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EXPORT COMMODITY STUDY OLIVE OIL

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Executive Summary

The Government of Tunisia (GOT) has an on-going program for agricultural sector structural adjustment. Priority in this program has been given to the promotion of agricultural exports. Olive oil is one of five commodities chosen for analysis in 1988/1989 under the GOT/AID Agricultural Policy Implementation Project. Part A of this study is directed toward assessing the key factors affecting the Tunisian potential for production of oil olives and export marketing of olive oils to international clients. Part B of the study investigates the prospects for increasing olive oil exports to the North American market. The conclusions drawn from Parts A and B are used to develop strategic marketing recommendations for the Tunisian olive oil sub-sector.

A. Domestic Production, Processing and Marketing

Olives are one of the most widely grown commercial crops in Tunisia. Over the last decade, total olive oil production has averaged 104,000 metric tons per year and Tunisia has exported annually about 50 percent of production. Export revenues have averaged 54,000,000 Dinars per year and only revenues from marine exports are comparable within the agricultural sector.

This study finds that, while Tunisian olive oils are competitive on world markets in quality characteristics, exports are increasingly being challenged for market share by exports from the European Community. In the near-term, competition in export markets will be based upon price and effective marketing. For Tunisia, maintenance of market competitiveness hinges critically on improving present productivities in production, processing and marketing.

1. Production

At the production level, the study concludes that Tunisia is living off the capital investments made by earlier generations of olive producers and by the GOT itself. Although some large, efficient olive plantations do exist, a large percentage of the existing olive tree population has been allowed to become overaged and/or otherwise decline in productivity without significant renewal.

Due to the fact that full use of modern cultivation techniques, water catchment methods, and non-labor agricultural inputs on a regular basis has been restricted to a minority of existing olive plantations, average production costs on a per tree basis may still be higher than in competing European countries because of low yields per tree and rising labor costs for weed control, tree pruning and hand harvesting. Moreover, the small size of most Tunisian olive holdings and the increasing fragmentation in tree ownership are making it extremely difficult for growers to adopt new production technologies -- chiefly because they cannot spread the fixed costs of such modernization over a sufficient number of highly productive trees. In an era of rising costs for skilled and unskilled farm labor, this situation is particularly true for mechanized production techniques related to weed control, water conservation, tree pruning and olive harvesting.

To stay competitive in export markets, the study concludes that Tunisians must make strenuous efforts to:

- a. Encourage Olive Tree Regeneration** – Encourage regeneration of existing olive groves as the most economic way to improve yields and reduce costs;
- b. Consolidate Holdings** – Provide economic incentives to olive growers to consolidate their holdings into management units containing highly productive trees and to remove from production trees which are no longer productive, well cared for, or properly sited; and
- c. Restructure Producer Prices** – Restructure producer price schedules so as to bring producer prices for the different qualities more in alignment with actual export demand. The current price structure with quality premiums favors production of virgin oils relative to pure oils, whereas effective demand in new markets is primarily for pure oils. Similarly, the structure of olive processing fees for producers needs to be changed from one based on the gross tonnage of olives pressed to one reflecting the amount of olive oil actually extracted per ton of olives processed. Finally, processors should be allowed to offer olive producers lower unit processing charges commensurate with more efficient processing technologies and thereby attract their business away from less efficient processors.

2. Processing

Tunisian olive oil is considered to be of high quality. However, much of the oil is processed at higher-than-necessary cost due to the obsolete nature and inefficiencies of many local processing plants. Efficiency can be improved by:

- a. Encouraging Modernization of Olive Presses** – It is clear that Tunisian olive processing costs are adversely affected by continued processor reliance on outmoded press systems, a spatial distribution of presses which increasingly misaligned with olive production areas, and a pan-regional fee structure for olive pressing which rewards the most inefficient press operators and provides no market-based incentives for press modernization. GOT assistance to the sub-sector must include both a liberalization of present processing fee structures and more creative, direct incentives for olive processors to adopt more modern press technologies in existing plants and, as necessary, site new presses closer to olive production areas.
- b. Preventing Olive Fermentation Before Pressing** – Better controls on harvest scheduling and storage of harvested olives are needed to prevent fermentation and preserve quality. In this regard, liberalization of processor fee schedules would allow for closer working relationships between growers and processors so that harvest schedules more closely match the processor's capacity and time scheduling in processing.

3. Marketing

To improve efficiencies in export marketing of Tunisian olive oils, three primary actions are essential.

a. Streamlining the ONH – If the ONH is to remain as the primary agency supporting and managing the GOT's concerns with olive oil marketing, the organization must have a structure commensurate with its expected functions. The study concludes that those primary functions should be limited to assuring quality control, promoting Tunisian olive oils and supporting private sector Tunisian exporters with marketing incentives in open markets, limited direct marketing activities only in markets where direct government-to-government sales are essential as the only effective means of market penetration, and collection and dissemination of market information to assist in export development.

b. Divesting ONH of its Present Export Monopoly and Non-Market Activities – Given the defined ONH functions above, the study recommends that the current agency monopoly in export marketing be abolished and that the GOT actively encourage private sector agents to push Tunisian sales of olive oils aggressively, particularly in non-EC markets. Moreover, the GOT should move to divest ONH of its responsibilities for those present programs and activities which could be better handled by direct GOT contracting with private sector agencies -- i.e. pest and disease control programs -- by market liberalization actions -- i.e. producer input supply -- or by transfer to agencies of the Ministry of Agriculture -- i.e. olive production and processing research and producer extension activities.

c. Providing Incentives for Better Export Product Packaging – Current GOT policies which encourage export packaging with a heavy domestic materials component result in high cost, low quality product packaging and are one reason why most Tunisian olive oil is exported in bulk. The low quality packaging impairs the quality image of Tunisian exports in all external markets. Until it is possible to improve the quality of the export packaging, it will be impossible to make meaningful inroads into the North American or other non-EC markets and capture the value-added receipts from shipment of packaged products. GOT actions to encourage use of "off-shore" arrangements, joint marketing ventures, and other export promotion actions to improve product packaging are considered essential to promote proper sizing of export containers, improve product appearance, and lower the unit costs of export offerings.

B. World Market Conditions

1. Production

During the mid-1980s, the most recent period for which data are available, world olive oil production remained in the range of 1,700,000 to 2,000,000 metric tons. Aggregate year to year production variability was less than 10 percent, less than half of that in the five preceding years. The proximate causes of interannual variability in world production are not clear from the available information.

Italy and Spain are, respectively, the leading world suppliers and the major contributors to the 75 percent world market share held by European Community (EC) countries. Tunisia over the past decade has produced between 7 and 9 percent of the world's olive oils and has exhibited relatively stable year to year export -- if not production -- levels.

2. Exports

Over the past decade, the world olive oil market has become increasingly export oriented, with a nearly three-fold increase (10 % to 27 %) in exports from world production. Spain is the leading world net exporter, followed closely by Greece. Tunisia is the fourth largest exporter in the world but exports the largest share of domestic production -- about 50 percent.

No reliable data are regularly reported on world export or import prices by grade and packaging. The gross value of exports is not a good indicator of prevailing prices since no reliable data are available to correlate prices, oil grades and packaging by export market.

3. Imports

Italy is the leading world importer of olive oils, accepting over half of the total world exports in some years. Much of that volume, however, is processed and re-exported. The United States is the current leading consumer of imported olive oils with about 10 percent of total world exports --i.e. 52,000 metric tons in 1986. The United States has exhibited steady -- if somewhat volatile -- import growth. Two other nations -- France and Libya, both of which were leading importers in the past, have declined sharply in importance in the 1980s. Tunisia is the third largest supplier of olive oils to the United States, after Italy and Spain, but currently holds less than a five percent market share. Some Italian exports reaching the United States undoubtedly contain olive oils of Tunisian origin.

4. Consumption

For the past fifteen years, average per capita olive oil consumption in the United States has increased at a rate of 2.5 percent per year. The annual rate of increase is slightly higher in Canada. Total per capita consumption in both countries, however, remains quite low at 0.19 kilograms in 1986 --or about two percent of total edible oil consumption. Greater increases are widely predicted in the near-term.

5. Trade Restrictions

Tunisia has duty-free access to the North American market and no non-tariff barriers exist to constrain Tunisian market access. The absence of an accepted standard to define olive oils by grade in the United States, however, does make marketing more difficult. In the absence of such a standard, domestic marketing agents often promote their products using terms and labels -- e.g. "cold-pressed", "extra light" -- which have no equivalents in prevailing international product codes for olive oils.

C. The North American Market

Other than aggregate trade data, information on olive oil sales in North America is very limited. For purposes of this study, a total of 31 in-depth interviews were conducted in the United States and Canada with olive oil importers and other persons familiar with market and import conditions.

The composition of United States market demand has been evolving quite rapidly in the 1980s, due primarily to the entry of new, higher income and health-conscious consumers into

a market that had been dominated by ethnic consumers of southern European origin. These newer consumers tend to buy olive oils in small container sizes (250 milliliters), in contrast to the gallon purchases preferred by traditional ethnic consumers.

The Government of Spain is now encouraging a major expansion of Spanish olive oils into the United States market and is supporting price discounts of 40 to 60 percent under comparable Italian oils. Olive oils, nonetheless, remain relatively expensive and price-induced substitution for other edible oils -- particularly soybean oil -- is expected to be small. Sales increases are more likely to be associated with changing life styles and dietary considerations among American consumers. Most olive oil appears to be consumed in major cities, especially on the east and west coasts and in Chicago.

The North American market is dominated by sales of pure olive oil. Virgin oils are considered too costly and strongly flavored for most consumers. Rather, "light" oils -- an ill-defined product -- are gaining rapidly in popularity.

About 70 to 80 percent of olive oil sales are made through supermarkets, with the rest being largely to the restaurant trade. Three brands -- i.e. Bertolli, Berio and Pompeian -- have a 70 percent value share of the United States retail market. This market share appears to be very secure due primarily to these companies' good distribution networks and to strong brand identity by consumers. A large number of brands make up the residual 30 percent of the market. In total, some 91 firms and subsidiaries import and distribute olive oils in North America. These firms may be classified as:

1. Subsidiaries of foreign firms;
2. Importers and distributors of own brand name products; or
3. Brokers.

The Canadian market for olive oils is even less well documented than the United States market but is thought to share many of the same demand and supply characteristics. Canadian market demand is highly concentrated in two major eastern cities -- i.e. Toronto and Montreal.

In both countries, Tunisian olive oils are well-known and have a very good reputation for quality among the major importers. They, unfortunately, do not have similarly strong source recognition among consumers in either country. While olive oils marketed as being a **Product of Tunisia** would not meet with great opposition among either importers or consumers, they would almost certainly have to be sold at a discount against Italian oils.

D. Alternative Market Penetration Strategies

In the Part B report, six major marketing alternatives for olive oil in the North American market are analyzed. They include:

1. **National Distribution of a Proprietary Label** -- This entails the development of a Tunisian brand name for retail and institutional sales across North America;
 2. **Regional Distribution of a Proprietary Label** -- This is a strategy similar to the one above but with a focus on a specific region in North America -- i.e. the Great Lakes or a state such as California;
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- 3. Sole Supplier of a Distributor-Owned Brand** – A contractual arrangement with a distribution to be a sole supplier within the entire market or a region;
- 4. Supplier for Institutional Sales** – Targeting institutional, especially restaurant, sales with gallon-sized containers;
- 5. Bulk Sales** – This would be essentially a continuance of current ONH practices in the United States market;
- 6. Bulk Sales with North American Stocks** – Augment current ONH practices with the addition of olive oil stocks in North America for the purpose of more rapid delivery.

E. Recommended Marketing Strategy

Of the strategies described in III. above, Alternatives 1 and 2 are considered too costly and risky as Alternative 1 would require an investment of up to \$ 2,000,000 at the onset with no guarantee of success in market penetration. The cost of a regional strategy would be less but still considerable. Moreover, the ONH and private sector agents current lack sufficient expertise to direct such a complex marketing campaign in North American at present. Alternative 4 places the Tunisian exporters in an extremely price sensitive market where quality, a major competitive strength of the Tunisian olive oils, is little valued. The final two Alternatives -- i.e. 5 and 6 -- are little different from ONH's current marketing practices and offer limited opportunities to increase sales, while prices and sales volumes would remain unstable from year to year.

Alternative 3, therefore, is the optimal short-term strategy. Contracts need to be drawn with several distributors supplying both the United States and Canada. The contracts should:

1. Be multi-year and with staggered expiration dates to minimize the impact of loss of any one contract;
2. Specify exclusive supply by Tunisia; and
3. Establish a formula to be used in price determination.

Several potential North American distributors, one of which -- Lindsay Olive Growers -- has made an initial proposal, are identified in the study.

In the longer term, after Tunisian exporters have become more experienced with the North American market, the development or acquisition of a North American brand might be more feasible. This step would require the location in North America of a Tunisian cadre of market representatives. These representatives would have to be fluent in English and thoroughly familiar with North American customs and marketing practices.

**AGRICULTURAL POLICY IMPLEMENTATION PROJECT
EXPORT COMMODITY STUDY**

**Part A
Olive Oil Competitiveness Analysis**

**January 1989
FINAL REPORT**

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Preface

This Part A study of the production, processing and marketing of olive oil in Tunisia was requested by the Government of Tunisia (GOT), in the context of its on-going economic structural adjustment program for the agricultural sector. The research was funded through the Tunisia Agricultural Policy Implementation Project -- Project No. 664-0343 -- which is jointly sponsored and funded by the GOT Ministry of Agriculture (MOA) and the United States Agency for International Development (USAID). The prime technical assistance contractor for this project is Abt Associates, Inc. of Washington, D.C. and Cambridge, Massachusetts. Sub-contractors for the project include the University of Wisconsin, Madison, Wisconsin; the Institut Supérieur de Gestion (ISG), Tunis, Tunisia; and Ithaca International Limited, Ithaca, New York.

The Part A Commodity Report on olive oil was researched, written and revised during the period from April 1988 to January 1989 by a team of six agricultural specialists from the Direction General de la Developpement, du Plannification, et des Investissements Agricole/General Direction for Planning, Development and Agricultural Investment (DGPDI) of the Ministry of Agriculture and the Institute Supérieur de Gestion/Higher Institute for Management (ISG), both in Tunis, Tunisia, and Ithaca International Limited of Ithaca, New York. These specialists were:

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The team's research efforts in Tunisia were greatly facilitated by the assistance and guidance provided by the Director and staff at the DGPDI; the resident APIP project manager, Dr. Roger Montgomery; and the USAID project manager, Dr. Shirley Pryor. The directors and staffs of the Tunisian Office National de l'Huile/National Office for Edible Oils (ONH) and the Institut de l'Olivier/Institute for Olive Research provided us with invaluable insights into the current situation in the olive oil sub-sector in Tunisian. In this, they labored long hours to respond to the team's general questions and requests for clarifications on specific points. Finally, team members conducted numerous interviews in the field with olive producers and processors in both the public and private sectors -- all of which added new perspectives and information for this final report.

Upon completion of the draft final report, the text and tables were professionally reviewed and critiqued separately by Dr. Max Brunk, Professor-Emeritus of Agricultural Marketing at Cornell University; Dr. Gary W. Williams, Professor and Coordinator of the Texas Agricultural Market Research and Development Center at Texas A&M University; and Drs. Roger Montgomery and Mark Newman of Abt Associates, Inc.. To the maximum extent possible, their comments and suggested revisions were incorporated into the final report.

The team wishes to thank all of specialists for their sincere efforts on our behalf and for their assistance with the production of this final report.

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List Of Acronyms

AIRD	Associates in Rural Development
CAP	Common Agricultural Policy
ECC	European Economic Community
EC	European Community
FAO	Food and Agricultural Organization of the United Nations
GDP	Gross Domestic Product
GNP	Gross National Product
GOT	Government of Tunisia
MOA	Ministry of Agriculture
ONH	Office National de l'Huile (National Office for Edible Oils)

MAIN REPORT

Part A Study Olive Oil Competitiveness Analysis

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I. Introduction

Agriculture has always had an important place in the Tunisian economy. The sector contributed about 25 percent of the country's gross domestic product (GDP) in the decade of the 1960s. This contribution declined to 18 percent of GDP in the 1970s and fell further to 14 percent in the first half of this decade.

The decline in the agricultural sector's relative contribution to the national accounts is attributable partly to stagnation - or, at best, slow growth - within the sector itself. But, more importantly, major structural changes in GDP have come about through the rapid growth in other sectors, particularly, manufacturing, tourism, services, and petroleum. While growth in these sectors has been steady, if not spectacular, in the 1980s, most agriculture enterprises have been affected by highly variable rainfall conditions, rising production costs, and output prices which, for some crops, do not provide strong incentives to farmers for technological modernization and increased production.

As can be seen in Annex 1, Table 1, Tunisia has an estimated 4,700,000 hectares of arable cropland. Cereals, chiefly wheat and barley, are cultivated on about 40 percent of this land. Tree crops, chiefly olives, fruits and nuts, occupy an additional 37 percent of the total cropland. The remaining 1,050,000 hectares of cropland is divided between beans and other legume crops (100,000 hectares), industrial and vegetable crops (100,000 hectares), cultivated forage crops (250,000 hectares), and crop fallow (600,000 hectares).

A. General Characteristics of the Olive Oil Sub-Sector

1. Land and Other Resources Employed

In Tunisia, as in most of the Mediterranean basin, the cultivation of olive trees is thousands of years old. Before the end of the nineteenth century, Tunisians were cultivating an estimated 11,000,000 olive trees on 275,000 hectares. By 1930, an agricultural census counted 16,500,000 olive trees on 410,000 hectares.

Since Independence in 1956, considerable efforts have been made to expand the national area in olive trees. In the major period of expansion from 1956 to 1976, the area in olive trees almost doubled from 715,000 to 1,400,000 hectares. Since 1976, the total area in olive trees has remained roughly constant, with new plantings balanced by removal of older plantations, as land owners adopt alternative crops and trees fall to the inexorable expansion of urban areas.

Unlike many other agricultural crops in Tunisia, olive trees are distributed throughout the entire country. As can be seen in Annex 2, Figure 1, olive plantations occupy land from the far north, where average annual rainfall is about 1,200 millimeters, to the semi-desert areas of the far south, where rainfall rarely exceeds 150 millimeters. Annex 1, Table 2 shows the distribution of trees within the three major zones. In terms of olive trees, the Northern zone is estimated to have 14.8 percent of the total olive trees; the Central zone 29 percent; and the Southern zone 56.2 percent.

Since actual olive production varies as a function of the age of existing olive trees and their density per hectare, land use per se is not the best indicator of the relative importance of the three production zones. Spacing of the trees per hectare within the different zones is obviously a function of the effective rainfall received and soil conditions. At present, these different tree spacings result in densities ranging from 200 or more trees per hectare in the north to about 17 trees per hectare in the extreme south. This results, as can be seen in Annex 1, Table 3, in the northern zone having the largest percentage of olive trees (37.2 percent) albeit on the smallest land area, whereas the southern zone has only 26.7 percent of a national plantation estimated at 55,227,000 trees.

In addition, since the northern zone is a relatively new area for olive production, it has the highest percentage of olive trees under 20 years of age (24 percent). At the opposite extreme, the central zone -- and, particularly, a sub-zone known as the Old Sahel along the east coast -- has been a principal production area for a very long time and currently is experiencing a decline in production. This decline is in no small measure attributable to the fact that an estimated 44.5 percent of its olive trees are aged 70 years or older -- the cutoff age after which senescence sets in in olive trees.

For reasons which are discussed in the following section on production, much of the land area in olive trees is judged by local experts to be of marginal productivity -- i.e. soils have low inherent fertility or poor drainage; existing plantations have deteriorated beyond the salvage point; and/or rainfall is too low in total or poor in distribution to support crops in most years. For example, the Ministry of Agriculture (MOA) estimates 500,000 to 600,000 hectares of the existing plantations to be in marginal condition (Ministere de l'Agriculture, Janvier 1987, p. 5). The National Office for Oils (ONH), which is the official olive oil marketing agency in Tunisia, has based its annual production estimates in recent years on an effective productive area of between 1,050,000 and 1,130,000 hectares (ONH, personal communication).

In addition to the physical resources devoted to olive production, as can be seen in Annex 1, Table 4, over 30 percent of Tunisia's 376,500 farms have olive enterprises. The importance of olive production enterprises again varies considerably between the three major zones. In the north, 7,100 farms -- 5.8 percent of the total farms within the zone -- are estimated to have olives as a principal enterprise. In the central zone, 43.7 of all farms produce olives as their primary source of farm income. And, in the south, 38.1 percent of farms rely on this crop as a principal enterprise.

In all zones, most olive plantations are owned by smallholders. Annex 1, Table 5 presents the estimated size distribution of olive farms in Tunisia. As can be seen in this Table, 61.3 percent of all olive plantations occupy 10 hectares or less and 84.5 percent are 20 hectares or less. State farms and government-assisted cooperative units constitute only 0.1 percent of total land holdings in olive trees and large privately-held plantations account for only 15.4 percent of total holdings.

While the majority of olive farms are smallholder operations, Annex 1, Table 5 does not necessarily imply that smallholders actually produce the major share of olive oil in Tunisia. To determine production shares by farm size class, one would need additional data -- i.e. average farm size in hectares and average olive yields per hectare within farm size classes.

2. Economic Importance of the Sub-Sector

In the 1980s, Tunisia has ranked fifth in the world as an olive oil producer and is usually ranked as the second or third largest olive oil exporter. As per Annex 1, Table 6, estimated average production of olives over the period 1976/77 to 1987/88 has been 517,917 metric tons. Interannual production levels, however, have varied widely as a function of rainfall and the biannual bearing characteristics of the olive trees. The recent high production year was 1977/78 with 650,000 metric tons and the recent low year was 1982/83 with 290,000 metric tons.

Over the period 1979/80 to 1987/88, total olive oil production is estimated to have averaged 104,000 metric tons per year. Again, interannual production has varied widely, from 155,000 metric tons in 1983/84 to a low of 85,000 metric tons in 1982/83 (Annex 1, Table 7).

During the 1980s, despite these wide fluctuations in production, Tunisia has maintained its position of the world's second leading exporter of olive oil, after Spain. According to the ONH, olive oil exports over the period 1979/80 to 1986/87 have averaged 54,976 metric tons per year, ranging from a low of 36,117 metric tons in 1982/83 to a high of 70,674 metric tons the following year. Export revenues in 1986/87 totaled about 70,000,000 Dinars (approximately \$ 87,500,000 at the 1988 exchange rate). These exports make olive oil by far the leading agricultural export from Tunisia. In total export earnings, olive oil ranks third after petroleum and phosphates representing 8 percent of total exports and 40 percent of agricultural exports.

For a developing country, with a rapidly growing population and increasing need for foreign exchange earnings, export performance alone makes olive oil an extremely important factor in national development. However, since Tunisia is a net deficit country with respect to edible oils, olive oil production also plays an important role in domestic markets. In recent years, domestic consumption of olive oil has been estimated at approximately 49,000 metric tons. This consumption accounts for 35 percent of estimated domestic consumption of 140,000 metric tons, with the rest being supplied as imported vegetable oils, principally soybean oil.

Domestic production of olive oil has allowed Tunisia to install a government trade policy of exporting high value olive oil to foreign markets -- chiefly the European Economic Community -- and importing as substitutes low value vegetable oils from the principal world suppliers. This policy in the government's rationale has the following benefits for the country:

- It has allowed domestic consumers, with initially limited -- and with current wage freezes, possibly declining -- real purchasing power, to satisfy their needs for edible oils, given the substantial price differentials between olive oil and substitutes (approximately 1.300 Dinars per liter for olive oil and 0.320 Dinars per liter for substitutes);
- It has contributed toward the balancing of Tunisia's foreign trade accounts;
- It has contributed to the supply of foreign exchange needed for financing national investment programs;
- It has contributed to maintaining producer earnings in the olive oil sub-sector at levels higher than could have been sustained if the oil was wholly consumed in the domestic markets.

3. Social Importance of the Sub-Sector – Particularly Employment

The adaptation of the olive tree to difficult conditions, particularly in the arid south of Tunisia, explains, in the minds of some, why farmers continue to maintain their plantations. The presence of a viable tree crop in these areas is said to contribute to fixing local farming populations in place and to preventing an even greater rural exodus than the society is already experiencing. In addition, olive production provides steady, if modest, incomes for farm families whose enterprise alternatives are otherwise rather limited.

While the actual role of olive production in preventing rural exodus is debatable, there is no question that olive cultivation provides full-time employment for some families and seasonal employment for many others. It is estimated by the Ministry of Agriculture that about 1,000,000 of Tunisia's 7,000,000 people derive all or a part of their annual incomes from cultivation of this crop. Olive production and processing are thought to generate on average 25,000,000 person/days of labor for Tunisian workers -- or 20 percent of total employment in the agricultural sector.

Labor demanded for the olive crop is estimated to be divided between weed control and tree pruning (64 percent) and olive harvesting (36 percent). These activities are carried out with the assistance of paid seasonal laborers who often travel from more disadvantaged areas of the country in the period from November to April each year in search of cash wages.

In addition to field activities, workers are employed seasonally by olive press operators in transport of olives from farms to presses, the actual pressing operations, and in the transport, storing, packaging and distribution of the resulting olive oil. The bulk of this employment is generated during a brief 90 to 100 day period lasting roughly from mid-December to early April.

4. Regional Importance and Use of Otherwise Unusable Land

Olive production and processing activities are of differing economic and social importance in different parts of Tunisia. As a regional agro-industrial enterprise, olives are most important in the south of the country. Simply driving through the areas around Sfax, one is impressed by the extreme reliance local farmers put on the olive crop. Whereas rural Tunisians in the north and center of the country appear to have both a number of alternative crop opportunities and better access to off-farm employment, farmers in the south seem much more constrained in their enterprise choices. Few other crops can compete with olives in the harsh conditions of southern Tunisia -- e.g. pistachios, almonds, and, possibly, some adapted fruit varieties. All of these alternatives would appear susceptible to severe marketing difficulties if present production were to be expanded much beyond the limits of local consumer demand.

As will be discussed later in this report, there is also a heavy concentration of olive oil processing facilities in the south of Tunisia. In addition, the majority of Tunisian olive oil exports are shipped from the port of Sfax, which only serves to further emphasize the importance of the crop to the economic health of the whole region.

In general terms, then, any persistent decline in olive production or adverse change in the terms of trade for olive oil in world markets would be felt most severely in the southern parts of the country. Since this region already appears to be disadvantaged vis-a-vis the rest of the country, further decline in the profitability of its major agricultural crop would have the major consequence of further accentuating regional disparities.

II. Aspects of Olive Oil Production, Processing and Export Marketing

A. Production Aspects

1. Agro-climatic Factors Affecting Tunisia's Oil Olive Production

Understanding the olive tree itself is necessary to understanding its multi-faceted role in Tunisian agriculture. While there are exceptions, the following sequence generally ranks crops in ascending order of risk and managerial complexity: forest and range, tree crops, irrigated annual crops, and rainfed annual crops.

The olive tree is one of the most resilient and hardy of tree crops. Olive trees can be neglected for years and still be brought back to full production with a few years of careful tending. At the limit of its adaptability, the olive tree can be grown on the fringes of the desert in a climate so arid that its only alternative uses are for grazing of livestock and an occasional catch crop of wheat or barley. The olive tree can utilize marginal agricultural resources and still produce a high value product. Given certain soils, it can grow where no other tree crops can survive and produce.

Oil olives are generally grown on land which would be considered marginal for any other crop. It should be understood, however, that the olive tree is demanding in its soil requirements. It needs a deep, light, well-drained soil, with uniform moisture retention characteristics throughout the profile to survive the long hot summers of the Mediterranean climate. For good production results, the soil should be at least one meter deep. This land is considered marginal for other crops chiefly because of its lack of available moisture sufficient to support productive growth in these crops.

In a temperate climate, the beginning and end of the summer growing season is defined by the first and last killing frosts. For a Mediterranean climatic region, on the other hand, the growing season is during the winter months, which is limited by the drought conditions imposed by a hot dry summer. Temperature, day length and solar radiation in a Mediterranean climate are highly favorable to plant growth. Given irrigation to provide moisture for summer cropping, the Mediterranean climate has the highest yield generating capacity of any climate. Without irrigation, no annual crops and few tree or forage crops can survive the hot dry summers. Freezing nighttime winter temperatures do occur in Mediterranean climates. In Tunisia, they are more likely to occur in the Center and South than in the North. However, these temperatures are never low enough to be a threat to oil olive production.

2. Agricultural Regions in Tunisia

General agricultural regions can be distinguished in Tunisia. Locally, it is common to speak of the country in terms of three principal regions. These are: the agriculturally-rich North; the agriculturally-poor South; and, between them, a transition zone referred to as the

Center. The Tunisian olive industry uses these same terms and regional divisions with the following connotations.

The **North** is well-watered both in terms of rainfall and irrigation water made available from dams in the mountainous northwest of the country.

The **Center** refers to both the coastal plains and the hinterland steppe regions in the center of the country. The traditional major oil olive production region of the country was found on the coastal plains around Sousse. The steppes are a semi-arid, inland region of barren mountains and plateau basins, which traditionally have been used for extensive grazing. They are separated from the North by the Dorsal range and merge with the desert to the south. Along their eastern border, the steppes are separated from the sea by the 45 kilometer wide strip of land, commonly called the Sahel. This term, meaning "coast or border" in Arabic, in Tunisia refers to a region of low plains which borders the eastern seacoast from Nabeul to Gabes.

The **South** refers to both the coastal and inland regions in the south of the country. The major olive production area is centered around Sfax. In the parlance of Tunisian olive producers, the coastal plains around Sfax are not considered to be part of the Sahel. The pre-desert and desert areas of the far south are generally included in this region, but they are not very important for olive production.

As a general rule, within the agricultural regions of Tunisia, rainfall decreases as one moves south. In the North and Center, due to increasing elevation, average temperatures decrease as one moves inland. During this century, oil olive production has migrated to the south and inland. The South, which has 26.7 percent of the oil olive trees, produces on average 51.3 percent of the olive oil in Tunisia. Sfax, the largest city and port in the South, is now the hub of the most important olive production region.

3. Description of the Capacity of the Tunisian Oil Olive Production Sub-Sector

Oil olive production in Tunisia is an extensive, rather than intensive, form of agriculture. An annual rainfall of 400 millimeters is widely considered to be the minimum for oil olive production. Because of its soils, however, Tunisia can grow olives in areas of less than 200 millimeters of annual rainfall. Under such circumstances with the soil moisture constraint, tree spacing is less dense (20 to 40 trees per hectare versus up to 200 trees in the North). Yields -- and hence net returns -- per hectare are not very high, regardless of the crop inputs applied. Consequently, owners must operate large farm units if they are to derive their major revenues from olives grown in monoculture.

The ascendancy of the Sfax area over Sousse as the hub of the principal olive production zone in Tunisia demonstrates the importance of effective farm size. Sousse probably has the best productive environment for oil olives in Tunisia but its actual production is in severe decline at present chiefly because of the initial small size and increasing fractionalization through inheritance laws of the existing olive land holdings.

In the South, on the other hand, the climate for olives is severe with an average of only 200 millimeters of seasonal rainfall. It was not until after the turn of the century that any serious attempt was made to introduce commercial oil olive production in this area. However, land holdings in olive enterprises in this region are comparatively large and, as a consequence, the region has become the center for commercial olive production in Tunisia.

Throughout the three production regions, one can distinguish three approaches to olive farming, based on the size of the economic enterprise. Small-scale enterprises constitute by far the largest and most variable category. They can range from a single, multi-owner tree, which is neglected and never produces for the commercial market, to thriving, small oil olive operations. The latter, while economically sound and technically well managed, are too small to provide the main source of livelihood for a farm family as independent economic units. Such operations are to be found throughout Tunisia.

These small farms, with their oil olive and other crop enterprises, play a significant role in the Tunisian farm economy, even though they are usually judged to be non-economic in the context of modern, profit-oriented agriculture. Family farms of this type, with their strong element of self-reliance and emphasis on subsistence food production, make an important contribution to stabilizing the fabric of rural life. And, in fact, produce from these farms feeds large numbers of rural people, even though their net impacts on the commercial economy may be modest.

On these farms, the inclusion of an oil olive enterprise serves to diversify the total farming operation, utilize otherwise marginal resources, and reduce overall crop risk. Olive trees under these conditions are often well-tended through use of family labor but receive virtually no purchased agricultural inputs. Olive oil produced may be wholly consumed by the farm family or traded in a local circle of rural consumers. Such production is not necessarily uneconomic from the perspective of the landowner, even though none of it may reach urban markets and enter the export trade.

Small, well-tended oil olive groves also occur where an absentee owner, having significant off-farm income, takes pride in maintaining his olive grove, often passed down as an inheritance. This type of owner, having access to significant outside capital, is more likely to apply limited agricultural inputs and follow extension crop recommendations. Again, however, this type of olive grove is not the owner's primary source of income and the owner's reasons for maintaining the olive enterprise cannot always be attributed solely to a central profit motive.

While small, well-maintained oil olive operations exist throughout Tunisia, the general picture at this level is one enterprises with a high percentage of old trees -- i.e. over 70 years of age -- and declining yields per tree. The extremely small size of olive groves in the Sousse area is often cited as the major example of farm size as a problem in declining oil olive production. Soil erosion and the planting of trees in unsuitable areas traditionally used for water harvesting are additional factors in this decline.

Medium-scale farms are the next level of olive farming. Oil olive enterprise in this category are commercially oriented and have a sufficient number of hectares in olive trees to stand alone as the principal source of income for a farm family. Most of these farms are found in the Center and South of the country.

The determining characteristic of the third category of oil olive operations is one of fulltime paid employees. These farms are the principal source of livelihood for an operator and paid laborers. The farms can be either private operations or state farms. They have the potential to benefit both from economies of size and from improved post-harvest handling of olives -- i.e. by processing the harvest directly in an on-site olive press. It is at this level that Tunisia may be most competitive in terms of production costs, quality of olive oil produced, and capacity to monitor the characteristics of the olive oils produced.

4. Key Factors Affecting Olive Oil Production and Quality

In the available literature and in interviews with sub-sector participants, three production problems were universally cited as being the most detrimental to improving total olive oil production and quality. These problems were: (a.) old trees, (b.) poor control of Bermuda grass in olive groves, and (c.) improper handling of olives in post-harvest operations. Additional problems cited by some were:

- lack of application by farmers of recommended cultural practices in tree pruning and fertilization;
- erratic rainfall patterns and the lack of effective moisture conservation techniques; and
- the "alternate bearing" characteristic of the oil olive tree.

Pest and disease control in olive enterprises was not cited as a major constraint on production is noticeable by local olive specialists.

a. Old Trees

An olive tree in Tunisia is deemed to have a useful productive life of about 70 years. Full production is reached when the tree is about 30 years of age and starts to decline at about 50 years. As can be seen in Annex 1, Table 3, 64.7 percent of all oil olive trees in Tunisia are estimated to be entering or in their stage of full production and 14.5 percent are estimated to be over-aged. The Central zone around Sousse has the lowest percentage of trees in full production (36.5 percent) and the highest percentage of over-aged trees (44.5 percent).

This problem can be addressed in three ways:

- by pulling out old trees and replanting the plantation;
- by severe pruning of existing trees; or
- by regeneration of existing trees.

The first method is self-explanatory. The second method -- severe pruning -- entails cutting the existing tree back to the trunk and allowing its branches to regrow. Within three years after such pruning, the tree will be back in vigorous full production. This technique gives the tree renewed vigor for about ten years. It cannot be done, however, if the trunk itself is diseased in any way. The third method -- regeneration -- is accomplished by selecting 1 to 3 root shoots to replace the old tree. Once the old trunk is removed, the root shoots are allowed to grow up and full production is attained within five years. The key to the second and third methods is that the tree in question has a root system which is already fully developed and extensive within the soil profile, which permits rapid regrowth.

The main advantage of removing old trees completely and replanting is that one can rip the sub-soil of the plantation area before replanting the new trees. This can be very important where hardpans and other impediments prevent good water percolation through the soil.

One advantage of selecting new shoots over replanting is that it is not necessary to water the tree by means of hauling water to the site. In the case of replanting, this manual watering operation is necessary for two years. Other advantages are that the regenerated olive tree is out of production for a shorter period of time and that this technique can be applied to the operator's trees progressively over time. A third advantage is that the actual costs involved in regeneration of an olive grove are largely compensated for by sales of olive wood.

The advantages of regeneration are especially important to small farmers since total loss of olive revenues with complete replanting is obviously a major obstacle if the farm family does not have access to substantial alternative revenues, either from other crops or off-farm.

The GOT is currently subsidizing a program to encourage farmers to renew their olive groves by this regeneration technique.

b. Poor Control of Bermuda Grass in Olive Groves

Bermuda grass -- known as "chiendent" in Tunisia -- is often called "devil grass" in the western United States. It is considered a serious weed in olive groves because it competes vigorously with the trees for available soil moisture. Thorough weed control is always a prerequisite for any type of dryland farming. In areas where oil olive production takes precedence over all other crops, such as in the Sfax region, farmers try to eradicate, rather than simply control Bermuda grass. To accomplish this task, farmers will even resort to use of hand tools to dig out the roots of the Bermuda grass down to a depth of one and one-half meters.

Since Bermuda grass is propagated by stolons, it is virtually impossible to eradicate and is difficult to control. Chemical control has been attempted with the herbicides -- i.e. Roundup and Radican. Roundup has proven to be most effective but it is costly to use in Tunisia. Radican has not been effective under Tunisian conditions.

The springtooth harrow is the most widely used implement for controlling Bermuda grass in Tunisia. However, it can also be the means of dragging stolons over the grove and its use can result in further spreading of an existing infestation.

Another complication in Bermuda grass control is that the weed is considered by some farmers to be a good forage crop for livestock. In certain areas on the steppes, many small farmers use the areas around oil olive trees to graze livestock. This practice makes more economic sense to them than using the land solely for olive production in monoculture. In other words, farmers judge their losses of revenue from olive production to be more than compensated for by their gains in revenue from livestock sales.

In areas where there is no competition with livestock grazing, even a casual observer in 1988 cannot help but be impressed by how clean the large spaces between olive trees are kept by Tunisian oil olive growers. In the areas visited, it was rare to see a weed infested grove. These groves are kept clean right up to the trunks of the trees. This close work has to be done by hand labor and must be expensive. It is difficult to believe that farmers consider their oil olive enterprises to be unprofitable when such care is expended to keep them weed free. Of course, the need for weed control in 1988 has been reduced to some considerable extent by the drought conditions which have persisted during recent months.

c. Improper Post-Harvest Handling of Olives

It is generally acknowledged that post-harvest handling of olives is sub-standard on many farms. This problem is usually described as being a function of grower access to an oil press. Olives are subject to bruising damage in handling and to fermentation in storage, particularly if they are piled too high and subject to high ambient temperatures while awaiting pressing. The optimal technique for olives is hand picking, careful handling, and rapid pressing.

In Tunisia, olives are often put in jute bags or plastic packing cases and stacked for hauling to the oil press. At the press, they are transferred to bulk storage bins. There the olives

may be stacked too deep and held too long before processing. One of the factors which aggravates this situation, particularly in good production years, is that most farmers harvest their olives in January. This lack of harvest scheduling means that the oil presses have more olives than they can conveniently handle at that time and are under employed earlier and later in the harvest season. This problem of mishandling the timing of the harvesting results in processing delays and lower total yields of high quality oil.

Early picking of olives with resulting firm, green fruit is one way that some growers attempt to improve their net revenues from the resulting oil. The decrease in quality resulting from pressing these olives early is more than compensated by their increase resistance to careless post-harvest handling.

Machine harvesting of olives can lead to inclusion of significant quantities of inferior fruit in the mix pressed for oil. On the other hand, Tunisia's dry climate and post-harvest handling practices also have an adverse effect on quality. The importance of hand picking is that the olives can be harvested at the optimum time and they are free of leaves, twigs, dust and inferior fruit when they are taken to the press. This can result in higher quality oil than that which can be obtained from olives gathered after they have fallen from the tree. Machine harvesting is probably a technique more adapted to producers like Italy and Spain where labor rates for hand picking of olives are much higher than they are at present in Tunisia.

In Tunisia, costs of hand picking olives are thought to be high per laborer per day largely because the olive trees are large and per tree yields are low in many areas. Use of mechanical shakers to harvest olives has been tested in Tunisia but trials have found that up to 50 percent of the olives on large trees are not recovered by one shaking. Having to make two or more passes per tree to efficiently harvest large trees increases the costs of using mechanical methods. Abcission chemicals have also been tested in Tunisia but this method was deemed infeasible because olive quality was reduced due to the chemical residues remaining on the fruit.

Tunisians tend to speak of olive holdings in terms of numbers of trees maintained, rather than in terms of area cultivated. This points up the importance of the individual tree as the basic production unit to be considered when assessing the efficiency of olive production enterprises. For maximum picking efficiency, a high concentration of olives per tree is important. Because of its effect on tree size and the location of the fruit, one of the most important effects of regular pruning is more efficient harvesting of the olives.

d. Lack of Application of Recommended Culture Practices

Pruning is important because it:

- favorably influences the equilibrium between the oil olive tree's foliage canopy and its roots;
- increases the ratio of new, fruit-bearing woods;
- opens the tree to better light penetration; and
- keeps the tree from becoming excessively large and thus difficult to harvest.

Pruning is not an expensive practice because the value of the wood cut offsets to a large extent the cost of the pruning labor. Local experts when interviewed expressed the belief that many olive groves are improperly or insufficiently pruned each year. While it is difficult to contradict prevailing opinion with the information available to us, it should also be said that the majority of extensive oil olive plantations observed during the brief course of this

mission were well-pruned by American standards. It should be noted, however, that olive producers in the Mediterranean basin tend to prune their trees more severely than their California counterparts. Consequently, the difference in perception of what is actually happening in the field could be the result of differing criteria as to what constitutes "good" pruning.

It is estimated at present that only about ten percent of oil olives receive fertilizer applications. It is quite common for farmers who are producing rainfed crops in semi-arid regions to be hesitant in their use of chemical fertilizers. With annual crops, there is a significant risk that the investment in the fertilizer will be lost if rains are poorly timed or fail completely. This risk is not as significant for a tree crop since even a poorly timed rain would allow the tree to utilize the applied nutrients. The acceptance of good fertilization practices on a wide scale, therefore, would almost certainly have a major positive influence on olive production.

In Tunisia, only the lack of available nitrogen is considered to be a limiting factor in oil olive production. Three kilograms of ammonium nit-rate are recommended per tree. Fertilizer recommended in a split application, with one-half applied in the fall months before harvest and one-half applied in the spring after pruning. When a new plantation is being established, it is also recommended that a basal application of phosphorous and potassium be made to help the young tree's early development.

e. Farmer Preferences for Alternative Tree Crops

Generally, oil olive production cannot compete with other crops for anything but marginal agricultural land. This may in fact be land with good soils but marginal rainfall. The critical factor is always the effective annual precipitation. In Tunisia, the following crop enterprises can be competitive with oil olives: irrigated vegetables, small grains -- i.e. wheat and barley, and other drought-tolerant tree crops. On truly marginal land, there is the additional competition from natural range for livestock grazing.

Drought-tolerant trees in Tunisia include primarily pistachios and almonds but there are also local drought-tolerant varieties of peaches and apricots. The last is accomplished by double grafting. First, a peach shoot is grafted to an almond rootstock; then, an apricot shoot is grafted to the peach graft. In this manner, a reasonably drought-resistant apricot is obtained.

With respect to oil olive competition with alternative crops, the GOT, in line with its deliberate policy of maintaining the existing olive groves, makes it difficult for farmers to obtain the permits needed to pull out oil olive trees on certain types of land. If an olive producer wants to pull out his trees and replace them with another crop, he must obtain a government permit before he can proceed with the operation. Securing such a permit at present is a very lengthy and time-consuming exercise with an uncertain outcome. However, if permission is granted, it can be a financially very rewarding. In the Sfax area, for example, interviewees said that a permit to remove oil olive trees can quadruple the value of a farmer's land overnight.

The issue of competition between oil olives and other crops, however, must take into account some elementary agronomic facts. For small grains, irrigated vegetables, and livestock grazing enterprises, it is not strictly necessary to remove the oil olive trees from an area in order to add these enterprises. The spacing between trees in most of Tunisia -- and, particularly, as one moves south -- is sufficient for growing small grains, vegetables, or forages in strips between the trees. If additional room is needed, it is a simple matter to keep

the existing trees pruned severely, rather than actually removing them. Consequently, it is inaccurate in our opinion to pose the threat of competition with alternative crops as a life or death option for existing olive plantations. On the contrary, oil olive trees in all but the most highly productive and intensive plantations can easily co-exist with alternative crops on the same land, given adequate soil moisture.

The only direct, no compromise situation for land resources is posed by the drought-tolerant fruit and nut trees. Even with these trees, however, it is not necessary to convert an entire plantation. It is common to see plantations with fruit and nut trees scattered between the oil olive trees. In most cases, these alternative species were planted to replace dead olive trees. In these cases, the replacement is most likely to be an almond tree.

As a general rule, the alternative tree crops are seen as competitors with the olive tree in production of fruits and nuts for domestic markets. Even if the infrastructure existed in Tunisia for highly efficient export of these different crops, all would face very stiff competition in international markets -- perhaps even greater than that facing olive oil exports. None of these fruits and nut qualify as basic commodities and some are highly perishable.

It seems a dubious proposition to us, therefore, for certain groups to actively promote replacement of olives with crops for which market prospects may be shaky at best. With declining consumer purchasing power in domestic markets and stiff competition in export markets, it is not clear that projected producer revenues for the alternative crops could actually be attained if they were actually allowed to replace olives on a massive scale. To the contrary, an alternative scenario could easily be foreseen with the bottom dropping out the markets for these fruits and nuts as supply overwhelms effective demand in domestic markets and the produce is found to be non-competitive on international markets.

f. Erratic Rainfall and Lack of Moisture Conservation Techniques

Inadequate moisture to support good yields and produce high quality oil olives is a widely pervasive problem in Tunisia. While table olives in the north are generally an irrigated crop, oil olives are almost entirely a rainfed crop. In this situation, effective water harvesting techniques can mean that the actual water available per tree is much higher than one would predict by simple extrapolation from regional rainfall data. Techniques like dike building and keeping groves clean of weeds are critical to this effort. Soil depth and texture also play important roles in determining the rainfall required to sustain high production levels.

Since available soil moisture is the most basic factor influencing the prospects for increased olive production, it would be extremely useful in research efforts to calculate the yield potential of a given region on the basis of the efficiency with which available moisture can be exploited by the individual olive trees under different systems of water harvesting. The development of more effective water harvesting techniques by local researchers is probably the most important single contribution they could make to improved olive production in the medium and long-term.

g. The "Alternate Bearing" Characteristic of the Oil Olive Tree

The "alternate bearing" characteristic of oil olive trees is an immutable physiological factor in olive production. This factor alone leads to wide swings in annual olive production in Tunisia, even in situations where all olive groves are under good management regimes. Since the olive holdings in Tunisia are spread over virtually the entire country, however, there is some observable regional compensation in yields. Peak production years rarely occur in the same year in more than two regions. For example, as can be seen in Annex 1,

Table 6, over the last 12 years, peak production was attained in the South in 1980/81, in the Central zone in 1977/78, and in the North in 1983/84. Conversely, low production years were 1979/80, 1978/79 and 1982/83 for the North, Central and South regions, respectively.

The more serious problem of the "alternate bearing" characteristic is that in years of overall regional low production and on farms where total production is already marginal, farmers may decide that harvesting the olive crop with paid labor is unprofitable. When this situation presents itself, olives may simply be left to rot on the trees or farmers may allow local people to salvage part of the crop for their own use.

h. Other Production Factors

In concluding this section, two other factors in olive production in Tunisia -- olive pests and diseases and the oil olive varieties used in production -- merit brief discussion.

The most serious pests affecting oil olive production in Tunisia are the olive fruit fly (*Dacus oleae*), the olive moth (*Prays oleellus*), black scale (*Saissetia olea*), *Phloeotribus scarabaeoides* and *Euphyllura olivina*. All applications of pesticides for control of these pests are pre-financed by the GOT, with the ONH acting as the coordinating agency. Identification of problem areas is done by the Plant Protection Division of the Ministry of Agriculture. Area spraying, whether by air or through surface application, is done by private sector agencies under contract with the ONH. The ONH pays contractors directly for their work and the costs are taken into account when the GOT fixes annual producer price schedules. The principles of integrated pest management are carefully observed in pest control operations and pest problems are generally considered to be under control.

It is rarely the case that more than ten percent of the oil olive trees are affected by these pests. When infestations do occur, they are usually limited to areas within 30 kilometers of the coast. Since the past several years have been very dry, there have not been any major outbreaks of olive pests. Even when outbreaks do occur, it is never necessary to apply pesticides within three months of the beginning of the olive harvest.

Farmers in Tunisia periodically have problems in controlling both bird and desert locust predations on their crops. While these pests can cause serious damage at times, such damage is not specific to the olive crop. In these cases, GOT control programs are large-scale efforts conducted over the entire country, if need be. They are not limited specifically to the olive plantations.

Two oil olive populations -- Chetoui and Chemlali -- dominate oil olive production in Tunisia. Although Tunisians often refer to these two population as "varieties", this is not technically correct due to the wide variations in characteristics within the existing populations. The Chemlali oil olives dominate oil olive production in Tunisia -- with Chetoui olives being grown only in the North. Chetoui olives are generally smaller, more upstanding trees. They are better suited to close planting. Chemlali olive trees are larger and are planted under much wider spacings in the Center and South.

An important consideration with the Chemlali olives is that oil produced from this population has a tendency to appear cloudy at cool temperatures -- i.e. below 14 degrees Centigrade. However, under normal room temperatures, it will be completely clear.

5. Key Factors Affecting Cost of Production at the Farm Level

Of all the topics reviewed in this report, estimates of actual farm-level net returns of olive production rely on the weakest and most piecemeal data base. Good time series and cross-sectional survey data from the farm-level for olive enterprises do not exist in Tunisia. Virtually all the work done to date on estimating olive production costs is based on individual authors' assumptions as to how the different olive production systems in the country actually work. That is, it is based on assumptions about producer "norms" as to crop cultural practices, numbers of person/days needed to produce an olive crop annually, hypothetical wage rates for both hired and family labor -- if that distinction is even made, fixed asset values for olive trees planted 20 to 70 or more years ago, and other difficult and critical assumptions.

Given the evident variabilities in olive and olive oil production between regions and interannually within each region, statistically meaningful farm-level production figures for olive enterprises can only be established when the GOT has at its disposal reliable data collected annually from an extensive farm sample survey conducted over a period of, at least, ten years.

Deficiencies in the present data situation are further compounded by the fact that farmers are not paid by the ONH directly on the basis of the quantities of olives they produce. They are paid on the quantity and acid content of the olive oil after their olives have been pressed.

Since producer net revenues for olive enterprises are a function of not only actual farm-level olive production costs but also of the relative efficiencies of the different olive handling techniques and pressing technologies employed by individual olive press operators, any accurate estimations of olive enterprise budgets must track the olives from any individual farm through the pressing operation. Although, as Salinger et al (AIRD, 1987,p.76) correctly point out, these processing costs constitute on average only total 10 to 15 percent of total estimated olive oil production costs, individual oil presses evidently have very different oil extraction rates and olive handling systems and these differences introduce an exogenous but significant factor which must be accounted for in the calculation of any individual producer's net revenues. Simple farm enterprise budgets which present olive production costs to the farm gate are virtually useless in the Tunisian case where there is no effective farm gate price for olives per se.

After review of the existing literature on production costs, we had concluded that none of the existing cost estimates truly merited inclusion in this report. This is so because they do not reflect the broad spectrum of olive producer realities in Tunisia. Conclusions are drawn more as a function of the particular technical and financial hypotheses used by the individual authors in their indicative farm budgets, than from any actual farm-level observations. In the absence of such time series and cross-sectional field data, we do not see much real value in such farm budgeting efforts, particularly; if they are then used to make rather sweeping policy recommendations for the olive oil sub-sector. We, nevertheless, have decided to present below a summary of the most recent work on olive production costs.

Annex 1, Table 9 presents the ONH estimates of average production costs for olive oil on a per hectare and per kilogram basis. If one converts the per kilogram production costs to a per ton basis and compares them with the average producer prices received in Annex 1, Table 17, one arrives at the results shown in Annex 1, Table 18. These can be summarized as follows:

North Region -- For this region, ONH figures imply that net revenues at the farm-level were positive in each of the last five years. The range in net revenues was from 186.000 to 515.000 Dinars per ton of olive oil sold through ONH.

Central Region -- For this region -- reported to be the poorest producer of the three -- net revenues at the farm-level were negative in three of the last five years. The range in net revenues was from - 210.000 to + 57.000 Dinars per ton of olive oil sold through ONH.

South Region -- For the South -- the center of olive production in the country and purportedly the most technically proficient area -- net revenues were negative in two of the five years. The range in net revenues was from - 76.000 to + 196.000 Dinars per ton of olive oil sold through ONH.

National Level -- At this level, net revenues were negative in one of the last five years. The range in net revenues was from - 6.000 to + 226.000 Dinars per ton of olive oil sold through ONH.

The above estimates from data supplied by ONH clearly are short-term financial net returns since the ONH data do not show any fixed costs related to plantation establishment or interest and amortization on these and other long-term capital costs. Since most olive plantations in Tunisia were established from 20 to 70 years, the ONH concentration on short-term variable costs as the determining factor in farmers' estimates of their net returns is probably justified at this point in time.

Team observations of the condition of olive plantations in the three regions led us to two very general conclusions. First, olive producers are probably basing their annual production decisions on their assessments of anticipated net revenues derived as their gross receipts less their variable cash costs -- i.e. long-term fixed costs are considered "sunk" costs. Since the relevant fixed costs in most cases were almost certainly incurred by the present operator's ancestors, they do not figure in a real way into present present farmer's production calculus. Second, field observations confirm that olive plantations in the north and south of the country generally appear to be better maintained and larger than those in the central region, leading one to the tentative conclusion that net producer revenues must be more favorable in these regions.

The most comprehensive set of production cost estimates available to the team are those by Salinger et al (AIRD, 1987). This group calculated 26 different sets of olive enterprise financial budgets for Tunisia. These budgets include olives in monoculture and in mixed stands with almonds. Additionally, budgets were constructed taking into consideration three possible press systems: classic press, Super press, and continuous chain. All of the scenarios were recalculated as enterprise economic budgets. Finally, although it is not entirely clear from the report, the budgets appear to have been calculated using 1985/86 data. Annex 1, Tables 19 and 20 present the enterprise budget results.

The principal conclusion from Annex 1, Table 19 is that the fixed capital costs of plantation establishment and the variable costs of maintaining the trees in the period before bearing are now so high as to preclude establishment of new plantations. These results led the authors to recommend that GOT efforts in sub-sector development be limited to improving the productivity of existing olive groves, rather than encouraging establishment of new ones.

With respect to the results in Annex 1, Table 20, Salinger et al arrive at quite different conclusions, as to regional net revenues, than the ONH -- principally because their budgets include both fixed and variable costs, whereas the ONH budgets include variable costs only. The ONH results show positive net revenues in the central region and in Sfax -- for olives both in monoculture and with almonds -- and negative net revenues in the north and south.

Given the importance of labor in olive production for activities like tree pruning and harvesting, it is essential in short-term budgets -- i.e. analysis of gross receipts vis-a-vis variable costs -- to have good farm-level information on this factor. Distinctions must be made between use of unpaid family labor and hired labor. And, most important, such analysis must resolve the problem of the actual financial costs and derived economic values for this labor. The facile assumption that all farm labor throughout the country is paid at the minimum agricultural labor wage, as fixed by the GOT, is a very poor proxy for actual data on this key factor.

Another deficiency in the existing budgets is the lack of any distinction between the total number of trees in a representative farm enterprise and those which are actually picked in any given year. If one assumes that estimated production costs apply equally over large numbers of olive trees, when such trees are, in fact, not in commercial production, and then divides these costs by the estimated tons of olive oil produced, one greatly exaggerates the actual costs of olive production in Tunisia. If, as reported by the MOA, up to 600,000 of the 1,330,000 hectares of olive trees are not actually producing for the commercial market, any estimation of olive production costs per hectare using this method and then aggregated to the national level would be enormously misleading.

6. Prospects for Improved Olive Production in the Medium-Term

For purposes of this study, the medium-term is defined as the period of the VII National Economic Development Plan - i.e. through 1991. Over this period, total olive production in Tunisia will probably not vary significantly from the average yields recorded in the period 1980/81 to 1986/87. Yields in the medium-term will be almost entirely a function of annual rainfall received in the different production zones. Due to the relatively long period required for olive trees to reach full production after new plantings and/or regeneration, it seems unlikely that any GOT-supported efforts to improve the national olive groves will show results as significantly increased olive production over the VII Plan period. To the contrary, if progress in these renewal activities does not proceed at annual rates **higher** than those recorded for the early 1980s, it is entirely possible that tree renewals will not even compensate in quantitative terms for those existing trees entering the 70 + years age class during the same period.

Production figures already available for 1987/88 show that this year was below average in olive production -- i.e. 475,000 metric tons versus the average of 517,917 metric tons. Moreover, our interviews revealed that most Tunisian olive specialists are predicting an even worse production year in 1988/89, due to the drought conditions in the winter of 1987 and the spring of 1988. The condition has almost certainly weakened the olive trees during the time that they were setting fruit for the 1988/89 harvest, with evident consequences for next year's harvest. Thus, production years 1989/90 through 1991/92 would have to be considerably above average in olive yields simply to attain the average production figure for the period 1980/81 to 1986/87.

In quantitative terms, then, we would predict that olive production over the VII Plan period will not exceed the average production of the period 1980/81 to 1986/87 -- i.e. 545,000 metric tons -- and may fall considerably below this average. At best, this would imply that total olive oil yields would average about 108,000 metric tons per year and, given no significant increases in domestic consumption of olive oil due to GOT controls on its availability, ONH could be expected to have between 50,000 and 60,000 metric tons of olive oil available for export in any given year over the Plan period.

B. Processing Aspects

1. Description of Processing Capacity

Mechanical pressing after harvest is the essential first step in producing Tunisian olive oil. This operation, depending on the size of the annual harvest, is carried out at some or all of 1,115 olive presses distributed throughout the country. Annex 1, Table 10 shows the distribution of these presses and Annex 1, Table 11 presents their estimated olive pressing capacities by region and type of press.

The existing press system depends on three different types of press technologies: the classical press system, the Super press system, and the continuous chain system. Although a full technical discussion of these three systems is beyond the scope of this report, their principal advantages and disadvantages can be resumed from two publications (SOGETA, 1982; Projet FAO/TCP/TUN 6653, 1987) as follows:

The Classical Press System -- After crushing the olives, the classical system is used to mechanically extract the olive oil in two successive pressings. The first pressing extracts approximately 80 percent of the oil through a series of screens ("scourtins") which are made of either alfa grass or nylon. This first pressing lasts 20 to 30 minutes per load and exerts a pressure of approximately 40 kilograms per square centimeter on the olive pulp. Under good management, this first pressing can produce excellent quality oil.

The second pressing is carried out in a finishing press which represses the olive pulp. This second operation lasts 6 to 12 hours and produces olive oil of lower quality, which is stored separately.

The principal advantages of the classical system are:

- The first pressing produces oil by exerting less mechanical pressure on the olive pulp;
- The system is very sturdy and mechanically very simple; and
- Presses are produced locally and spare parts need not be imported.

The principal disadvantages of the classical system are:

- The screens, particularly if they are made of alfa grass, tend to impart a particular flavor to the olive oil. This flavor, while appreciated by some Tunisian consumers, is not considered desirable in olive oils for export;
- The costs of production per ton of olive oil extracted are much higher with this system, chiefly because of its higher labor requirements; and

- Working conditions for laborers are more onerous with this system than the other two.

The Super Press System -- This system mechanically extracts olive oil under hydraulic pressure from the pulp in a single pressing at an average pressure of 450 kilograms per square centimeter. Generally, about 70 percent of the oil is extracted as the press is building up pressure and the remainder is obtained when full pressure is reached. A single pressing lasts one to two hours. The Super Press system uses nylon screens only.

The principal advantages of this system are:

- The system is very sturdy and functional;
- It has a high extraction rate for oil in only one pressing;
- Costs of oil extraction are lower than those for the classical system; and
- Labor conditions are better for workers.

The principal disadvantages of the system are:

- Extra care must be taken with placement of the nylon screens to avoid imparting a metallic flavor due to olive oil coming in contact with exposed metal parts of the press; and
- The system and any replacement parts must be imported from Europe.

The Continuous Chain System -- Whereas the Super Press system is simply a mechanically more efficient modification of the classical system, the continuous chain process operates on a different principle. Oil extraction in this system is by centrifugal force and use of hot water with the olive pulp. The pulp essentially moves through the system and is separated into solid residues, and liquid residues and the olive oil itself. The oil exiting the continuous chain is separated from the hot water and other residues by separators at the end of the process.

It is said that this system yields olive oil with better organoleptic -- i.e. odor, taste, color and/or appearance -- characteristics than the other two systems, if hot water temperatures are strictly controlled, because of the absence of screens and the automated nature of the extraction process. The total yield from the continuous chain is equivalent to that of the Super Press system, given olives of the same initial quality.

The principal advantages of this system are:

- It is an automated process with greatly reduced labor requirements;
- It can yield olive oils of higher quality under proper management;
- The costs of production are the lowest of the three systems, chiefly due to the lowest labor requirements; and
- Working conditions are much improved for the laborers.

The principal disadvantages of the system are:

- It requires a higher degree of management skill in operations;
- It has high demand for hot water in the process;

- There is a high water content in the olive pulp residues which makes their handling more difficult;
- The quality of the olive oil produced can be adversely affected if the temperature of the hot water used is too high.
- Some olive oil is lost with the liquid residues from the system; and,
- The system and any replacement parts must be imported from Europe;

With respect to existing press systems, Tunisian olive oil extraction is heavily dependent on the classical system. Seventy-seven percent of all presses in the country are of the classical type constituting 62 percent of the estimated extraction capacity. Only 19 percent of all presses are Super Presses, representing 32 percent of total capacity. The continuous chain systems constitute only 2 percent of all presses and 6 percent of the oil extraction capacity.

There are important regional differences in both types of presses utilized and percent of total extraction capacity. In the north, which is the least traditional olive growing area, there are 192 oil presses, of which 44 percent are Super Presses and 12.5 percent are either continuous chain or mixed systems. With about 20 percent of overall extraction capacity, the north is operating with a higher percentage of the more modern and cost efficient systems.

The center of the country -- centered on Sousse -- is the most traditional olive growing area. It has 34 percent of total extraction capacity in 536 olive presses and is overwhelmingly dependent on the classical press system for oil production (86 percent of all systems).

In the south, there is a heavy concentration of oil presses and extraction capacity in the Sfax area -- i.e. 263 of 387 presses in the area and 84 percent of extraction capacity. Again, 74 percent of all presses are of the classical type.

Thus, the major characteristics of the existing oil pressing capacity in Tunisia are:

- Most of pressing capacity in the center and south of the country is based on the technically out-moded and financially inefficient classical press extraction system;
- There is a heavy concentration of presses in coastal urban areas -- i.e. Sfax, Sousse, Monastir and Mahdia represent 66 percent of total capacity -- whereas actual olive production has been gradually migrating toward the southern and inland areas of the country.

Available estimates of olive pressing capacities in Tunisia are based on the mechanical capacity of the existing presses operating 8 hours per day over a 90 day harvesting period -- i.e. mid-December to mid-March. When one compares existing oil extraction capacities by region with estimated average olive production over the past 12 years -- see Annex 1, Table 12 -- one can conclude that Tunisia has excess capacity in olive pressing on average in all three regions. The available data imply an average annual press utilization rate of 63 percent of capacity. By region, these average rates would be 64 percent in the north, 52 percent in the center, and 71 percent in the south of the country.

If one takes into account variabilities in olive production by region and year -- see Annex 1, Table 13 -- one sees that during one year in the last twelve in the north and south, olive production exceeded the estimated regional extraction capacities. However, peak production years in the two areas did not coincide and total national capacity was still underutilized. The implication, therefore, is that, even when one had peak production exceeding pressing

capacity in a region, olive pressing was accomplished by transshipment of the excess olives from the north or south to underutilized presses in the center of the country.

At the other end of the spectrum -- i.e. in low production years -- the underutilized capacities of the presses by region are impressive. In the north in 1979/80, 69 percent of pressing capacity would have been needed. In the center in 1978/79, utilization of only 32 percent of pressing capacity would have been sufficient to process the local olive crop. And, in the south in 1982/83 -- a bad drought year -- only 19 percent of existing pressing capacity would have been needed.

This excess capacity problem is made worse by the fact that olive pressing is by its nature a seasonal industry. Even in good production years, presses rarely operate for more than 90 days. This, in effect, means that press owners make capital investments in plant and equipment from which they can reap benefits under optimal conditions for only three months per year. After the pressing season is over, presses -- which have no other productive use -- are disassembled, cleaned and stored until the next year. Under present conditions of declining total olive production, many of the press owners apparently are lucky to find sufficient work to keep their presses operating for more than one or two months and some may not even bother to set up their presses at all.

In the current restructuring situation, the GOT has provided certain subsidies and other benefits to oil press owners and withdrawn others. On the positive side, the government has offered the following inducements for certain types of capital investments:

- Suspension of customs duties and taxes on business investments and income for specified periods of time;
- Tax advantages lasting from 5 to 10 years for new investments creating jobs for 10 and 20 permanent employees outside Tunis, Sousse and Sfax;
- Subsidization of interest rates on new investments in certain specified development zones;
- Subsidy rebates of 5 to 15 percent on investments in the specified development zones;
- And, finally, a commitment to provide necessary infrastructure and utilities for new plants established in the development zones.

Most of the government inducements for investment of private capital are general in nature and do not apply specifically to olive oil presses. As such, they do not favor specific investments in the olive oil sub-sector over alternatives for private entrepreneurs.

The ONH, on the other hand, does have some limited capacity to provide credits to investors who wish to modernize existing oil press operations or install new presses in "disadvantaged" areas of the country. This type of investment is encouraged by the ONH's charter but, at present, is rather modest in scope. In addition, the ONH has recently introduced a system of quality premiums to be paid to oil press operators for super and extra grade virgin olive oils.

Counterbalancing these positive inducements from the point of view of the olive press operators, the GOT has recently eliminated two types of benefits. In 1985, the GOT eliminated a pressing tax on olives of 6.000 Dinars per ton. The proceeds of this tax were collected by the press operators from producers bringing in their olives and retained essentially as a government subsidy. These receipts were over and above the regular charge per

kilogram of olives pressed, which is fixed annually in negotiations between oil press operators and local government officials.

In addition, from 1988, the GOT has eliminated "bonus" payments by ONH to press operators and certain olive producers. These payments formerly were made at the end of each fiscal year to persons **delivering olive oil to the ONH**. The original intent of these "bonuses" apparently was to provide olive growers with an additional inducement to market their olive oil through the ONH.

In principle, this "bonus" system was to have been similar to the marketing rebates paid to agricultural cooperative members in the United States. In fact, much of the money distributed under the system went to the literal deliverers of the olive oil -- i.e. the press operators -- and not to olive producers. This was so because the ONH found the "bonus" distribution system extremely difficult to administer and, as a consequence, chose to interpret the existing regulations literally, while ignoring the original intent. In any case, the elimination of these "bonus" receipts from ONH is seen by press operators as further evidence of their declining position.

2. Key Factors Affecting Olive Oil Output

The key factors affecting the total olive oil outputs at the processing level are the technical efficiencies of the various press systems; the mix of systems in an area; the skills of the press operators; and, possibly, in the north, the type of olives available for pressing.

Much of the physical plant and equipment in the oil pressing industry dates from the 1960s or earlier. This is particularly true for the classical presses. This plant and equipment has long since been depreciated by owners and is kept running essentially on an as needed basis and at relatively low fixed financial costs.

Under current conditions, the olive producer -- or an intermediary -- can retain ownership rights over the olive oil pressed from his olives. He may then take the olive oil back after pressing for family use or for local sale with or without an ONH permit; or he may consign the olive oil for sale to the ONH and later collection by them. In all the above cases, press operators are paid an oil pressing fee by the person delivering the olives to the press and, in the last case, they are paid a oil storage fee by the ONH. In short, then, oil extraction by a particular press operator does not necessarily imply a transfer in ownership of the olive oil.

Given the depreciated equipment and the fact that the press operators are paid by farmers on the basis of weight of olives processed, not the amount of oil extracted, there may be lower operator interest in taking any special actions to increase the extraction rates of oil at his press. This could be particularly true if the needed actions implied increased financial costs for the operator.

It is reasonable to assume that the mix of systems in an area -- and particularly the degree of dependence on classical systems -- plays a role in extraction efficiencies. The data aggregated to the regional level, however, present a confused picture on this point. The regional extraction rates -- i.e. kilograms of olive oil per metric ton of pressed olives x 100 -- by region are 18, 20 and 22 percent for the north, center and south, respectively. If technical extraction efficiencies were based solely on the percentage of improved press systems in a region, the order of efficiency expected would be from highest to lowest as follows: the north, the south, and the center.

The differences in efficiency may be explained by the varying skill levels of operators by region and the availability of different types of olives in the north. Conventional wisdom in Tunisia says that the best oil press operators are now to be found in the south and the least experienced in the north. It is also generally acknowledged that a skilled operator can often overcome technical constraints and achieve high efficiency rates even from very old press equipment.

Finally, in the north, it may be that the Chetoui type olive naturally contains a low percentage of extractable oil and, therefore, their predominant availability in the region slightly lowers overall extraction potential, regardless of equipment used and the skills of the operator.

3. Key Factors Affecting the Quality of Olive Oil Produced

Before proceeding with any discussion of olive oil quality, it is perhaps helpful to review several definitions which are fundamental to an understanding of international trading in olive oil. Olive oil is sold in international markets according to specific grades. These grade classifications are defined by two sets of international standards: the International Trade Standard Applied to Olive Oils and Olive-Pomace Oils of the International Olive Oil Council (I.O.O.C.) (Annex 3); and the CODEX Standard for Olive Oil, Virgin and Refined, and for Refined Olive-Residue Oil (Annex 4).

The listing below provides the terms and definitions for the olive oil grades used in this report. The listing is based upon the I.O.O.C.'s International Trade Standard, which is the preferred grading system in Tunisia. For more detailed presentations of the two olive oil grading systems, the reader is referred to Annexes 3 and 4.

a. Key Trade Definitions for Olive Oil

Olive oil is the oil obtained solely from the fruit of the olive tree (*Olea europaea sativa*), to the exclusion of oils obtained using solvents or re-esterification processes and any mixture with oils of other kinds. In no case shall the designation "olive oil" be used to refer to olive-pomace oils.

Virgin olive oil is the oil obtained from the fruit of the olive tree solely by mechanical or other physical means under conditions, particularly thermal conditions, that do not lead to alterations in the oil, and which has not undergone any treatment other than washing, decantation, centrifugation and filtration.

Virgin olive oil fit for consumption as it is includes:

- **Extra virgin olive oil** -- Virgin olive oil of absolutely perfect taste and odor having a maximum acidity, in terms of oleic acid, of 1 gram per 100 grams of oil.
- **Fine virgin olive oil** -- Virgin olive oil of absolutely perfect taste and odor having a maximum acidity, in terms of oleic acid, of 1.5 grams per 100 grams of oil.
- **Semi-Fine Virgin Olive Oil (or Ordinary Virgin Olive Oil)** -- Virgin olive oil of good taste and odor having a maximum acidity, in terms of oleic acid, of 3 grams per 100 grams of oil, with a margin of tolerance of 10 percent of the acidity indicated.

Virgin olive oil not fit for consumption as it is, designated **virgin olive oil lampante**, is an off-taste and/or off-smelling virgin olive oil or an oil with an acidity, in terms of oleic acid, of more than 3.3 grams per 100 grams of oil. It is intended for refining or for technical purposes.

Refined olive oil is the olive oil obtained from virgin olive oils by refining methods which do not lead to alternation in the initial glyceridic structure.

Olive oil or pure olive oil is the oil consisting of a blend of refined olive oil and virgin olive oil fit for consumption as it is.

Olive-pomace oil is the oil obtained by treating olive pomace --i.e. olive residues after oil pressing -- with solvents, to the exclusion of oils obtained by re-esterification processes and any mixture with oils of other kinds. It can be classified as follows:

- Crude olive-pomace oil -- Olive-pomace oil intended for refining with a view to its use in food for human consumption or for technical purposes.
- Refined olive-pomace oil -- Obtained from crude olive-pomace oil by refining methods which do not lead to alteration in the initial glyceridic structure. It is intended for human consumption either as it is or else in blends with virgin olive oil.
- Olive-pomace oil -- A blend of refined olive-pomace oil and virgin olive oil fit for consumption as it is. In no case shall this blend be called "olive oil".

b. Olive Oil Quality in Tunisia

In Tunisia, olive oil is graded primarily by degree of acidity and, secondarily, by taste factors. When the olive oil is sold through ONH, the producer price is determined solely on the basis of acidity. The press operator, on the other hand, is eligible to receive quality premiums for oil produced in the Super (a grade not used in I.O.O.C. Standard and undefined in the local literature) and Extra grade categories.

As can be seen in Annex 1, Table 14, the percentages of olive oil extracted by different quality grades is quite variable from year to year. However, since the ONH quality premium system was introduced, there seems to have been a clear improvement in percentages of oil in the top three grades - Super, Extra and Fine - and large shift in oils from the virgin olive oil "Lampante" grade to the Ordinary grade.

To our knowledge, there has never been a quantitative analysis of the factors leading to interannual shifts in qualities of olive oil produced in Tunisia. There is, however, much conventional wisdom on the subject. As concerns the degree of acidity, most local specialists seem to be in agreement that increased acidity is directly related to three key factors:

- Farmers combining fresh olives hand-picked from the tree with bruised and rotting olives collected on the ground after falling from the tree;
- Any long delays in shipping the olives to the press, particularly if the fruit has been bruised during harvesting.
- Poor handling of the olives at the press before processing. Poor handling is defined as piling the olives too high in the storage bins; mixing different batches of good and inferior olives together; and, especially important, exposing the

olives to high ambient temperatures for extended periods prior to processing. Since olives are highly perishable and subject to rapid fermentation at high temperatures, avoiding this type of mishandling may be the key factor in reducing rapid buildup of acidity prior to processing.

In addition to acidity problems, olives are also susceptible to picking up off-flavors. Accumulation of such off-tastes can happen on the trees, in transit, and during the extraction process. The professional oil tasters at ONH state that, much like wine grapes or honey, olives on the trees pick up flavors from their immediate environment. Some of these flavors -- e.g. the taste of almonds -- are desirable, but most are cause for downgrading the olive oil -- particularly tastes like diesel oil. In processing, as mentioned above, the two principal problems affecting quality are the off-tastes imparted by the "alfa" screens, made with esparto grass and used with classical press systems; and the metallic tastes which can be imparted by exposure to parts of the Super Press system.

This problem of off-tastes is extremely important at the upper end of the quality grading system. Strong tastes in the oil, particularly diesel or metallic tastes, can result in an oil with very low acidity being reclassified as "lampante". This downgrading results in the oil losing its "virgin" classification because "lampante" oils are by definition a product unfit for human consumption without resort to further refining. After such refining, by international code standards, the resultant olive oil must be identified by labels distinguishing it from "virgin" oils -- i.e. refined or pure olive oil. Such oils command prices on the export markets which are only 60 to 80 percent of "virgin" oil prices.

Poor storage of olive oil after processing can also affect oil quality. This is particularly true if storage tanks are not airtight or if stocks are not rotated on a regular basis, with removal of the accumulated sludge at the bottoms of the tanks. This problem, however, is apparently well recognized and generally avoided by good stock management.

Finally, as can be seen in Annex 1, Table 15, there appears to be a sharp regional differentiation in quality of olive oils produced in Tunisia. Whereas the percentage of oils in the top three quality grades in the north and south is 50 percent or more, the central region produces high percentages of ordinary and "lampante" oils -- i.e. 55 percent or more of these oils being classified as "lampante" and unfit for human consumption without further refining. This problem persists across all pressing systems.

4. Key Factors Affecting Costs of Processing

Five key factors stood out in our interviews as having major impacts on the costs of olive processing. They are:

- The degree of capacity utilization in existing presses;
- The relative efficiencies of the three major press systems and the mix of existing systems within a region;
- The rising cost of labor employed in the presses;
- The transportation costs involved in both post-harvest shipments to the presses and post-processing consolidation of the olive oil from the presses to ONH; and
- The GOT system of fixing processing charges at the local level for press operators.

The underutilization of existing olive pressing capacity in most years undoubtedly has depressing effects on the sub-sector. The fact that most press operators have not been able

to secure sufficient stocks of olives in the 1980s to operate at anything near full capacity has obvious implications for their annual incomes. Since olive processing prices are fixed at the local level in negotiations between GOT official and press operators, a second consequence of this problem is that these rates are higher than they would be under full utilization conditions. This results in an implicit tax on olive producers in a sub-sector already suffering from low net returns to producers. Finally, and perhaps, more importantly, this problem of over-capacity must have a strong depressive effect on the prospects for additional private investment in plant modernization and/or construction of new plants.

The differences in efficiency between the olive pressing systems in Tunisia have been commented on by many analysts (AIRD, 1987; ONH, 1986; Project FAO/TCP/TUN/6653, 1987). The crux of this problem is that overall processing capacity is dominated by the classical press system, particularly in the center and south of the country. As Salinger et al report (AIRD, 1987), the estimated costs of production per ton of olives processed were 29.368 Dinars per ton for the classical press system; 21.811 Dinars per ton for the Super Press; and 12.932 Dinars per ton for the continuous chain system. Since the classical press systems constitute 67 percent of total national pressing capacity versus only 6 percent for the most efficient system, the implied efficiency loss is enormous and is directly translated into higher processing costs per ton by the negotiated rate system at the local level.

Although very surprising to us, the issue of increasing shortages of qualified workers and rising wage rates through the sub-sector was constantly raised in our interviews. Given the fact that Tunisian labor markets overall suffer from substantial and rising rates of unemployment, this problem is difficult to explain. Rising wage rates could be partially explained by the GOT policy of setting minimum rates for both the industrial and agricultural sectors. These rates would at very least constitute a floor price for labor expectations in negotiations. As to the labor shortages, it may be that profitability in the olive pressing industry has declined to such an extent that press operators cannot offer full-time employment to many workers. Since sub-sector employment for most laborers is seasonal -- and the length of the processing season is shortening with the overall decline in olive production -- there may be very limited incentives for prospective laborers -- even with skills -- to hold themselves available for this work if they can find any other employment in regional labor markets.

Substantial transport is needed to assemble olives for pressing and then consolidate stocks of the resulting olive oil. The average trucking distance from farm to press is about 30 kilometers -- but there is apparently a rising incidence of transshipments of olives between regions as press operators endeavor to increase the utilization of their presses by trucking in the olives themselves or offering other inducements to producers. In addition, as mentioned earlier, the location of existing presses -- with capacity being largely concentrated in urban coastal areas -- is far from optimal with respect to present olive production areas.

The ONH has attempted to deal with its transport problems in consolidating stocks and its previous dependence on contracts with truckers by purchasing and operating its own fleet of oil tankers. ONH records show that this move has significantly reduced costs in post-processing transport operations. However, cost reductions in pre-processing transport of a bulky crop like olives -- where essentially 75 to 80 percent of the trucking costs are incurred in hauling olive pulp with limited post-processing value to the presses. Some work is underway to increase utilization of the olive pulp for animal feeds and other products, which would provide some increased revenues to counterbalance transport costs, but this industry is still in its infancy.

The GOT practice of fixing local processing rates for olives in annual negotiations between press operators and local officials apparently results in these charges being set in rough

alignment with average processing costs at area presses. Since most areas are dominated by the inefficient classical press systems, this system appears to reward inefficient press operators and implicitly tax olive producers. More careful management of this fixed rate system -- or its liberalization in favor of more competitiveness between press operators -- would undoubtedly put some press operators out of business but it would also provide the single most powerful incentive for plant modernization in the present situation -- and possibly for installation of new plants in production areas.

5. Prospects for Improved Processing

Although there is a near universal acknowledgement in Tunisia that the existing physical plant in olive oil pressing is aging, technologically out of date, and a major contributor to the rising costs of producing local olive oil, we do not believe the processing situation will improve dramatically in the near future. This is so because the primary responsibility for modernizing aging olive pressing facilities and for building new plants closer to major production areas lies with private sector entrepreneurs. The Government of Tunisia will attempt to influence the modernization process over the course of the Seventh Plan period - 1987-1991 - by making loans available through the banking system at favorable interest rates and by enforcing restrictions on what types of technologies may be installed in new plants. It cannot, however, force present owners to invest in new plants and equipment. Moreover, the GOT to date has shown little inclination to tackle the system of negotiated rates for olive processing which has tended to reward inefficient classical operators at the expense of olive producers.

Given that the essential choice of new sub-sector investment lies with private entrepreneurs, we believe it is extremely important to evaluate the prospects for expansion or modernization of pressing facilities from their perspective. In this regard, there are the following factors to consider:

- The sub-sector clearly suffers at the moment from excess capacity in olive oil presses. As can be seen in Annex 1, Table 12, over the last twelve years, estimated pressing capacity has exceeded average olive pressing need by about 300,000 tons. Alternatively stated, in the average production year over the same period, existing presses have been used at only 63 percent of their capacity.
- As can be seen in Annex 1, Table 13, even in years when regional harvests exceeded regional pressing capacities, total pressing capacity was still substantially greater than total pressing need. In these cases of unusually high regional production, olive pressing was accomplished by transshipments of olives from the northern or southern production areas to presses in the center of the country. This need for transshipping has probably raised oil production costs -- and, possibly, also lowered oil quality -- in these unusual years, but it seems a logical assumption that these temporary cost increases were still considerably less than those which would have been involved in construction of new plants to be used to capacity only once in a decade.
- Present press owners cannot fail to observe that overall oil olive production in Tunisia has declined in the 1980s and that government planning targets for increased production in the last two economic plans have not been met.
- As overall olive production has declined, the prospects for marketing Tunisia's olive oil on international markets has also become more uncertain. Since about one-half of all oil produced is exported, uncertainties vis-a-vis export markets,

particularly the European Community, inevitably impact adversely on the investment decisions of present press owners.

- Since most of the existing oil presses were fully amortized years ago, owners are probably enjoying optimal profits from their operation now. Further investments in these plants --beyond those absolutely needed for press replacement to maintain present operations -- are probably not viewed favorably by many owners since they would inevitably cut into existing profit margins and result in increased financial obligations to outside agencies.
- Reports indicate that the average age of press owners is increasing. Most owners are said to be in their fifties and sixties. Moreover, there is relatively little participation of younger Tunisians in pressing operations -- except as seasonal labor. These phenomena have two serious implications for the course of future investments. First, owners have, in effect, aged with their presses. Many have strong preferences for their present installed technologies -- particularly the classic press systems -- and express strong reluctance to change technologies late in the careers. Second, there is a natural reluctance for elderly entrepreneurs to assume substantial capital risks late in their careers for investments which may or may not pay off in the late 1990s or later.
- Since press owners currently derive the majority of the income on the basis of tons of olives pressed -- not on the percent of olive oil extracted -- they may have little incentive to increase the technical efficiency of their presses. This is particularly true since the GOT has opted to provide the "carrot" of inducements for plant modernization through loans, tax deferrals, and other means; but has not utilized the "stick" of rate scheduling -- or complete liberalization -- to force needed modernization.
- Similarly, although owners are paid ONH quality premiums if they produce Super and Extra grade oils, these premiums by themselves may not currently be sufficient to compensate the inefficient operators for the extra costs incurred in more rapid processing of olives during the harvest period or in better maintenance of their presses to produce better quality oils.
- This situation is further aggravated by the fact that owners know full well that Tunisia's biggest and most stable export market at the moment is the Italian market for "lampante" olive oil -- oil with high acidity and off tastes which must be refined before it can be consumed. Since this type of olive oil can be produced even by the most careless press owner and has a "guaranteed" market through ONH, many owners may realize that it is the Tunisian olive grower who ultimately bears the brunt of the financial consequences for production of low quality oils. The press owners themselves stand to lose only the relatively minor quality premiums paid by ONH for the Super and Extra grade oils. In short, it simply may not be worth the individual owner's effort in time and money to strive for excellence in processing given existing market conditions.
- Finally, it must be realized that many sectors of the Tunisian economy are growing more rapidly and present better investment possibilities at present than the edible oil sub-sector. Entrepreneurs with significant access to investment capital are, therefore, faced with many alternatives to investment in olive press modernization and/or replacement. Although further research is needed in this area, it is entirely conceivable that further investment in olive presses at this time is considered by many owners to be a third, fourth or fifth best use of their capital resources.

For all these reasons, then, we are pessimistic with respect to the real prospects for significant modernization of the existing pressing capacity and installation of new presses in the more rural areas of Tunisia during the VII Plan period. The most likely projection for this period is that plant capacities and technologies will remain about where they are at present -- or, in the worst case scenario, decline further.

C. Marketing Aspects

1. Description of the ONH Role in Marketing of Olive Oil

a. The ONH Mandate

The Office National de l'Huile (ONH) was created by Public Law 62-24 on 30 August 1962, as the successor agency to the Tunisia Office for Olive Oil (OHOT). Since then a series of public laws between 1968 and 1970 -- the most important one for purposes of this report being Public Law 70-13 of 16 October 1970 -- modified the ONH's mandate and reorganized its structure. Under these laws, the ONH was created in its present form as a public interprofessional establishment of an industrial and commercial nature with the status of the civil company and financial autonomy from the Tunisian government.

The ONH was to be based in Tunis. It was to have monopoly power over the following activities:

- The purchasing of domestically produced olive oil;
- The purchasing of oils from olive pulp after initial olive oil extraction by mechanical means, either fresh or refined;
- The exportation of said oils;
- The importation of vegetable oils, either edible or for industrial use in soap making; and
- Sales at the wholesale level in domestic markets of olive oil, mixed oils (e.g. olive oil mixed with soybean oil), and pure vegetable oils.

In its founding charter, the ONH was described primarily as a marketing agency for edible oils -- domestic or imported. Additionally, the ONH was seen to be the primary actor in execution of the following:

- Gathering, studying and publishing of information on the production, transformation and marketing of olive products and such other oil products which may be of interest;
- Maintaining an equilibrium between domestic stocks and consumption of edible oils in Tunisia;
- Proposing to the government all proper measures to assure protection of sub-sector's interests in organization of campaigns, enforcement of quality standards, and preventing fraud which reduces Tunisia's reputation for the purity of its olive oil.
- Studying and seeing that the needs in transforming olives to olive oil are provided and, eventually, extending this provision of materials to the farm-level.

- Eventually taking financial participation in all enterprises dealing directly or indirectly with the production, transformation, and marketing of olive and other edible oils in Tunisia.
- Encouraging research and extension efforts related to olive production, contributing to disease and parasite protection efforts, and, eventually, subsidizing certain agencies having an interest in the sub-sector.
- Eventually managing the state farms engaged in olive production and processing.
- Presenting the government with proposals for fixing olive producer prices and the allowable margins in product processing, based on prices received for exported olive oils and the wholesale prices received in domestic markets for all vegetable oils.
- Eventually constituting and managing security stocks of vegetable and olive oils.
- Controlling the technical norms applicable to production of olive oil, running the annual campaigns for olive processing, and providing management assistance to local olive oil pressing plants.
- And, finally, in a general way, executing all other assignments from the government -- both national and international -- which are aimed at developing, improving and modernizing the olive sub-sector.

Under the charter, the ONH is required to maintain separate enterprise accounts for olive oil and other vegetable oils in all their activities. Year-end results -- positive or negative -- are to be reported to the government. In years when there are net profits on the olive oil account, the ONH is required to pay olive oil producers, who sold their products to the ONH, a bonus on sales.

b. Actual ONH Operations

In execution of its existing mandate with respect to olives, the ONH has concentrated most of its efforts on olive oil procurement, collection and storage of the purchased stocks, quality testing, olive oil grading and blending, and the marketing of olive oils in both international and domestic wholesale markets. Other activities at the producer level -- i.e. research and extension, sales of inputs, disease and pest control programs funded and managed for olive growers (perhaps, 11 to 16 percent of the ONH marketing margins -- are of lesser importance when compared to marketing efforts.

At present, the OHN has four principal collection centers for olive oil in Tunis, Sousse, Sfax and Kairouan. Together these centers have a storage capacity of 117,840 metric tons -- with Sfax having 65,000 metric tons of capacity; Sousse, 28,450 metric tons; Tunis, 18,350 metric tons; and Kairouan, 6,040 metric tons. The total national olive oil storage capacity is 260,000 metric tons, of which OHN and the oil pressing plants have 46 percent each and other agents without oil presses have 8 percent.

Annual olive oil production, once pressed, basically is divided into three separate marketing channels. The first channel is back to the producer for family consumption. The second is direct local sales of olive oil for Tunisian consumers through a licensing arrangement with the ONH. And, the third is purchase and collection by ONH for either export, or wholesaling in domestic markets as virgin olive oil, or for use in mixes with imported vegetable oils and wholesaling to local distributors.

Annex 2, Figure 2 and Annex 1, Tables 7 and 21 show the marketing channels and the approximate quantities of olive oil which enter each separate channel annually. The es-

estimated total production of olive oil in Tunisia during the period 1979/80 to 1986/87 was 104,000 metric tons per year (Annex 1, Table 7). Of this estimated total, the ONH actually collected an average of 69,891 metric tons per year for the same period. This implies that the first and second marketing channels (direct family consumption and direct sales by licensed ONH agents) supplied on average 34,109 metric tons per year to Tunisian consumers. This amounted to 32.8 percent of estimated total available olive oil.

For the 67.2 percent of the total estimated olive oil actually collected by ONH (average of 69,891 metric tons per year) -- i.e. the third marketing channel -- an average of 54,971 metric tons was exported (i.e. 78.7 percent of olive oil collected by ONH and 52.9 percent to total estimated olive oil). Finally, an average of 12,392 metric tons of olive oil were wholesaled by ONH for use in the domestic market either as olive oil or in mixtures with other vegetable oils (Annex 1, Table 21). This amounts to 17.7 percent of the olive oil collected by ONH and 11.9 percent of total estimated availability. The balance of 3.6 percent of ONH olive oil and 2.4 percent of total availability is attributed to losses in transport and storage.

For olive oil collected by ONH, deliveries are affected by three basic methods: direct delivery to ONH Centers by the producer; delivery by designated ONH agents; or consignment by the oil press operators to ONH in the name of the producer. In all cases, ONH pays olive oil transporter for deliveries, according to fixed transport rates, or transports the oil with its own fleet of tankers.

Payments received by the olive oil producers are established from a fixed annual schedule of prices ("advances") based on the degree of acidity of the freshly pressed virgin oil. Annex 1, Tables 16 and 17 show, respectively, the producer prices ("advances") paid by grade and degree of acidity and the average of the producer prices within grade for the previous eight years.

To establish the payments to producers for their olive oil, the ONH sends inspectors to each oil press in the country to take samples from each producer's olive oil as it is pressed. The ONH then analyzes these samples for degree of acidity and taste characteristics. Once these analyses are completed, olive oils at each olive press are segregated by grade and degree of acidity and sealed in holding tanks. Finally, the ONH schedules deliveries of the stored olive oils by grade and degree of acidity from the olive presses to one of its central storage centers where the shipments are again segregated in ONH storage tanks by grade and degree of acidity. In the interim period when olive oils are stored in facilities outside those of the ONH, storage owners are paid according to fixed rates for use of their storage tanks.

Since the olive harvest may start as early as November each year and run through March, the bulk of ONH's collection activities take place during this same period. By April each year, the ONH has a reasonably precise accounting of both the total stocks of olive oil on hand for the year and a breakdown of those stocks by grade and degree of acidity. A breakdown of the olive oils collected by ONH by grade for the period 1979/80 to 1987/88 is shown in Annex 1, Table 14. The preliminary estimate for 1987/88 was available to the team by mid-April 1988.

2. Timing and Consistency of Product Availability

With proper rotation of stocks in their storage tanks, the ONH estimates that local olive oil can be held for up to two years without significant deterioration in quality. Given that the ONH appears to hold relatively large carry-over stocks at the end of each official campaign year (October), there does not appear to be any significant problem with seasonality in

product availability within any one year. That is to say, if stocks are available from the previous harvest or carry-overs, the ONH can market its products to importers' specifications throughout the year.

The principal uncertainties in orderly marketing are the substantial interannual variations in total olive yields and in the quality of the resulting olive oils. Total estimated olive production over the last twelve years has averaged 517,917 metric tons per year but varied from a high of 775,000 metric tons in 1983/84 to a low of 290,000 metric tons in 1982/83 (Annex 1, Table 6). Much of this interannual variation in yields is caused by exogenous factors like annual rainfall in the different production zones and the fact that olive trees are biannual bearers. Because of the existence of olive plantations throughout the country, there is in any given year some regional compensation in production between the major production zones but this phenomenon does not always mitigate extreme year variations.

The wide swings in olive oils produced by quality grade are harder to explain. In Annex 1, Table 14, the swings in the total production of "lampante" olive oil are particularly noticeable. Swings from 75 percent of total oil collected by ONH in 1979/80 to 44.3 percent in 1984/85 to only 3.0 percent in 1987/88 cannot be explained simply by improving processing techniques. The statement is often made by local specialists that years with exceptionally high olive production tend to result in higher percentages of "lampante" grade olive oil -- chiefly because the olives tend to be harvested over a longer period and pressings contain more dropped olives -- but we have detected no such relationship in the figures presented to us.

3. Description of Existing Markets with Quantities Exported, Prices Received, and Characteristics of the Products Exported

ONH's marketing policy currently covers three markets: sales to international clients; wholesale olive oil sales for the domestic market; and wholesale sales of olive oil to agents who prepare and market mixed oils at wholesale or retail in domestic markets.

Annex 1, Tables 22 through 25 present details on the export market during the 1980s. Over this period, the ONH has exported olive oil to over fifteen countries. With the exception of sales to the United States, Canada and the Gulf states in the Middle East, virtually all export sales are covered either by regional trade agreements (i.e. the European Community) or bilateral government agreements (i.e. the USSR, eastern European countries, Libya and Algeria). Outside of the European Community, ONH often exports in collaboration with state trading companies or through other similarly restricted trade channels. In many instances, trade flows in olive oil are negotiated in a broader politico-economic environment by senior GOT officials, with the ONH serving as the executing agency for pre-determined export arrangements.

The European Community -- particularly, Italy and France -- is the largest importer of Tunisian olive oils. This market is covered by import restrictions linked to the Common Agricultural Policy (CAP). The current EC/Tunisia agreement for olive oils restricts total imports by quota to 46,000 metric tons per year through 1991. Imports from Tunisia are also subject to a minimum entry price (i.e. reference price) and receive certain EC negotiated concessions in common with other Mediterranean basin exporters.

In the 1980s, Tunisia's most important export client has been Italy. Sales to Italy have averaged 58.2 percent of total exports over this period. The remainder of exports to the

European Community are to France, although this market has deteriorated markedly in the last two years.

These two markets display quite different import patterns. Italy is primarily an importer of Tunisia's "Lampante" olive oil as feedstock for its domestic refining industry. This olive oil is refined and sold in mixtures with Italian production as "Pure" and "Rivera" olive oils. The distinction being that "pure" olive oil is entirely refined oil and "Rivera" is a mix of "pure" and virgin olive oils. Since Italy exports significant quantities of these olive oils both within the EC and in international markets, it is probable that some of the oils entering North American markets under Italian brandnames are in fact low grade Tunisian oil, further refined, mixed with Italian oils, and transshipped.

France, on the other hand, has traditionally been the largest European importer of Tunisian virgin olive oils. The imports have largely been of Super and Extra grade olive oils. French importers in the past have been very demanding in their product specifications for these higher value products, even going to the extent of specifying only olive oils originating from certain regions and presses in Tunisia. The recent decline in exports to this market are apparently due to ONH's inability or unwillingness to meet the importer's product specifications and, probably, the increased availability of similar products within the EC with the entry of Spain and Portugal.

If the French share of Tunisian olive oil exports has declined, exports to the USSR in the past two years have almost exactly replaced them as a percentage of total exports. However, the USSR imports in this period have been entirely refined "Lampante" oil and are used chiefly for industrial purposes - i.e. canning of fish.

Among states in North Africa and the Middle East, Libya and Jordan have been large importers of Tunisian olive oil in certain years. Libyan imports were suspended during 1986, 1987 and part of 1988 and prospects for a future trade relationship in olive oil were unclear in mid-1988. The common border between the two neighbors has now re-opened. Tunisia has already benefited from substantial inflows of foreign exchange from Libyans making purchases of commercial and consumption goods in the south of the country. No figures, however, are available as yet on 1988 olive oil sales to Libya.

Olive oil exports to Jordan and other Arab-speaking countries in the region appear to be highly variable. Most of these countries have displayed highly erratic buying patterns in the 1980s -- buying substantial tonnages of Tunisian olive oils in one year and then dropping out of the trade figures entirely for several years. A case in point is Algeria, Tunisia's western neighbor, which purchased 2,971 and 4,001 metric tons of olive oils in 1984/85 and 1985/86, respectively, after not registering at all in previous 1980s trade figures, and then again dropped out of the market entirely 1986/87.

Finally, the United States ranks as one of Tunisia's steadier, if not major, clients. In the 1980s, between about 2 and 4 percent of Tunisia's oil exports have been directly to this market and there appears to be a modest upward trend in exports in recent years. Tunisia exports to the United States presently go to four importers on the east coast and in Texas. Most of these exports in recent years have been bulk shipments or containerized shipments of 200 kilogram barrels. Minor sales of olive oil in gallon and quart tins have been made to Pope Foods, a subsidiary of the Purex Corporation, located in New Jersey (Annex 1, Table 26).

With respect to domestic marketing, the ONH sells olive oils at wholesale to agents who either sell them directly or mix them with imported vegetable oils. Over the last eight years,

ONH has marketed an average of 12,392 metric tons annually in this way. On average these marketings amounted to about 17.7 percent of total olive oil collected by the Office. However, the amount of oil wholesaled each year for domestic use has been falling for the last four years in absolute terms and for the last three years in percentage terms. In 1986/87, for example, only 9,572 metric tons -- or 13.5 percent -- of 70,655 metric tons collected by ONH were sold domestically.

In addition to the olive oil actually collected by ONH, an average of about 35,000 metric tons of oil disappears in local trade each year. Much of this disappearance seems to originate with farmers who have their olives pressed locally for a fee and then reclaim the olive oil for family use. At the next level of local marketing, olive oil is sold under ONH license at local presses or through other outlets. Under present GOT regulations, each head of family in Tunisia is entitled to purchase up to 200 kilograms of olive oil annually for family use. Clearly, this limit is rarely attained, even in the more affluent areas, because of the high price of olive oil relative to subsidized vegetable oils -- a 3 or 4 to 1 price ratio at present -- and the low -- and, possibly, declining -- per capita real purchasing power of Tunisian consumers in the 1980s.

4. Description of the ONH Capacity for Product Preparation, Packaging and Labelling

ONH currently exports the vast majority of olive oils as bulk shipments. Only very limited shipments are still made in gallon, liter and quart tins and in smaller glass bottles. Tins were previously shipped under two brand names: Pope for one client in the United States and Carthage mainly for clients in the Middle East and the Gulf States. The Pope shipments were designed to the specifications of the American client but have been discontinued for reasons of cost and tin quality. The Carthage shipments are a local innovation of the ONH, as are the shipments in small glass cruet bottles to Middle Eastern markets.

At present, ONH officials state that local packaging of olive oils is prohibitively expensive for two reasons. First, GOT policy currently makes it difficult to import finished tins for olive oil if a local manufacturer is deemed to be capable of supplying a similar product. Second, import prices for glass bottles -- for which importation is permitted because no local supplier exists -- are too high to justify expanding their use outside the limited Middle Eastern market.

Under present circumstances, the ONH feels that pre-packaging of olive oils in tins forces it to subsidize the inefficiencies of local suppliers of these products, in support of the GOT's protectionist "infant industry" policy. Expanded use of imported glass bottles, on the other hand, seems to be more a question of present market demand being insufficient to allow bulk buying from foreign suppliers presumably at lower import costs.

For the domestic market, the GOT, through contractual arrangements with local firms, provides mixed vegetable oils in one liter plastic bottles. ONH acts as the GOT agent in this operation and passes the full production costs on to the government. The government, in turn, then subsidizes the costs, as necessary, from its larger consumer program, which subsidizes through various means the prices for a number of food products, including vegetable oils, for all Tunisians.

5. Indicative Cost Structures for Olive Oil Exports FOB Tunis, CIF New York and CIF Houston

Annex 1, Table 27 presents indicative cost structures for olive oil exports to the United States. ONH's four clients in the American market at present are:

- Pompeian, Inc. of Baltimore, Maryland;
- Gem Packing, Inc. of New York, New York;
- Pope Foods, Inc. of Orsdel, New Jersey; and
- Star Import/Export of Houston, Texas.

The performance of and prospects for Tunisian olive oil marketings to the North American market are subjects to be addressed in Part B of this report.

6. Competition Between Exports and Domestic Consumption of Olive Oil

It has clearly been the GOT's policy in the 1980s to turn the terms of trade for edible oils in domestic markets against olive oil. The government has continued to import large quantities of vegetable oil substitutes -- i.e. soybean and rapeseed oils -- to meet domestic consumption needs. These imported oils are mixed with small quantities of olive oil -- i.e. 5 percent at present -- and sold at a uniform subsidized price throughout the country.

The core rationale behind the current GOT edible oils policy is compatible with accepted trade principles to the extent that the higher value product -- i.e. olive oil -- can be sold on international markets. Such sales generate important foreign exchange earnings and these receipts allow Tunisia to import a significant portion of its needs for lower cost vegetable oils at an exchange value of better than 2 to 1 for domestic markets.

The current differences in relative prices between olive oil and other vegetable oils provide considerable incentives for such a trade policy, irrespective of any Tunisian social policies vis-a-vis domestic consumers. The subsidies on mixed oils are a complicating factor in the existing macroeconomic policy matrix and are an extension of the broader GOT social policy of providing basic consumption goods to "disadvantaged" consumers at low prices. As such, the subsidies are an integral part of the country's generalized attempt to control wage/price differentials in the domestic economy.

Given present conditions in international markets, three criticisms have been raised with respect to the GOT policy. First, existing policy, which is basically sound, is not being fully implemented since the GOT through the ONH is currently directing some olive oil toward domestic use at prices somewhat less than the border price -- i.e. estimated at an average export price of 1,180.947 Dinars, net of taxes and other export costs, versus an average price of 910.591 Dinars paid for olive oil for domestic use. Second, the government is incurring unnecessary transaction costs in mixing olive oil and vegetable oils for domestic use, rather than simply selling the oils as separate commodities and allowing the consumer to mix them as desired. And, third, any sales of olive oil in domestic markets -- since it is sold at less than the border price -- inevitably lowers returns to olive producers.

7. Information Available to ONH on International Markets for Olive Oil

The bulk of ONH information on export prospects appears to come from its own data collection efforts. This information comes through:

- Relationships with existing clients;
- Visits by ONH officials to existing and prospective markets;
- Tunisian embassies and ONH's trade representatives in France and Italy;
- Published trade journals and other sources.

As a member of the International Olive Oil Council (Conseil Oleicole International), the ONH also has access to that organization's information on international market conditions for olive oil products. This information consists mainly of aggregated data on the quantities of olive oil traded by product, export prices, and, in a more general fashion, details on olive production and development plans in major producing countries. Detailed information on specific competitors with respect to export price structures; costs of production, processing and marketing; and sectoral development planning through this source is considered to be very weak and not very reliable.

Day-to-day information relative to actual export sales comes to ONH through telephone, telex and facsimile machine links to clients. Orders from established clients are received in writing via telex or facsimile machine, with full product specifications using commercial trade standards system developed by the International Olive Oil Council.

Customers also may specify additional taste conditions for their orders. To facilitate this aspect of export marketing, the ONH conducts olive oil tasting sessions for international importers either in Tunisia or at the client's offices. Once a specific taste preference is expressed, the ONH maintains samples of that particular type of olive oil. When a client order is received with specific taste conditions, ONH oil tasters prepare shipments to those specifications, either by selections from oils in stock or through blending of oils.

In general terms, one has the impression that the ONH is very well informed on present marketing conditions in the European Community -- its major client. It also seems to have reasonably good information on potential markets in the Arab world from North Africa to the Gulf States, mainly through contacts with state importing agencies. Information on the Soviet Union and eastern European countries is more closely held and less available to exporting countries, including Tunisia. And, finally, the ONH seems to have only general information about the North American market, mainly through its four existing clients and the Tunisian embassy in Washington.

The ONH currently views the North American market as its best prospect for expanding exports. To pursue this marketing objective, the Office has been discussing opening a trade office in the United States. Under this marketing strategy, ONH trade representatives would be based at the Tunisian embassy in Washington, D.C. and would be responsible for product promotion, management of client contacts in both the United States and Canada. ONH use of paid local brokers to manage actual product warehousing and sales operations is also under consideration at present.

8. GOT/ONH Pricing Policy for Olive Oil

The Government of Tunisia has a two tiered pricing system for olive oil. For olive oil exports, which are the major concern of this report, Tunisia is essentially a price taker in an international market dominated by European olive oil producers, principally Spain and Italy. Tunisia had 9,2 percent of total world olive oil exports in 1986 -- the last year for which data are available. General price levels for olive oil by grade in these markets are heavily influenced by prices prevailing in the European Community and current export promotion

programs in effect under the Community's Common Agricultural Policy (CAP). Specific prices received at ONH by quantity, grade and type of packaging are negotiated by agents of the ONH with foreign buyers within a band set by prices prevailing in international markets or fixed with respect to a specific set of reference prices, as with the EC/GOT international agreement.

At present, over eighty percent of ONH export sales are negotiated directly on a government to government basis, through government parastatals with state monopolies on edible oil imports, or under international agreement, as with the European Community. Only in the North American and Gulf States markets could ONH currently be described as operating under "open" market conditions, unregulated by specific quotas, pricing agreements, or other contractual arrangements.

Under these conditions, the ONH has very limited flexibility in price negotiations. With authority from the GOT, ONH agents may attempt to undercut competitors' prices for equivalent grade oils in non-EC markets. Tunisia, however, does not command a sufficiently large share of any export market to have the capacity to negotiate export prices at levels higher than the prices offered by competitors. In certain instances, the ONH has even be forced to sell olive oil at significantly below its grade to meet a specific client's demand and/or fulfill pre-negotiated sales contracts and quotas.

In the domestic market, the GOT essentially sets administered and uniform national prices for olive oil at the wholesale level and then fixes marketing margins for distributors. It also sets ONH producer prices for olive oil by degree of acidity within grade and determines the premiums paid for quality differences in the same oils.

Annex 1 Tables 16 and 17 present prices paid to Tunisian olive oil producers in recent years. Annex 1 Table 25 shows gross prices received by ONH in international markets over the period 1982/83 to 1986/87. Annex 1 Table 29 also compares the average export and domestic prices received by ONH for olive oil over the same period. As can be seen from Annex 1 Table 29, average domestic prices received by ONH for olive oil increased significantly in the 1980s but still fell about 245 Dinars (21.2 percent) below average export price received on a per metric ton basis in 1986/87.

Costs of export stock assembly, storage, preparation and shipping account for part of the difference between average domestic and export prices. But, without full access to ONH export accounts for all clients, we were unable to determine precisely what percent of the difference is attributable to these costs. It does seem, however, that gross ONH sales receipts for olive oil would increase if the GOT permitted unlimited ONH sales in international markets at the expense of domestic consumption -- i.e. without reserving certain quantities of oil for direct domestic retail sale and use in mixing with imported vegetable oils or, alternatively, requiring domestic consumers to purchase their oils from ONH at their actual border prices. Again, however, on the basis of the information provided to date by ONH, we could not determine what, if any, increase there would be in net sales receipts as the result of such a change in national policy.

With respect to the mechanism for determining domestic olive oil pricing, the ONH appears to play an important but not decisive role. The annual determination of domestic wholesale, retail and producer prices for olive oil by grade in Tunisia is ultimately the responsibility of a committee of senior GOT officials, representing several concerned ministries. The ONH, in effect, serves as secretary to this committee and provides it with technical information on existing sub-sector conditions and its projections of expected production and marketing conditions for the coming year.

The principal ONH input into pricing decisions is a series of price schedules -- "baremes". These schedules are generated by an ONH computer program, which takes into account ONH specialists' projections on the following variables:

- domestic olive oil production levels in the coming year;
- ONH olive oil collections for the same production year and levels of carry-over stocks;
- ONH operating expenses and the costs of mandated assistance programs for olive producers -- i.e. disease and pest controls, subsidies for tree regeneration or replanting;
- price levels and quantities to be sold in export markets; and
- impacts of the proposed price schedules on consumer subsidies for edible oils as administered by the Caisse Generale de Compensation.

During the 1986/87 price negotiations, for example, the ONH generated fifteen such pricing schedules in August 1986, based upon 300 runs of the computer program. For this exercise, the presentation of "acceptable" price schedules for 1986/87 was conditioned by three constraints:

- schedules were not to favor the blending of olive oils;
- schedules were to provide a sufficient price spread to induce olive growers to produce olive oils of low acidity; and
- schedules were to reflect a realistic assessment of expected prices for Tunisian olive oils on international markets .

The present system of export pricing for Tunisian olive oils is driven by market forces over which the GOT and ONH have little or no control. To meet export objectives, ONH negotiators must ensure that their sales offerings in both quality and price conform to client demands and are, at least, competitive with those of their market rivals.

In the domestic market, none of these forces are present because GOT decision-making with respect to allocations of olive oil to domestic consumption, importation of alternative vegetable oils, and the regulation of prices for all mixed vegetable oils separates the domestic and international markets. In this market, government administrative decisions effectively replace competitive market forces. Pricing and other marketing decisions are accomplished by administrative fiat, with no consumer representation and only limited participation by olive producers and oil press operators. Prices fixed and products made available do not appear to have any direct relationships to the effective domestic demand for olive oil and/or mixtures of olive oil and vegetable oils. Nor is there any direct consideration in domestic price determination of variations in growers' costs of production and marketing margins across regions. Third, the current system is heavily dependent on the accuracy and fallibility of the ONH's projections of market conditions six to nine months in advance of actual export sales and on GOT political and financial considerations in operation of its consumer subsidy programs. And, finally, there are no effective pressures on the ONH from private competition in olive oil marketing, beyond the initial point where the olive producer may retain some or all of his olive oil for family use and/or distribution through informal channels.

III. Conclusions

A. Do Production, Processing and Marketing Costs Affect Export Potential for Tunisian Olive Oil?

Tunisia is clearly vying for export sales of olive oil in an international arena well populated with formidable competitors. International market conditions at present are largely determined by the market influence of European olive oil producing countries in world trade -- both in terms of their export sales and the conditions they collectively impose on olive oil imports for the Community. If, as expected, the European Community becomes a net exporter of olive oils in the early 1990s and chooses to subsidize export sales to maintain internal producer prices at some minimum level, all other exporting countries will come under even greater pressure to reduce the prices of their own export offerings -- and, hence, to reduce their production, processing and marketing costs dramatically. Although Tunisia does produce certain types of olive oil for use in blending, which are unique in the world market, we do not believe the volume of these particular oils is sufficient to exempt the Tunisian export trade from these generalized market pressures.

At present, it seems evident that the Tunisian olive oil sub-sector is living off the capital investments made by earlier generations of olive producers and olive oil processors -- and by the GOT itself. At the production level -- although some large, efficient olive plantations do exist in the country -- a large percentage of the existing olive tree population has been allowed to become overaged and/or otherwise decline in productivity without significant renewal. Although full use of modern cultivation techniques, water catchment methods, and non-labor agricultural inputs on a regular basis has been restricted to a minority of existing olive plantations, average production costs on a per tree basis may still be higher than in competing European countries because of low yields per tree and rising labor costs for weed control, tree pruning, and hand harvesting. Moreover, the small size of most Tunisian olive holdings and the increasing fragmentation in tree ownership are making it extremely difficult for growers to adopt new production technologies -- chiefly because they cannot spread the fixed costs of such modernization over a sufficient number of highly productive trees. In an era of rising costs for skilled and unskilled farm labor, this situation is particularly true for mechanized production techniques related to weed control, water conservation, tree pruning and olive harvesting.

At the processing level, national dependence on outmoded and inefficient classical olive press systems and a rate system for olive pressing which discourages press modernization has undoubtedly contributed to higher processing costs for Tunisian olive oil. In addition, the fact that present pressing capacity is poorly situated with respect to actual olive producing areas has increased processing costs by raising the grower-to-press assembly costs for the olive crop.

Compared with the cost inefficiencies introduced by low per tree productivity and outmoded processing technologies, the costs incurred in export marketing of olive oil appear to us to be relatively modest. The export cost structures provided to us for North American markets show total marketing margins of 21 to 22 percent on CIF bulk export shipments and 29 percent for CIF shipments in drums.

For bulk shipments (Extra and Rivera) to North America in 1986/1987, 57 to 57.4 percent of the total ONH marketing margin (21.4 to 22 percent of total export cost) is composed either of costs imposed by the GOT in taxes, surcharges, port fees, or costs for international shipping and handling. All of which are largely outside the control of the ONH -- see Annex 1, Table 27. For shipments in drums, the marketing costs for the above items, plus the purchase and handling of the drums, amounts to 70.5 percent of total marketing margins (28.9 percent of total export cost).

- The comments above, however, should in no way be interpreted as absolving the ONH from the need to improve the cost effectiveness of its primary intervention in olive oil marketing. There are certainly ways in which the Office could streamline its operations to achieve further cost savings in its operations. Some which should be subjected to further evaluation are:
- divesting ONH of responsibilities for servicing the routine input supply requirements of olive producers and turning them over to the private sector;
- divesting ONH of responsibility for the olive pest and disease control program and turning them over to private contractors working directly with farmers on a fee basis or through the government on a contract basis;
- divesting ONH of responsibilities for producer extension activities and turning them over to the Ministry of Agriculture and/or private agricultural input supply firms;
- eliminating government involvement in production of olive/vegetable oil mixtures for the domestic market;
- and, finally, allowing private sector participation in domestic marketing of olive oils and vegetable oils at prices reflecting unsubsidized wholesale purchase costs and with realistic marketing margins differentiated by regions.

In addition, the GOT might wish to foster additional improvements in ONH institutional performance by relaxing current government restrictions on private sector participation in export marketing of olive oils, so as to provide the ONH with some salutatory sales competition. This could be accomplished, in the first instance, by allowing private firms to compete freely for shares of Tunisian olive oil sales in the essentially open export markets -- i.e. North America and the Gulf States -- and, later, by allowing open competition for the olive oil sales controlled by government-to-government agreements through direct tendering of supply agreements, open auctions for export licenses, or other similar sales allocation mechanisms.

B. Does the Quality of Tunisian Olive Oil Affect Export Potential?

On the basis of our available information, there is, as yet, no definitive answer to this question. The range of qualities demanded in Tunisian olive oils for export is clearly a factor to be determined, in the first instance, by export clients' responses to consumer preferences and effective purchasing power in their respective markets.

Some specialists have asserted that greater concentration on production of high quality virgin olive oils in Tunisia would logically lead to greater net foreign exchange earnings for the economy. And, the GOT's current sub-sector strategy -- in line with this assertion -- provides for periodic increases in the premiums paid for high quality virgin oils to further this production shift. It should be remembered, however, that underlying this strategy is the critical hypothesis that an important and untapped demand for high quality virgin olive oils

exists in world markets. A implied corollary is that the ONH and/or private Tunisian exporters are exceptionally well-placed to capture a major share of this hypothetical market niche.

Unfortunately, our review of Tunisian export data through 1987/1988 with respect to quality factors and the structure of existing Tunisian export markets, leads us to the conclusion that both the hypothesis and its corollary may be incorrect. In the past twenty years, Tunisia's export sales have been largely conditioned by the high level of effective demand for low quality "lampante" olive oil in Italy and other countries. This oil when refined is in demand precisely because it finds wide acceptance in the world market when sold as low cost "pure" or blended Rivera olive oils for direct consumption and food processing. The potential for displacing these sales with higher cost, higher quality virgin olive oils may be limited, particularly as traditional ethnic consumer markets in southern Europe become increasingly saturated with surplus EC olive oils.

Based on Tunisian experience to date, it seems likely that the present specialized European sub-market in France and Italy for certain types of high quality Tunisian virgin oils will continue to exist. These oils cannot be produced in Europe for a variety of climatic and agronomic reasons. They are prized by importers for direct sale to high income, discriminating consumers and for blending with European oils -- virgin and pure. In blending, they impart certain specific characteristics to improve the taste characteristics of the resulting products. But, again, this is a narrow specialized market, which may not expand significantly in the medium-term.

Finally, with respect to Tunisian export markets outside the European Community, the pattern is one of highly erratic sales with a generalized preference in most of the Arab world for low cost olive oils, which can compete directly with other imported vegetable oils. And, with a few major growth points -- i.e. the Soviet Union and North America -- where importers favor "pure" or Rivera oils for food processing or for direct consumer sales.

For these reasons, the market potential for the medium-term does not -- in our opinion -- lie with increasing sales of high quality virgin olive oils. As the European Community becomes a net exporter of olive oils in the next decade, importers in the world's largest single market for these high quality virgin olive oils may become increasingly interested in importing only those virgin oils with particular taste/acidity characteristics needed for blending. Moreover, for the North American market, which -- in our opinion -- has been correctly isolated as the growth market with the best potential for Tunisia, we see the greatest increases in import demand occurring for low cost, "pure" and Rivera olive oils, with only very limited market expansion in high quality virgin oils -- see Part B for a more detailed discussion of this point.

Given that the ONH has apparently already sold some existing stocks of virgin olive oils at refining grade prices to satisfy its largest single client -- Italy -- and to meet EC quota requirements and has done the same thing with respect to, at least, one American importing firm, we suggest that the GOT and the ONH might consider revisions in the current strategy for producer payments. The current emphasis on quality premiums makes economic sense only in the case where a clear and growing effective demand can be shown to exist for quality virgin olive oils in the international markets and where Tunisian exporters have a demonstrated capacity to exploit a significant competitive marketing advantage in those markets.

We would suggest, therefore, that the GOT and the ONH consider a restructuring of the ONH producer price schedules to provide greater incentives for **increases in total olive oil production**, which might be much more relevant to Tunisia's actual export possibilities, than

continuation of the present effort to skew the production mix in favor of higher quality virgin oils.

C. Do GOT/ONH Policies and the Present Tunisian Marketing System Affect Export Potential?

1. Predominance of ONH in Olive Oil Marketing

To exploit current world markets, any olive oil exporter must put primary stress on two elements. First, the exporter must provide a line of products which effectively matches the particular demands of importers with respect to product availability, quality, and, most importantly, cost. Second, the exporter must devise a marketing strategy which is aggressive and effective in securing initial export sales and in servicing on-going commitments to clients. Our initial review of the Tunisian marketing system leads us to believe that improvements could be made with respect to both elements.

In world market, the dominant factor in securing export sales is -- and will continue to be -- the delivered cost of the product to the importer. Importers in most growing markets are primarily interested in "pure" and Rivera olive oils for mass market sales and for food processing. Moreover, importers distributing in general consumer markets in Europe and North America are increasingly insistent that their suppliers provide products pre-packaged in small volume units -- i.e. generally in containers of one liter or less. And, lastly, these containers must have attractive labelling which effectively presents olive oil to the consumer as a healthy alternative to other vegetable oils. In our opinion, the ONH does not seem to be willing or able to respond effectively to any of these marketing factors, due to deficiencies in or constraints upon its own operation.

These market factors, we believe, have several implications for GOT/ONH marketing policies.

First, the need to market Tunisian olive oils at the lowest possible export prices places an upper limit on government efforts to raise producer prices and processor margins. Clearly, further real increases in producer prices and processor returns without at least concomitant increases in productivity at the producer and processor levels will raise export prices and will make Tunisian products less competitive in export markets.

Second, the economic rationale behind the current policy of offering quality premiums to producers and processors for high quality virgin olive oils is, at best, faulty in the absence of proof that guaranteed markets exist for such oils. Continuance of this policy could easily result in a situation where the ONH is forced to pay premiums for and hold larger stocks of high quality virgin olive oils, which are marketable only at low "lampante" oil prices. Under this scenario, expected increases in foreign exchange earnings would not materialize and the GOT would continue to incur the local dinar costs of subsidizing quality premiums for oils which cannot be marketed at virgin prices.

Third, the GOT "infant industry protection" policy, which forces the ONH -- and other exporters -- to use local packaging materials if they can be supplied by a Tunisian firm and precludes use of imported packaging, needs rethinking. This GOT policy has, in our opinion, prevented the ONH from meeting importer specifications for olive oil in pre-packaged, small volume units. Under current conditions, local packaging materials are said by ONH officials to be of low quality and are available only at high per unit costs. Such

packaging is too expensive to compete effectively with Spanish and Italian equivalents. As a result, the ONH currently exports over 85 percent of its olive oil in bulk shipments and the domestic economy is deprived of potential value added benefits of quality product packaging. Moreover, this protectionist policy appears to have effectively removed any pressures on local firms to develop the capacity to produce and market the high quality, low cost packaging materials needed to support the national export promotion effort.

With respect to the second element in effective marketing -- a good strategy, our principal conclusion is that export marketing in Tunisia via a government parastatal with an export monopoly has been relatively successful when the ONH can operate from behind government-to-government agreements in controlled economies. The ONH, however, has not proven to be very successful at selling olive oil in new growth markets, where it has encountered vigorous, open competition for market shares.

This being the case, in the 1980s, the ONH, rather by design than default, has relied on government-to-government agreements in controlled markets for the vast majority of its export sales. Primary stress throughout this period has been placed on fulfilling Tunisia's annual EC quota commitments, even if implementation of this policy meant delaying or ignoring potential sales opportunities elsewhere. A GOT/ONH marketing strategy so rigidly contingent upon maintaining and servicing one major client relationship has obviously been constrained in developing new export market opportunities. In this respect, the observed lack of movement in market diversification away from Tunisia's traditional sales base in western Europe has not -- in our opinion -- been the result of lack of opportunities for aggressive Tunisian marketing in other markets, it has been dictated by GOT policy.

Whether or not the marketing strategy pursued by the ONH in the 1980s has actually resulted in a level of foreign exchange earnings less than that which could have been obtained by more aggressive marketing worldwide cannot be established from the data available to us. It must be admitted, however, that the European Community has generally provided Tunisia with a safe, nearby and relatively high return market for the limited quantities of olive oil it had available for export. The greater cultural and linguistic compatibilities between Tunisians and other Mediterranean peoples have undoubtedly played a major role in making this trade relationship much more comfortable to maintain than those with more aggressive and disinterested North Americans or state brokers from eastern European countries. Finally, since consumers within the European Community habitually demand a broader spectrum of olive oils for domestic use than consumers in most other markets, the ONH undoubtedly also found it easier to place the full range of available Tunisian oils with European brokers than with agents in alternative markets.

What is of serious concern now, however, is that the prospects for Tunisia's continuing this comfortable trade relationship with the European Community at anything approaching the present 46,000 ton quota level beyond 1991 are clearly jeopardized by the emergence of the Community as a net exporter of olive oils. This new reality presents a major dilemma for the present GOT/ONH marketing system. If, in the short-term, the ONH fails to fulfill the GOT's present quota commitments to the Community, Tunisia will almost certainly forfeit any lingering possibilities for continuation of an olive oil quota in the next round of EC/GOT trade negotiations. If, on the other hand, the ONH is not directed and funded to move aggressively and immediately to secure an increased market share for Tunisian olive oils in new growth markets, like North America, then Tunisia by 1991 may find itself simultaneously losing its EC quota and fighting to even maintain its present market shares in these markets in the face of greatly increased and probably subsidized European competition.

Under these circumstances, we believe that Tunisia's best course in export marketing is a very aggressive and well-funded campaign to secure greater market shares for its olive oils in non-EC markets, particularly in North America and the Gulf States, in the period before 1991. We further conclude that the ONH, acting primarily as a streamlined marketing and quality control agency, without monopolistic powers in the export trade, has a significant role to play in such a campaign. In marketing, the ONH's competitive advantage would appear to lie primarily in acting as the GOT's agent in implementing government-to-government trade agreements. For marketing efforts in open economies, i.e. North America, the GOT should not just permit but actively solicit participation from Tunisian private sector firms, in joint ventures or other relationships with international marketing agencies, to augment ONH's own marketing activities.

Finally, we believe that the GOT has a legitimate need to maintain existing regional ONH quality control facilities and to use them for mandatory quality testing and grading of all olive oils. This program is vital for the protection of Tunisia's heretofore excellent reputation with international clients for proven quality in exported olive oils.

2. GOT/ONH Pricing Policy for Olive Oil and Substitute Products

Given current price differentials between the various edible oils in world markets, Tunisia's trade policy of exporting olive oils and importing other cheaper vegetable oils for domestic consumption makes good economic sense. The GOT's subsidy program for edible oils -- as distinct from the trade policy -- however, has had, at least, two unfortunate consequences for Tunisia's export trade. First, stocks of olive oil, which otherwise might be bid away for export sales, are administratively reserved for use in the GOT's oil mixing program. And, second, the prices paid for these oils appear ultimately to have a depressive effect on the prices received by producers marketing their olive oils through the ONH.

3. GOT Development Policy Towards the Sub-Sector

By the government's own admission, national development policy with respect to promotion of olive oil over the last decade -- i.e. during the Fifth and Sixth Development Plans -- was not very successful in dealing with fundamental sub-sector problems. The Ministry of Agriculture's evaluation of the achievements under the Sixth Plan (Ministere de l'Agriculture, Decembre 1985) presents a pessimistic appraisal of the Plan's accomplishments.

The objectives set forth in the Sixth Plan were acknowledged to be modest when compared to sub-sector requirements and were not significantly different from those included in the Fifth Plan. Most of the targets under the Sixth Plan were not attained. Average olive oil production during the Plan period was 18 percent less than target level and average production per olive tree was observed to have dropped from 570 kilograms during the period 1971 to 1980 to 482 kilograms per tree during the Sixth Plan period. In the Ministry's opinion this drop in production "could not be attributed solely to the alternate bearing characteristics of the olive trees or to climatic factors" (Ibid, p. 24). The Ministry's summary analysis then ends with the judgement that "... with the exception of certain actions taken with respect to pest and disease control, the processing of olive oil, and the starting of certain research programs, no concrete and large scale actions were undertaken to improve the situation in the sub-sector" (Ibid, p. 24).

Our own analysis of the situation in the sub-sector and the effects of government development policies on sub-sector problems finds no quarrel with the Ministry's own assessment.

Our findings, as reported in the preceding sections of this report, have led us to the summary conclusions that GOT sub-sector policies over the past twenty years have provided few real incentives in olive producers and have effectively eliminated the private sector as a participant in olive oil processing and marketing. Finally, we have tried to present an analysis of sub-sector's possibilities in the next decade which isolates some of the weaknesses of current GOT development policies and suggests specific changes, where appropriate.

ANNEX 1

Statistical Tables

Annex 1 - Table 1
Estimated Pattern of Land Use In Tunisia

CATEGORY	Hectares
Total Land Area	16,400,000
Total Agricultural Land	9,700,000
Cropland	4,700,000
Forest and Alfa Land	1,300,000
Rangeland	3,700,000
Total Cropland	4,700,000
Cereals Area	1,900,000
Tree Crop Area	1,750,000
of which Olive Tree Area	1,332,509
Legume Crops Area	100,000
Forage Crops Area	250,000
Industrial and Vegetable Crops Area	100,000
Fallow	600,000

Source: Ministère de l'Agriculture, Role Economique et Social de l'Olivier en Tunisie

Annex 1 - Table 2
Estimated Area Planted to Olive Trees by Region

REGION	Number of Hectares Planted	Percent of Total
North	197,368	14.8
Center	386,329	29.0
South	748,812	56.2
Total	1,332,509	100.0

Source: Ministère de l'Agriculture, Role Economique et Social de l'Olivier en Tunisie

Annex 1 - Table 3
Estimated Number of Olive Trees
by Region and by Age Class

REGION	AGE CLASS			Total Trees
	0-19 Years	20-70 Years	Over 70 Years	
NORTH				
Trees	4,944,653	13,035,973	2,579,374	20,560,000
Percent	24.0	63.0	13.0	37.2
CENTRAL				
Trees	3,327,171	13,034,270	3,579,559	19,941,000
Percent	16.7	65.4	17.9	36.1
SOUTH				
Trees	3,202,038	9,644,901	1,879,06	14,726,000
Percent	21.7	65.5	12.8	26.7
TOTAL				
Trees	11,473,862	35,715,144	8,037,994	55,227,000
Percent	20.8	64.7	14.5	100.0

Source: *Ministere de l'Agriculture, Role Economique et Social de l'Olivier en Tunisie*

Annex 1 - Table 4
Estimated Number of Farms in Tunisia
by Olive Enterprises

REGION	Total Number of Farms	Number of Farms With Olive Enterprises	Percent
North	122,700	7,100	5.8
Central	171,800	75,000	43.7
South	82,000	31,300	38.1
Total	376,500	113,400	30.1

Source: *Ministere de l'Agriculture, Role Economique et Social de l'Olivier en Tunisie*

Annex 1 - Table 5
Estimated Size Distribution of Olive Farms in Tunisia

FARM SIZE CLASS	Number of Farms	Percent of Total
0 - 5 Hectares	44,000	38.8
5- 10 Hectares	25,500	22.5
10-15 Hectares	15,500	13.7
15-20 Hectares	10,800	9.5
20-40 Hectares	11,700	10.3
40-60 Hectares	3,300	2.9
60 or More Hectares	2,500	2.2
State Farms and Cooperative Units	41	0.1
Total	113,341	100.0

Source: *Ministere de l'Agriculture, Role Economique et Social de l'Olivier en Tunisie*

Annex 1 - Table 6
Estimated Olive Production in Tunisia by Region
1976/77-1987/88

YEAR	REGION			Total
	North	Central	South	
			<i>(Tons)</i>	
1976/77	60,000	130,000	235,000	425,000
1977/78	130,000	234,000	286,000	650,000
1978/79	60,000	89,000	276,000	425,000
1979/80	50,000	185,000	190,000	425,000
1980/81	105,000	160,000	460,000	725,000
1981/82	70,000	100,000	255,000	425,000
1982/83	110,000	110,000	70,000	290,000
1983/84	195,000	195,000	385,000	775,000
1984/85	90,000	110,000	275,000	475,000
1985/86	135,000	150,000	240,000	525,000
1986/87	122,000	165,000	313,000	600,000
1987/88	115,000	135,000	225,000	475,000
12 Year Average	103,500	146,917	267,500	517,917
Percent of Total Yield by Region	20.0	28.7	51.3	

Source: *Office National de l'Huile*

Annex 1 - Table 7
Estimated Olive Oil Production, Exports and Value of Exports
1979/80-1987/88

YEAR	Estimated Olive Production (000 MT)	Estimated Olive Oil Production (000 MT)	Actual Olive Oil Exports (MT)	Total Value of Exports (000000 D)
1979/80	425	85	48,767	35
1980/81	725	145	70,635	57
1981/82	425	85	62,146	65
1982/83	290	58	36,117	33
1983/84	775	155	70,674	67
1984/85	475	95	51,021	54
1985/86	525	105	44,448	54
1986/87	600	120	56,000	65
1987/88	475	85	—	—
Average	524	104	54,976	54

Source: Office National de l'Huile

Note: Average export prices received by ONH per metric ton as follows:

1979/80 - 718 Dinars/MT	1983/84 - 952 Dinars/MT
1980/81 - 807 Dinars/MT	1984/85 - 1049 Dinars/MT
1981/82 - 1046 Dinars/MT	1985/86 - 1206 Dinars/MT
1982/83 - 923 Dinars/MT	1986/87 - 1156 Dinars/MT

Annex 1 - Table 8
Estimated Gross Margins on Olives and Alternative Fruit Crops
by Region in Dinars Per Hectare

REGION	CROP				
	Olives	Almonds	Apricots	Pistachios	Peaches
North	72	95	—	1,458	672
Central	56	74	61	—	—
South	50	74	61	1,100	—

Source: Office National de l'Huile, *Situation du Secteur Oleicole Propositions Pour Son Developpement*, Mai 1986, p.2.

Annex 1 - Table 9
Estimated Production Costs Per Hectare of Olives
and Per Kilogram of Olive Oil Produced
1981/82-1987/88

REGION	YEAR						
	1981/82	1982/83	1983/84	1984/85	1985/86	1986/87	1987/88
	<i>(Dinars per Hectare)</i>						
North	65.571	83.407	88.383	73.750	95.610	84.610	96.483
Central	50.217	66.741	79.510	76.312	88.361	88.970	93.833
South	46.567	45.614	75.860	72.355	74.438	95.100	86.416
	<i>(Dinars per Kilogram of Olive Oil)</i>						
North	0.455	0.477	0.471	0.591	0.638	0.736	0.637
Central	0.558	0.654	0.698	0.816	0.920	1.186	1.095
South	0.554	1.471	0.555	0.821	0.931	0.780	0.971
Average	0.533	0.789	0.572	0.776	0.861	0.852	0.926

Source: Office National de l'Huile

Annex 1 - Table 10
A Breakdown of Olive Oil Presses in Tunisia
by Region and Type of System

REGION	TYPE OF OIL PRESS SYSTEM				
	Classic Presses	Super Presses	Continuous Chain Presses	Mixed Systems	TOTAL PRESSES
North	83	85	13	11	192
Sahel	439	26	5	4	474
Center	44	17	1	0	62
Sfax	206	46	3	8	263
South	81	36	1	6	124
Total	853	210	23	29	1,115

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Annex 1 - Table 11
Distribution of Olive Oil Pressing Capacity in Tunisia
by Governorat and by Mechanical System Employed

REGION/GOVERNORAT	Classic System	Super Press System	Continuous Chain System	Total Capacity
NORTH		<i>(Metric Tons Per Season)</i>		
Tunis	757	9,076	6,250	16,083
Bizerte	5,021	5,089	1,500	11,610
Nabeul	14,214	22,431	2,295	38,940
Beja	3,051	11,572	3,500	18,123
Zaghouan	10,590	33,967	4,500	49,057
Jendouba	2,402	7,619	—	10,021
Le Kef	1,916	5,466	—	7,382
Siliana	1,065	8,366	1,200	10,631
Sub-Total	39,016	103,586	19,245	161,847
CENTRAL				
Sousse	72,360	3,763	4,060	80,183
Monastir	61,889	11,457	3,500	76,846
Mahdia	58,183	8,832	675	67,690
Kairouan	26,178	21,571	2,500	50,249
Kasserine	3,139	2,918	—	6,057
Sub-Total	221,749	48,541	10,735	281,025
SOUTH				
Sfax	214,340	81,696	18,937	314,973
Sidi Bouzid	7,328	12,312	—	19,640
Gafsa	2,536	5,076	—	7,612
Gabes	3,640	3,888	—	7,528
Medenine	20,586	6,739	—	27,325
Sub-Total	248,430	109,711	18,937	377,078
Total	509,195	261,838	48,917	819,950

Source: *Office National de l'Huile, Situation du Secteur Oleicole Propositions Pour Son Developpement, Annex 3*

Annex 1 - Table 12
Comparison of Average Estimated Olive Production by Region
and Average Estimated Olive Pressing Capacity by Region:

REGION	Average Estimated Olive Production	Average Estimated Pressing Capacity	Net Excess Capacity
		(Metric Tons)	
North	103,500	161,847	58,347
Central	146,917	281,025	134,108
South	267,500	377,078	109,578
Total	517,917	819,950	302,033

- Notes:*
- 1. Average estimated olive production is the 12 year average taken from Annex Table 6.*
 - 2. Average estimated pressing capacity is taken from Annex Table 11.*
 - 3. Figures imply an average plant utilization rate of 63 percent in years near the average estimated olive production.*

Annex 1 - Table 13
Comparison of Highest and Lowest
Olive Production in the Last 12 Years and
Average Estimated Olive Pressing Capacity by Region

REGION	Olive Production	Estimated Pressing Capacity	Net Excess Capacity
		(Metric Tons)	
NORTH			
Highest Year (1983/84)	195,000	161,847	(33,153)
Lowest Year (1979/80)	50,000	161,847	111,847
CENTRAL			
Highest Year (1977/78)	234,000	281,025	47,025
Lowest Year (1978/79)	89,000	281,085	192,085
SOUTH			
Highest Year (1980/81)	460,000	377,078	(82,922)
Lowest Year (1982/83)	70,000	377,078	307,078

Source: Assembled by team from previous Tables

Note: Figures in this Annex Table and Annex Tables 6 and imply that olives would have been transshipped from the North to the Central Region in one year (1983/84) out of the last 12 years and that olives would have been transshipped from the South Region to the Central Region in two years (1980/81 and 1983/84) out of the last 12 years. In none of the last 12 years did total estimated olive production exceed total estimated national pressing capacity.

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Annex 1 - Table 14
Breakdown of Olive Oil Collected by ONH by Grade
1979/80-1987/88

GRADE	YEAR								
	1979/80	1980/81	1981/82	1982/83	1983/84	1984/85	1985/86	1986/87	1987/88
SUPER									
Metric Tons	4,353	31,607	5,600	3,284	8,640	4,486	15,856	8,527	13,423 ¹
Percent	7.3	27.5	9.9	14.3	7.5	7.9	24.4	12.2	27.0
EXTRA									
Metric Tons	3,177	23,614	7,696	2,115	11,321	5,807	7,974	14,056	11,192
Percent	5.3	20.6	13.6	9.2	9.9	10.3	12.3	19.9	23.0
FINE									
Metric Tons	2,659	23,068	10,974	2,760	14,181	3,837	9,099	12,987	11,346
Percent	4.5	20.1	19.5	12.0	12.4	6.8	14.0	18.4	23.0
ORDINARY									
Metric Tons	4,694	27,709	24,215	7,431	42,522	17,333	26,264	27,055	11,791
Percent	7.9	24.2	42.9	32.4	37.1	30.7	40.4	38.3	24.0
"LAMPANTE"									
Metric Tons	44,883	8,592	7,940	7,326	37,883	25,074	5,506	7,931	1,866
Percent	75.0	7.6	14.1	32.1	33.1	44.3	8.9	11.2	3.0
TOTALS									
Metric Tons	59,766	114,590	56,425	22,916	114,547	56,537	64,999	70,656	49,618

Source: Office National de l'Huile

Note: ¹ Preliminary figures for olive oil collection in 1987/88

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Annex 1 - Table 15
Breakdown of Olive Oil Quality by Region and Press System

REGION	Press System	PERCENT OF OLIVE OIL IN QUALITY GRADE		
		Super/Extra/Fine	Ordinary	"Lampante"
North	Classic/Super Press	65	20	15
	Continuous Chain	65	25	10
Central	Classic/Super Press	15	25	60
	Continuous Chain	15	30	55
South	Classic/Super Press	50	30	20
	Continuous Chain	50	35	15

Source: Office National de l'Huile

Note: No year or period given in data

Annex 1 - Table 16
Produce Prices in Dinars Per Metric Ton of Olive Oil Paid by ONH
Exclusive of Producer "Bonuses"
1979/80-1987/88

GRADE	Degree of Acidity	ONH PRODUCER PRICE			
		1979/80	1980/81	1981/82	1982/83
Extra and Super	0.3	470.000	530.000	580.000	700.000
	0.4	466.400	527.900	577.700	697.100
	0.5	462.800	525.800	575.400	694.200
	0.6	459.200	523.800	573.100	691.300
	0.7	455.600	521.700	570.800	688.400
	0.8	452.000	519.700	568.500	685.600
	0.9	448.400	517.600	566.200	682.700
	1.0	446.000	515.600	563.900	679.900
Fine	1.1	443.600	513.600	561.700	677.100
	1.2	441.200	511.600	559.400	674.200
	1.3	438.800	509.600	557.200	671.400
	1.4	436.400	507.600	554.500	668.600
	1.5	434.000	505.600	552.700	665.900
Ordinary	1.6	432.800	503.600	550.000	663.100
	1.7	431.600	501.600	548.300	660.300
	1.8	430.400	499.600	546.100	657.600
	1.9	429.200	497.700	543.900	654.900
	2.0	428.000	495.700	541.800	652.100
	2.1	426.800	493.800	539.600	649.400
	2.2	425.600	491.800	537.400	646.700
	2.3	424.400	489.000	535.300	644.000
	2.4	423.200	488.000	533.100	641.400
	2.5	422.000	486.100	531.000	638.700
	2.6	420.800	484.200	528.900	636.000
	2.7	419.600	482.300	526.800	633.400
	2.8	418.400	480.400	524.700	630.800
	2.9	417.200	478.500	522.600	628.100
	3.0	416.000	476.600	520.500	625.500
3.1	415.400	473.900	518.400	622.900	
3.2	414.800	471.200	516.300	620.300	
3.3	414.200	468.500	514.200	617.800	
"Lampante"	3.4	413.600	465.800	512.200	615.200
	3.5	413.000	463.100	510.100	612.600
	3.6	412.400	460.500	508.100	610.100
	3.7	411.800	457.800	506.100	607.500
	3.8	411.200	455.200	504.000	605.000
	3.9	410.600	452.600	502.000	602.500
	4.0	410.000	450.000	500.000	600.000

Annex 1 - Table 16 (Continued)

GRADE	Degree of Acidity	ONH PRODUCER PRICE				
		1983/84	1984/85	1985/86	1986/87	
Extra and Super	0.3	800.000	860.000	980.000	1,100.000	
	0.4	797.100	856.500	965.000	1,089.720	
	0.5	794.200	853.000	950.300	1,079.530	
	0.6	791.300	849.500	935.800	1,069.440	
	0.7	788.500	846.100	921.500	1,059.440	
	0.8	785.600	842.700	907.500	1,049.530	
	0.9	782.800	839.300	893.600	1,039.720	
	1.0	780.000	835.800	880.000	1,030.000	
	Fine	1.1	777.200	832.500	869.800	1,015.600
		1.2	774.400	829.100	859.600	1,001.410
1.3		771.600	825.700	849.600	987.410	
1.4		768.800	822.400	839.800	973.610	
1.5		766.000	819.000	830.000	960.000	
Ordinary	1.6	763.300	815.700	826.600	955.880	
	1.7	760.500	812.400	823.200	951.770	
	1.8	757.800	809.100	819.700	947.690	
	1.9	755.100	805.800	816.400	943.620	
	2.0	752.300	802.600	813.000	939.570	
	2.1	749.600	799.300	809.600	935.530	
	2.2	746.900	796.100	806.300	931.520	
	2.3	744.200	792.900	802.900	927.520	
	2.4	741.200	789.900	799.600	923.540	
	2.5	738.900	786.400	796.300	919.570	
	2.6	736.200	783.300	793.000	915.620	
	2.7	733.600	780.100	789.800	911.690	
	2.8	730.900	776.900	786.500	907.780	
	2.9	728.300	773.800	783.200	903.880	
3.0	725.700	770.600	780.000	900.000		
3.1	723.100	767.500	776.900	896.950		
3.2	720.500	764.400	773.900	893.920		
3.3	717.900	761.300	770.900	890.890		
"Lampante"	3.4	715.300	758.200	767.900	887.880	
	3.5	712.700	755.100	764.900	884.870	
	3.6	710.100	752.100	761.900	881.880	
	3.7	707.600	749.000	758.900	878.890	
	3.8	705.000	746.000	755.900	875.920	
	3.9	702.500	743.000	752.900	872.950	
	4.0	700.000	740.000	750.000	870.000	

Source: *Government of Tunisia, Journal Officiel de la Republique Tunisienne, various issues.*

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Annex 1 - Table 17
Producer Prices for Olive Oil in Dinars Per Ton Paid by ONH
1979/80-1987/88

QUALITY/GRADE	YEAR			
	1979/80	1980/81	1981/82	1982/83
Extra/Super	457.550	522.763	571.950	689.900
Fine	438.800	509.600	557.100	671.440
Ordinary	422.800	486.806	502.660	640.167
"Lampante"	411.800	457.857	506.071	607.557
ONH Average Producer Price	419.000	508.000	544.000	640.000

QUALITY/GRADE	YEAR			
	1983/84	1984/85	1985/86	1986/87
Extra/Super	790.938	847.863	929.213	1,064.673
Fine	771.600	825.740	849.760	987.606
Ordinary	740.333	788.228	798.211	922.052
"Lampante"	707.600	749.057	758.914	878.917
ONH Average Producer Price	737.000	777.000	855.000	976.000

Source : Calculated from ONH data.

Annex 1 - Table 18
Estimated Net Revenues to Olive Producers Selling Their
Olive Oil through ONH by Region
1983/84-1987/88

REGION	YEAR				
	1983/84	1984/85	1985/86	1986/87	1987/88
	<i>(Dinars/Metric Ton of Olive Oil Sold to ONH)</i>				
North	266.000	186.000	217.000	240.000	515.000
Central	39.000	(39.000)	(65.000)	(210.000)	57.000
South	182.000	(44.000)	(76.000)	196.000	181.000
Average	165.000	1.000	(6.000)	124.000	226.000

Source: Data supplied by Office National de l'Huile

Note: () indicate negative return.
 Calculated as average producer price from Table 17 less average production costs from Table 9.

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Annex 1 - Table 19
Estimated Long-term Financial and Economic Net Revenues in Dinars
Per Ton of Olive Oil Produced
by Region, Production System, and Type of Press System

REGION/PRODUCTION SYSTEM	FINANCIAL BUDGETS		ECONOMIC BUDGETS	
	Cost/Ton	Net Revenue/Ton	Cost/Ton	Net Revenue/Ton
NORTH				
Classic Press	2,204	(1,353)	2,427	(1,393)
Super Press 1	2,204	(1,353)	2,417	(1,383)
Super Press 2	2,204	(1,353)	2,412	(1,377)
Continuous Chain 1	2,179	(1,326)	2,380	(1,344)
Continuous Chain 2	2,179	(1,326)	2,378	(1,342)
CENTRAL				
Classic Press	4,008	(3,229)	4,628	(3,700)
Super Press	4,008	(3,229)	4,610	(3,683)
Continuous Chain	3,903	(3,122)	4,483	(3,553)
SOUTH/PURE STAND				
Classic Press	18,702	(7,870)	10,305	(9,299)
Classic Press 2	8,702	(7,859)	10,291	(9,285)
Super Press 1	8,702	(7,870)	10,299	(9,293)
Super Press	28,702	(7,870)	10,296	(9,291)
Continuous Chain	18,702	(7,869)	10,294	(9,287)
Continuous Chain 2	8,702	(7,869)	10,293	(9,285)
SFAX/ALMONDS				
Classic Press 1	3,362	(2,530)	4,230	(3,224)
Classic Press 2	3,362	(2,530)	4,225	(3,220)
Super Press 1	3,362	(2,530)	4,224	(3,219)
Super Press 2	3,362	(2,530)	4,222	(3,216)
Continuous Chain 1	3,362	(2,529)	4,220	(3,212)
Continuous Chain 2	3,362	(2,529)	4,219	(3,210)
SFAX/PURE STAND				
Classic Press 1	3,939	(3,107)	4,653	(3,647)
Classic Press 2	3,939	(3,107)	4,648	(3,642)
Super Press 1	3,939	(3,107)	4,647	(3,641)
Super Press	23,939	(3,107)	4,645	(3,639)
Continuous Chain 1	3,939	(3,107)	4,642	(3,637)
Continuous Chain 2	3,939	(3,107)	4,641	(3,635)

Source: AIRD (1987), p. 77

Notes: Original figures converted to Dinar/metric ton basis.
 () indicate negative net revenues.

Annex 1 - Table 20
Estimated Short-term Financial and Economic Net Revenues in Dinars Per Ton
of Olive Oil Produced by Region and Production System

REGION/PRODUCTION SYSTEM	FINANCIAL BUDGETS		ECONOMIC BUDGETS	
	Cost/Ton	Net Revenue/Ton	Cost/Ton	Net Revenue/Ton
North	953	(102)	997	38
Central	668	112	736	192
South/Pure Stand	1,151	(318)	1,222	(216)
Sfax/Almonds	369	463	387	619
Sfax/Pure Stand	637	196	655	351

Source: AIRD (1987), p.78

Notes: Figures converted to Dinars/ton of olive oil produced.
 () indicate negative net revenue per ton.

Annex 1 - Table 21
Allocation of Olive Oil Collected by ONH
1979/80-1986/87

YEAR	Total Oil Collected	Total Oil Exported	ONH Oil Sold in Domestic Domestic Markets	Carry-Over Stocks
1979/80	59,767	48,721	8,540	11,545
1980/81	114,590	70,635	8,214	14,051
1981/82	56,427	62,146	10,970	49,792
1982/83	22,909	36,117	14,171	33,143
1983/84	114,547	70,674	23,085	5,764
1984/85	56,537	51,022	14,657	25,552
1985/86	64,699	44,448	9,943	16,410
1986/87	70,655	56,001	9,572	26,718
8 Year Average	69,891	54,971	12,392	23,864

Source: Office National de l'Huile

Annex 1 - Table 22
Tunisian Olive Oil Exports by Destination
1979/80-1986/87

YEAR	COUNTRY					
	Italy	France	USSR	USA	Jordan	Yugoslavia
1979/80						
Quantity Exported	30,281	8,284	550	1,200	1,947	0
Percent of the Total Exports	62.1	17.0	1.3	2.4	4.0	0
1980/81						
Quantity Exported	42,633	11,639	600	1,200	512	84
Percent of the Total Exports	60.4	16.5	0.8	1.7	0.7	0.1
1981/82						
Quantity Exported	21,310	8,813	1,500	1,400	1,505	120
Percent of the Total Exports	34.3	14.2	2.4	2.3	2.4	0.2
1982/83						
Quantity Exported	23,494	7,726	0	1,200	0	225
Percent of the Total Exports	65.0	21.4	0	3.3	0	0.6
1983/84						
Quantity Exported	44,781	11,428	1,000	1,481	1,097	275
Percent of the Total Exports	63.3	16.2	1.4	2.1	1.6	0.4
1984/85						
Quantity Exported	30,466	7,068	3,000	1,444	2,477	1,032
Percent of the Total Exports	59.8	13.9	5.9	2.8	4.9	2.0
1985/86						
Quantity Exported	20,351	712	7,000	2,280	6,173	825
Percent of the Total Exports	45.8	1.6	15.7	5.1	13.9	1.9
1986/87						
Quantity Exported	42,617	1,486	7,199	2,080	32	1,860
Percent of the Total Exports	76.1	2.7	12.9	3.7	0.1	3.3
8 YEAR AVERAGE						
Quantity Exported	31,992	7,145	2,606	1,536	1,718	553
Percent of the Total Exports	58.2	13.0	4.7	2.8	3.1	1.0

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Annex 1 - Table 22 (Continued)

YEAR	COUNTRY					Total Exports
	Syria	Algeria	Libya	Norway	All Other Countries	
1979/80						
Quantity Exported	3,095	0	2,458	0	952	48,767
Percent of the Total Exports	6.3	0	5.0	0	1.9	100.0
1980/81						
Quantity Exported	1,401	0	12,003	0	635	70,635
Percent of the Total Exports	2.0	0	17.0	0	0.8	100.0
1981/82						
Quantity Exported	1,627	0	19,837	100	5,934	62,146
Percent of the Total Exports	2.6	0	31.9	0.2	9.5	100.0
1982/83						
Quantity Exported	0	0	3,146	192	134	36,117
Percent of the Total Exports	0	0	8.7	0.5	0.5	100.0
1983/84						
Quantity Exported	100	0	9,005	272	1,335	70,774
Percent of the Total Exports	0.1	0	12.7	0.4	1.8	100.0
1984/85						
Quantity Exported	400	2,971	1,691	286	86	50,921
Percent of the Total Exports	0.8	5.8	3.3	0.6	0.2	100.0
1985/86						
Quantity Exported	2,016	4,001	0	367	723	44,448
Percent of the Total Exports	4.5	9.0	0	0.8	1.7	100.0
1986/87						
Quantity Exported	0	0	0	344	382	56,000
Percent of the Total Exports	0	0	0	0.6	0.7	100.0
8 YEAR AVERAGE						
Quantity Exported	1,080	872	6,018	195	1,261	54,976
Percent of the Total Exports	2.0	1.6	10.9	0.4	2.3	100.0

Source: *Official National de l'Huile*

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**Annex 1 - Table 23
Tunisian Olive Oil Exports in Metric Tons by Grade and Destination
1982/83-1986/87**

GRADE/DESTINATION	YEAR				
	1982/83	1983/84	1984/85	1985/86	1986/87
SUPER					
Italy	—	500	950	—	3,435
France	—	735	100	—	—
Other EEC Countries	—	—	—	15	—
Other European Countries	52	—	—	—	—
EXTRA					
Italy	80	1,040	5,230	2,251	2,828
France	7,726	10,548	6,967	712	1,486
Other European Countries	140	286	313	381	358
USA	1,164	1,467	1,400	1,856	1,840
Canada	—	—	3	17	30
East Bloc Countries	25	—	—	—	—
Middle East	—	—	—	7	—
North Africa	3,146	—	—	—	—
Gulf States	16	—	—	—	89
Others	52	—	—	—	—
FINE					
Italy	—	—	1,000	—	250
France	—	100	—	—	—
Middle East	—	1,097	2,877	8,209	—
Gulf States	16	49	56	630	241
North Africa	—	—	—	1,040	—
Other Arab Countries	16	—	—	—	—
ORDINARY					
Italy	5,547	6,510	—	—	—
France	—	45	—	—	—
East Bloc Countries	200	275	1,033	825	1,860
Middle East	—	100	—	—	—
North Africa	—	—	2,971	2,001	—
Total Virgin Olive Oil Exports					
	18,180	22,752	22,900	17,944	12,417

**Annex 1 - Table 23
(Continued)**

GRADE/DESTINATION	YEAR				
	1982/83	1983/84	1984/85	1985/86	1986/87
LAMPANTE¹					
Italy	17,867	36,731	23,286	18,100	36,104
North Africa	—	1,100	—	960	—
REFINED LAMPANTE					
USA	—	—	—	400	—
USSR	—	1,000	—	7,000	7,200
PURE OLIVE OIL					
USA	36	14	44	24	240
USSR	—	—	3,000	—	—
East Bloc Countries	34	72	—	20	40
North Africa	—	9,005	1,691	—	—
Others	—	—	100	—	—
Total Refined Olive Oil Exports	17,937	47,922	28,121	26,504	43,584
Total Olive Oil Exports	36,117	70,674	51,021	44,448	56,001

Source: Office National de l'Huile

Notes: ¹ Lampante olive oil before refining is technically still virgin olive oil. Since, however, it is by definition unfit for human consumption and can only be sold after further refining, it is included in this category.

Annex 1 - Table 24
Evolution of Olive Oil Sales in Metric Tons by Quality Grade
1982/83-1986/87

QUALITY	YEAR				
	1982/83	1983/84	1984/85	1985/86	1986/87
Super	52	1,235	1,050	15	3,435
Extra	12,349	13,341	13,913	5,224	6,631
Fine	32	1,246	3,933	9,879	491
Ordinary	5,749	6,930	4,004	2,826	1,860
Virgin Olive Oil Sub-Total	18,182	22,752	22,900	17,944	12,417
"Lampante"	17,867	37,831	23,286	19,060	36,104
Refined "Lampante"	0	1,000	0	7,400	7,200
Pure Olive Oil	70	9,091	4,835	44	280
Olive Oil Sub-Total	17,937	47,922	28,121	26,504	43,584
Total Virgin and Non-Virgin Olive Oil Exports	36,119	70,674	51,021	44,448	56,001

Source: *Office National de l'Huile*

Annex 1 - Table 25
Average Prices Received Per Ton of Olive Oil Exported
by Destination and by Type of Packaging
1982/83-1986/87

DESTINATION	Type of Packaging Utilized	YEAR				
		1982/83	1983/84	1984/85	1985/86	1986/87
				<i>(Dinars)</i>		
France	Bulk/Pack	1,028	1,112	1,226	1,494	1,247
Italy	Bulk	816	869	978	1,242	1,102
Other EEC Nations	Pack	—	—	—	1,495	—
Other Nations in Europe	Bulk/Pack	—	950	1,084	1,180	1,485
USA	Bulk/Pack	1,154	1,178	1,123	1,212	1,472
Canada	Bulk	—	—	—	987	1,151
USSR	Bulk	—	1,010	1,009	1,296	1,243
Other East Bloc Nations	Bulk	1,113	1,190	1,316	1,173	1,325
Middle East Nations	Bulk/Pack	—	1,110	1,181	1,135	—
Gulf States	Bulk/Pack	—	1,171	1,914	1,159	1,337
North Africa	Bulk/Pack	1,361	1,164	1,095	975	—
Others	Bulk/Pack	1,243	2,334	1,163	2,170	1,614
Weighted Average		923	952	1,049	1,206	1,250

Source: Office National de l'Huile

Note: "Bulk" indicates shipments in container ships or in large barrels holding 200 kilograms of olive oil.
 "Pack" indicates shipments in one gallon tins or smaller. Glass bottles may also be used.

Annex 1 - Table 26
Detailed Breakdown of Exports of Tunisian Olive Oil to United States Importers
1982/83-1986/87

	IMPORTER			
	Pompelan		Pope Foods	
	Quantity (Tons)	Price (US \$)	Quantity (Tons)	Price (US \$)
1982/83				
Bulk/Extra	1,164	1,700	—	—
Bulk/Rivera	36	1,700	—	—
1983/84				
Bulk/Extra	1,450	1,520	—	—
Drums/Extra	—	—	17	1,620
Quarts/Rivera	—	—	14	1.40*
1984/85				
Bulk/Extra	1,400	1,360	—	—
Gallons/Rivera	—	—	20	4.85*
Quarts/Rivera	—	—	24	1.40*
1985/86				
Bulk/Refined "Lampante"	400	1,232*	—	—
Bulk/Extra	1,750	1,578*	—	—
Gallons/Rivera	—	—	24	4.85*
Quarts/Rivera	—	—	1	1.38*
Drums/Extra	—	—	20	1,370
1986/87				
Bulk/Extra	1,600	1,820	—	—
Bulk/Rivera	220	1,530	—	—
Gallons/Rivera	—	—	20	5.05*

	IMPORTER			
	Star Imports/Exports		Gem Packing	
	Quantity	Price	Quantity	Price
1985/86				
Gallons/Extra	5	5.00*	—	—
One Liter Bottles/Extra	1	2.10*	—	—
Drums/Extra	—	—	80	1,510
1986/87				
Gallons/Extra	32	5.25*	—	—
Drums/Extra	—	—	210	1,800

Source: Office National de l'Huile

Notes: * indicates unit price per container.

* indicates FOB price Tunis.

¹ combined shipment of 24 tons total in gallon and quart containers.

Annex 1 - Table 27
Indicative Cost Structures for Tunisian Olive Oils Exports
to United States Importers in Dinars Per Metric Ton
1986/87

COST ITEM	SHIPPING METHOD/OLIVE OIL QUALITY		
	Bulk/Extra	Bulk/Rivera	Drums/Extra
Producer Price for Olive Oil	1,064.673	1,100.000	1,064.673
Assembly Costs:			
Purchasing	3.435	3.435	3.435
ONH Transport	4.302	4.302	4.302
Finance	36.687	36.687	36.687
Administrative	22.306	22.306	22.306
Field Support	34.363	34.363	34.363
Other	15.181	15.181	15.181
SUB-TOTAL	1,180.947	1,216.274	1,180.947
Filtration Loss	11.809	12.163	11.809
SUB-TOTAL	11.809	12.163	11.809
Packaging Costs:			
Packaging Materials	0	0	82.000
Transport of Packaging Materials	0	0	0.350
Cost of Drum Filling	0	0	1.000
Oil Loss in Filling Drums	0	0	0.035
Quality Checking	0	0	0.500
Olive Oil Export Tax and Surtax	11.000	11.000	0
SUB-TOTAL	11.000	11.000	83.885
Pre-Shipping Costs:			
Customs Tax	18.130	18.839	18.130
Port Handling Charges	6.000	6.000	9.000
SUB-TOTAL	24.130	24.839	27.130
FOB TUNIS COST	1,216.886	1,264.276	1,303.771
Shipping Costs:			
Ocean Shipping to New York	58.400	58.400	105.263
Bank Charges	2.590	2.692	2.719
Broker's Commission	43.680	36.720	43.200
ONH Fee	43.680	36.720	43.200
SUB-TOTAL	148.350	134.532	194.382
CIF NEW YORK COST	1,365.236	1,398.808	1,498.153

Source: Calculated from information supplied by the Office National de l'Huile

Annex 1 - Table 28
Evolution of "Bonuses" Paid to Producers and Quality Premiums
Paid to Olive Oil Processors by ONH
1980/81-1987/88

CATEGORY	YEAR				
	1980/81	1981/82	1982/83	1983/84	1984/85
	<i>(Dinars/Kilogram of Oil Delivered)</i>				
"BONUS"	0.095	0.095	0.160	0.160	0.070
QUALITY PREMIUMS					
Super Extra (0.30)					
Sublime	--	--	--	0.050	0.065
Very Good	--	--	--	0.040	0.055
Good	--	--	--	0.030	0.050
Ordinary	--	--	--	0.020	0.040
Super Extra (0.50)					
Very Good	--	--	--	0.040	0.055
Good	--	--	--	0.030	0.050
Ordinary	--	--	--	0.020	0.040
Super Extra (0.70)					
Very Good	--	--	--	0.035	0.045
Good	--	--	--	0.025	0.040
Ordinary	--	--	--	0.015	0.030
Extra (1.00)					
Good	--	--	--	0.020	0.035
Ordinary	--	--	--	0.010	0.025
Fine (1.2)					
Good	--	--	--	0.015	0.015
Ordinary	--	--	--	0.005	0.010

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Annex 1 - Table 28 (Continued)

CATEGORY	YEAR		
	1985/86	1986/87	1987/88
	<i>(Dinars per Kilogram of Oil Delivered)</i>		
"BONUS"	0.080	0.050	—
QUALITY PREMIUMS			
Super Extra (0.30)			
Sublime	0.060	0.090	0.090
Very Good	0.045	0.070	0.070
Good	0.035	0.060	0.060
Super Extra (0.50)			
Very Good	0.030	0.060	0.060
Good	0.020	0.050	0.050
Super Extra (0.70)			
Very Good	0.020	0.050	0.050
Good	0.010	0.040	0.040
Extra (0.80)			
Good	0.005	0.035	0.035

Source: Office National de l'Huile

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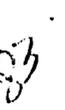
Annex 1 - Table 29
Estimated Direct Producer Share of ONH Receipts for
Tunisian Olive Oil Exported and Sold Wholesale in Local Markets
1982/83-1986/87

	YEAR				
	1982/83	1983/84	1984/85	1985/86	1986/87
Estimated Receipts from Olive Oil Exports (Millions of Dinars)	33.436	68.782	53.397	53.671	64.390
Average Export Price Received (Dinars Per Metric Ton)	923.330	951.453	1,049.449	1,206.271	1,155.562
Average Domestic Price Received (Dinars Per Metric Ton)	698.145	716.818	775.723	814.383	910.591
Weighted Average All Prices Received (Dinars Per Metric Ton)	859.875	893.456	988.348	1,134.673	1,119.805
Average Producer Price Paid by ONH (Dinars Per Metric Ton)	644.000	737.000	771.000	855.000	976.000

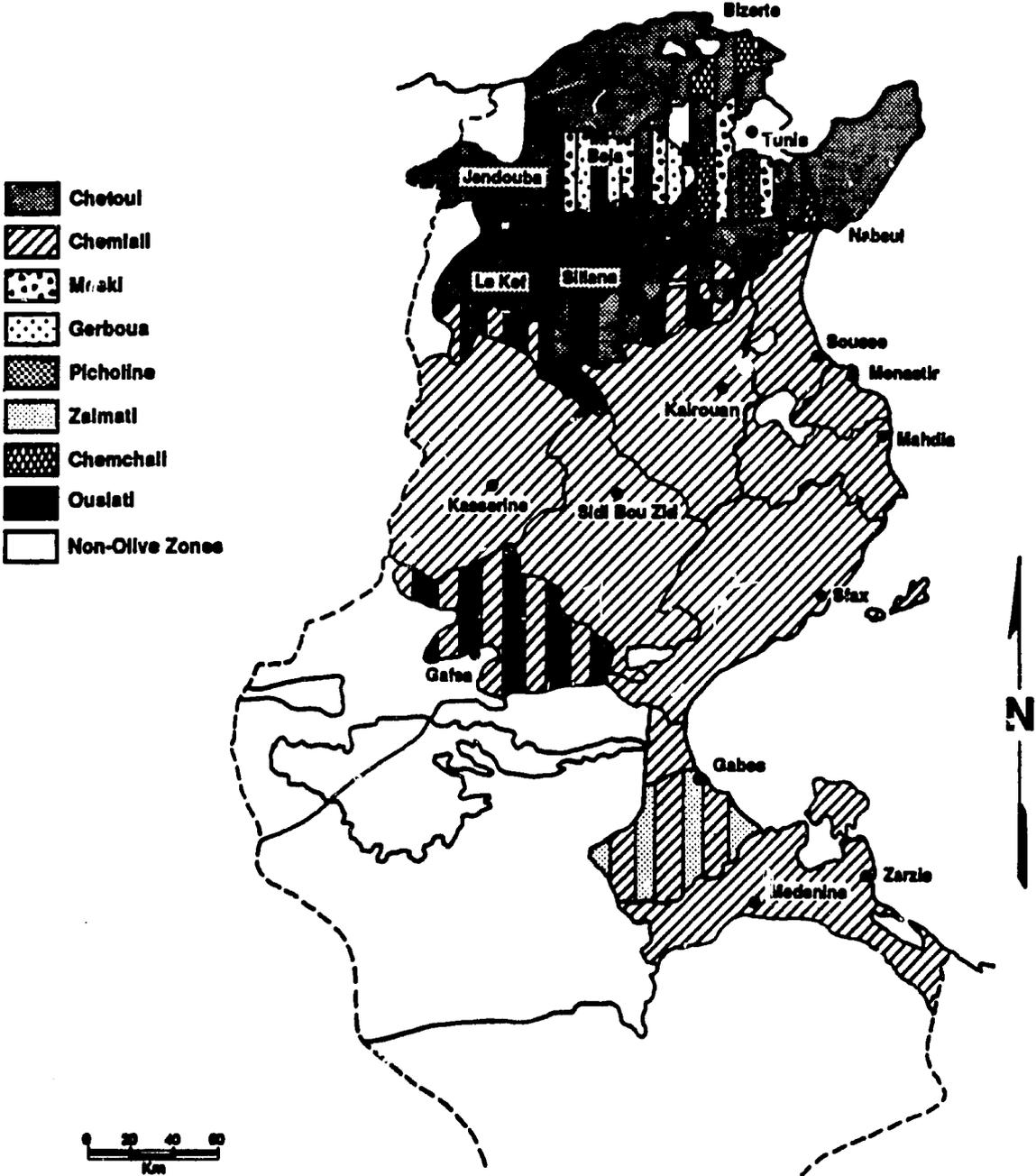
Source: Data obtained from the Office National de l'Huile

ANNEX 2

Maps And Figures

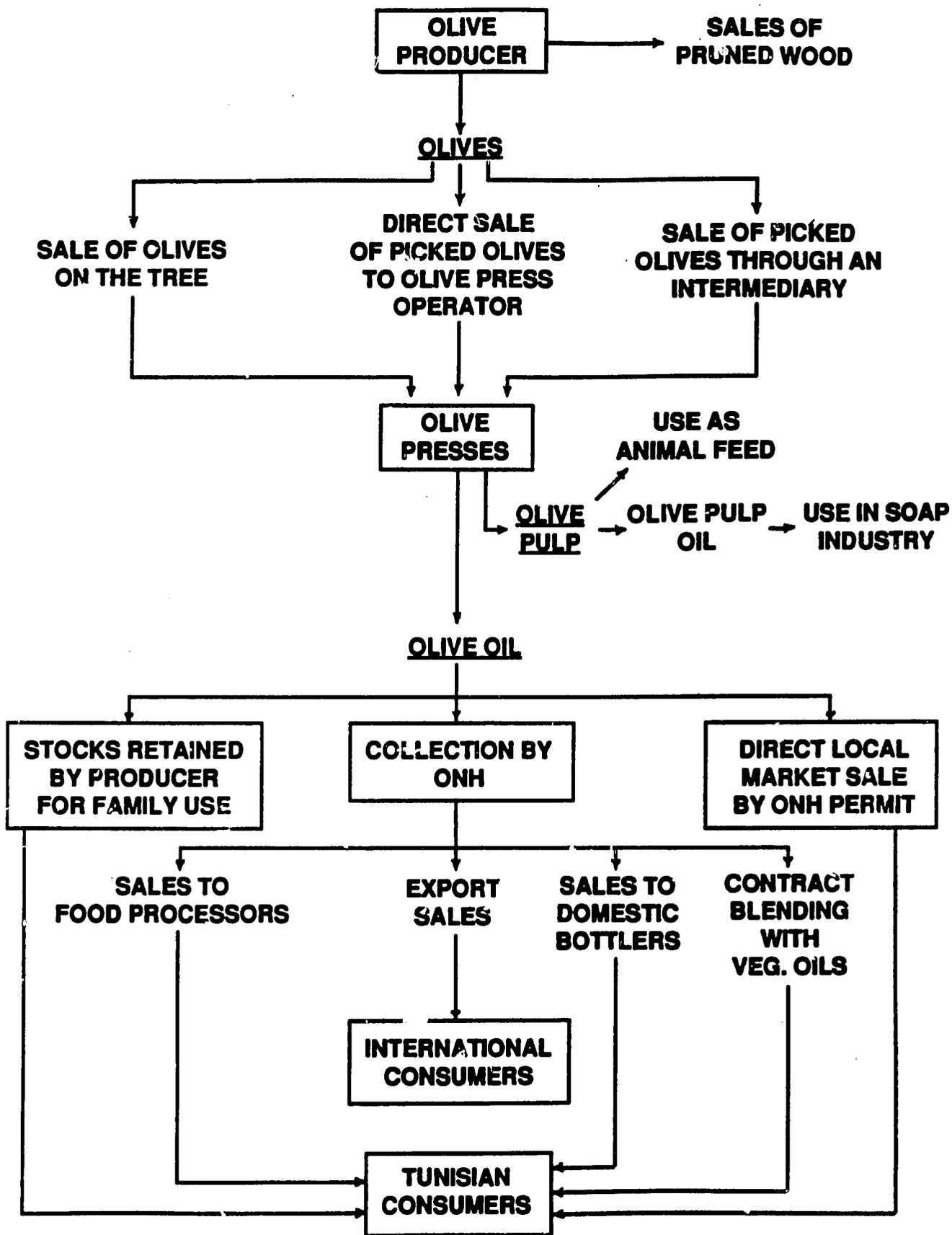


**ANNEX 2 FIGURE 1
DISTRIBUTION OF OLIVES IN TUNISIA BY VARIETY**



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**ANNEX 2 FIGURE 2
OIL OLIVE MARKETING CHANNELS IN TUNISIA**



ANNEX 3

International Olive Oil Council Trade Standards For Olive Oils And Olive-Pomace Oils

INTERNATIONAL
OLIVE OIL
COUNCIL

COI/T.15/OT no. 1/Rev. 1
19 February 1967

ENGLISH
Original: FRENCH

INTERNATIONAL TRADE STANDARD APPLYING TO
OLIVE OILS AND OLIVE-POMACE OILS

SCOPES

This standard applies to extra virgin olive oil, fine virgin olive oil, semi-fine (or ordinary) virgin olive oil, virgin olive oil lampante, refined olive oil, blends of refined olive oil and virgin olive oil, crude olive-pomace oil, refined olive-pomace oil and blends of refined olive-pomace oil and virgin olive oil.

These oils, which are traded at international level, are either intended for human consumption as they are or after refining, or they are intended for technical purposes.

2. DEFINITIONS

2.1. Olive oil is the oil obtained solely from the fruit of the olive tree (*Olea europaea sativa* Hoffm. et Link), to the exclusion of oils obtained using solvents or re-esterification processes and any mixture with oils of other kinds. In no case shall the designation "olive oil" be used to refer to olive-pomace oils.

2.1.1. Virgin olive oil is the oil obtained from the fruit of the olive tree solely by mechanical or other physical means under conditions, particularly thermal conditions, that do not lead to alterations in the oil, and which has not undergone any treatment other than washing, decantation, centrifugation and filtration.

2.1.1.1. Virgin olive oil fit for consumption as it is ^{1/} includes:

- 1) extra virgin olive oil: virgin olive oil of absolutely perfect taste and odour having a maximum acidity, in terms of oleic acid, of 1 gram per 100 grams;

^{1/} Oil which may be referred to as "natural".

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ii) fine virgin olive oil: virgin olive oil of absolutely perfect taste and odour having a maximum acidity, in terms of oleic acid, of 1.5 grams per 100 grams;

iii) semi-fine virgin olive oil (or ordinary virgin olive oil): virgin olive oil of good taste and odour having a maximum acidity, in terms of oleic acid, of 3 grams per 100 grams, with a margin of tolerance of 10% of the acidity indicated.

2.1.1.2. Virgin olive oil not fit for consumption as it is, designated virgin olive oil lampante, is an off-taste and/or off-smelling virgin olive oil or an oil with an acidity, in terms of oleic acid, of more than 3.3 grams per 100 grams. It is intended for refining or for technical purposes.

2.1.2. Refined olive oil is the olive oil obtained from virgin olive oil by refining methods which do not lead to alterations in the initial glyceridic structure.

2.1.3. Olive oil (or pure olive oil) is the oil consisting of a blend of refined olive oil and virgin olive oil fit for consumption as it is.

2.2. Olive-pomace oil is the oil obtained by treating olive pomace with solvents, to the exclusion of oils obtained by re-esterification processes and any mixture with oils of other kinds. It can be classified as follows:

2.2.1. Crude olive-pomace oil: olive-pomace oil intended for refining with a view to its use in food for human consumption or for technical purposes.

2.2.2. Refined olive-pomace oil: obtained from crude olive-pomace oil by refining methods which do not lead to alterations in the initial glyceridic structure. It is intended for human consumption either as it is or else in blends with virgin olive oil.

2.2.3. Olive-pomace oil: blend of refined olive-pomace oil and virgin olive oil fit for consumption as it is. In no case shall this blend be called "olive oil".

3. PURITY CRITERIA

The chemical identity characteristics forming the purity criteria are applicable to edible and non-edible olive and olive-pomace oils.

ES

3.1. Sterol content

(% of the sum of beta-sitosterol, campesterol and stigmasterol)

	<u>Olive oil</u>	<u>Olive-pomace oils</u>
- beta-sitosterol	> 93%	> 93%
- campesterol	< 4.0%	< 4.0%

Should a component having the same retention time as cholesterol be detected upon chromatographic analysis, its content shall not exceed 0.5% of the sterol fraction.

3.2. Fatty acid composition using gas-liquid chromatography (% w/w of methyl esters):

Oleic acid	55.0 - 83.0
Palmitic acid	7.5 - 20.0
Linoleic acid	3.5 - 21.0
Stearic acid	0.5 - 5.0
Palmitoleic acid	0.3 - 3.5
Linolenic acid	0.0 - 1.5
Myristic acid	0.0 - 0.1
Arachidic acid	max. 0.8
Behenic acid	max. 0.2
Lignoceric acid	max. 1.0
Heptadecanoic acid	max. 0.5
Heptadecenoic acid	max. 0.6
Erucic acid	} not present in discernible amounts
Lauric acid	

3.3. Saturated fatty acid content in the 2-position in the triglycerides: Maximum acceptable level being the sum of the palmitic and stearic acids:

- virgin olive oil	< 1.5%
- refined olive oil	< 1.8%
- pure olive oil	< 1.8%
- crude olive-pomace oil	< 2.2% ^m
- refined olive pomace oil	< 2.2%

^m Provisional limit pending the outcome of analyses of which the IOOC Executive Secretariat will have to be notified by Members.

	<u>Olive oils</u>	<u>Olive-pomace oils</u>
3.4. <u>Saponification value</u> (mg KOH/g oil)	184 - 196	182 - 193
3.5. <u>Unsaturation matter</u> (Using light petroleum)	≤ 15 g/kg	≤ 30 g/kg
3.6. <u>Bollier index</u>	≤ 17 ^{1/}	-
3.7. <u>Olive-residue oil test</u>	negative	-
3.8. <u>Semi-oleic acid test</u>	negative	negative

4. QUALITY CHARACTERISTICS

	Extra virgin olive oil	Fine virgin olive oil	Semi-fine virgin olive oil	Virgin olive oil lampante ^{2/}	Refined olive oil	Olive oil	Crude olive-pomace oil	Refined olive-pomace oil	Olive-pomace oil
<u>4.1. Organoleptic characteristics</u>									
- odour	absolutely perfect	absolutely perfect	good	off-smelling	acceptable	good		acceptable	acceptable
- taste	absolutely perfect	absolutely perfect	good	off-taste	acceptable	good		acceptable	acceptable
- colour	light yellow to green	light yellow to green	light yellow to green	defective	light yellow	light yellow to green		light yellow to brownish yellow	light yellow to green
- aspect at 20°C for 24 hours	limpid	limpid	limpid		limpid	limpid		limpid	limpid
<u>4.2. Free acidity</u> % m/m expressed in oleic acid	≤ 1.0	≤ 1.5	≤ 3.3	> 3.3	≤ 0.3	≤ 1.5	no limit	≤ 0.3	≤ 1.5
<u>4.3. Peroxide value</u> in milleq. peroxide oxygen per kg/oil	≤ 20	≤ 20	≤ 20	> 20	≤ 10	≤ 20	no limit	≤ 10	≤ 20
<u>4.4. Absorbency in Ultra-Violet</u> (E _{1%} ^{1cm})									
- at 270 nm	≤ 0.25	≤ 0.25	≤ 0.30 ^{1/}	no limit ^{1/}	≤ 1.10	≤ 0.90		≤ 2.00	≤ 1.70
- Δ E	≤ 0.01	≤ 0.01	≤ 0.01		≤ 0.16	≤ 0.15		≤ 0.20	≤ 0.18

- 1/ Should this index be higher than 17, the content of arachidic, behenic and lignoceric acid shall be given.
- 2/ It is not obligatory for the criteria in 4.1, 4.2 and 4.3 to be concurrent; one is sufficient.
- 3/ After passage of the sample through activated alumina, absorbency at 270 nm shall be equal to or less than 0.11.

5. FOOD ADDITIVES

5.1. Virgin olive oils and crude olive-pomace oils: none permitted.

5.2. Refined olive oil, olive oil, refined olive-pomace oil and olive-pomace oil: alpha-tocopherol permitted to restore natural tocopherol lost in the refining process.

Maximum level: 200 mg/kg of total alpha-tocopherol in the final product.

6. CONTAMINANTS

	Extra virgin olive oil	Fine virgin olive oil	Semi-fine virgin olive oil	Virgin olive oil lampante	Refined olive oil	Olive oil	Crude olive-pomace oil	Refined olive-pomace oil	Olive-pomace oil
6.1. <u>Moisture and volatile matter</u> (% m/m)	≤ 0.2	≤ 0.2	≤ 0.2	≤ 0.3	≤ 0.1	≤ 0.1	≤ 1.5	≤ 0.1	≤ 0.1
6.2. <u>Insoluble impurities</u> (% m/m) in light petroleum	≤ 0.1	≤ 0.1	≤ 0.1	≤ 0.2	≤ 0.05	≤ 0.05		≤ 0.05	≤ 0.05
6.3. <u>Soap test</u>	-	-	-	-	negative	-	-	negative	-
6.4. <u>Flash point</u>	-	-	-	-	-	-	> 120°C	-	-

7. HYGIENE

It is recommended that the products intended for human consumption covered by the provisions of this standard be prepared in accordance with the appropriate sections of the General Principles of Food Hygiene recommended by the Codex Alimentarius Commission (CAC/RCP 1 - 1969, Rev. 1).

8. PACKING

Olive oils and olive-pomace oils intended for international trade shall be packed in containers complying with the General Principles of Food Hygiene recommended by the Codex Alimentarius Commission (CAC/RCP 1 - 1969, Rev. 1).

The containers used may be:

8.1. tanks, containers, vats, which permit the transportation in bulk of olive oils and olive-pomace oils;

8.2. metal drums, in good condition, hermetically-sealed, which should be internally covered with a suitable varnish;

8.3. metal tins and cans, lithographed, new, hermetically-sealed, which should be internally covered with a suitable varnish;

8.4. demi-johns, glass bottles or bottles made of suitable macromolecular material.

9. CONTAINER FILLING TOLERANCE

The volume occupied by the contents shall, under no circumstances, be less than 90% of the capacity of the container, except in the case of tin containers with a capacity of, or less than, 1 litre in which the volume occupied shall, under no circumstances, be less than 80% of the capacity of the container; this capacity is equal to the volume of distilled water at 20°C which the container can hold when full.

10. LABELLING

In addition to sections 2, 3 7 and 8 of the Codex General Standard for the Labelling of Pre-packaged Foods (CODEX STAN 1-1985) and the guidelines^{1/} applying to food not intended for direct sale to consumers (which is to undergo industrial processing at a later stage or to be repacked for sale to consumers), the specific provisions providing the following information shall be applied:

10.1 On containers intended for direct sale to consumers or intended for distributors responsible for repackaging the product for sale to consumers

10.1.1. Name of the product

The labelling on each container shall indicate the generic name and the specific designation of the product contained, complying in every way with the relevant provisions of this standard.

^{1/} Under elaboration.

10.1.1.1. Olive oils:

- extra virgin olive oil ✓
- fine virgin olive oil ✓
- semi-fine or ordinary virgin olive oil ✓
- refined olive oil
- olive oil or pure olive oil.

10.1.1.2. Olive-pomace oils:

- refined olive-pomace oil
- olive-pomace oil.

10.1.2. Free acidity of oils:

The free acidity of oils shall be declared on the label and expressed in terms of oleic acid (percentage m/m or degrees).

10.1.3. Net contents:

The net contents shall be declared by weight or volume in the metric system ("Système International" units).

10.1.4. Name and address:

The name and address of the manufacturer, packer, distributor, importer, exporter or seller shall be declared.

10.1.5. Country of origin:

The name of the country of origin shall be declared. When the product undergoes processing or re-packing, including in small containers, in a second country, the country in which the processing was performed shall be considered the country of origin for the purposes of labelling.

10.1.6. Indications of source and appellations of origin:**10.1.6.1. Indications of source:**

The labels of virgin olive oils may indicate their source (country, region or locality) when they have been empowered to do so by their country of origin and when such virgin olive oils have been produced, packed and originate exclusively in the country, region or locality mentioned.

✓ Oil which may likewise be referred to as "natural".

The labels for blends of refined olive oil and virgin olive oil shall only indicate the source of the exporting country.

10.1.6.2. Appellations of origin

The labels of extra virgin olive oils may indicate their appellation of origin (country, region or locality) when they have been awarded one, in accordance with the terms provided under the regulations of their country of origin and when such extra virgin olive oil has been produced, packed and originated exclusively in the country, region or locality mentioned.

The labels for blends of refined olive oil and extra virgin olive oil packed and exported by the country providing the extra virgin olive oil may indicate the appellation of origin which would have been given to the extra virgin olive oil in the blend.

10.1.7. Lot identification

Each container shall be embossed or otherwise permanently marked in code or in clear to identify the producing factory and the lot.

10.1.8. Date marking and storage conditions

10.1.8.1. Date of packing

The date of packing shall be declared by the month and year in uncoded numerical sequence.

The month may be indicated by letters in those countries where such use will not confuse the consumer; if the month is December, the expression "and (stated year)" may be used as an alternative.

10.1.8.2. Date of minimum durability

In the case of pre-packaged products intended for the end consumer, the date of minimum durability (preceded by the words "best before end") shall be declared by the month and year in uncoded numerical sequence. The month may be indicated by letters in those countries where such use will not confuse the consumer; if the shelf life of the product is valid to December, the expression "and (stated year)" may be used as an alternative.

The period of durability shall not exceed 12 months after the date of packing. It may however be extended to 15 months for oils packed in metal containers.

10.1.8.3. Storage instructions

Any special conditions for storage shall be declared on the label if the validity of the date of minimum durability depends thereon.

10.2. On forwarding packs of oils intended for human consumption

In addition to the details noted under section 10.1., the following inscription shall appear:

- number and type of containers held in pack.

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10.3. On containers allowing the transportation in bulk of olive oil and olive-pomace oil

The labelling on each container shall include:

10.3.1. Name of the product

The name shall indicate the specific designation of the product contained, complying in every way with the provisions of this standard.

10.3.2. Net contents

The net contents shall be declared by weight or volume in the metric system ("Système International" units).

10.3.3. Name and address

The name and address of the manufacturer, distributor or exporter shall be declared.

10.3.4. Country of origin

The name of the exporting country shall be declared.

11. METHODS OF ANALYSIS AND SAMPLING

The methods of analysis and sampling given below are international referee methods.

Prior to the determinations for fixing the purity criteria, virgin olive oil lampante and crude olive-pomace oil shall undergo an alkaline neutralization process complying with paragraph 5 of the IUPAC method (1979, 6th edition) no. 2.210 "Determination of the Fatty Acids in the 2-position in the triglycerides".

11.1. Determination of the fatty acid composition

According to the IUPAC method (1979, 6th edition) no. 2.302 "Gas-Liquid Chromatography of Fatty Acid Methyl Esters" or to the ISO method 5508-1978.

11.2. Determination of the saponification value

According to the IUPAC method (1979, 6th edition) no. 2.202 "Determination of the Saponification Value (S.V.)" or to the ISO method 3657-1977.

11.3. Determination of the unsaponifiable matter

According to the IUPAC method (1966, 5th edition) II.D.5. (II.D.5.1. and II.D.5.2.) "Determination of the Unsaponifiable Matter - Light petroleum method".

The results are expressed in g/unsaponifiable matter per kg/oil.

11.4. Determination of the Bellior index

According to the method CAC/RH 20-1970 mentioned in point 8.7. of the Recommended International Standard for Olive Oil, Virgin and Refined, and for Refined Olive-Residue Oil, CODEX STAN 33-1981.

11.5. Olive-residue oil test

According to the method CAC/RH 22-1970 mentioned in point 8.9. of the Recommended International Standard for Olive Oil, Virgin and Refined, and for Refined Olive-Residue Oil, CODEX STAN 33-1981.

11.6. Semi-ricinoleic acid test

According to the method CAC/RH 21-1970 mentioned in point 8.8. of the Recommended International Standard for Olive Oil, Virgin and Refined, and for Refined Olive-Residue Oil, CODEX STAN 33-1981.

11.7. Determination of the sterol content

According to the IUPAC method (1979, 6th edition) no. 2.403 "Identification and Determination of Sterols by Gas-Liquid Chromatography" solely using SE 30 packing material.

11.8. Determination of the fatty acids in the 2-position in the triglycerides

According to the IUPAC method (1979, 6th edition) no. 2.210 "Determination of the Fatty Acids in the 2-position in the Triglycerides of Oils and Fats".

11.9. Determination of the organoleptic characteristics

Method being considered.

11.10. Determination of the free acidity

According to the IUPAC method (1979, 6th edition) no. 2.201 "Determination of the Acid Value (A.V.)

11.11. Determination of the peroxide value

According to the IUPAC method (1979, 6th edition) no. 2.501 "Determination of the Peroxide Value (P.V.)" or to the ISO method 3960-1977.

11.12. Determination of the absorbency in Ultra-Violet E $\frac{\%}{1 \text{ cm}}$

According to the method CAC/RM 26-1970 mentioned in point 8.15 in the Recommended International Standard for Olive Oil, Virgin and Refined, and for Refined Olive-Residue Oil, CODEX STAN 33-1981, "Determination of Specific Extinction in Ultra-Violet".

11.13. Determination of the alpha-tocopherol

According to the IUPAC method (6th edition, 1st supplement: Part 4, 1981) no. 2.404 "Identification and determination of tocopherols".

11.14. Determination of the moisture and volatile matter

According to the IUPAC method (1979, 6th edition) no. 2.601 "Determination of the Moisture and Volatile Matter" or to the ISO method 662-1980.

11.15. Determination of the insoluble impurities in light petroleum

According to the IUPAC method (1979, 6th edition) no. 2.604 "Determination of the Insoluble Impurities" or to the ISO method 663-1981.

11.16. Soap test

According to the method "Soap Test" CAC/RM 27-1970, mentioned in point 8.19 in the Recommended International Standard for Olive Oil, Virgin and Refined, and for Refined Olive-Residue Oil, CODEX STAN 33-1981.

11.17. Determination of the flash point

According to the AOCS Cc 9b-55 method, amended in 1977.

ANNEX 4

Codex Standards For Olive Oil, Virgin and Refined, and For Refined Olive-Residue Oil

**CODEX STANDARD FOR
OLIVE OIL, VIRGIN AND REFINED,
AND FOR REFINED OLIVE-RESIDUE OIL 1/
(World-wide Standard)**

1. SCOPE

This standard applies to virgin olive oil, refined olive oil and refined olive-residue oil and blends and mixtures thereof. Refined olive oil may be marketed alone or blended with virgin olive oil; refined olive-residue oil may be marketed alone or mixed with virgin olive oil.

2. DESCRIPTION

2.1 Olive oil is the oil obtained from the fruit of the olive tree (*Olea europaea* L.) without having been subjected to manipulation or any treatment not authorized by sub-sections 2.2 and 2.3 of this standard.

2.2 Virgin olive oil is the oil obtained from the fruit of the olive trees by mechanical or other physical means under conditions, particularly thermal, which do not lead to alteration of the oil. Virgin olive oil is an oil which is suitable for consumption in the natural state.

2.3 Refined olive oil is the oil obtained from virgin olive oil, the acid content and/or organoleptic characteristics of which render it unsuitable for consumption in the natural state, by means of refining methods which do not lead to alterations in the initial glyceridic structure.

2.4 Refined olive-residue oil is the oil obtained from "olive residues" by extraction by means of solvents and made edible by means of refining methods which do not lead to alteration in the initial glyceridic structure.

3. ESSENTIAL COMPOSITION AND QUALITY FACTORS 2/

1/ Formerly CAC/RS 33-1970.

2/ The limits of essential composition and quality factors of virgin olive oils show very widely spaced minimum and maximum values, since they take account of the oil characteristics of all producing countries. Characteristics and limits of physical and chemical indices and values, and of fatty acid composition for the various grades of virgin olive oils produced in each olive-growing area, determined at the various periods of each olive crop year and also after eight months' normal preservation of these oils are published yearly in each producing country's "National Olive Oil Index File".

3.1 Identity Characteristics (under normal ecological conditions)

3.1.1 Fatty acid composition (% m/m of methyl esters)

Oleic acid		56.0 - 83.0
Palmitic acid		7.5 - 20.0
Linoleic acid		3.5 - 20.0
Stearic acid		0.5 - 3.5
Palmitoleic acid		0.3 - 3.5
Linolenic acid		0.0 - 1.5
Myristic acid		0.0 - 0.05
Arachidic acid	)	minute amounts only
Behenic acid)	
Gadoleic acid)	
Lignoceric acid)	
Erucic acid	)	not present in discernible amounts
Lauric acid)	

3.1.2 Physical and Chemical Indices

3.1.2.1 Relative Density (20°C/water at 20°C)

Virgin olive oil)	0.910 - 0.916
Refined olive oil)	
Refined olive-residue oil)	

3.1.2.2 Refractive Index ($n_D^{20°C}$)

Virgin olive oil)	1.4677 - 1.4705
Refined olive oil)	
Refined olive-residue oil)	

3.1.2.3 Saponification Value (mg KOH/g oil)

Virgin olive oil)	
Refined olive oil	)	184 - 196
Refined olive-residue oil	)	182 - 193

3.1.2.4 Iodine Value (Wijs)

Virgin olive oil)	
Refined olive oil	)	75 - 94
Refined olive-residue oil	)	75 - 92

3.1.2.5 Unsaponifiable Matter (using light petroleum)

Virgin olive oil	)	not more than
Refined olive oil	)	15 g/kg <u>1/</u>
Refined olive-residue oil	)	not more than
	)	25 g/kg <u>2/</u>

3.1.2.6 Bellier Index

Virgin olive oil)	
Refined olive oil	)	not more than 17
Refined olive-residue oil	)	not applicable

1/ A characteristic feature of the unsaponifiable matter in olive oil is its content of squalene, which is higher than that of the other vegetable oils. Another distinctive feature is that its sterols are composed of practically pure beta-sitosterol.

2/ The unsaponifiable matter of olive-residue oil contains more alcoholic compounds than that of virgin or refined olive oils, and its iodine value is therefore lower than that normally noted in virgin or refined olive oils, and its melting point is higher.

3.1.2.7 Semi-siccative Oil Test

Virgin olive oil)	
Refined olive oil	)	negative
Refined olive-residue oil)	

3.1.2.8 Olive-Residue Oil Test

Virgin olive oil)	
Refined olive oil	)	negative
Refined olive-residue oil	)	not relevant

3.1.2.9 Cottonseed Oil Test

Virgin olive oil)	
Refined olive oil	)	negative
Refined olive-residue oil)	

3.1.2.10 Teaseed Oil Test

Virgin olive oil)	
Refined olive oil	)	negative
Refined olive-residue oil)	

3.1.2.11 Sesameseed Oil Tests

Virgin olive oil)	
Refined olive oil	)	negative
Refined olive-residue oil)	

3.2 Quality Characteristics

3.2.1 Colour, Odour and Taste

Virgin olive oil: Clear oil, of a yellow to green colour, with specific odour and taste, free from odours or tastes indicating alteration or pollution of the oil.

Refined olive oil: Clear oil, limpid, without sediment, of clear yellow colour, without specific odour or taste and free from odours or tastes indicating alteration or pollution of the oil.

Refined olive-residue oil: Clear oil, limpid, without sediment, of a yellow to yellow-brown colour, without specific odour or taste and free from odours or tastes indicating alteration or pollution of the oil.

Blends and Mixtures: The colour, odour and taste shall be intermediate between those of the two types blended or mixed.

3.2.2 Free Acidity

	Acidity	Acid Value
Virgin olive oil	not more than 3.3 % m/m expressed as oleic acid	not more than 6.6 mg KOH/g oil
Refined olive oil	) not more than 0.3% m/m expressed as oleic acid	) not more than 0.6 mg KOH/g oil
Refined olive-residue oil		

3.2.3 Peroxide Value

Virgin olive oil) not more than 20 milliequivalents peroxide oxygen/kg oil
Refined olive oil	
Refined olive-residue oil	
Blends and mixtures	

3.2.4 Specific Extinction in Ultra-violet ($E_{1\text{ cm}}^{1\%}$)

	$E_{1\text{ cm}}^{1\%}$ maximum at 232 nm	$E_{1\text{ cm}}^{1\%}$ maximum at 270 nm	$\Delta E_{1\text{ cm}}^{1\%}$ maximum variation at near 270 nm
Virgin olive oil	3.50	0.25	1/
Refined olive oil	-	1.10	0.16
Refined olive-residue oil	6.00	2.00	0.20
Blends of virgin and refined olive oils	-	0.90	0.15
Mixtures of virgin and refined olive-residue oils	5.50	1.70	0.18

4. FOOD ADDITIVES

	<u>Maximum level</u>
4.1 Virgin olive oil	none permitted
4.2 Refined olive oil	) alpha-tocopherol, for the purpose of restoring natural tocopherol lost in processing
Refined olive-residue oil	
Blends of virgin and refined olive oils	
Mixtures of virgin and refined olive-residue oils	
	200 mg/kg total alpha-tocopherol in the final product

1/ Oils having a specific extinction at 270 nm exceeding 0.25 may still be regarded as virgin oils if, after passage of the sample through activated alumina, their specific extinction at 270 nm is less than 0.11 (see sub-section 8.15.6).

5. CONTAMINANTS

Maximum level

5.1 Matter Volatile at 105°C

Virgin olive oil 0.2% m/m

Refined olive oil)
Refined olive-residue oil) 0.1% m/m

5.2 Insoluble Impurities

Virgin olive oil 0.1% m/m

Refined olive oil)
Refined olive-residue oil) 0.05% m/m

5.3 Soap Test

Refined olive oil)
Refined olive-residue oil) negative

Virgin olive oil)
Blends of virgin and refined) not applicable
olive oils)
Mixtures of virgin and refined)
olive-residue oils)

6. HYGIENE

It is recommended that the product covered by the provisions of this Standard be prepared in accordance with the appropriate Sections of the General Principles of Food Hygiene recommended by the Codex Alimentarius Commission (Ref. No. CAC/RCP 1-1969, Rev.1).

7. LABELLING

In addition to Sections 1,2,4 and 6 of the Codex General Standard for the Labelling of Pre-packaged Foods (Ref. No. CODEX STAN 1-1981) the following specific provisions apply:

7.1 The Name of the Food

7.1.1 All products designated as "olive oil" shall conform to the provisions of this standard for virgin olive oil or refined olive oil and shall be either virgin olive oil or a blend of virgin and refined olive oil.

7.1.2 All products designated as "virgin olive oil" shall conform to the provisions for virgin olive oil.

7.1.3 All products designated as "refined olive oil" shall conform to the provisions for refined olive oil.

7.1.4 All products designated as "refined olive-residue oil" shall conform to the provisions for refined olive-residue oil.

7.1.5 Refined olive-residue oil shall not be described as olive oil without qualification, but always as "refined olive-residue oil".

7.1.6 Mixtures of refined olive-residue oil and virgin olive oil shall be described as "refined olive-residue oil and olive oil".

7.2 Net Contents

The net contents shall be declared by volume in either the metric ("Système International" units) or avoirdupois or both systems as required by the country in which the product is sold.

7.3 Name and Address

The name and address of the manufacturer, packer, distributor, importer, exporter or vendor of the product shall be declared.

7.4 Country of Origin

7.4.1 The country of origin of the product shall be declared if its omission would mislead or deceive the consumer.

7.4.2 When the product undergoes processing in a second country which changes its nature, the country in which the processing is performed shall be considered to be the country of origin for the purposes of labelling.

7.5 Lot Identification

Each container shall be embossed or otherwise permanently marked in code or in clear to identify the producing factory and the lot.

7.6 Date Marking ^{1/}

7.6.1 The date of minimum durability of the food shall be declared in clear.

7.6.2 In addition to the date, any special conditions for the storage of the food should be indicated if the validity of the date depends thereon.

8. METHODS OF ANALYSIS AND SAMPLING

The methods of analysis and sampling described hereunder are international referee methods.

8.1 Determination of Fatty Acid Composition

(Method using gas-liquid chromatography to be developed)

8.2 Determination of Relative Density

According to the IUPAC (1954) method (IUPAC Standard Methods for the Analysis of Oils and Fats, 4th Edition, 1954, Determination of density).

Results are expressed as relative density at 20°C/water at 20°C.

8.3 Determination of Refractive Index

According to the IUPAC (1964) method (IUPAC Standard Methods for the Analysis of Oils, Fats and Soaps, 5th Edition, 1966, II. B. 2 Refractive Index).

Results are given as the refractive index relative to the sodium D-line at 20°C ($n_D^{20°C}$)

8.4 Determination of Saponification Value (I_S)

According to the IUPAC (1964) method (IUPAC Standard Methods for the Analysis of Oils, Fats and Soaps, 5th Edition, 1966, II. D. 2 Saponification Value (I_S)).

Results are expressed as the number of mg KOH/g oil.

8.5 Determination of Iodine Value (I_I)

According to the (Wijs) IUPAC (1964) method (IUPAC Standard Methods for the Analysis of Oils, Fats and Soaps, 5th Edition, 1966, II. D. 7. 1, II. D. 7. 2 and II. D. 7. 3 The Wijs Method).

^{1/} The Codex Alimentarius Commission has adopted Guidelines on Date Marking for Use by Codex Committees (CAC/Vol. VI).

Results are expressed as % m/m absorbed iodine.

8.6 Determination of Unsaponifiable Matter

According to the IUPAC (1964) light petroleum method (IUPAC Standard Methods for the Analysis of Oils, Fats and Soaps, 5th Edition, 1966, II. D. 5. 1 and II. d. 5. 2).

Results are expressed as g unsaponifiable matter/kg oil.

8.7 Determination of Bellier Index CAC/RM 20-1970

8.7.1 Definition

The Bellier index of an oil is the temperature at which precipitation of salts of the fatty acids of this oil commences, when the oil has been saponified and made into solution as described under 8.7.5 Procedure.

8.7.2 Reagents

The reagent used shall be of recognized analytical reagent quality.

8.7.2.1 Aqueous ethanolic potassium hydroxide solution. 42.5 g of pure KOH is dissolved in 72 ml of distilled water and adjusted to 500 ml with 95% v/v ethanol.

8.7.2.2 70% v/v ethanol solution (use pure ethanol or rectified spirit).

8.7.2.3 Aqueous acetic acid solution 1+2 (by volume) so adjusted that 1.5 ml exactly neutralizes (phenolphthalein indicator) 5 ml of the aqueous ethanolic potassium hydroxide solution (8.7.2.1).

8.7.3 Apparatus

8.7.3.1 220 mm x 26-27 mm test tubes

8.7.3.2 Condenser consisting of a glass tube with stopper

8.7.3.3 Thermometer graduated in 1/4° from 8 to 25°C, fixed in a stopper.

8.7.4 Preparation of Sample

To remove water, the oil is decanted and filtered through paper at a temperature slightly above the melting point of certain solid constituents which could separate from the fluid fatty matter.

8.7.5 Procedure

Place 1 ml of oil and 5 ml of the aqueous ethanolic KOH solution into a test tube. Connect to condenser and heat moderately, agitating by rotation from time to time until saponification is complete, i. e. until a perfectly clear solution is obtained. Allow to cool, disconnect condenser and add 1.5 ml of the aqueous acetic acid solution and 50 ml of the ethanol solution. Attach thermometer and homogenize. Place test tube in a beaker of water at 23-25°C. If a flocculent precipitate forms, leave standing for an hour at the same temperature and filter into a test tube. Attach thermometer to the test tube containing the clear solution. Place for a moment in a beaker of water at about 10°C less than the estimated Bellier index. Withdraw and ensure even temperature by inverting a number of times (cooling should be at the rate of about 1°C per minute). Repeat this operation until cloudiness appears. Note temperature. Allow the temperature to increase a few degrees to dissolve the precipitate. Homogenize by inverting test tube over and cool. The cooling should be slow and shaking more frequent as the temperature approaches that noted the first time.

8.7.6 Expression of Results

The Bellier index is the temperature °C at which the cloudiness reappears.

8.7.7 Repeatability

Two parallel determinations may not differ by more than 0.25°C.

8.8 Semi-siccative Oils Test CAC/RM 21-1970.

8.8.1 Principle of Method

Based on the reaction between semi-siccative (unsaturated) oils and bromine yielding substances which form an insoluble precipitate at 0°C.

8.8.2 Reagents

The reagents shall be of recognized analytical reagent quality.

8.8.2.1 Hexane. Or, if not available, light petroleum with distillation point between 40° and 60° C and bromine value less than 1, free of residues.

8.8.2.2 Bromine reagent obtained by adding drop by drop while shaking 4 ml of chemically pure bromine (the presence of chlorine prevents the reaction) into 100 ml of hexane or light petroleum, chilled to 0°C and kept in the melting ice bath until required.

8.8.3 Apparatus

8.8.3.1 Stoppered 50-ml Erlenmeyer flask.

8.8.3.2 Bath of melting ice.

8.8.4 Procedure

The oil to be tested is filtered and dried. Place 1 ml of the oil in the previously dried Erlenmeyer flask and dissolve in 10 ml of hexane. Place the stoppered Erlenmeyer flask in the melting ice bath. After 5 min add 10 ml of bromine reagent in small quantities at a time, while shaking and maintaining the temperature at 0°C. The colour of the solution must clearly indicate excess bromine. Leave the Erlenmeyer flask in the melting ice bath for one hour, after which note appearance of solution. If semi-siccative oil is present, a flocculent precipitate will form, varying in quantity according to the percentage of adulteration and the nature of the adulterating oil. The solution remains clear and transparent in the case of genuine olive oils.

8.8.5 Expression of Results

The result is expressed as positive or negative.

8.9 Olive-Residue Oil Test CAC/RM 22-1970

8.9.1 Principle of Method

Based on the temperature of precipitation of salts of the fatty acids after saponification.

3.9.2 Reagents

The reagent used shall be of recognized analytical reagent quality.

8.9.2.1 Aqueous ethanolic potassium hydroxide solution. 42.5 g of pure KOH is dissolved in 72 ml of distilled water and adjusted to 500 ml with 95% v/v ethanol.

8.9.2.2 70% v/v ethanol solution (use pure ethanol or rectified spirit).

8.9.2.3 Aqueous acetic acid solution 1:2 (by volume) so adjusted that 1.5 ml exactly neutralizes (phenolphthalein indicator) 5 ml of the aqueous ethanolic potassium hydroxide solution (8.9.2.1).

8.9.3 Apparatus

8.9.3.1 100 ml balloon-flask equipped with reflux condenser.

8.9.3.2 50 ml test tubes.

8.9.3.3 Heating arrangement to keep balloon-flask at about 80°C.

8.9.3.4 Thermometer graduated from 15° to 60°C.

8.9.4 Preparation of Sample

To remove water, the oil is decanted and filtered through paper at a temperature slightly above the melting point of certain solid constituents which could separate from the fluid fatty matter.

8.9.5 Procedure

Place about 1 g of the oil, prepared as above, into the balloon-flask. Add 5 ml of aqueous ethanol potassium hydroxide solution. Attach condenser and bring to boil holding at this temperature for 10 minutes, shaking from time to time. Allow to cool at ambient temperature. Add 1.5 ml of acetic acid solution and 50 ml of ethanol solution previously heated to 50°C. Mix by shaking, introduce thermometer; and allow to cool, noting the appearance of the solution once 45°C is reached. If a flocculent precipitate forms at a temperature above 40°C, the test is positive. Allow to cool to ambient temperature (not lower than 18°C) over at least 12 hours. Observe solution again; the formation of a flocculent precipitate, floating in the middle of the liquid also indicates that the test is positive. A cloudiness not forming into flakes does not indicate the presence of olive-residue oil.

8.9.6 Expression of Results

The result is expressed as positive or negative.

8.9.6.1 NOTE: On rare occasions some virgin olive oils, obtained by second pressing, yield a positive result.

8.10 Cottonseed Oil Test CAC/RM 23-1970

8.10.1 Principle of Method

Based on red colour developed by cyclo-propenoic acids under the operating conditions in the presence of sulphur.

8.10.2 Reagents

The reagents used shall be of recognized analytical quality.

8.10.2.1 Sulphur reagent: Mix equal volumes of amyl alcohol and a solution of 1 g of sulphur in 100 ml of carbon disulphide.

8.10.3 Apparatus

8.10.3.1 250 mm x 25 mm test tubes.

8.10.3.2 Water bath with constant temperature control

8.10.3.3 Heating apparatus to keep the test tubes at 110°-120°C.

8.10.4 Procedure

Place approximately 10 ml of the oil under examination into a test tube, add the same volume of sulphur reagent; shake and keep in water bath at 70°-80°C, shaking until the carbon disulphide has completely evaporated (generally 5 min. are enough), which is confirmed by the appearance of slight fuming above the liquid. Transfer the test tube to the heating apparatus and keep at 110°-120°C for 2 hours. A red, or pink colour indicates the presence of cottonseed oil. However, the appearance of an orange colour must not be interpreted as being proof of the presence of cottonseed oil.

8.10.5 Expression of Results

The result is expressed as positive or negative.

8.10.5.1 NOTE: The heating of the cottonseed oil to temperature above 170° brings about a progressive destruction of the cyclopropenoic acids responsible for the coloration. This destruction is practically complete at 200°C.

8.11 Teaseed Oil Test CAC/RM 24-1970

8.11.1 Principle of Method

Based on Fitelescu (modified Lieberman-Burchard) test, i. e. red colour developed by acetic anhydride in the presence of sulphuric acid in chloroform solution of the oil.

8.11.2 Reagents

The reagents used shall be of recognized analytical quality.

8.11.2.1 Chloroform

8.11.2.2 Concentrated sulphuric acid ($d = 1.84$)

8.11.2.3 Acetic anhydride

8.11.2.4 Diethyl oxide

8.11.3 Apparatus

8.11.3.1 150 mm x 15 mm test tubes

8.11.3.2 2 ml pipette, graduated in tenths

8.11.3.3 Dropper so calibrated that 7 drops of oil weigh approximately 0.22 g

8.11.3.4 Water bath at 5°C

8.11.4 Procedure

Using the graduated pipette, place 0.8 ml of acetic anhydride, 1.5 ml of chloroform and 0.2 ml of sulphuric acid in a test tube. Cool to 5°C, then add approximately 0.22 g of oil. If cloudiness appears, add acetic anhydride drop by drop with shaking until the solution becomes clear. Keep at 5°C for 5 minutes. Add 10 ml of diethyl oxide previously cooled to 5°C. Stopper the test tube and mix immediately by inverting it twice. Return the test tube to the bath at 5°C and observe the colour. After about one minute a red colour will appear if tea oil is present.

8.11.5 Expression of Results

The result is expressed as positive or negative.

8.11.5.1 NOTE: A pink colour shall be regarded as negative, since some olive oils yield this colour.

8.12 Sesameseed Oil Tests CAC/RM 25-1970

8.12.1 Principle of Method

Based on the detection of sesamoline, a glycoside, and sesamine, a complex cyclic ether, which are present in small amounts in sesameseed oil.

8.12.2 Detection of Sesamoline

8.12.2.1 Reagents

The reagents used shall be of recognized analytical quality.

8.12.2.1.1 Concentrated hydrochloric acid ($d = 1.18$),

8.12.2.1.2 Solution of 2% v/v freshly distilled furfural in 95% v/v ethanol.

8.12.2.2 Apparatus

8.12.2.2.1 Graduated 50-ml stoppered test tube.

8.12.2.3 Procedure

Place 10 ml of the oil and 10 ml of conc. hydrochloric acid in the graduated test tube. Stopper and shake vigorously for 30 seconds. Allow to stand. Add 0.5 ml of the solution of furfural. Stopper and shake again. Allow to stand until decantation. If the lower layer does not turn red, the test is negative. If a red coloration appears, add 10 ml of water and shake gently and allow the liquid to settle. If the coloration disappears, the test is negative. If the coloration remains, the test is positive. Refined sesame oils do not always give a positive reaction by this method.

8.12.2.4 Expression of Results

The result is expressed as positive or negative.

8.12.3 Detection of Sesamine

8.12.3.1 Reagents

The reagents used shall be of recognized analytical quality.

8.12.3.1.1 Concentrated sulphuric acid ($d = 1.84$).

8.12.3.1.2 Solution of freshly distilled furfural in acetic anhydride, 0.35/ml v/v.

8.12.3.2 Apparatus

8.12.3.2.1 25-ml, stoppered graduated test tube.

8.12.3.2.2 Decanting beaker approximately 50-ml.

8.12.3.2.3 Flat-bottomed porcelain dish approximately 60 mm in diameter.

8.12.3.3 Procedure

Place 10-ml of the oil and 5 ml of the solution of furfural in the test tube. Stopper and shake vigorously for approximately one minute. Pour the mixture into the decanting beaker and allow to settle. Transfer a portion of the deposit into the dish and add 6 or 7 drops of sulphuric acid. Mix by shaking the dish gently. The test is positive if a greenish-blue colour appears. Sesame oils, even when refined, give a positive reaction.

8.13.3.4 Expression of Results

The result is expressed as positive or negative.

8.13 Determination of Free Acidity

According to the IUPAC (1964) method (IUPAC Standard Methods for the Analysis of Oils, Fats and Soaps, 5th Edition, 1966, II. D. 1 Acidity - Acid Value (I_A)).

Results are expressed as % m/m oleic acid and/or as the number of mg KOH required to neutralize 1 g oil.

8.14 Determination of Peroxide Value (I_P)

According to the IUPAC (1964) method (IUPAC Standard Methods for the Analysis of Oils, Fats and Soaps, 5th Edition, 1966, II. D. 13 Peroxide Value).

Results are expressed as milliequivalents active oxygen/kg oil.

8.15 Determination of Specific Extinction

in Ultra-Violet ($E_{1\text{ cm}}^{1\%}$)

CAC/RM 26-1970

8.15.1 Principle of Method

The degree of oxidation of olive oil is reflected by its specific extinctions at 232 and 270 nm. In fact, virgin olive oil, of good quality and correctly stored, contains very few products of oxidation; these, mainly of peroxidic nature, have a maximum absorption at approximately 232 nm. The values of:

$E_{1\text{ cm}}^{1\%}$, at 232 and 270 nm, in such olive oils are below the maximum provided for in the standard. On the other hand, when the oil is treated with decolorizing agent (absorbant earth) during the refining process, conjugated trienoic compounds are formed. Those compounds have a maximum absorption situated at approximately 270 nm; this means that refined oils have higher values of $E_{1\text{ cm}}^{1\%}$ at 270 nm.

NOTE: Measurement of specific extinction in ultra-violet is essentially a measurement of the state of alteration of the oil. It is not specifically a measurement of the refining. In some particular cases, abnormally altered virgin oils can show spectral characteristics close to those of refined oils.

8.15.2 Reagents

8.15.2.1 Spectrophotometrically pure cyclohexane: Minimum transmittance at 220 nm: 40% and minimum transmittance at 250 nm: 95% by comparison with distilled water.

8.15.2.2 Basic alumina of known grade

Basic alumina of Brockmann grade I (0% H_2O) is obtained by heating for 3 hours at 380-400°C basic alumina (chromatographic quality) of particle size 30 μ to 130 μ (mean 80 μ). To 100 g of this product add 5 ml of distilled water to produce basic alumina of Brockmann grade close to IV.

NOTE: Method used to check the activity index of the alumina

Place 30 g of the basic alumina (as obtained above) in a chromatographic column, 450 mm long and 35 mm diameter; through this column, pass, under the conditions laid down in the method, a mixture of 95% virgin olive oil, having a specific extinction coefficient below 0.18 at 270 nm, and of 5% arachis oil previously treated, during the refining process, with decolorizing agent (absorbent earth) and having a specific extinction coefficient equal to or above 4 at 270 nm. If this mixture shows a specific extinction coefficient greater than 0.11, the activity of the alumina is acceptable. Should the elution of conjugated trienes not have taken place using this alumina, an alumina at a higher level of hydration should be used after verifying that it agrees with the preceding test.

8.15.3 Apparatus

8.15.3.1 Ultra-violet spectrophotometer for measurements between 210 and 300 nm.

8.15.3.2 Quartz cells of 1 cm thickness.

8.15.3.3 50-ml and 500-ml volumetric flasks.

8.15.3.4 Chromatographic column, 450 mm long and 35 mm diameter.

8.15.3.5 Adjustment of Spectrophotometer: Dissolve 0.2 g of dry potassium chromate in exactly 1 litre of a 0.05 N solution of potassium hydroxide. Place 25 ml exactly measured, of this solution in a 500-ml flask and bring up to 500 ml mark with the 0.05 N solution of potassium hydroxide. Determine the optical density of this latter solution by comparison with the 0.05 N solution of potassium hydroxide as a reference solution, in a 1 cm cell. This, at 275 nm should be 0.200 ± 0.005 .

8.15.4 Procedure

If the oil is not completely clear at ambient temperature, filter before attempting measurements. Place approximately 0.5 g, weighed accurately, of the oil in the 50-ml flask. Add the cyclohexane up to the mark and shake. Fill a cell with this solution and measure the optical density using the cyclohexane as reference solution. Make determinations at 232 and 270 nm.

Determine, in the region of 270 nm, the wavelength of maximum absorption λ_m and determine the optical density at λ_m , $\lambda_m - 4 \text{ nm}$ and $\lambda_m + 4 \text{ nm}$.

8.15.5 Calculation and Expression of Results

8.15.5.1 Calculation of Specific Extinction at 232 and 270 nm

$$E_{1 \text{ cm}}^{1\% \lambda} = \frac{A \lambda}{c \cdot l}$$

where

$$E_{1 \text{ cm}}^{1\% \lambda} = \text{specific extinction at wavelength } \lambda \text{ nm}$$

$$A \lambda = \text{optical density at wavelength } \lambda \text{ nm}$$

$$c = \text{concentration of the test solution in g/100 ml}$$

$$l = \text{thickness of the cell in cm}$$

NOTE: If the optical density read is less than 0.2, re-measure with a more concentrated solution. If it is more than 0.8, re-measure with a weaker solution.

8.15.5.2 Calculation of the variation of the specific extinction at the wavelength of maximum absorption near 270 nm

$$\Delta E_{1 \text{ cm}}^{1\% \lambda} = E \lambda_m - \frac{(E \lambda_m - 4) + (E \lambda_m + 4)}{2}$$

where $\Delta E_{1 \text{ cm}}^{1\% \lambda}$ = variation of specific extinction at λ_m

$$E \lambda_m = \text{specific extinction at the wavelength of maximum absorption near 270 nm}$$

$$E \lambda_m - 4 \text{ and } E \lambda_m + 4 = \text{specific extinctions at wavelengths of } \lambda_m \text{ plus or minus 4 nm}$$

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8.15.6 Additional procedure for determination of the specific extinction after passage through alumina

Place 30 g of basic alumina as described in 8.15.2.2 in a chromatography column approximately 450 mm long and 35 mm in diameter, furnished with a draining tube of about 10 mm diameter. Pack the alumina mechanically by repeatedly tapping the column, held vertically, on a wooden surface. Place in the column thus prepared 100 ml of a solution of 10% oil in hexane. Collect the drainings and evaporate the solvent in a vacuum at less than 25°C. Using the oil so obtained, immediately determine the specific extinction at 270 nm, as previously described.

8.16 Determination of Alpha-Tocopherol

According to the FAO/WHO Codex Alimentarius Method (Recommended International Standard for Margarine CAC/RS 32-1969, Section 9.6 Determination of Vitamin E (Tocopherols) Content, CAC/RM 18-1969)(*).

Results are expressed as mg alpha-tocopherol/kg oil.

8.17 Determination of Matter Volatile at 105°C

According to the IUPAC (1964) method (IUPAC Standard Methods for the Analysis of Oils, Fats and Soaps, 5th Edition, 1966, II. C. 1.1 Moisture and Volatile Matter).

Results are expressed as % m/m.

8.18 Determination of Insoluble Impurities

According to the IUPAC (1964) method (IUPAC Standard Methods for the Analysis of Oils, Fats and Soaps, 5th Edition, 1966, II. C. 2 Impurities).

Results are expressed as % m/m.

8.19 Soap Test CAC/RM 27-1970

8.19.1 Principle of Method

Detection of alkalinity using bromophenol blue as indicator.

(*) Might be replaced by the IUPAC method when results of collaborative testing are available.

8.19.2 Reagents

8.19.2.1 Solution of 0.1% of bromophenol blue in 96% v/v ethanol.

8.19.2.2 Freshly distilled acetone, 2% v/v water content.

A few drops of the solution of bromophenol blue should give a yellow to yellow-green colour to the acetone with 2% water.

8.19.3 Apparatus

8.19.3.1 150 mm x 15 mm test tube.

8.19.4 Procedure

Place 10 ml of the acetone and 1 drop of the bromophenol blue solution in a test tube. The solution should have a yellow colour. If not, rinse the test tube with acetone until the blue colour disappears. Place 10 g of the oil in the test tube, stopper with a clean stopper, shake and allow to settle. The presence of blue colour in the upper acetonic layer indicates the presence of soap.

8.19.5 Expression of Results

The result is expressed as positive or negative.

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APPENDIX I

EXTRACT FROM THE
INTERNATIONAL OLIVE OIL AGREEMENT 1963

Annex A

Designation and definitions of olive oil
for international trade

1. Virgin olive oils (Note: The expression "Pure virgin olive oil" may also be used): Olive oils produced by mechanical processes and free from any admixture of other types of oils or oils extracted in a different manner, classified as follows:

(a) Extra: Olive oil of absolutely perfect flavour, having a maximum acidity - i. e., oleic acid content - of 1 gramme per 100 grammes.

(b) Fine: Olive oil with the same characteristics as extra, except that its maximum acidity - i. e., oleic acid content - is 1.5 grammes per 100 grammes.

(c) Ordinary: (Note: the expression "semi-fine" may also be used as the equivalent of or instead of "ordinary"): Olive oil of good flavour having a maximum acidity - i. e., oleic acid content - of 3 grammes per 100 grammes, with a margin of tolerance of 10 per cent with respect to the indicated acidity.

(d) Lampante (lamp oil): (1)

2. Refined olive oils (Note: the expression "pure refined olive oil" may also be used): Obtained by refining virgin olive oil.

3. Pure olive oils: Consisting of a blend of virgin olive oil and refined olive oil. Mixed oils may also be classified as types, the characteristics of which are determined by mutual agreement between buyers and sellers.

4. Olive-residue oils: Oils obtained by treating olive residues with solvents.

(1) Not applicable to the Codex standard.

5. Refined olive-residue oils: Oils obtained by refining the oils mentioned in paragraph 4 and intended for food use. (Note: Blends of refined olive-residue oil and virgin olive oil habitually destined for domestic consumption in certain producing countries are called "refined olive-residue oil and olive oil". These blends shall not, under any circumstances, be termed simply "olive oil").

6. Olive-residue oils for technical use: (1)

(1) Not applicable to the Codex standard.

ANNEX 5

Report Part A Terms Of Reference

Terms Of Reference

Olive Oil Export Commodity Study

I. Introduction

As part of its on-going agricultural sector structural adjustment program, the Government of Tunisia has given priority to the promotion of agricultural exports. This effort will only be effective if Tunisian exporters can maintain and increase the competitiveness of their products in their traditional markets and exploit new market opportunities, particularly in North America. It will be necessary, therefore, to understand the essential factors determining the competitiveness of Tunisian agricultural commodities entering world markets and to assess the key constraints affecting the availability, quality and export costs for these products. Effective strategies for releasing these constraints need to be developed and existing market advantages exploited, enhanced and consolidated.

This study is one of five export commodities analyses to be conducted in 1988/1989 under the GOT/AID Agricultural Policy Implementation Project. The commodities to be covered by these analyses are olive oil, wines, citrus, dates and nuts, and marine products. Each study will be composed of a Part A and a Part B. Each Part A sub-study will deal with analysis of the key factors affecting the exportability of the Tunisian agricultural commodity - i.e. its competitiveness in export markets FOB Tunis. Each companion Part B will investigate the requirements of importers in key markets and the prospects for increasing Tunisian exports. Finally, the results of the Part A and B studies will be used to develop strategic marketing recommendations for Tunisian agents involved exporting the agricultural commodities being studied.

In the particular case of olive oil, the study approach will be to assess how to maintain Tunisia's traditional market share in existing European markets while finding new strategies to penetrate or expand non-traditional markets, particularly in North America.

The terms of reference for the olive oil export study is presented in the sections below. The Part A sub-study deals with the analysis of conditions in Tunisia which affect olive oil competitiveness and the Part B sub-study concerns itself with the receptiveness of potential importers to the available commodity.

Part A Sub-Study Olive Oil Competitiveness Analysis

I. General Description of the Part A Study

The objective of the Part A commodity competitiveness sub-study is to present a clear and concise description of the key factors affecting the exportability of Tunisian olive oil to world markets.

To accomplish this objective, the Part A study team will review the history of the competitive performance of Tunisian olive oil as an export commodity in its traditional markets and determine the key factors affecting the level of this performance. The study will analyze Tunisian production of olives and trace domestic olive oil through the different stages of its processing and preparation for export. At each stage, the team will examine export performance and the factors affecting processing efficiencies and suitability with respect to available quantities, qualities and prices of the Tunisian products.

II. The Terms of Reference as Described In Official Documents

The Abt Associates' prime contract contains a one paragraph description of what is required of this study on page 10.

The AID Project Paper contains no scope of work for this study beyond the one paragraph description included in the prime contract.

The World Bank report on the Agricultural Structural Adjustment Loan Program - i.e. Report P-4368-TUN, Volume II - of 3 September 1986 contains a three page scope of work for an Export Promotion Study.

The Abt Associates' Response to the AID Request for Proposals dated 7 August 1987 contains a two page description of our approach.

Relevant sections of the three documents are appended to this Terms of Reference as Attachment A.

III. The Objectives of the Overall Study with Specific Questions

The ultimate objective of the overall olive oil export study is a set of concrete recommendations directed toward increasing the export competitiveness of Tunisian olive oil. The results of the competitiveness study - Part A - together with its companion export marketing study - Part B - will be used to present a detailed export marketing plan which will be both realistic and cost effective.

In order to arrive at these recommendations, a logical process must be followed of findings, conclusions and recommendations. The following sub-sections deal with the topics to be analyzed by the study team.

A. Factual Information to be Gathered

1. Identify and describe for Tunisia the different stages in domestic olive oil production, processing and export marketing.
2. Identify the key factors determining the quality of domestic olive oil for export and causing any variations in quality.
3. Assess the timing and consistency of olive oil availability for export.
4. Assess the process of handling and packaging of the domestic olive oils for export and identify any local trademarks or brand name products.
5. Identify the most important existing markets for Tunisian olive oil, the quantities presently exported to each market, and, as available, the prices and quality conditions demanded in those markets.
6. Identify, from existing sources, the different costs involved in domestic olive oil production and processing as well as any constraints experienced at each stage of export marketing.
7. From this information, evaluate the export position of the Tunisian olive oil products and identify their comparative advantages, if they exist, and key constraints on their competitive position.

B. Conclusions Required

1. Assess whether or not the financial costs of production in growing and processing olives in Tunisia constitute a handicap affecting the competitiveness of olive oil for export.
2. Assess whether or not the quality of the olive oil produced constitutes a handicap or an advantage in present export markets.
3. Assess the technologies currently being used in Tunisia for the processing of olives and refining of olive oil and their impact on the quality of the export products.
4. Analyze the Tunisian system of commercialization and marketing of olive oil and assess the degree of market information available to the National Office for Edible Oils regarding world markets and export distribution channels.
5. For Tunisian processors and refiners, evaluate marketing performance and any innovations in overcoming their marketing difficulties with respect to adaptation of their products' quality and packaging, market information, publicity and promotion.
6. In a general manner, assess the effects of government policies and interventions on the competitiveness of Tunisian olive oil with particular respect to the monopoly of the National Office for Edible Oils and the involvement of parastatal enterprises in export marketing.

C. Recommendations to be Made as a Result of the Overall Study

1. Propose, as appropriate, recommendations for enhancing existing competitive advantages of domestic olive oil, if they exist, and for correcting factors reducing competitiveness in export markets.
2. Indicate the implications of these actions for the following actors/agencies in the olive oil marketing chain:
 - The Government of Tunisia
 - The National Office for Edible Oils (ONH)
 - Domestic Olive Oil Processors and Exporters
 - Olive producers.
3. Sketch out a strategic action plan of practical measures for implementing the proposed recommendations with details, insofar as possible, of the plan, timing and responsibilities for implementation.

IV. Methodology to be Employed

The following general methodology will be employed by the study team in Tunisia.

1. A document search and review will be done by the entire study team to profit from previous studies, including case studies of agro-industrial companies done by the Graduate Institute for Management; the Abbot/Rassas study for Abt Associates; and others as available. A critical synthesis of these studies will enable their findings and recommendations to be used as inputs for this Part A study and to define what additional information needs to be collected.
2. Study findings will also be based upon interviews in Tunisia with key persons in government, at the National Office for Edible Oils (ONH), and with farmers, olive oil processors, and exporters.
3. Collection and study of published statistics for Tunisia on the production, transformation and commercialization of olive oil, with particular attention to existing information on the structure of costs, will be reviewed by the team.
4. Tunisian team members will conduct, as feasible, case studies of a number of selected, representative Tunisian producers of olive oil, as well as of olive growers.

V. Key Agencies to be Contacted in Tunisia

The key agencies to be contacted in Tunisia are:

- The National Office for Edible Oils (ONH)
 - The Olive Institute in Sfax
 - The Chamber of Commerce of Olive Oil Producers.
 - Olive Growers and Olive Oil Processors.
-

Attachment A

I. Description of The Study as per The ABT Associates Prime Contract, Page 10

" - Competitiveness of Tunisian Agricultural Commodities

ASAP emphasizes the promotion of certain agricultural commodities in Tunisia for either import substitution or export. For these key commodities, it will be necessary to closely monitor the changes in their domestic cost structures vis-a-vis the border prices, and measure their comparative advantages. This information will allow decisions to be made on the economic feasibility of increasing exports of domestic production of certain commodities for either export or displacement of current Tunisian imports. The evaluations of product competitiveness will entail complete reviews of the existing cost structures for agricultural products from the farm-level through marketing and processing margins to the point of final sale. Examples of key commodities to be evaluated periodically are hard wheat, soft wheat, barley, vegetables with export potential, beef, poultry, milk and olive oil. For certain commodities with export potential - i.e. olive oil, wines, dates and nuts - the competitiveness studies will be directly linked to follow-up development of export marketing strategies."

II. Description of Agricultural Export Promotion Study in the World Bank Agricultural Sector Adjustment Loan (ASAL) Document - P-4368-TUN, Volume II - Dated 3 September 1986, Pages 410-412

"A. Agricultural Export Promotion Study

Objective

To provide the basis for a community and market specific export development strategy for agricultural products through 1990.

Purpose and Scope

The purpose of the study would be threefold:

- (a) to analyse and judge the effectiveness of export efforts since 1975, with particular emphasis on olive oil, wine, dates, marine products, citrus and winter vegetables. This analysis should include a detailed review of actions, procedures, cost and overall operational adequacy, including business acumen of the institutions, entities and private interest involved;
- (b) to determine Tunisian agricultural comparative advantages, and non-economic disadvantages, with respect to (i) production and (ii) market access. This analysis should be made for the main, currently exported, products as well as for prospective export products identified as part of this export promotion work. Existing or potentially threatening bottlenecks, both in production and in trade, should be analyzed. Structural changes, expected in the medium term taken into account;

suggestions for further macro-economic adjustments which could stimulate export performance should be made; and

- (c) to prepare a coherent strategy for Tunisia's agriculture sector, based on (i) realistic expectations of its potential; (ii) a nationally supported effort at market penetration or at least at market maintenance, particularly in the EEC, and including full use of Tunisia's rights and protections under the GATT; (iii) maximum usage of private sector agility and commercial aggressiveness; and (iv) on selected investments in promising export oriented ventures, including in working capital for the importation of inputs. The strategy would distinguish between different products and be market specific.

Approach

The study approach requires a profound understanding, analysis and judgement of the dynamics of Tunisia's agricultural trade, including perhaps most importantly, such intangibles as operational effectiveness, commercial aggressiveness, business acumen and politically motivated actions, both in Tunisia and with its trading partners. Hence the strategy to be developed should be rooted in the reality of Tunisia's agricultural past trade situation and prospects in new markets.

In-country work can be initiated with a study of the results of the SOGREAH work currently underway, followed by detailed analysis of such institutions as CEPEX, the Groupements Interprofessionnelles, the Offices de l'Hulle et du Vin, and others, as well as private exporters. In this context, it is imperative that the cooperation of these institutions be secured prior to the commencement of the study. The substantive part of the work, generating the basis for understanding and judgement, will be a series of in-depth interviews with senior personnel of the institutions and entities concerned.

It is expected that work outside of Tunisia will be guided by the topical expertise of those undertaking the study and guidance from Tunisian counterparts in the potential new markets to be explored. Usual information sources on trade patterns, market access, and access conditions, including competition, should be used. International traders and commission agents should be interviewed; main conventional marketing centers, such as the Bourse des Primeurs in Marseille, and potential but unexplored ones should be visited. Of particular importance is an assessment of the extent of interest in contractual relations between major current or future traders and Tunisian growers, including guidance on the possibilities of foreign investments in Tunisia's agricultural production should be explored.

Professional Responsibility

It should be emphasized that this work can be undertaken only by those individuals who have personal experience with agricultural production, trade and development at senior levels, both in the private and in the public sector. The study can be done effectively, by those who command respect at the senior decision-making level of management, i.e. by those who have a demonstrated and proven ability to develop and lead profitable international trade.

Cost and Duration

With full-time dedication of two or three senior professionals, supported by one data gathering and analysis assistant, the entire effort up to the stage of report prioritization after discussing a draft with the Government and private exporters should not take more than eleven months of professional time. Preference may be given to those teams who are willing

to make part of their remuneration contingent upon trade generated directly through their efforts."

III. Description of The Study from the ABT Associates' Proposal of 7 August 1987, Pages 47-48

"5.2.3 Competitiveness of Tunisia Agriculture

The GOT/World Bank Agricultural Sector Adjustment Program (ASAP) and APIP strongly emphasize the promotion of certain agricultural commodities in Tunisia for export. Similarly, some import-substituting crops have benefited from generous government measures. For these key commodities, it will be necessary to monitor in depth changes in domestic cost structures, as induced by Tunisian government policy reforms, as compared with their border prices. Provision of this information will allow decisions to be made on the financial and economic wisdom of attempting to increase domestic production of these commodities for export and/or displacement of current Tunisian agricultural imports.

The evaluations of commodity competitiveness will entail detailed reviews of the existing cost structures throughout the marketing chain from the farm-level through crop marketing and processing to the point of final sale or export from Tunisia. Commodities will be selected for detailed cost studies based in part upon the findings in the initial 1987 Domestic Resource Cost study and in part on government priorities in export promotion and import substitution. Examples of key commodities thought to have import substitution or export potential are:

1. For import substitution: hard wheat, bread wheat, beef, poultry, and milk;
2. For export promotion: olive oil, wine, citrus, dates, other specialty fruits and nuts; and winter vegetables.

For the five commodities shown to have the greatest potential for export promotion, the competitiveness studies will be directly linked to follow-on development of export marketing strategies.

At present, competitiveness studies are planned at five times during APIP with the specific commodities to be studied chosen by the GOT and USAID. Each study is expected to require two person-months of external technical assistance and complementary inputs of Tunisian expertise, as appropriate, from DPSAE, government parastatal organizations, or the private sector. According to the project paper, two studies will be implemented in 1988, two in 1989, and one in 1990."

ANNEX 6
Report Bibliography

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**AGRICULTURAL POLICY IMPLEMENTATION PROJECT
EXPORT COMMODITY STUDY**

**Part B
Olive Oil Export Marketing Analysis**

**January 1989
FINAL REPORT**

Preface

This Part B study of Tunisian export marketing of olive oil in Tunisia was requested by the Government of Tunisia (GOT), in the context of its on-going economic structural adjustment program for the agricultural sector. The research was funded through the Tunisia Agricultural Policy Implementation Project (APIP) -- Project No. 664-0343 -- which is jointly sponsored and funded by the GOT Ministry of Agriculture (MOA) and the United States Agency for International Development (USAID). The prime technical assistance contractor for this project is Abt Associates, Inc. of Washington, D.C. and Cambridge, Massachusetts. Sub-contractors for the project include the University of Wisconsin, Madison, Wisconsin; the Institut Supérieur de Gestion (ISG), Tunis, Tunisia; and Ithaca International Limited, Ithaca, New York.

The Part B Export Marketing Report on olive oil was researched and written during the period from April to October 1988 by a team of nine agricultural specialists from Ithaca International Limited of Ithaca, New York. These specialists were:

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The team's research efforts in Tunisia were greatly facilitated by the support assistance provided by several graduate student assistants at Cornell University and contract secretarial and technical staff. The director and staff of the Tunisian Office National de l'Huile/National Office for Edible Oils (ONH) provided us with invaluable insights into the current situation in the olive oil sub-sector in Tunisia. Finally, team members conducted numerous interviews in the field and by telephone with olive oil producers, importers and other specialists in the United States and Canada. All of these interviewees added new perspectives and information for this final report.

Upon completion of the draft final report, the text and tables were professionally reviewed and critiqued separately by Dr. Max Brunk, Professor-Emeritus of Agricultural Marketing at Cornell University; Dr. Gary W. Williams, Professor and Coordinator of the Texas Agricultural Market Research and Development Center at Texas A&M University; and Drs. Roger Montgomery and Mark Newman of Abt Associates, Inc.. To the maximum extent possible, their comments and suggested revisions were incorporated into the final report.

The team wishes to thank all the specialists for their sincere efforts in helping us to understand current marketing conditions in the North American and Tunisian markets and for their assistance in improving the content of this final report.

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LIST OF ACRONYMS

CBI	Caribbean Basin Initiative
C.V.	Coefficient of Variation
CIF	Cost, Insurance and Freight
EC	European Community
GOT	Government of Tunisia
GSP	General System of Preferences
MOA	Ministry of Agriculture
OECD	Organization for Economic Cooperation and Development
ONH	Office National de l'Huile (National Office for Edible Oils)
US	United States of America

MAIN REPORT

Part B Study Olive Oil Export Marketing Analysis*

*The Terms of Reference for this study are contained in Annex J.

I. World Market Conditions

A. Production

In the twelve year period from 1975 to 1986, world olive oil production averaged 1,797 thousand metric tons. Annex A Table 1 presents annual world olive oil production for the 1975/1986 period. In two years, 1975 and 1982, world production exceeded two million tons. World production has been highly variable from year to year, particularly prior to 1983. In four of the seven years between 1975 and 1982, production changed by more than 20 percent from the previous year. In three of these years, 1976, 1981 and 1982, world production was particularly volatile, rising or falling by more than 400 thousand tons from the previous year's production.

In recent years, world production has stabilized and exhibited less variability. In the four-year period 1983/86, production remained in the 1,700 to 2,000 thousand metric ton range, averaging about 1,850 thousand tons. In none of these four years did production change by more than 8.7 percent from the previous year.

Annex B Figure 1 shows how major producing countries contributed to total world output of olive oil in the 1981/86 period. Italy was the leading producer with 32 percent of world production. Spain is next in importance with 27 percent. It is interesting to note that, with the recent inclusion of Spain and Portugal, European Community (EC) countries now account for about 75 percent of world production. Turkey and Tunisia are now the leading non-EC producers -- each contributing about 6.3 percent to world production.

Annex B Figure 2 shows how producer shares of world production have changed over time. Although Italy and Spain have consistently remained the world's largest producers in recent years, no major producer exhibits either a clear upward or downward trend in proportion of world production. Tunisian production accounted for 9.3 percent of world production in 1975 and reached a low of 2.8 percent in 1982. In 1983 and 1986, Tunisian output accounted for 8 and 7 percent, respectively, of world production, but there is no apparent trend towards an increased share.

Annex B Figure 2, combined with data presented in Annex A Table 10, provides information useful in assessing the sources of variability in world olive oil production. Turkey exhibits the greatest percentage volatility with a 62 percent coefficient of variation (C.V.) over the 1980/1986 period. Spain and Italy have C.V.s of 36 and 31 percent, respectively. Tunisian output is by far the least volatile of any major producer. Its C.V. is only 16.1 percent. Off-setting production trends among the producing countries dampen the year to year variability in world production. The C.V. for world production is only 14.4 percent.

In physical terms, Italy and Spain contributed most to the volatility of world olive oil production in the 1980/1986 period. During this period, the average annual variability in production for each of these countries was approximately 282 thousand metric tons. Over the 1983/1986 time period, Spain's production has been exceptionally erratic with year to year production variation averaging 305 thousand tons. This production variability has added greatly to the recent uncertainty of EC imports.

B. Exports

Annex A Table 2 presents world exports for selected years from 1970 to 1986. Between 1980 and 1986, world olive oil exports averaged 362 thousand tons. The decade of the 1980s may be conveniently separated into two periods, divided by the dramatic increase in world exports in 1983. In the three years from 1980 through 1982, exports were very stable, averaging 261 thousand tons. In the four-year period 1983 through 1986, world exports averaged 438 thousand tons. In the more recent period, exports were not only considerably higher but they were also more erratic -- ranging from a low of 357 thousand tons in 1984 to a high of 505 thousand tons in 1985. Despite this volatility, a definite upward trend in world olive oil exports is apparent.

Typically, Spain is the world's leading exporter of olive oil, although Greece captured first place honors in 1982, 1983 and 1984. Between 1980 and 1986 Spanish exports averaged 109 thousand tons while Greek exports were 71 thousand tons. Italian exports more than doubled in the 1980/1986 period, rising from about 29 thousand tons in 1980 to over 80 thousand tons in 1984, 1985 and 1986. Tunisia's 1980/1986 exports averaged 55 thousand metric tons, making it the fourth leading exporting country in the world.

As was the case with production, Spain's exports are extremely volatile. Between 1980 and 1986, variations in Spanish exports accounted for approximately 77 percent of the total variability of world exports. Annex B Figure 3 provides a graphical look at how the exports of individual countries varied between 1980/1986. Exports of many nations, especially Spain, are highly variable. Annex A Table 2 shows descriptive statistics of olive oil exports, including measures of export variability. The C.V.s of annual exports are: Spain 76 percent, Greece 75 percent, Turkey 65 percent, and Italy 40 percent. As in the case of olive oil production, Tunisian exports are remarkably stable. Her C.V. for the 1980/1986 period was 29 percent.

Analysis of export statistics reveals that between 1975 and 1986 there was a dramatic change in the world olive oil market. At the beginning of this period, exports accounted for only 9.3 percent of total world production. Over 90 percent of all olive oil was consumed in the countries where it was produced. At the present time, 27 percent of all olive oil produced moves in international trade. Prices, production decisions and marketing strategies of major olive oil producing nations are becoming increasingly tied to the world market. Of all major producing countries, Italy and Greece are least tied to the world market. Between 1980 and 1986 Italy exported 11.1 percent and Greece 25 percent of their production.

Tunisia is the country most strongly integrated into the world market. Between 1980 to 1986, 50 percent of Tunisia's estimated production was exported. In Tunisia, the Office National de l'Huile (ONH) exercises direct control over olive oil exports, and considerable influence over producer prices and quantities of olive oil available for domestic markets. The ONH purchases a significant percentage of domestic olive oil production. This oil is then allocated to three possible end uses. It can be exported, it can be sold in domestic markets, or it can be stored. Annex A Table 3 presents Tunisian production, collections by the ONH, and exports.

ONH collections in the 1980/1986 period ranged from 40 percent of production in 1982 to a high of 80 percent of production in 1980. The ONH purchases more in absolute terms, and a higher percentage of production in years when the oil production is large. In general,

exports are high in years of large production and collection. Over the 1980 to 1986 period, stocks averaged 27 thousand tons.

It would appear that ONH has considerable control over the domestic consumption and export of olive oil. Even though Tunisia has in recent years exported approximately 50 percent of its olive oil production, this percentage could be increased. Expanded exports could occur as a result of two scenarios. ONH could import a larger quantity of low-cost oil for blending with domestic olive oil for local consumption. This would allow per capita domestic consumption of "total oil" to remain constant while increasing olive oil exports. Manipulation of this sort involves careful monitoring of domestic production, domestic olive oil prices and the cost of imported substitute oils. Given the erratic nature of domestic production, considerable skill would be required to engage in useful arbitrage which would allow a significant expansion of olive oil exports given this scenario. The domestic price and the tastes and preferences of Tunisian citizens would also have to be weighed against the desire for increased foreign exchange earnings.

Alternatively, domestic per capita oil consumption could be allowed to decline, thus releasing additional supplies for export. The most likely policy tool to accomplish this result would be a significant increase in the domestic olive oil price. Some knowledge of the price elasticity of demand for olive oil in Tunisia would be required to predict the resultant decline in domestic consumption and increased availability of oil for export. This alternative would however involve considerable sacrifice on the part of the Tunisian population and would also be likely to decrease the amount of oil sold by producers to ONH.

In addition to the possibility of increasing the volume of exports of olive oil, there may be good opportunities to increase foreign exchange earnings by altering export destinations. If the EC market quota is reduced and Tunisia is forced to find new market opportunities, the North American market may present significant opportunities. The fact that Tunisian exports are relatively constant provides a distinct advantage when establishing new world markets. If the US and Canadian market are to be penetrated, it is imperative that the quantity and quality of oil promised be delivered. The US and Canadian markets can not be considered a residual destination for olive oil not exported to traditional customers in the EC.

C. Imports

Trends in world imports of olive oil, of course, mirror those characterizing world exports, at least in the aggregate. World imports have trended generally upward in recent years, increasing by 43 percent--from 363 thousand to 518 thousand metric tons--between 1980 and 1986 (Annex A Table 4). This upward trend has not been uniform. There were 28 percent and 14 percent decreases in world imports from previous years' levels in 1981 and 1984, respectively.

Both the level and variability of world imports are directly attributable to trends characterizing major importing countries. Italy has remained the world's largest olive oil importer over the entire 1970/1986 period, accounting for 52 percent of world imports in 1970, and 51 percent as late as 1985. Some of Italy's imports, including imports from Tunisia, are for re-export. Despite Italy's preeminent position as an importer, Italian imports have experienced the highest degree of variability of all major importers over the 1980/1986 period. Annex B Figure 4 and Annex A Table 12 present descriptive data concerning international olive oil purchases by leading importing nations. Over the 1980 to 1986 period, Italian

imports amounted to 42 percent of all olive oil traded in the world market. Italy's coefficient of variation was a high 47.3 percent, with average year to year variability in Italian exports amounting to about 76 thousand tons.

Annex A Table 4 and Annex B Figure 4 also show the extent to which the world olive oil import market, aside from Italian imports, is fragmented. In terms of share of the world market or volatility of imports, no nation compares to Italy. In 1981, Libya imported 21 percent of olive oil traded in the international market. This is the only time any nation, other than Italy, has purchased more than 20 percent of all olive oil traded.

In the last three years (1984/1986), the US was the only nation other than Italy importing more than 10 percent of all traded olive oil. Both France and Libya, whose shares of world imports had exceeded that of the US in years prior to 1984, exhibited substantially lower import market shares (in the 6 to 7 percent range) from 1984 to 1986. In terms of variability, the C.V.s for all other major importers lie well below that of Italy: France - 38 percent; Libya - 33 percent, the US - 27 percent. This can be seen visually in Annex B Figure 4.

Annex A Tables 13 and 14 present trade matrices for the years 1981 and 1986. Each of these matrices show exports from major producing countries and imports by country of destination. Of particular significance to Tunisia is the change in the relative importance of various markets over the past several years. In the early 1980s, Tunisia's exports moved primarily to Italy, France, and Libya. By 1986, the USSR, Japan, Norway and the Eastern European countries had strongly increased their share of the Tunisian market.

The US olive oil import market was characterized by relatively stagnant growth over the decade of the 1970s, but has experienced significant and steady growth in the 1980s. Annex A Table 5 presents data concerning imports of olive oil by the United States. Total US imports fluctuated between 21,600 and 30,550 metric tons between 1970 and 1980 with no discernable trend. Since 1980, there has been a sharp upward trend in US olive oil imports. In 1980, US imports were 25,500 metric tons. By 1986, they had more than doubled, reaching a level of 52,200 metric tons. This 104 percent increase over six years averages a healthy 17.4 percent annually. It should be noted, though, that due to strong increases in total world imports, the US import market share was only 10.1 percent of the world olive oil market in 1986, virtually the same as in 1980. As indicated above, the US has represented a highly stable import market; its C.V. measuring import variability was the lowest of all major importers over the 1980-86 period. The US market, then, has been one characterized by steady and consistent growth.

Annex A Table 5 and Annex B Figure 5 also show trends in the origins of US imports in recent years. Two countries, Italy and Spain, have accounted for 85 to 95 percent of US olive oil imports since the early 1970s. Over time, Spain has been displaced by Italy as the major source of US imports. Spain's market share has fallen from 60 percent in 1970 to 34 percent in 1980 and 20 percent in 1986. US imports from Italy exhibit an opposite trend. Italy supplied 30 percent of US olive oil in 1970; however, that share had increased to 67 percent by 1986. These developments have occurred even as Italy has increased its position as a substantial net importer of olive oil. This is the result of Italy becoming a major transhipper of olive oil. Olive oil imported by the US and Canada may well have been produced in Spain, Tunisia or Greece (see Annex A, Table 14). However, final processing and packaging may have been completed in Italy, and Italy thus appears as the country of export origin.

Of the remaining significant suppliers of olive oil consumed in the U.S., Tunisia is the largest, exporting between 1,200 and 1,450 tons annually to the US in the 1980's. As a

proportion of total US imports, however, Tunisia's share is small, ranging between 2.5 and 4.7 percent in the 1980's. Tunisia has represented a relatively stable source of US olive oil imports. Between 1980 and 1986, Tunisia has been the most stable supplier of US olive oil. This is manifest by an annual C.V. of only 8.5 percent.

Canadian olive oil imports have been characterized by cyclical behavior in the 1970s and 1980s (Annex A Table 6). From a level of just over 2,100 metric tons in 1970, Canadian imports rose to nearly 5,700 tons in 1976 before declining to about 2,800 tons in 1982. Since then, imports rose to nearly 5,000 tons in 1985, falling again in 1986 to just over 4,100 tons. Up to 1984, Spain and the EC were the major suppliers of olive oil to Canada. With the integration of Spain into the EC, the Community now supplies nearly all (97 percent in 1986) of Canada's import requirements. Tunisia exported only 17 metric tons of olive oil to Canada in 1986. This small amount is nonetheless the highest level yet recorded.

The material presented in the preceding analysis does not address the important issue of price as a determinant of either olive oil consumption or the potential level of olive oil imports by the US and Canada. It would be extremely useful to develop a predictive model which links import levels to the world price and retail prices in the two nations. Unfortunately, this has proved to be an impossible task. The only way that this could be accomplished would be through the use of the price approximations derived by determining the unit values resulting from dividing total value by quantity of imports for selected markets. It is felt that results based on unit values determined in this manner would be largely meaningless.

The quantity of olive oil imported into the US and Canada is determined as a result of negotiations between a small number of importers and representatives of exporting countries. Obtaining realistic prices by grade given this oligopolistic framework is impossible. Oils of different qualities are imported and blended in many different ways and prices are quoted for a myriad of grades and standards. Separate price series are reported by at least four agencies and are inconsistent in terms of grade, value and time specification for which they apply. It is felt that the analysis of demand for imported olive oil based on existing price information would lead to spurious results and conclusions which would be tentative at best and could likely be inaccurate.

D. Consumption

US per capita consumption of edible (salad and cooking) oils has increased gradually over the 1970/1986 period (Annex A Table 7). Between 1970 and 1972, consumption averaged 15.9 pounds (7.2 kilograms) per capita. By 1984/1986, per capita consumption averaged 22.3 pounds (10.1 kilograms)--an increase of 40 percent. Total US edible oil consumption increased 78 percent over the same period, from 3.15 billion pounds (1,432 thousand metric tons) in 1970 to 5.62 billion pounds (2,555 thousand metric tons) in 1985.

Olive oil constitutes only a small part of US edible oil consumption. Olive oil accounted for somewhat less than 2 percent of edible oil demand over the entire 1970/1986 period. On a per capita basis, olive oil consumption has increased sharply in the US. From an average level of 0.31 pounds (0.14 kilograms) per capita in 1970/1972, consumption rose 35 percent to 0.42 pounds (0.19 kilograms) per capita in 1984/1986. This yields an average growth rate of approximately 2.5 percent annually. Total US olive oil consumption increased over 83 percent from 1970 to 1986.

Canadian consumption of salad oils has evidenced a similar trend to the US (Annex A Table 8). Consumption increased gradually over the 1970/1984 period from a level of 5.78 pounds (2.63 kilograms) per capita in 1970 to 9.72 pounds (4.4 kilograms) in 1984. This represented a 68 percent increase. Over the same period, per capita olive oil consumption increased at a similar rate, nearly doubling from 0.22 pounds (0.1 kilograms) per capita in 1970 to 0.43 pounds (0.2 kilograms) in 1984, before declining to 0.36 pounds (0.16 kilograms) in 1986. Average consumption levels of olive oil in Canada in 1984-1986 (0.41 pounds--or 0.19 kilograms--per capita) were virtually identical to average levels in the US (.42 pounds per capita). Although Canadian levels started from a lower base in the early 1970s, growth since then has been somewhat stronger in Canada.

With increasing emphasis on health in North America, olive oil may be in a particularly good position to capture a larger share of the consumer edible oil market. First, consumers have increasingly switched from polysaturated animal fats to increased consumption of vegetable oils. The 1986 per capita consumption of animal fats is only about 63 percent of the 1970 level. It would now appear that olive oil may be in the unique position of capturing a larger share of the vegetable oil market as a result of health oriented consumer demand. Olive oil is a monounsaturated fatty acid which has the desirable properties of lowering low density lipoproteins (bad cholesterol), while raising or not lowering high density lipoprotein (good cholesterol) levels. These properties are not found in any other readily available vegetable oil.

E. Trade Restrictions

Annex A Table 9 summarizes the major trade restrictions on imports of olive oil by the US and Canada and Tunisia's largest trading partner, the EC. The US has a general tariff on olive oil imports of \$0.038 cents per pound on olive oil in containers less than 40 pounds (18.2 kilograms) and \$0.026 per pound for oil in containers greater than 40 pounds (a higher tariff is applicable to imports from communist countries). The general tariff is waived, however, for three categories of countries: those included in the generalized system of preferences (G.S.P.), those included in the Caribbean Basin Initiative (C.B.I.) and a selected additional group of developing countries. Tunisia falls in the first group of countries eligible under the G.S.P., and thus has duty-free access to the US olive oil market. Canada imposes no tariffs or other trade restrictions on olive oil imports.

EC trade restrictions on olive oil imports are complicated, largely due to the existence of a system of intervention prices, production aids, variable levies, and import quotas designed to support returns to domestic producers. The EC olive oil import policy can perhaps best be summarized by quoting from a recent OECD study:

"A producer target price is fixed at a level deemed desirable to provide a fair income for producers and to maintain the volume of community production. By contrast, the representative market price is fixed to allow the normal disposal of oil produced, having regard to the prices of competing products; a ratio of between 2 and 2.5 to 1 between olive oil and seed oil is generally considered to ensure the disposal of the olive oil. The intervention price is set lower than the target price to allow for the cost of transport to the intervention centers and is the price at which the intervention agencies must buy all quantities of olive oil of a given quality offered to them. Lastly, a threshold price is fixed for olive oil imported from non-member countries so that the selling price of the imported produce is at the level of the representative market price when crossing the EEC frontier.

A variable levy is charged on imports from outside the Community. These levies which match the difference between c.i.f. import prices and the threshold prices bring world supply prices up to the target prices, taking account of internal transport costs". (OECD, "National Policies and Agricultural Trade", OECD, Paris, France, September 1987, pp. 80-83)

Lastly, agreements on voluntary restraint with non-Member countries limit imports to the EC. Currently (and through 1991), Tunisia is limited to an export ceiling of 46,000 metric tons of olive oil to the EC. Examining current levels of the various intervention prices listed above might help clarify the relationships among them. However, these prices are not available to the authors at this time.

Clearly, if the current system of domestic support and import control mechanisms is continued, the integration of Spain--in addition to recent entrant Greece--into the EC poses a direct threat to a non-Member exporter like Tunisia. As long as target and intervention prices are maintained at higher than world market levels, domestic oil production will be higher (and consumption lower) than would otherwise occur. As domestic production approaches internal consumption requirements and the political constraints to lowering support levels remain operative, non-Member exporters, such as Tunisia, may be in an increasingly precarious position in the EEC market.

II. The North American Market

A. Introduction

The North American olive oil market is in the midst of a number of fundamental changes in demand and supply/pricing arrangements. The relatively stable market of the recent past, made up largely of gallon sales to first and second generation immigrants from the Mediterranean basin, is rapidly eroding. Replacing these consumers is a new, more broadly-based group of "upscale", health-conscious olive oil users. At the same time, the Government of Spain is making a concerted push into the North American market using both advertising and aggressive pricing to challenge the traditional dominance of Italy in this market. As a result of these changes, the food sector is paying closer attention to olive oil and printed information is becoming more commonplace. Yet, to date, information on olive oil marketing is very limited.

Due both to the dynamic market environment and the paucity of published information on olive oil sales in North America, it was necessary to go to primary sources (importers and distributors) for information on the structure and operation of this market. During May through July 1988 a total of 32 contacts were made in North America, which can be summarized as follows:

US:	Total contacts	23
	Personal interviews	11
	Telephone interviews	12
CANADA:	Total contacts	9
	Personal interviews	4
	Telephone interviews	5

Drs. William Lesser and Enrique Figueroa of the Department of Agricultural Economics at Cornell University and Mr. Mohamed Rouissi of the Office National de l'Huile conducted these interviews. A synopsis of the personal interviews, including a list of interview participants, is included in Annex C. These interviews included three current direct purchasers of Tunisian olive oil, including its major customer, Pompeian, Inc.

The information collected from these contacts, augmented by the available published information (Annex D), was combined with the investigators' knowledge of North American food marketing systems and strategies in the preparation of the market information and targeted strategies presented below.

B. The United States Olive Oil Market

1. Market Volume and Trends

Olive oil import data show a doubling of volume over 1980/1986 (Annex A Tables 5 and 6). Domestic retail disappearance data, a somewhat different data set, show a near-doubling of

sales in a four year period, 1983/1987 (Hall, Annex D). During this period, the prominence of Italy as the major exporter was challenged but remained dominant.

According to knowledgeable industry observers, the increases in sales are largely coming from non-traditional consumers. These appear to be health-conscious young professionals with significant disposable income and a hobby interest in gourmet cooking (Luchetti, Annex D). These market appraisals are made largely by inference as there is no known survey of olive oil consumers in the US

Industry personnel point to the increasing popularity of smaller container sizes, with the one-quarter liter bottle (250 ml.) now the most popular, as evidence of the shifting market. Traditional consumers tend to favor gallon-sized containers. This new market is seen as potentially very large and another doubling of sales volume in three to five years is expected by many. Despite this, olive oil presently accounts for only 10 percent of domestic edible oil consumption in dollar sales and much less in volume terms (Hall, Annex D and Annex A Table 7).

The recent entry of Spain, with financial backing from the government, as a major player in the US retail market is upsetting the price structure. Spanish oil, widely recognized for its consistent quality, is being priced at 40 to 60 percent below branded Italian oils. This pricing strategy is too recent for industry personnel to have a clear perception of impacts on sales. In general, the traditional American consumer associates olive oil as coming from Italy and is seen as reluctant (but not adverse) to accepting products from other sources. Price competition among olive oil brands shifts market shares between importers within the olive oil category but does not affect other oil products significantly. Thus the aggressive pricing of Spanish oils can attract customers traditionally buying Italian olive oil. The price spread between olive oil and alternative salad and cooking oils, including soybean oil, the volume leader, however, remains so large that even major reductions in olive oil prices are not expected to cause substitution of olive oil for other culinary oils. If shifts do occur, they are more likely to be based on factors related to changing lifestyles and health considerations rather than price factors. Many knowledgeable industry participants feel the relatively strong flavor of olive oil is one factor limiting greater substitution in traditional North American uses of salad oils. Observers are nonetheless hopeful that falling olive oil prices, combined with drought-induced rises in soybean oil prices, will cause some further experimentation with olive oil.

There are no domestic data on the distribution of consumption across the US. Observers do recognize the Northeast as being the traditional base, followed by the west coast, especially California. Other centers of consumption are Chicago and Miami, both traditional immigrant centers. Consumption in the the Middle West and Great Plains States is considered to be very low.

2. Product Type and Container Size

Olive oil enters the US market as approximately 80 percent pre-packaged products and 20 percent bulk shipments. This export mix appears to be an exporters' response to the EC CAP packaging subsidy and the ongoing decline in the practice of mixing olive oil with other oils for sale in North America.

Available US import data treat oils from olives as a single product so it is not possible to determine specifically the shares of virgin, pure and olive pumace oils entering the US. It is nonetheless widely recognized that pure olive oil is by far the leading product sold in

domestic markets. According to the industry participants interviewed, virgin olive oils are too expensive and possibly too strongly flavored for the US market. Indeed, the most rapidly growing product is "light" olive oil -- a product which currently falls outside either of two international codes for trade standards (Sullivan, Annex D). Nielsen retail market data (Annex G) provide some statistical support for the assertion that pure olive oil is the dominant-selling product in North America.

In the absence of specific data, trade personnel interviewed estimate the retail share of US sales at between 70 and 80 percent of total imports, with the bulk of the remaining stock going to institutional outlets (particularly restaurants). Only a very small share (less than 5 percent) is believed to be used in mixing with other vegetable oils, and/or for preparation of other food and non-food products. Container sizes for olive oils range from two ounce to one American gallon. The five most common are :

250 Milliliters
500 Milliliters
750 Milliliters
1 Liter
1 American Gallon

or their approximate ounce equivalents. The leading container size in terms of units sold and the number of stores carrying the product is 8 ounces (approximately 250 milliliters). The one gallon container overall accounts for a large percent of total volume of oil sales (Annex G).

3. Market Structure and Channels of Distribution

The most pertinent available lists identify 32 major companies handling olive oil in the US market (Annex E). A more complete list, Annex F, has a total of 91 entries. Some of the latter are small firms, while others are subsidiaries or branches of companies listed in Annex E and hence represent an over-counting of actual firm numbers. Some known importing companies, on the other hand, are missing from both lists. Of particular relevance to Tunisia, for example, are the facts that Pompeian Inc. of Baltimore, Maryland and Gem Packing Corporation of Brooklyn, New York are mentioned in both lists, whereas the Pope brand of the Purex Corporation of Orsdel, New Jersey and Star Imports/Exports of Dallas, Texas are mentioned in neither list. All four firms were identified by ONH as importers of Tunisian olive oils.

The listed and known firms can be conveniently identified as filling one or more of the following roles:

- US subsidiary of foreign firm (eg., Bertolli USA).
- US firm importing and distributing under its own label (eg., Pompeian, Inc., Tee Pee Olives, Purex Corporation)
- Brokers and agents (eg., Apple Food Sales Co., Gem Packing Corporation)

Agents and firms with branded products are directly involved in the importation and distribution of olive oils. Distribution is typically done by maintaining stocks in regional public (space for rent) warehouses. Regional food brokerage firms are responsible for making sales calls, collecting orders, and billing. A separate set of food brokers have responsibility for approaching firms which supply the institutional (restaurants, hospitals, etc.) market.

Oil brokers typically act as the local sales representative for exporters. They are largely involved with bulk products.

At the retail level, the sales of products are highly concentrated. The leading three brands -- i.e. Bertolli, Berio and Pompeian -- have an aggregate 70 percent market share of olive oil by volume and an even higher proportion of dollar sales. The remainder of the retail market is made up of a large number of other brands, each with a small (2-3%) or minuscule (below 1%) share of the market (Annex G).

The few US growers and processors of olives for oil are presented in Annex H. These firms, which are all located in Southern California, produce very small volumes of olive oil relative to Tunisia's production. Very little of the available US olive oil is sold as oil. Most is used in processing for other food products. Overall, the US is not a significant supply factor in olive oil trade, nor do domestic firms affect US oil import policies.

4. Retail Prices

The Nielsen data (Annex G) may be used to gain some insights into US retail prices. These prices are reported on a per (US) ounce basis for different brands and container sizes. Prices range from \$0.04 to \$0.57 per ounce. In general, the high priced items have very limited store distribution. Regrettably the price data do not identify the olive oils by grade, which, if available, would explain a good deal about the apparent variability in prices.

For brands known to be pure olive oil, retail prices average \$0.15 to \$0.25 per ounce. In gallon containers, the price is \$0.04 to \$0.11 per ounce. Virgin oil prices range from \$0.30 to \$0.32 per ounce.

Using export prices from Tunisia it can be calculated, that the ONH is currently receiving about 25 percent of the US retail price for the exported oils. This is not unreasonably low due to the high mark-up used by retailers to compensate for the relatively high carrying costs, small volumes, and slow sales turnovers for olive oils. As a comparison, for all fat and oil products produced in the US, farmers receive about 31 percent of the retail price (US Dept. of Agriculture, Agricultural Chartbook, Chart 109). Due to the greater transport costs involved, imported olive oils would be expected to return less to exporters in the producing country.

C. The Canadian Olive Oil Market

1. Market Volume and Trends

Canadian imports of olive oil have been more erratic than US imports (Annex A Table 8). Compared to 1975 imports, imports during 1976 and 1977 nearly tripled. During the next two years imports were halved and in 1980 imports surged again. Since 1981, imports have been relatively more stable. Even so, in 1985 Italy exported to Canada twice as much oil as it did in 1984 and 1986 and the same can be said of Greece. Currently, the Canadian import market is approximately 5,000 metric tons per year. Relative to Tunisia exports of about 55,000 tons per year, the Canadian market is very small.

In Canada, however, increases in olive oil consumption are likely. Historically, Canadians of Italian and Greek ancestry as a group have consumed the majority of the imported olive oil.

Recently, however, as in the United States, increases in consumption have been attributable to "upscale" consumers. This "upscale" demographic segment is one that is likely to increase both in numbers and disposable income. The demand created by this new consumer group is largely for extra-virgin oil. An increase in the Hispanic population in Canada, though not as large as in the US, has also contributed to increased olive oil consumption.

One visit to an olive oil importer's warehouse in Montreal revealed he carried olive oil in gallon tins reflecting his distribution to institutional foodservice wholesalers. The larger importers of olive oil supply the supermarket retail trade. These importers tend to import packaged and brandname products.

In 1987, CIF import prices for olive oils ranged from \$1,600 to 3,000 (Canadian) per metric ton, with the average CIF import price being \$2,500 (Canadian) per metric ton. Although price comparisons are not particularly revealing because they are not by grade or type of packaging, it is of some interest to know who are the high and low price suppliers and their import quantities. France is the high price exporter and The Netherlands supplied Canada with the lowest priced oil. French imports were 70 metric tons (1.1% volume share) in 1987 and The Netherlands were 17 metric tons (0.3%).

On a volume basis, olive oil imports from Italy and Spain represented 55 percent and 30 percent, respectively, of total 1987 imports while on a value basis, Italy had 62 percent of import value and Spain had 24 percent. In the 1980s, Spain's value share had been rather constant at around 33 percent. In 1987, however, Spain began selling olive oil at a discount in an effort to halt the erosion of its Canadian market share.

During the two years--1985 and 1986--that Tunisia exported olive oil to Canada, it was by far the lowest price supplier. Tunisian oil imports were priced at half the price of the next cheapest supplier. Moreover, the price was one-tenth that of the most expensive supplier.

2. Market Structure

The Canadian market, according to the individuals interviewed, has been primarily an Italian ethnic market. Supermarket sales are by far the largest outlet for olive oil and institutional sales and restaurants are the next largest. The popularity of extra virgin oil among the "upscale" consumer group, suggests that this grade of olive oil may have the highest potential for growth in market share.

The French-speaking population of Quebec is the Canadian market with the most potential for increased sales. These consumers are well educated with relatively high incomes. In addition, there is a diversity of ethnic groups (some from North Africa) which demand olive oils for their cooking.

3. Market Structure and Channels of Distribution

Data comparable to the Nielson retail market data for the US market do not exist for the Canadian market. Nonetheless, based on information from personal interviews, telephone interviews, and visits to Ottawa and Montreal, it was determined that there are three major olive oil brands in Canada--i.e., Maestro, Pastene and Gattuso--and three additional minor brands--i.e., Bon Gusto, Bertolli and Gallo. All six brands sell to both supermarkets and the institutional market. The exact percentage of olive oil imported bulk and repackaged in Canada is not known. Discussions with industry representatives, however, suggest that the

majority of imports arrive prepackaged. The Toronto and Montreal urban markets represent well over half of the Canadian market.

At the retail level, pure olive oil is by far the most common grade sold. It is sold in 3 liter tins and, 1 liter, 500 milliliters, 250 milliliters, and 150 milliliters glass bottles. Virgin oil is sold in all of the above containers, except the three liter tin. Extra virgin oil is sold in 500, 250 and 150 milliliter glass containers.

D. Import Requirements and Labeling - North American Markets

There are no phytosanitary or packaging requirements to olive oils imported into Canada. A publication of Agriculture Canada titled, "LIST OF LICENSEES, Under the Canada Agricultural Products Standards Act" provides a list of licensed importers. If an importer is not on this list, the potential exporter should exercise caution in dealing with that importer. In addition, it is highly recommended by Agriculture Canada representatives that any new relationship between an importer and an exporter have an accompanying request for "inspection upon receipt". This assures the exporter that the shipped product was received under conditions that Agriculture Canada certifies as acceptable.

The US has neither accepted the international trade standards nor established its own fixed standards for grading and labeling olive oils. A request is pending to have the US adhere to the product descriptions laid out in the International Olive Oil Agreement of 1986 (see Part A, Annex 3), but observers are not very hopeful that any action will be taken in the near future. As a result of governmental inaction, the labeling of olive oil products in the US is not based on any meaningful trade standard and label. Designations, like "cold pressed" and "extra light", are not indicative of any clear standard for either the packagers or the consumers (see also Luchetti and Sullivan articles in Annex D).

E. Reputation of Tunisian Oil

Tunisian olive oils are well known by experts in North America. The virgin and extra virgin oils are very highly regarded for quality but there is some concern that Tunisian oils have tastes which are too strong for the US market. It may, therefore, be necessary to overcome this taste problem through additional blending in accordance with consumer taste testings.

Most industry participants interviewed felt there would be no major resistance to selling olive oil listed as "Product of Tunisia." The US has become sufficiently international in the sourcing of products in recent years that the reluctance to try products from new supply sources has lessened. The Canadian market tends to be even more international in this regard. Nonetheless, there is a general consumer resistance to non-Italian oils which means that olive oil identified as being from Tunisia would have to be priced below the Italian products, and probably at prices comparable to Spanish oils.

Most larger buyers are very familiar with the French firm which brokers Tunisian olive oil in North America. Their representatives are highly regarded and seemingly quite active in the US. During interviews, samples of Tunisian oil were encountered in some rather small firms suggesting a diligent marketing effort. Despite this evidence, the degree of market presence is considered by many customers to be low compared to other suppliers.

Where Tunisia is described as lacking by interviewees is in the marketing effort put forth by the Office National de l'Huile (ONH). This Office is seen by importers as not being aggressive enough in pursuing export sales and in following up on business agreements. The negotiation of the terms of trade through a parastatal bureaucracy is considered by North American importers to be an inordinately slow and cumbersome process, which is a major disadvantage in the rapidly moving, highly competitive US market. Most significantly, Tunisia is seen by importers as an erratic supplier, particularly with respect to its bulk sales of olive oil. The perception is that neither the ONH nor its current US import partners are comfortable with long term commitments. There is an apparent reluctance on both sides to enter any ongoing relationship which would involve an implicit mutual dependence between the importer and the ONH. The management of Pompeian, Inc., for example, expressed a deep concern that the ONH would reduce its supply with little warning if more profitable markets become available elsewhere. This concern over the dependability of the supplier is clearly a constraint limiting the purchases of olive oil by the largest of Tunisia's US trading partners. Overall, the ONH is regarded as a supplier of olive oil in bulk with little supply continuity between shipments.

It was not possible to determine if the concern of importers with respect to the dependability of Tunisian supply is valid or not. What is ultimately important is the perception, not the reality. The current trade practices adopted by the ONH do seem to place it in a position of sharp bargaining for each sale and the lack of longer term agreements results in lower average and less stable prices for Tunisian olive oils. In short, current market penetration problems in North America appear to be more related to the marketing approach adopted by ONH vis-a-vis potential North American importers, than with any constraints imposed by the underlying demand structure for olive oils in North America or importer acceptance of Tunisian olive oils.

III. Alternative Penetration Strategies

Among the numerous alternatives available, six possible market penetration strategies are selected as representative of the approaches which might be taken by the ONH in an attempt to penetrate further the North American market.

1. National Distribution of a Proprietary Label

This strategy means development of a new label for Tunisian olive oil and national distribution in the US and Canada. The benefits to this approach are obvious as it gives access to the largest segment of the potential market--the retail market (approximately 80% of sales). The ownership of a brand name further allows considerable stability in pricing for retail prices are traditionally more stable than wholesale prices. Tee Pee Olives is an example of a firm which could direct such a market penetration program.

The major constraint to this approach is the eventual cost involved. Chief among these is the new product introduction ("slotting") fee demanded by supermarket chains. These fees can amount to \$15,000 to \$20,000 per item. With up to five pure olive oil container sizes required per supermarket chain, in addition to virgin and light oil sizes, the total cost per supermarket chain could easily be \$100,000 to \$150,000. Covering the major national and regional chains and including funds for sample products and promotions, the initial costs of such an approach could easily approach \$2 million. This would have to be paid in advance. Additionally, the initial market entrance for a new, non-Italian olive oil could require a price discount of 15 to 20 percent below comparable Spanish oils. This price discount would have to be maintained for some time--probably at least a year--as established brands would resist the entrance of a new brand by offering additional advertising and price concessions.

A new brand is unlikely to challenge strong brand recognition of the three leading brands and, therefore, would be placed in direct competition with the myriad of brands contesting the remaining 30 percent of the market. That "available" share is likely to decline as the promotional activities for Spanish olive oils lead to a larger share for those products. Overall, a dollar sales share of one to five percent of the North American market seems to be the ceiling, and this would not come for many years, if ever. For comparison, Goya has a 1.1 percent share and Pope, a sometime buyer of Tunisian oil, a 2.7 percent share. Moving beyond a 5 percent share means capturing fully 20 percent of the market not controlled by the three market leaders. A one to five percent share translates in 1988 to between 455 and 2,273 metric tons of olive oil.

2. Regional Distribution of Proprietary Label

This approach is very similar to the first strategy, except that only supermarkets in selected regions would be targeted. Since the bulk of sales are made in a few regions of the country, the total sales impact would be comparable to above. So would the cost as the bulk of the funds described above would be spent in the same regions. Costs for a substantial campaign should be expected to exceed \$1,000,000. However, using the regional approach would be an appropriate means of testing the feasibility of a national campaign. Perhaps a region, like the Great Lakes States of the US and Canada, or a state like California, would be a good

initial target. These states and provinces incorporate several large metropolitan areas and large ethnic populations.

3. Sole Supplier for a Distributor-Owned Brand

Under this strategy, the distributor owns the brand name and bears the costs of market penetration. The ONH serves as a supplier of the olive oil for that brand. Given the fluctuations of international olive oil prices, the price agreement would have to be flexible and describe not the actual price but the means for determining the price. Among the firms visited, Casa Imports and Lindsay Olive Growers could serve the role of distributor.

A major benefit to this approach is the assurance of an outlet on a regular basis. Most likely, the volume would be relatively stable year to year. GOT investment costs would be minimal and the ONH responsibility for making marketing decisions limited. In contrast, the long term stability of this arrangement would be in doubt as the brand name owner could at any time find another major supplier. Even the threat to do so could set off major price negotiations. A multi-year exclusive supply agreement could reduce such risks.

4. Supplier for Institutional Sales

Under this approach, the ONH--or a private Tunisian exporter--supplies oil primarily in gallon containers to distributors for sale to restaurants and other institutions. This approach is relatively straightforward but does involve the ownership of a brand name.

Its limitation is that the volume of higher quality oils sold in this way is believed to be very small, the bulk of sales being made up by pomace oils. Distributors interviewed expressed an interest in carrying a Tunisian brand at a 10 to 15 percent discount off current Spanish oil prices. This market is extremely price sensitive and the brand franchise is weak. Many poor grade oils are said to be sold. Hence, it would involve considerable, ongoing price competition.

5. Bulk Sales

This is essentially the approach presently taken by ONH in the North American market. It is done on a regular basis with Pompeian and sporadically with Pope or irregularly through brokers. These sales are relatively easy to control as they are handled on a case-by-case basis. When more profitable markets exist elsewhere, there is little commitment to ship to North America.

This benefit is also the greatest weakness because it results in a market with no year-to-year stability. Each sale is independent and must compete directly on price with all other available products. Moreover, it is not clear what could be done to sell major additional amounts of oil in bulk. The open bulk market appears to be in decline and will remain so as long as Common Market packaging subsidy policies are maintained. Tunisia already has a sizable amount of the bulk market with 2,000 to 2,500 tons sold annually to Pompeian. That amount is unlikely to increase.

6. Bulk Sales with North American Stocks

This approach is the same as 5 above, with the addition of bulk storage held in North America. Having local stocks would speed delivery time and make it feasible for ONH to sell in smaller volumes. This would make the product more attractive for a new class of customers, especially smaller firms, such as Oasis Trading Co. (see Annex C).

The increase in service costs implied by this approach is quite sizable. It also focuses attention on a segment of the market which seems to be in decline--i.e., the small institutional supplier/mixer and possibly leads to competition with current bulk customers, an undesirable situation.

IV. Recommended Marketing Strategy

When selecting among the major market expansion strategies listed above, several factors must be considered. The plan must be phased so as not to commit too many resources and demand a level of marketing support by ONH which exceeds reasonable expectations at this time. Furthermore it must be an opportunity to provide a return on the investment within a short period, say two years, and offer the opportunity for a major increase of 20 percent or more in sales within that period.

Analyzed using these criteria, strategy 5 has limited additional potential as that approach is being utilized at this time. The addition of bulk storage (option 6) could provide additional service income but at the risk of competing directly with current bulk customers who frequently sell in limited volumes to smaller customers. Strategies 1 and 2 for their part involve major initial investments in a brand name and introductory distribution fees. Due to the high failure rate (over 50%) of new brands in the highly competitive US market, product introduction is always a risky undertaking. In the case of the ONH, the risks are compounded by the limited amount of current staff expertise with US marketing and distribution requirements. Taken together, these limitations suggest that the ownership of a US brand is not an appropriate short term strategy.

The most attractive initial strategy then appears to be 3 above, the establishment of a sole supplier relationship for an established distributor-owned brand. This approach will provide access to the critical retail market via a known brand but without the costs and risks associated with establishing a new brand.

An evaluation of the Canadian market leads to the same conclusion, the use of an established distributor brand (strategy 3). Indeed, this approach is even more appropriate in Canada due to its small population, concentrated major olive oil markets in Montreal and Toronto, and its limited number of bottling facilities, which would necessitate importation in retail containers, not bulk. In fact, the potential market is so small that the US distributor selected could be asked to serve the Canadian market as well. The economies of size in product handling and distribution, as well as market oversight, dictate that arrangements be made to cover the entire North American market, not the two national markets separately.

Interviews made for this study led to the identification of two potential distributor cooperators, Lindsay Olive Growers of Lindsay, California and Casa Importing, of Utica, New York. These firms are predominately regional in their distribution so that working with both would not lead to a conflict of interest. These firms are offered as suggestions for they have the necessary equipment and expertise, and management expressed an interest in a supply agreement. A preliminary proposal made by Lindsay Olive Growers is contained in Annex I. Additional and/or substitute firms are available and should be considered.

If this approach is followed it is necessary to negotiate an agreement between the ONH and the distributor. Several factors must be included in the agreement. Given the vicissitudes of the world olive oil price, a price formula rather than a fixed price must be established. A price formula is a system for establishing a price and is typically based on some observable price, such as the EC support level. The duration of the contract is also critical for its cancellation would leave the ONH without an outlet for a substantial amount of its volume. At a minimum, it would be preferable to have contracts with several firms to reduce

dependence on any one and to stagger the expiration dates of the agreements to minimize possible disruptions. If this approach is followed, it will be essential to have an effective negotiator familiar with US and Canadian law and business practice.

In the longer term, the potential of acquiring a brand name should be reevaluated. During the initial period of working with an existing distributor, a base of knowledge on the operation of the North American market can be established. Assisting in that effort should be a North American representative reporting directly to the ONH on market conditions. Because Tunisia is so distant from this market it may be advisable to have an ONH representative stationed in the Tunisian Embassy to serve as a coordinator between Tunis and the North American marketing operations. The experience gained would be helpful for the ONH in later years as these individuals rise to more senior positions. To be effective a representative stationed in North America must speak English fluently and be familiar with cultural practices. An individual with a graduate business or marketing degree from a US or English-speaking Canadian university would be particularly well suited.

V. Strategic Action Plan For Olive Oil

The strategic action plan for the olive oil industry needs to include provisions to reduce costs, improve quality of the oil and of packaging, provide better incentives for producers and processors to more directly address buyer and consumer preferences, and establish a stronger presence in the North American market. Currently, Tunisia is a relatively low cost exporter of olive oil, and Tunisian olive oil has the reputation of being of high quality. However, the industry's production and marketing strategies are not realizing the full potential of market opportunities. The GOT needs to modify pricing and other policies to provide incentives (market signals) for producers and processors to respond properly to and exploit aggressively market opportunities.

Elements of the action plan should include the following.

1. Provide Incentives to Improve Production and Control Costs

Tunisia is already a low cost exporter of olive oil. However, to stay competitive every effort will be necessary to at least constrain and preferably reduce costs of production and processing. The following are recommended:

- **Encourage Olive Tree Regeneration** – Encourage regeneration of existing olive groves. This would appear to be the most economical way to improve yields and reduce costs.
- **Consolidate Holdings** – Provide economic incentives to olive growers to consolidate holdings of productive or potentially productive groves. Also provide economic incentives for the removal of olive trees that are no longer productive, well cared for, or properly sited.
- **Restructure Producer Prices** – Restructure producer price schedules so as to bring producer prices for the different qualities more in alignment with export market prices. The current price structure with quality premiums favors production of virgin oils relative to pure oil, whereas effective demand in new markets is primarily for pure oils. The method of pricing olive processing needs to be changed to encourage the private sector to invest in more efficient processing and marketing technologies. Changes should include pricing that reflects the amount of oil extracted per ton of olives possessed and not simply the number of tons processed. Moreover, processors should be allowed to offer growers lower unit processing charges commensurate with more efficient processing technologies and thereby attract business away from less efficient processors.

2. Enhance Processing Efficiency

Tunisia oil is considered to be of high quality. However, much of the oil is also processed at higher-than-necessary cost due to the obsolete nature of many local processing plants. Efficiency can be improved by:

- **Encourage Modernization of Presses** – Encourage the modernization of olive oil presses by allowing market forces to set the olive oil pressing rate structure. The current flat average rate encourages the use of obsolete presses, which in turn results in higher cost oils. A revised pricing system should be coupled with target GOT subsidies to encourage initial investments in modern processing plants.
- **Use Appropriate Technology** – When investing in the modernization of processing plants, it is essential that only the most appropriate and efficient technology is installed so that oil quality is maintained and the cost efficiencies demanded in both the domestic and export markets can be satisfied. Further analysis is required to identify the optimal technology for each application.
- **Prevent Olive Fermentation Before Pressing** – Control harvest scheduling and storage of the harvested olives to prevent fermentation. This will require a closer working relationship between the grower and the processor so that harvest schedules more closely match the processor's time schedule for processing.
- **Improve Package Quality for Export** – Improve the quality of the export packages and labelling on bottles and shipping containers. Package size and type and the quality of the label are important factors in the buyer's perception of quality. Tunisian oil is known to be of high quality but available containers and labels are not up to the standards of those used by competitors in the North American market.

3. Eliminate the Requirement That Only Domestic Materials Be Used in Packaging For Export

The current GOT policy results in high cost, low quality export packaging and is one reason why most of the olive oil is exported in bulk. The low quality packaging impairs the quality image of Tunisian olive oils in all export markets. Until it is possible to improve the quality of the package, it will be impossible to make meaningful inroads into the North American or other non-EC markets. Removal of this blanket requirement would make it possible for the private sector to invest in equipment to package olive oil in appropriate size containers and competition would force local manufacturers of packaging materials to improve the quality and lower the unit cost of their offerings. The current practice of shipping only in bulk places Tunisian olive oil at a disadvantage.

4. Transfer Pest and Disease Control to the Private Sector

Transfer responsibility for providing routine inputs and pest and disease controls from ONH to the private sector. This will ultimately provide growers with more options in purchasing inputs and contract services and reduce GOT costs in sub-sector support. Some subsidization of services by the GOT may be required in the initial years.

5. Transfer Technical Assistance and Grower Extension Services to Ministry of Agriculture

Several aspects of the current situation indicate that resources would be more appropriately used if the technical assistance and grower extension services were transferred from ONH to the Ministry of Agriculture.

6. Coordinate the Olive Harvest and Processing Schedules

Develop a program to coordinate better the time of harvest and processing. This might come about through the offering of economic incentives, a restructuring of the producer price schedules, or proper market conditions. However, research to identify the most appropriate pricing and harvesting schedules to be followed will probably be necessary. A subsequent educational program emphasizing the reasons for the changes is highly desirable.

7. Locate a Representative in the North American Market

It is difficult to be competitive in the North American market without intimate and daily knowledge of the characteristics of American consumers and the people who control the distribution system. A Tunisian export representative should be located in the United States and should have the authority to negotiate prices and terms of trade for olive oil exports on the spot since fast response times are necessary in responding to sales opportunities. This person should be located near the office(s) of major customer(s). He should be fluent in English and thoroughly familiar with American commercial practices. This person should coordinate all North American sales agreements and develop close arrangements with U.S. or Canadian-based processors and brokers.

8. Sell Through a Well-established American Brand

Enter into exclusive supply arrangements with one or more U.S. processors and/or brokers who already have well-established brands in the U.S. and/or Canadian markets. The cost of establishing a unique Tunisian brand identity at this time would be prohibitive.

9. Promote Aggressively

An aggressive promotional campaign should accompany all efforts to export into the North American as well as other markets. Initially, this would include promotional efforts directed to importers and brokers through exhibits at trade shows, advertisements in trade publications and the preparation and distribution of high quality brochures about the Tunisian olive oil and the industry. Any arrangement with the distributor of a specific brand should include an allowance for sharing the cost of promotions, provided the source (Tunisia) of the oil was clearly identified in the advertisements.

10. Reevaluate Strategy in Three to Five Years

During the next three to five years, the representative described in 7 above should establish a network of industry contacts and develop a familiarity with the North American market. With this knowledge base, the marketing strategy should be reevaluated. With enough knowledge, it might be feasible for Tunisian exporters to purchase a North American brand and/or establish a Tunisian brand. This, however, should only be contemplated after a thorough market evaluation based on good experience with the product being sold through a U.S. brand name.

11. Establish a More Aggressive Marketing Program in Other Non-EC Countries

Concurrent with any attempt to expand into the North American market, private sector agents should also be encouraged to push more aggressively into other non-EC markets. Bulk sales should continue to be aggressively pursued but package sale opportunities should be explored also. Such initiatives can be encouraged by eliminating ONH's monopoly on export sales, modifying the requirement to use only domestic products in packaging, and by restructuring pricing structures as suggested above.

12. Limit the Role of Government

The role of GOT in olive oil marketing should be limited to quality control, promotion assistance and the collection of information to assist in market development. In addition, GOT should adjust its macroeconomic policies to encourage actively the private sector--as producers, press operators and exporters--to be innovative and aggressive in supplying both the domestic and the export markets.

ANNEX A

Statistical Tables

Annex A - Table 1
World Production of Olive Oil
Output of Leading Producing Nations-1975 to 1986

PRODUCTION	1975	1976	1977	1978	1979	1980
			<i>(1000 metric tons)</i>			
Greece	288	251	309	262	228	281
Italy	606	325	739	454	513	730
Morocco	44	41	32	24	39	28
Portugal	58	43	40	47	55	62
Spain	509	442	359	548	483	488
Tunisia	196	102	132	87	94	145
France	2	2	2	2	2	2
Turkey	110	201	81	201	84	185
Others	228	109	**	171	119	69
World	2,041	1,516	1,589	1,796	1,617	1,990

PRODUCTION	1981	1982	1983	1984	1985	1986
Greece	272	351	317	360	310	267
Italy	655	510	885	370	690	430
Morocco	20	43	24	30	31	35
Portugal	26	58	13	57	42	46
Spain	322	615	288	763	429	534
Tunisia	85	58	155	95	105	120
France	2	0	2	2	1	1
Turkey	74	185	49	122	98	170
Others	131	217	127	136	125	167
World	1,587	2,037	1,860	1,935	1,831	1,770

Source: *FAO Production Yearbook*

Annex A - Table 2
World Exports of Olive Oil
By Country of Origin - 1970 to 1986 (metric tons)

COUNTRY	1970	1975	1980	1981	1982	1983	1984	1985	1986
EUROPE									
Spain	178,862	49,179	122,327	63,574	34,193	72,034	46,416	269,578	157,300
Italy	15,503	12,264	28,635	42,561	42,551	51,506	81,513	87,911	80,410
Greece	12,296	32,126	11,901	14,975	44,922	147,520	108,417	53,569	114,119
Portugal	11,663	2,880	3,107	3,490	3,484	3,539	5,618	4,040	8,698
France	3,522	3,282	21,553	12,559	19,306	20,560	3,219	5,804	5,087
U.K.	112	201	742	682	481	582	701	587	20,652
Other	559	4,739	1,110	943	541	719	565	592	8,794
Total	222,517	104,671	189,374	138,784	145,388	296,460	246,449	422,081	395,060
AFRICA									
Tunisia	24,994	42,240	48,721	70,365	62,146	36,117	70,674	50,921	44,448
Other	10,583	16,687	12,363	570	596	1,731	7,072	336	206
Total	35,577	58,927	61,084	71,205	62,742	37,848	77,746	51,257	44,654
ASIA									
Turkey	310	9,342	3,339	43,447	20,556	63,747	20,788	26,658	28,825
Gaza Strip	N/A	N/A	6,200	5,000	7156	4,551	5,165	3,000	5,000
Other	1,429	7,229	1,737	3,781	2,314	1,855	2,166	537	3,374
S. AMERICA	3,450	9,267	9,752	8,195	6,336	6,388	4,896	6,072	3,338
OTHER	1	1	3	3	12	12	—	3	9
TOTAL	263,284	189,437	271,488	270,414	241,824	410,861	357,210	504,902	480,002

Source: *FAO Trade Year Book. Various Years*

Annex A - Table 2 (Continued)
Percent Composition – Selected Countries

COUNTRY	1970	1975	1980	1981	1982	1983	1984	1985	1986
Spain	67.9	30.0	45.1	23.5	14.1	17.5	13.0	53.4	32.8
Italy	5.9	6.5	10.5	15.7	17.6	12.5	22.8	17.4	16.8
Greece	4.7	17.0	64.4	5.5	18.6	35.9	30.4	10.6	23.8
Tunisia	9.5	22.3	14.9	25.9	24.6	8.9	21.3	9.2	9.2
Other	12.0	24.2	25.1	29.4	25.1	25.2	12.5	9.4	17.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: FAO Trade Year Book, Various Years

Annex A - Table 3
Tunisian Olive Oil: Production ONH Collections,
Exports, and Stocks - 1980 to 1986
(metric tons)

YEAR	Production	Produc. Collected	Exported	Carryover Stocks	ONH Sales For Domestic Consumption
1980	145,000	114,590	70,635	49,792	8,214
1981	85,000	56,427	62,146	33,143	10,970
1982	58,000	22,909	36,117	5,764	14,171
1983	155,000	113,547	70,674	25,552	23,085
1984	95,000	56,537	50,921	16,410	14,657
1985	105,000	64,699	44,448	26,718	9,943
1986	120,000	70,655	56,001	31,800	9,572

Annex A - Table 4
World Imports of Olive Oil
By Country of Destination - 1970 to 1986 (metric tons)

COUNTRY	1970	1975	1980	1981	1982	1983	1984	1985	1986
EUROPE									
Italy	132,796	85,118	131,443	57,901	75,294	204,594	165,394	253,419	231,427
France	14,956	21,802	61,366	33,040	27,071	29,544	24,534	30,017	27,645
W. Germany	3,203	3,358	3,531	3,450	3,184	4,280	4,139	5,777	6,274
U.K.	2,889	2,636	2,596	2,567	2,719	3,511	3,519	3,753	39,798
Other	9,855	13,991	10,393	11,466	27,681	11,324	11,371	14,303	24,753
Total	163,799	126,905	209,329	108,424	135,949	253,263	208,957	307,269	329,897
AFRICA									
Libya	18,627	21,288	61,395	56,013	46,944	62,000	30,000	28,000	32,000
Other	8,290	2,005	3,414	3,744	2,418	6,225	3,651	4,569	4,983
Total	26,917	23,293	64,809	59,757	49,362	68,225	33,651	32,569	36,983
ASIA									
Turkey	N/A	N/A	N/A	N/A	N/A	N/A	2,797	31,513	12,810
Jordan	90	206	8,513	2,800	8,983	4,642	6,947	6,000	7,420
Other	?	?	?	?	?	?	21,181	26,270	24,794
N. AMERICA									
USA	28,507	21,486	25,827	27,725	29,140	33,039	41,637	44,496	52,160
Other	3,581	3,059	6,215	4,139	5,309	5,230	6,480	6,049	5,157
Total	32,088	24,545	32,042	31,864	34,449	38,269	48,117	50,545	57,317
S. AMERICA									
Brazil	13,229	9,743	8,012	10,797	9,575	10,472	8,160	9,765	11,000
Other	1,316	1,090	2,133	1,936	1,210	925	839	1,593	1,436
Total	14,545	10,833	10,145	12,733	10,785	11,397	8,999	11,358	12,436

Annex A - Table 4 (Continued)

COUNTRY	1970	1975	1980	1981	1982	1983	1984	1985	1986
USSR	8,500	5,157	11,570	15,184	7,749	15,036	21,452	26,023	28,047
OCEANIA	5,511	3,907	6,376	6,380	6,684	7,158	8,377	1,834	8,054
TOTAL	225,616	202,903	363,078	261,235	272,790	417,936	360,478	493,381	517,758

Percent Composition - Selected Countries

Italy	52.0	42.0	36.2	22.2	27.6	48.9	45.9	51.4	44.7
France	5.9	10.7	16.9	12.6	9.9	7.1	6.8	6.1	5.3
USA	11.1	10.6	7.1	10.6	10.7	7.9	11.6	9.0	10.1
Libya	7.3	10.5	16.9	21.4	17.2	14.8	8.3	5.7	6.2
USSR	3.3	2.5	3.2	5.8	2.8	3.6	6.0	5.3	5.4
Other	20.4	23.7	19.7	27.4	31.8	17.7	21.4	22.5	28.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: *FAO Trade Year Book. Various Years*

**Annex A - Table 5
U.S. Olive Oil Imports By Country of Origin
1970 to 1986 (metric tons)**

COUNTRY	1970	1975	1980	1981	1982	1983	1984	1985	1986
EUROPE									
Italy	8,938	9,472	14,366	16,487	16,624	18,829	25,678	28,146	35,107
Spain	17,210	9,103	8,763	8,813	8,657	9,766	11,168	11,495	10,481
Greece	420	473	485	578	519	544	570	715	903
Other	476	1,615	522	596	2,045	2,494	1,239	895	1,016
Total	27,044	20,663	24,136	26,474	27,845	31,633	38,655	41,251	47,507
AFRICA									
Tunisia	1,327	674	1,197	1,196	1,373	1,204	1,450	1,424	1,331
Other	0	0	0	0	0	0	0	0	21
Total	1,327	674	1,197	1,196	1,373	1,204	1,450	1,424	1,352
ASIA	N/A	60	0	36	0	268	1,000	1,170	3,091
L. AMERICA	N/A	112	102	0	0	8	30	100	201
OTHER	130	125	118	15	19	-	-	-	63
TOTAL	28,501	21,634	25,553	27,721	29,237	33,133	41,461	43,956	52,214

Percent Composition - Selected Countries

Italy	31.4	43.8	56.2	59.5	56.9	56.8	61.9	64.0	67.2
Spain	60.4	42.1	34.3	31.8	29.6	29.5	26.9	26.1	20.1
Tunisia	4.7	3.1	4.7	4.3	4.7	3.6	3.5	3.2	2.5
Other	3.5	11.0	4.8	4.4	8.8	10.1	7.7	6.7	10.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: *FATUS, Foreign Agricultural Trade United States, ERS, USDA, Various Years*

Annex A - Table 6
Canadian Olive Oil Imports
By Country of Origin - 1970 to 1986
(metric tons)

YEAR	EEC ¹	Spain ^a	Tunisia ^c	Other ^a	Total ^a
1970	N/A	N/A	N/A	N/A	2,126 ^b
1971	N/A	N/A	N/A	N/A	2,174 ^b
1972	N/A	N/A	N/A	N/A	2,903 ^b
1973	813	1,016	N/A	508	2,337
1974	914	1,321	N/A	457	2,692
1975	711	813	N/A	711	2,235
1976	610	2,388	N/A	2,692	5,690
1977	965	4,216	N/A	255	5,436
1978	1,067	1,422	N/A	661	3,150
1979	1,067	1,219	N/A	711	2,997
1980	1,270	2,896	N/A	660	4,826
1981	1,314	1,282	N/A	281	2,877
1982	1,523	1,043	0	223	2,789
1983	1,959	1,513	0	211	3,683
1984	4,833	— ^d	0	88	4,921
1985	4,815	— ^d	3	142	4,960
1986	3,986	— ^d	17	112	4,115

Sources: ^a *Canada's trade in Agricultural Studies, Agriculture Canada.*
^b *FAO Trade Year Book.*
^c *Project Report - J. Eriksen (Annex Table 23).*
^d *Spanish Data included with EEC.*

Annex A - Table 7
U.S. Consumption of Edible Oils
1970 - 1986

YEAR	CONS. ALL SALAD AND COOKING OILS ^a		IMPORTS OF OLIVE OIL ^b	
	Total (mil. lb)	Per Capita (lb)	Total (mil. lb)	Per Capita (lb)
1970	3,153	15.4	62.84	0.31
1971	3,241	15.6	61.83	0.30
1972	3,530	16.8	67.37	0.32
1973	3,747	17.7	60.11	0.28
1974	3,861	18.1	53.72	0.25
1975	3,860	17.9	47.70	0.22
1976	4,243	19.5	62.40	0.29
1977	4,207	19.1	54.31	0.25
1978	4,484	20.1	61.93	0.28
1979	4,690	20.8	60.21	0.27
1980	4,837	21.1	56.34	0.25
1981	5,009	21.8	61.12	0.27
1982	5,080	21.8	64.47	0.28
1983	5,624	23.5	73.06	0.31
1984	4,693	19.8	91.42	0.38
1985	5,623	23.5	96.92	0.41
1986	5,831	23.7	115.13	0.48

Source: ^a USDA Agricultural Statistics

^b FATUS, Foreign Agricultural Statistics United States

**Annex A - Table 8
Canadian Consumption of Edible Oils
1970 - 1986**

YEAR	CONS. ALL SALAD AND COOKING OILS ^a		IMPORTS OF OLIVE OIL ^b	
	Total (mil. lb)	Per Capita (lb)	Total (mil. lb)	Per Capita (lb)
1970	123.2	5.78	4.69	0.22
1971	127.9	5.93	4.79	0.22
1972	147.5	6.77	6.40	0.29
1973	154.2	6.99	5.15	0.23
1974	171.2	7.65	5.94	0.27
1975	177.6	7.81	4.93	0.22
1976	207.9	9.04	12.55	0.55
1977	223.9	9.61	11.99	0.52
1978	220.3	9.35	6.95	0.30
1979	199.3	8.38	6.61	0.28
1980	193.9	8.05	10.64	0.44
1981	205.6	8.45	6.34	0.26
1982	203.3	8.25	6.15	0.25
1983	249.5	10.01	8.12	0.33
1984	244.5	9.72	10.85	0.43
1985	N/A	N/A	10.94	0.43
1986	N/A	N/A	9.07	0.36

Source: ^a *Handbook of Food Expenditures, Prices and Consumption.*
Agriculture Canada, 1986

^b *Canada's Trade in Agriculture Statistics, Agriculture Canada*

**Annex A - Table 9
Restrictions on Olive Oil Trade in the U.S.
Canada and the EEC.**

COUNTRY		Rate of Duty		Other
U.S.	<u>1</u>	<u>Special</u>	<u>2</u>	
— Weight with immediate container 40 lbs.	3.8/lb on contents & container	Free (A,E,I)	8/lb on contents container	—
— Other	2.6 /lb.	Free (A,E,I)	6.5 /lb.	—
Canada	—			—
EEC	Variable levy (see text)			Restraint agreements

Notes: ¹U.S. tariffs reduced to zero levels under preferential rates applied to imports from GSP (A), Caribbean Basin Initiative (E) and selected developing (I) countries.

Annex A - Table 10
World Production Olive Oil Descriptive Statistics 1980-86
Selected Countries

COUNTRY	Mean (MT)	Standard Deviation	CV (%)
Italy	535,570	164,470	30.7
Spain	460,290	166,500	36.2
Greece	269,290	59,323	22.0
Turkey	90,286	55,743	61.7
Tunisia	102,140	16,464	16.1
Other	184,860	40,458	21.9
Total	1,642,400	236,030	14.4

Source: USDA Agricultural Statistics

Annex A - Table 11
World Exports Olive Oil by Country of Origin
Descriptive Statistics 1980-86
Selected Countries

COUNTRY	Mean (MT)	Standard Deviation	CV (%)
Italy	59,298	23,521	39.7
Spain	109,350	82,903	75.8
Greece	70,775	52,804	74.6
Turkey	29,623	19,218	64.9
Tunisia	53,269	15,303	28.7
Other	40,075	15,652	39.1
Total	362,390	106,280	29.3

Source: FAO Trade Year Book, various years

Annex A - Table 12
World Imports Olive Oil
Descriptive Statistics 1980-86
Selected Countries

COUNTRY	Mean (MT)	Standard Deviation	CV (%)
Italy	159,920	75,566	47.3
France	33,317	12,651	38.0
Libya	45,193	15,086	33.4
USA	36,289	9,936	27.4
USSR	17,866	7,530	42.1
Other	91,219	28,173	30.9
Total	383,810	99,529	25.9

Source: FAO Trade Year Book, various years

Annex A - Table 13
Olive Oil Trade Matrix 1981, Volume ^a Traded (MT)

COUNTRY OF ORIGIN	COUNTRY OF DESTINATION											Total Exports
	Italy	Greece	Spain	France	UK	Tunisia	Libya	USSR	USA	Canada	Other	
Italy	—	0	0	6,616	1,156	5,944	10,030	2,968	16,487	789	—	42,561
Greece	8,226	—	0	15	438	0	0	0	578	332	5,386	14,975
Spain	4,638	0	—	4,881	502	0	830 ^b	7335 ^b	8,813	1,282	35,293	63,574
France	8,875	0	0	—	389	0	0	0	338	3	2,954	12,559
United Kingdom	0	0	0	0	—	0	0	0	0	0	682	682
Tunisia	42,633	0	0	11,639	0	—	12,003	600	1,196	na	2,564	70,635
Libya	0	0	0	0	0	0	—	0	0	0	0	0
USSR	0	0	0	0	0	0	0	—	0	0	0	0
USA	0	0	0	0	0	0	0	0	—	0	0	0
Canada	0	0	0	0	0	0	0	0	0	—	0	0
Other	—	0	0	9,889	82	na	33,150	4,281	309	471	—	65,428
Total Imports	57,901*	0	0	33,040	2,567	na	56,013	15,184	27,721	2,977	65,932	—

^a All olive oil (Virgin, Lampante, Refined, Untreated)

^b Anuario d'Estadística Agraria

Sources: EEC Countries — Import Data from Eurostat Trade Statistics

Tunisia — L'Office National del'Huile (Tunisia)

USA — Foreign Agricultural Trade Statistics

Canada — Agriculture Canada

Total Imports — FAO Trade Year Book

Libya, USSR — Eurostat Export Data

*FAO figures less than total for individual countries.

Annex A - Table 14
Olive Oil Trade Matrix 1986, Volume ^a Traded (MT)

COUNTRY OF ORIGIN	COUNTRY OF DESTINATION											Total Exports
	Italy	Greece	Spain	France	UK	Tunisia	Libya	USSR	USA	Canada	Other	
Italy	—	5	1,627	11,753	2,432	0	8,093	6,520	35,107	1,871	13,002	80,410
Greece	128,281	—	0	238	471	0	0	2,329	903	367	—	114,119*
Spain	72,514	0	—	14,546	34,336	0	3,351	3,002	10,481	1,237	17,833	157,300
France	7,522	0	0	—	454	0	0	0	241	—	—	8,249
United Kingdom	12,210	0	0	0	—	0	0	0	4	0	8,348	20,652
Tunisia	20,351	0	0	712	0	—	0	7,000	1,331	17	15,037	44,448
Libya	0	0	0	0	0	0	—	0	0	0	0	0
USSR	0	0	0	0	0	0	0	—	0	0	0	0
USA	0	0	0	0	0	0	0	0	—	0	0	0
Canada	0	0	0	0	0	0	0	0	0	—	0	0
Other	0	1	2,845	396	2,105	0	20,556	9,196	4,147	591	—	54,824
Total Imports	231,427*	6	4,472	27,645	39,798	0	32,000	28,047	52,214	4,115	88,583	—

a All olive oil (Virgin, Lampante, Refined, Untrated)

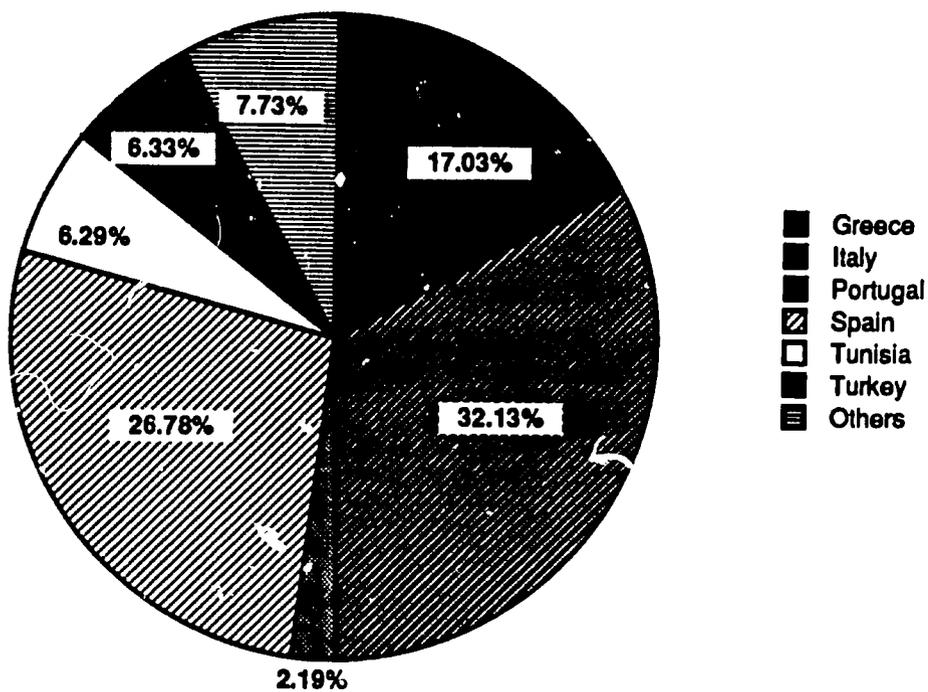
Sources: EEC Countries — Import Data from Eurostat Trade Statistics
Tunisia — L'Office National del'Huile (Tunisia)
USA — Foreign Agricultural Trade Statistics
Canada — Agriculture Canada
Total Imports — FAO Trade Year Book
Libya, USSR — Eurostat Export Data

**FAO figures less than total for individual countries.*

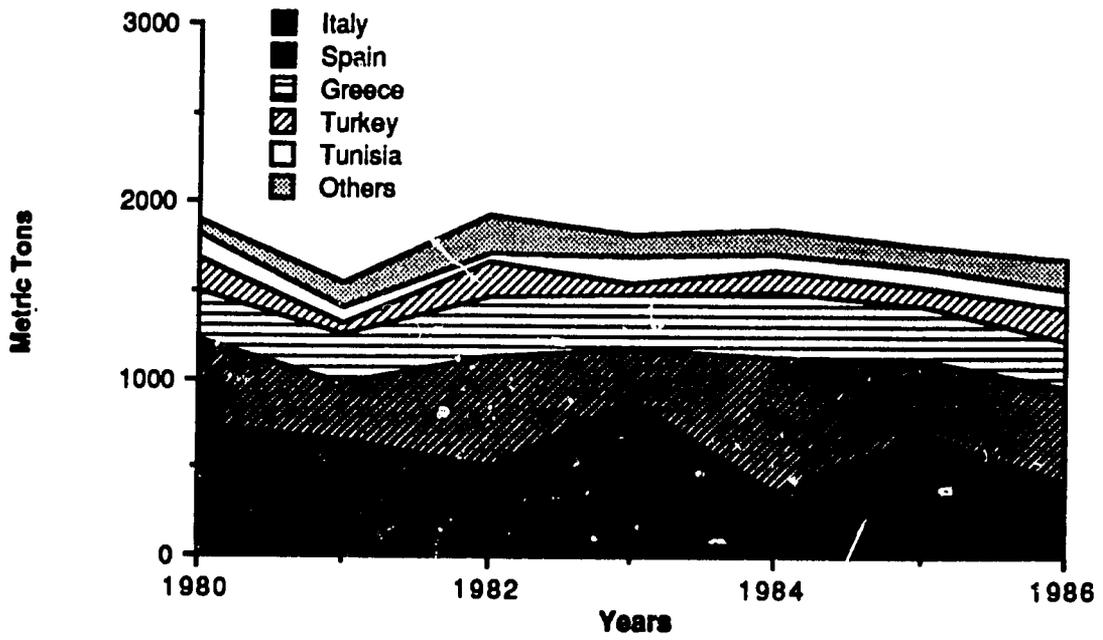
ANNEX B

Maps and Figures

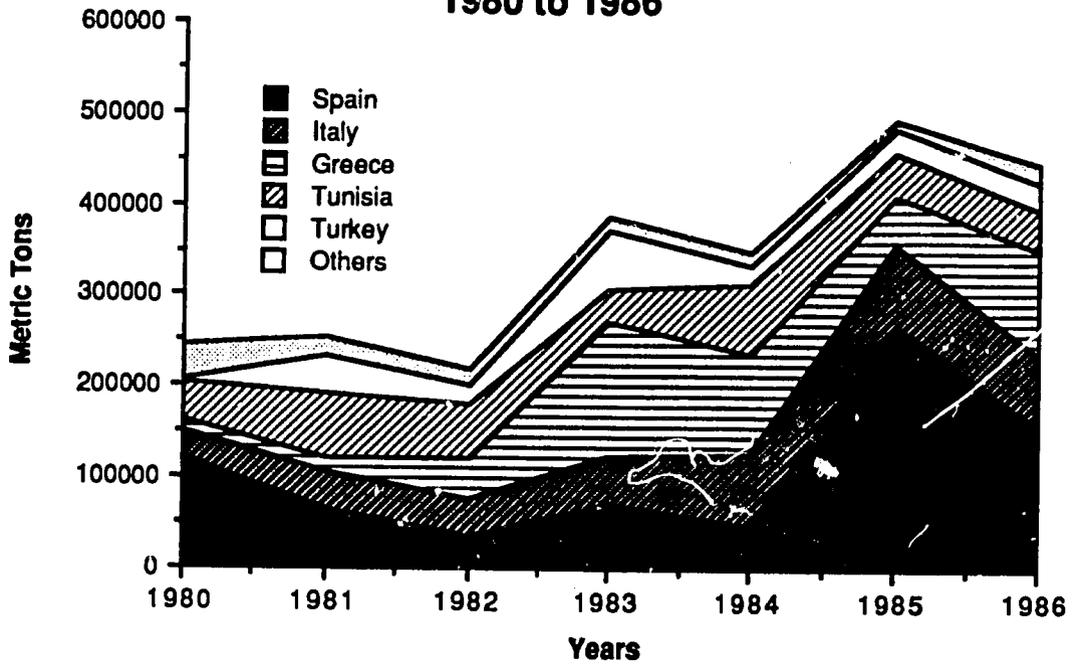
ANNEX B FIGURE 1
Average Country Shares of World Olive Oil Production
1981 to 1986



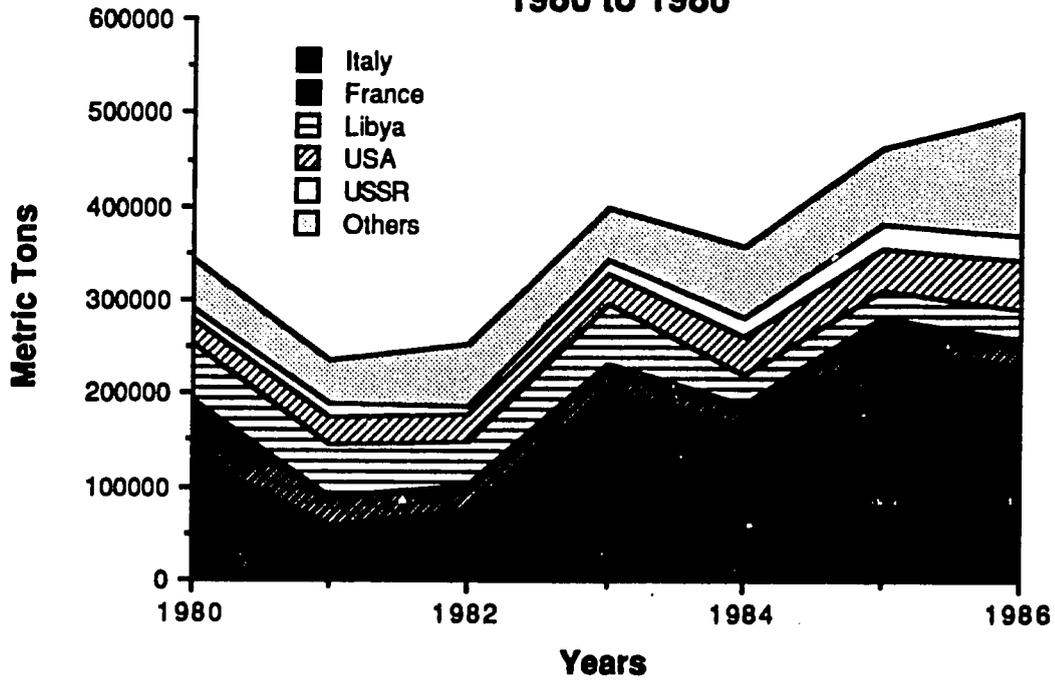
ANNEX B FIGURE 2
World Production of Major Olive Oil Producers
1980-1986



ANNEX B FIGURE 3
World Exports of Olive Oil by Exporting Countries
1980 to 1986

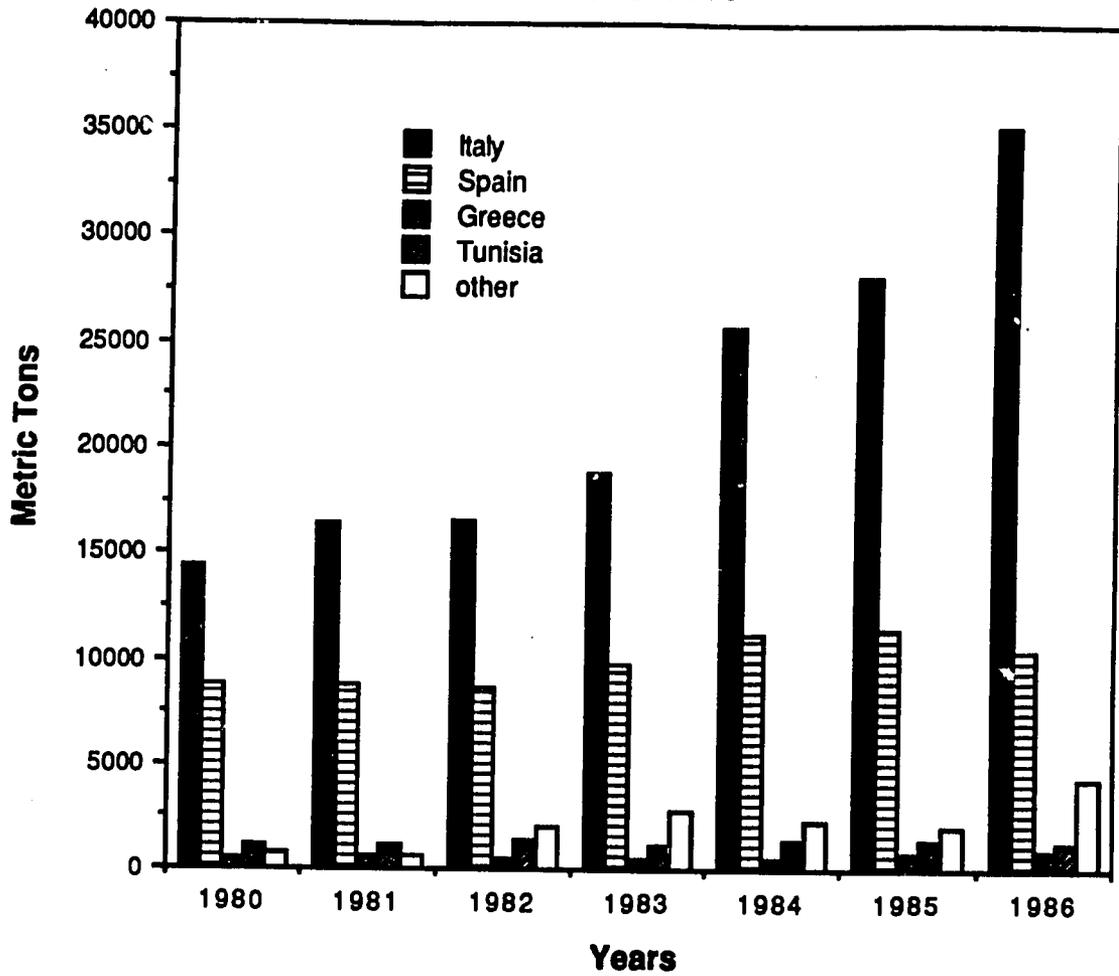


ANNEX B FIGURE 4
World Imports of Olive Oil by Importing Countries
1980 to 1986



171.

ANNEX B FIGURE 5
U.S. Imports of olive oil by country of origin
1980 to 1986



ANNEX C

Individuals and Firms Contacted And a Synopsis of the Findings

TABLE A.7 INDIVIDUALS AND FIRMS CONTACTED AND A SYNOPSIS OF THE FINDINGS

Personal interviews with Canadians:

Agriculture Canada
Robert W. Anderson, Ph. D.
Chief, Horticultural Unit
Sir John Carling Building
Ottawa, Ontario, K1A 0C5
(613) 995-5880

Mr. Danny Dempster, Executive Vice-President
Canadian Produce Wholesalers Association
310-1101 Promenade Prince of Wales
Ottawa (Ontario) Canada K2C 3W7
(613) 226-4187

Mr. Ariste Hebert, Head Buyer
Boni Fruit
11281, Albert-Hudon
Montreal-Nord (Quebec) H1G 3J5
(514) 324-6991

Mr. Wolfgang E. Peschlow, President
Les Aliments Supra
9238 Boulevard Pie 1x14
Montreal, Que. H1Z 4H7
(514) 328-1050

Telephone interviews with Canadians:

Mr. Hank Blommers
Canadian Fruit Wholesalers Association
Ontario Terminal Market
Toronto, Ontario
(416) 741-9342

Ms. Debra Bryton, Executive Director
Canadian Food Processors Association
1409 130 Albert
Ottawa, Ontario
(613) 233-4049

Mr. Don Jarvis, Director
Grocery Products Manufacturing Council
Montreal, Quebec
(514) 236-0583

Mondial Food
Mr. Emilio Taddio, Sales Director
9232, boul. Pie IX
Montreal (Quebec) H1Z 4H7
(514) 328-1508

Primo Foods, Inc.
MR. Arthur Pelliccione, President
Toronto, Ontario
(416) 741-9342.

Personal interviews with Americans:

Mr. Michael Angelo, President
Angelo's Markets
2205 McHenry Blvd.
Modesto, CA. 95355
(209) 523-7997

Mr. Robert D. Russo, President
Lindsay Olive growers
650 W. Tulare Rd.
Lindsay, CA. 93247
(209) 562-5121

Mr. Joseph Scibica, President
NICK SCIABICA & Sons, INC.
P O Box 1246
MODESTO, CA. 95353
(209) 577-5067

Telephone interviews with Americans:

Ms. Janet Bartucci, Director
Italian Trade Commission
New York, NY
(212) 980-1500,

Mr. David Daniels, Manager
California Olive Committee
516 N. Fulton
Fresno, CA. 93728
(209) 486-1383

Mr. W.T. Ireland, Partner
Georgetown Venture/Trading Company, Inc.
3075 Canal St.
Washington, D.c. 20007
(202) 333-0871

Ms. Nancy Jenkins, Editor
Journal of Gastronomy.
50 Boston St.
Sommerville, MA. 02143
(617) 625-2937.

Mr. Miles Lambert, Analyst
Agriculture and Trade Analysis Division
Economic Research Service
United States Department of Agriculture
Washington, D.C.
(202) 786-1621

Mr. Joe Lichtenberg, President
The National Pasta Association
Washington, D.C.
(703) 841-0818.

Mr. Bill Monroe,
Bertoli USA, Inc.
1353 Lowrie Ave.
South San Francisco, CA. 94080
(415) 761-3772

Mr. Jim Oberti, President
OBERTI OLIVE COMPANY
P O Box 899
MADERA, CA. 93637
(209) 674-8741.

Mr. Verni Saverno, President
VERNI SAVERNO & SONS.
11990 Auberry Rd.
CLOVIS, CA. 93612
(209) 299-0074.

Mr. Allen Zackery, Principal
Zackery & Front, Public Relations Firm
New York, NY
(212) 867-7363.

Synopsis Of Interviews

Demand

The demand for olive oil is increasing and will continue to increase. Although it was difficult to obtain quantitative measures regarding anticipated rates of growth nor specific forecasts about which market segments will grow more than others, the consensus was for continued growth. Having said this, it nonetheless appears that the greatest growth is expected in the extra virgin segment of the market. It is a small but lucrative segment. For example, premium virgin oil sells for as much as \$35.00 per liter and a common retail price is \$15.00. The most common retail container of extra virgin oil is a 250 ml glass bottle.

Other market segments, virgin, pure, and bulk are also anticipated to grow, but the consensus attributed to the extra virgin segment was not evident for these other segments. Irrespective of the market segment, much of the increased demand is attributed to published reports concerning the low cholesterol count of olive oil versus other oils. Also, there are some medicinal qualities attributed to extra virgin oil.

Market Entrance

The prevailing opinion is that the Tunisians should not try to establish a new brand--not only would it cost to establish but brand identification with Tunisia may not appeal to the ethnic groups who historically have consumed olive oil. Rather, the Tunisians should either sell, in bulk, to current North American firms who already have brand recognition and shelf space or the Tunisians should concentrate their efforts on the foodservice segment where brand loyalty is not important. The foodservice segment is primarily a price sensitive market without much brand loyalty. If the strategy is to concentrate on the foodservice segment, then price discounts would facilitate market entry. Importers indicated a willingness to meet and talk to representatives of the Tunisian government about potential deals.

The few olive oil producers in the US are all in California. The four that I spoke with were eager to talk to the Tunisians about samples, prices, delivery schedule, quality, and packaging of the product. They all agreed that Tunisian oil is a high quality oil that has a good reputation in the market. There is some disagreement concerning whether oil should be shipped bulk and repackaged in the US or whether it should be packaged and labeled in Tunisia. Apparently, the cost structure of both alternatives needs to be determined.

Lindsay International, Inc (a sister company to Lindsay Olive Growers) presented the most appealing presentation and proposal. Essentially, they are willing to sell Tunisian oil under their label and sell the product through their well established system of distribution. An eleven-percent take would be their charge--two-percent price discount for the supermarket buyers, four-percent for the brokers, and five-percent for Lindsay International. These charges seem reasonable to individuals in the trade. In addition, Lindsay Olive Growers are also interested in purchasing olives from the Tunisians for the 'pizza' market. Lindsay International, Inc. is willing to negotiate on a number of other issues--seats on the Board of Directors, advertising and promotion, packaging and transportation, technical assistance, and others.

ANNEX D

Published Information

Olive Oil Tops Rivals in Growth

By PHIL HALL

Olive oil — an upscale and, some say, more healthful alternative to the more familiar vegetable and corn oils — has become the fastest-growing segment within the cooking oil category.

Data released by SAMI/Burke, the New York-based research firm, shows olive oil sales have almost doubled from \$62 million in sales for 29.3 million pts. in 1983 to \$112.7 million in sales for 46.2 million pts. in 1987.

Olive oil was the third largest cooking oil segment in 1987 behind vegetable oil (\$582 million for 733 million pts.) and corn oil (\$225.4 million for 312 million pts.), according to SAMI.

"We have expanded our olive oil section and have moved it into the more prominent section of the shelf," said Lee Salo, grocery buyer, Raley's, Broderick, Calif.

"Olive oil sales have been pretty good," said Joe Shuttlesworth, grocery buyer, Furr's, Lubbock, Tex. "We carry a number of sizes. The smallest, 8.5 oz., seems to sell best — about 150 cases in six weeks."

"Our sales of olive oil are up about 20% over last year," said Robert O'Connor, grocery buyer, Cala Foods, San Francisco. "The larger sizes have really taken off. Part of the reason is promotion. We do an awful lot of advertising and putting up displays of the 3-liter size."

The growing popularity of the segment is causing many changes in cooking oil merchandising.

"We expanded the space. We needed it for the new items," said Nick Alex, grocery buyer, Vons Cos., El Monte, Calif.

Alex said olive oil sales "were up about 35% over last year" and that the segment now takes up one-third of the store's cooking oil section.

"We have expanded our mix of olive oil, and placed the segment on our top shelves," said Mike Sullivan, grocery buyer, Red Food Stores, Chattanooga, Tenn.

"We never used to pay attention to olive oil," said Shuttlesworth. "We had only one size for about 20 years. Then we got toying around with the idea of putting in some more, changing brands and going to a good-looking label."

Tracking the Growth of Olive Oil

Olive oil has become the fastest-growing segment among cooking oils, outpacing all other gourmet varieties, including safflower and peanut. Shown are sales of selected cooking oils.

Sales Volume in Millions of Dollars

Category	1983	1984	1985	1986	1987
Vegetable	\$638.6	\$733.0	\$701.7	\$623.2	\$582.0
Corn	217.8	299.7	301.3	284.0	225.4
Olive	62.0	67.0	70.4	84.2	112.7
Non-stick	67.3	69.5	77.5	75.1	82.5
Safflower	20.6	25.4	27.9	27.3	28.6
Sunflower	36.4	33.8	26.8	21.8	21.0
Peanut	19.2	18.7	17.9	16.9	17.9

Source: SAMI/Burke

Retailers said olive oil earned higher profit margins than other oils.

O'Connor said profit margins were "a little higher because the competition on vegetable oil is hot out here, but you're not allowed to make any money on it."

"The profit margin on olive oil is higher than on the other oils because it's not a commodi-

ty item that people use a lot of," said a grocery buyer with Piggly Wiggly Southern in Vidalia, Ga.

Some retailers said health considerations are the driving force behind olive oil's sales, citing research showing mono-unsaturated fats like olive oil reduce harmful blood cholesterol levels.

"Gradually, the olive oil market has increased," said Bruce Anderson, grocery buyer, Harris Teeter, Charlotte,

"Our sales of olive oil are up about 20% over last year. . . . Part of the reason is promotion. We do an awful lot of advertising."

— Robert O'Connor
grocery buyer
Cala Foods

N.C. "I don't know why, unless it's the health jag."

"Olive oil has picked up," said Sullivan. "I say it's all about the cholesterol."

Olive oil can be divided into three subsegments: pure olive oil, which has an acidity level up to 3%; virgin olive oil, with up to 1.5% acidity, and extra-virgin olive oil, with less than 1% acidity.

Extra-virgin olive oil is the most expensive product within the segment, selling for \$25 and up per liter, and therefore offering the highest profits but the fewest turns.

Most retailers polled by Supermarket News said they stock only pure olive oil, the least expensive of the three subsegments, which accounts for approximately 80% of the olive oil market, according to Richard J. Sullivan, executive vice president, Olive Oil Association of America, Matawan, N.J.

Nearly all olive oil on the market is imported. Department of Commerce figures listed 51,000 metric tons imported in 1987. Domestic production is limited mainly to California.

Greg Maxwell, grocery buyer, Byerly's, Edina, Minn. — an upscale chain where olive oil makes up one-third of the oil section — said he carries some domestic brands but thought the "better-quality olive oils are the ones that are imported, especially when people are always going to insist on quality."

Not all retailers are pleased with their olive oil sales.

"In our area, they're slow," said Dan Puett, grocery buyer, Falley's, Topeka. "A lot of people see that as a gourmet item. We're a warehouse-type store."

"Olive oil has slowed down because the prices are so high," said Mel Weitz, president, Melmarkets, East Rockaway, N.Y.

Weitz' comment was echoed by Steve Heckendorf, grocery buyer, New Deal Markets, Modesto, Calif., who said sales of olive oil were "poor" and that the segment had "not appealed to our working class clientele."

Marketing Olive Oil

The Chance of a Lifetime

By Fausto Luchetti
Executive Director
International Olive Oil Council

ONE of the main points of the new 1986 International Agreement on Olive Oil and Table Olives is the marketing and the high standards of quality of olive oils.

To this end, the International Olive Oil Council — IOOC acts in two ways: (a) encouraging and financing all the activities aimed at improving olive oil quality and efficiency of production; (b) a wide range effort to oppose and censure all activities that foster and maintain a climate of confusion in olive oil marketing. Such confusion benefits only a few persons whose interests often do not concur with the more general interests of the whole olive oil industry.

In this regard, problems are not primarily caused by the fact that there are various grades of olive oil, although it would be wise to reduce their number. Rather, they are caused by the way olive oil is labeled and, in general, described to the consumer. This makes it difficult, if not impossible, for the consumer to know exactly what it is being offered.

In other words, there can and should be room for the different grades of olive oil offered on the market. This is provided that each grade of olive oil is offered for what it really is, without discrediting any other grade of this oil.

For a number of reasons, clarity has always been absent in the description of the characteristics of the various grades of olive oils. It is this lack of clarity that has harmed the image of the product and continues to do so. This situation can be better illustrated by giving some examples.

Few consumers are aware of one of the interesting results of recent research concerning the physicochemical characteristics of olive oil. They have shown the beneficial effects on human health of monounsaturated fatty acids. Olive oil has several of these.

Until now it had generally been held, quite rightly, that polyunsaturated fatty acids, which are found mostly in seed oils, substantially lower blood cholesterol, while olive oil neither raises nor lowers it.

However, the results of the latest scientific research indicate that there are two new facts con-

cerning blood cholesterol to consider. It was already known that in blood cholesterol there are two fractions, low-density lipoproteins (LDL) and high-density lipoproteins (HDL). The first cause harmful deposits to accumulate on the arteries, while the second are not only not pernicious, but are actually essential to the body. It has been discovered that polyunsaturated fatty acids, which are found mostly in seed oils, lower the content in the blood of both cholesterol fractions to the same extent, that monounsaturated fatty acids, which are the main component of olive oil, lower only the harmful LDL cholesterol fraction, while they do not affect the good HDL fraction and/or, in some cases, even raise it.

Contrary to common belief, this extremely interesting discovery applies to the whole range of grades of olive oils, from extra virgin to refined, since refining does not affect the content of monounsaturated fats.

Today, when the competition from seed oils is becoming fiercer and the financial crisis in most of the industrialised countries is felt in the budgets of the average family, it is more necessary than ever to use sound reasoning to describe the actual features and properties of olive oil (and fortunately these do exist) which set it apart; make it better for health's sake than other vegetable oils; and justify the much higher price paid for it. But, in order to do so, care must be taken to avoid civil wars among the different grades of olive oil, which would only bring disrepute to the product as a whole.

This does not mean that all the different grades of olive oil should be regarded as being alike. It is important, for instance, that consumers be properly informed about the characteristics of the extra virgin olive oil, an actual juice of a fruit, and on its taste-aroma-color features. However, this should be done without deprecating other grades of olive oils or the seed oils. Nobody, least of all anyone involved in the olive oil trade, wants to clash head-on with the powerful industry of the other vegetable oils which has the means to promote and defend its product. Nor should we forget that olive oil accounts for a tiny percentage of total vegetable oil production and that, especially today, it can use enough solid arguments to make room for itself, quietly, on the consumption scene.

The IOOC is prepared, in the general interest of the olive oil industry, to carry on its work for a sound promotion of the different grades of olive oil. Nevertheless, to do so it needs the collaboration and cooperation not only of the olive-growing countries, but also of all the different sectors of the industry at both national and international levels.

It would be useless, indeed to extol the nutritional properties of olive oil and spend money on institutional promotional campaigns only to find that the product that the consumer is actually offered does not match such standards of quality. I would go even further: in countries like the United States, in which the interests of the consumers are closely protected by strong national organizations, if a discrepancy, no matter how small, were eventually to be found between the benefits of olive oil that are described in the IOOC information campaign and any of the characteristics of the product which is on sale, it would cause a serious, irreversible setback to the trend of growth of olive oil consumption in the United States.

Because, at present, this trend appears to be excellent, the possibility of making olive oil a success and of establishing it in the U.S. market is connected with the industry's earnest and serious efforts in solving the problem of the quality of olive oil. It would frankly be a serious error from every point of view to miss such a good opportunity.

Olive Oil Report

By Richard Sullivan

OLIVE oil consumption continued to grow at a healthy rate this past year. Imports exceeded 140 million pounds. 80% of the imports were in consumer size containers, i.e. a container weighing less than 40 pounds. The balance arrived in bulk (drums or tanks). Five years ago imports in consumer size containers were 50-55% of the market. Subsidies abroad favored increased use of consumer size containers, but this may be changing. If the differential in subsidies between consumer pack and bulk pack is sufficiently reduced or eliminated, one may see a higher percentage of bulk oil imports than now prevails.

In less than five years olive oil imports have more than doubled, and some believe that they will double again in the next five years.

Olive oil continued to be seen as a healthy product that meets the consumer's interest in using diet to help prevent cardiovascular disease and cancer. Researchers focus on the high nonunsaturated fat composition of olive oil and report that it is not only equal to but may even be superior to polyunsaturated fats in lessening the risk of heart disease and cancer. This is not to infer that olive oil will prevent these diseases, but that it can be consumed as part of a well balanced and healthy diet. This also is not to infer that monounsaturated fats should replace polyunsaturated fats in the diet. The standard recommendation is that fat should constitute about 30% of caloric intake and be composed of equal amounts of monounsaturated, polyunsaturated, and saturated fat.

The International Olive Oil Council (IOOC) has now supported an olive oil promotion program in the United States for four years. When one compares the interest in olive oil today with what existed five years ago, one can only conclude that the IOOC program has been an eminent success. There was relatively little interest among the general public in olive oil. It had an ethnic following, a following among well respected chefs, and a following among those who took special care in food preparation. The increased consumption of the product parallels an increased interest in fine dining, but it is doubtful whether that accounts for all the growth in consumption. There must be many new users who are frying with olive oil and using it as a regular salad dressing.

Marketers of olive oil have introduced new products that are lighter tasting, and are sold as "extra light." This product differs from the traditional pure olive oil in that it is lighter in taste. The new consumer of olive oil who has not grown up on or acquired a taste for olive flavor is the target for extra

light oil. Hopefully, the product will expand the overall market for olive oil.

The term extra light is a marketing term that makes sense. Whether it suggests a reduction in calories is debateable. "Miller Lite" and "Pepsi Light" suggest a reduction in calories but consumers are looking for reduced calories in their beverages. That is why they buy them. Are consumers looking for a reduction in calories in a food oil or do they know that all oils have essentially the same number of calories? If they do not know that they can find the caloric information in the nutritional information panel on the label of extra light olive oil.

In a significant move the European Community began enforcing the labeling requirements for olive oil found in the International Olive and Olive Oil Agreement of 1986. In particular, on exports of olive oil extracted from olive pomace it requires the product to be labeled "Olive Pomace Oil." On a few occasions in the U.S. the FDA has detained imported olive oil charging that the product should have been labeled "Olive Pomace Oil." Some packers of Olive Pomace Oil continue to label their product Olive Oil on the principal display panel, and then explain on a side panel that the oil is a blend of Olive Pomace Oil and Virgin Olive Oil.

The U.S. has no standards of identity for olive oil nor have any common or usual names been described in the regulations. Proper terminology for the product is left to the interpretation of FDA officials who must apply law and regulations to specific questions and issues. Even if the Agency is consistent in its interpretation, the fact that it has never been challenged in Court leads to some doubt as to how firm the interpretation is. Also, if the interpretation is not effectively enforced in the market, it may be observed more in the breach. Isolated enforcement actions lead companies to ask: how can FDA move against us and not against others in the business which are dealing in much larger volumes than we are?

Some contend that if FDA is challenged in a Court case it would be forced to prove that Olive Pomace Oil should not simply be marketed as Olive Oil. After all, it is 100% olive oil. It is nutritionally identical to pressed olive oil, and its chemical profile is essentially the same. They also contend that the refining of Olive Pomace Oil is so good that not even a good laboratory can always differentiate it from refined (pressed) olive oil. (This may be sales talk.)

As we go to press plans have been made for a delegation from the IOOC to meet with the FDA in Washington relative to the labeling of olive oil in the U.S. The delegation will presumably seek to have FDA accept and enforce the olive oil terminology in

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the International Olive and Olive Oil Agreement of 1986. At best, the FDA is expected to say that product labeled in conformity with the Agreement will meet FDA requirements, but enforcement will be like it is for all food products that do not present a health risk, i.e. it will be done on a random basis so a company never knows when its product will be sampled and analyzed.

Pure Olive Oil is sometimes being labeled as "cold pressed." In the past the product was not so identified. Only Virgin Olive Oil was considered cold pressed. To some the term "cold pressed" signifies that a product has not been refined, that it is edible for consumption upon being pressed. How well the term "cold pressed" is understood by the consumer is not all that certain. Its use for Pure Olive Oil is said to distinguish the product from olive oil from pomace when packers label this product simply as Olive Oil. Whether this approach adds to confusion or makes the best of a bad situation depends on how one's ox is being gored.

Spain has begun an olive oil promotion campaign in the U.S. to educate U.S. consumers that Spain is the largest producer of olive oil. Whether this will lead to more sales of Spanish olive oil is anybody's guess. Supermarket shelf space is the key to sale of any product. How much shelf space Spanish olive oil will get depends on how much money will be spent in marketing the product. No supermarket will

make space available unless there is a strong, ongoing promotional effort involving slotting allowances, promotional discounts, couponing, advertising, etc. to move more product and create better profits than the product being replaced.

Other countries view the growing U.S. market as an opportunity for increased sales to the U.S., but they must face the same circumstances that Spain faces in the U.S.

Gabriel Luzzi retired as Executive Director of the IOOC and was succeeded by Fausto Luchetti. Mr. Luzzi was a great friend of AFI, as is Mr. Luchetti, and a strong supporter of the olive oil promotion program in the U.S. He tried to bring the U.S. into the International Olive and Olive Oil Agreement of 1986 but faced insurmountable odds. The U.S. is basically opposed to commodity agreements. The fact that the Olive Oil Agreement steers clear of quotas, price arrangements, and buffer stocks only means that the usual negative aspects of commodity type agreements, from the U.S. perspective, are missing. There is no constituency in the U.S. trying to influence participation in the Agreement. That, more than anything stands in the way of U.S. participation.

Many thanks to Milton Klein of Pompeian Inc. who served as Chairman of AFI's Olive Oil Group during the past year. He is being succeeded by Henry Orsi of Giurlani USA, in Campbell, California.

1984

Facts, fantasies about cooking oils

MAINE SUNDAY TELEGRAM 6-12-88

Let's come to terms with cooking oils.

You may have noticed that gourmet food writers have a lot to say about cold-pressed virgin olive oil, while health food proponents insist that a fresh safflower oil is the best choice. Specialty food shopkeepers have been heard to sniff, "Some people have no idea how to use walnut oil." And what about the long shelves of all-purpose cooking oil at the local supermarket?

What we need are the facts.

In the beginning, there are lipids, just another term for fats. About 95 percent of these lipids in our food (and in our bodies as well) are triglycerides. You may have heard your doctor say, "Your triglycerides are up." Those triglycerides can contain saturated, unsaturated, mono- or polyunsaturated fatty acids. If they're up, it could be the first two.

There is no freedom of choice about the basic need for a small amount of fat of some kind. Some essential nutrients are soluble only in fat — linoleic acid and the fat-soluble vitamins A, D, E and K. Maintaining an even body temperature depends upon fat. Energy reserves, body protection from mechanical shocks require this support. It is also a fat of some kind that carries the aroma and flavor-conveying compounds in food — the basis for the smell of bacon frying, bread in the oven or Caneton Tour d'Argent.

The possibility of choice is in those three turn-off words: saturated, unsaturated, polyunsaturated. If you remember that the body can synthesize every fatty acid it needs except one and that essential linoleic acid is polyunsaturated, then you will remember which label to choose. In labelless, it sometimes reads PUFA ("Prefer PUFA"). Generally, vegetable and fish oils are polyunsaturated. The harder and firmer the fat, such as lard, the more saturated and, nutritionally speaking, the less desirable.

The catch is that both unsaturated and polyunsaturated oils, the good guys, have the possibility of going rancid. The most polyunsaturated oil, when stale, will actually destroy vitamins in the body, thus turning the essential fatty acid into a digestive disaster. And it tastes terrible.

Another problem is hydrogenation — often called an insult to oil. When a food producer wants to make a polyunsaturated oil spreadable, he uses a process called hydrogenation which makes the oil

Allene White

Yankee Sustenance



that is more saturated than the original oil. However, if it's not crucial to your diet, it's OK to spread on your toast — but know what you want, and read the fine print to make sure you get it.

Specifics about oils

And now we come to the specifics. Among all of the oils available, which to choose and for what purpose? Your priorities can be health, cooking properties, expense, or a little of each.

- Almond oil: Too expensive for frying or sauteeing. It is light, pale and good for salads. A health food item with little flavor of its own.
- Apricot kernel oil: High in Vitamin E, best for salad dressings.
- Avocado oil: Extremely expensive. More of a novelty or a beauty product than a cooking oil.
- Coconut oil: Very high in saturated fats. Sometimes used in nondairy creamers, resulting in more saturated fats than the cream it replaces. Often used in packaged bakery products.
- Corn oil: A good choice for frying breaded foods. Light in flavor, high smoke point. The Erewhon brand cold-pressed corn oil is especially good.
- Cottonseed oil: Greasy and unpleasant. Not much to recommend it.
- Grape seed oil: Overrated, expensive, often flavored with thyme, rosemary or basil (something you could do with any oil at less cost.)
- Hazelnut oil: Delicious for salad dressings but costly. Can be combined with corn oil for both flavor and economy.
- Olive oil: The good news is that the monounsaturated fat in olive oil is effective in lowering total blood cholesterol. Since olive oil is light, healthy, blended, "virgin" or "extra-virgin" is a necessity for both Italian and French cooking, this is

for you!

• Peanut oil: Favored by French chefs. Planter's is excellent for cooking and baking. The French Huilior is best in salads. Labels that show grease stains should be avoided since they indicate spillage and possible rancidity.

• Safflower oil: Favored by the cholesterol-conscious. Its lack of taste can be adjusted by adding herbs of your choice.

• Sesame oil: Both brown and pale golden, the former is most flavorful. The pale golden can add an interesting accent to fresh salads.

• Soy oil: Used in blends, it is usually partly hydrogenated. Health food stores carry soy oils of higher quality.

• Sunflower oils: Pleasant when used cold but overpowering when heated.

• Walnut oil: Used only for salad dressings. Expensive.

• All purpose oils: Are no-purpose oils. To grease a muffin tin, maybe. Lightly.

My favorite salad dressing:

Vinaigrette with Red Wine Vinegar

- 1 garlic clove, mashed
- 1 small onion or shallot
- 1/2 teaspoon sugar
- 1/2 teaspoon salt
- 1 teaspoon mustard
- 6 small capers, rinsed
- 1/2 teaspoon Worcestershire sauce
- Sprinkling of celery salt
- 1/2 cup red wine vinegar
- 1 cup olive oil (or half corn, half olive oil)
- Freshly ground black pepper

Combine garlic, onion, sugar, and oil with the back of a spoon or use a mortar and pestle. Work this into a paste with the rest of the ingredients (except for the oil) blending in 1 tablespoon of the red wine vinegar.

Add the oil in a thin stream, whisking continuously. This will make 1 1/2 cups which will keep for two or three weeks if covered and refrigerated.

Some people like to add an anchovy fillet or two. Do you have a favorite dressing that you'd like to share? Write to Allene White, Bay Road, Blue Hill

"OLIVE OIL TOPS RIVALS IN GROWTH"

Supermarket News
Monday, June 6, 1988
Pps. 12, 14

By PHIL MALL

Olive oil — an upscale and, some say, more healthful alternative to the more familiar vegetable and corn oils — has become the fastest-growing segment within the cooking oil category.

Data released by SAMI/Burke, the New York-based research firm, shows olive oil sales have almost doubled from \$62 million in sales for 29.3 million pts. in 1983 to \$112.7 million in sales for 46.2 million pts. in 1987.

Olive oil was the third largest cooking oil segment in 1987 behind vegetable oil (\$582 million for 733 million pts.) and corn oil (\$225.4 million for 312 million pts.), according to SAMI.

"We have expanded our olive oil section and have moved it into the more prominent section of the shelf," said Lee Sa'o, grocery buyer, Raley's, Broderick, Calif.

"Olive oil sales have been pretty good," said Joe Shuttlesworth, grocery buyer, Furr's, Lubbock, Tex. "We carry a number of sizes. The smallest, 8.5 oz., seems to sell best — about 150 cases in six weeks."

"Our sales of olive oil are up about 20% over last year," said Robert O'Connor, grocery buyer, Cala Foods, San Francisco. "The larger sizes have really taken off. Part of the reason is promotion. We do an awful lot of advertising and putting up displays of the 3-liter size."

The growing popularity of the segment is causing many changes in cooking oil merchandising.

"We expanded the space. We needed it for the new items," said Nick Alex, grocery buyer, Vons Cos., El Monte, Calif.

Alex said olive oil sales "were up about 35% over last year" and that the segment now takes up one-third of the store's cooking oil section.

"We have expanded our mix of olive oil, and placed the segment on our top shelves," said Mike Sullivan, grocery buyer, Red Food Stores, Chattanooga, Tenn.

Tracking the Growth of Olive Oil

Olive oil has become the fastest-growing segment among cooking oils, outpacing all other gourmet varieties, including safflower and peanut. Shown are sales of selected cooking oils.

Sales Volume in Millions of Dollars

Category	1983	1984	1985	1986	1987
Vegetable	\$638.6	\$733.0	\$701.7	\$623.2	\$582.0
Corn	217.8	289.7	301.3	284.0	225.4
Olive	62.0	67.0	70.4	84.2	112.7
Non-stick	67.3	69.5	77.5	75.1	82.5
Safflower	20.6	25.4	27.9	27.3	28.6
Sunflower	36.4	33.8	26.8	21.8	21.0
Peanut	19.2	18.7	17.9	16.9	17.9

Source: SAMI/Burke

"We never used to pay attention to olive oil," said Shuttlesworth. "We had only one size for about 20 years. Then we got toying around with the idea of putting in some more, changing brands and going to a good-looking label."

Retailers said olive oil earned higher profit margins than other oils.

O'Connor said profit margins were "a little higher because the competition on vegetable oil is hot out here, but you're not allowed to make any money on it."

"The profit margin on olive oil is higher than on the other oils because it's not a commodity item that people use a lot of," said a grocery buyer with Piggly Wiggly Southern in Vidalia, Ga.

Some retailers said health considerations are the driving force behind olive oil's sales, citing research showing monounsaturated fats like olive oil reduce harmful blood cholesterol levels.

"Gradually, the olive oil market has increased," said Bruce Anderson, grocery buyer, Harris Teeter, Charlotte, N.C. "I don't know why, unless it's the health jag."

"Olive oil has picked up," said Sullivan. "I say it's all about the cholesterol."

Olive oil can be divided into three subsegments: pure olive oil, which has an acidity level up to 3%; virgin olive oil, with up to 1.5% acidity, and extra-virgin olive oil, with less than 1% acidity.

Extra-virgin olive oil is the most expensive product within the segment, selling for \$25 and up per liter, and therefore offering the highest profits but the fewest turns.

Most retailers polled by Supermarket News said they stock only pure olive oil, the least expensive of the three subsegments, which accounts for approximately 80% of the olive oil market, according to Richard J. Sullivan, executive vice president, Olive Oil Association of America, Matawan, N.J.

Nearly all olive oil on the market is imported. Department of Commerce figures listed 51,000 metric tons imported in 1987. Domestic production is limited mainly to California.

Greg Maxwell, grocery buyer, Byerly's, Edina, Minn. — an upscale chain where olive oil makes up one-third of the oil section — said he carries some domestic brands but thought the "better-quality olive oils are the ones that are imported, especially when people are always going to insist on quality."

"Our sales of olive oil are up about 20% over last year.... Part of the reason is promotion. We do an awful lot of advertising."

— Robert O'Connor
grocery buyer
Cala Food

Not all retailers are pleased with their olive oil sales.

"In our area, they're slow," said Dan Puett, grocery buyer, Falley's, Topeka. "A lot of people see that as a gourmet item. We're a warehouse-type store."

"Olive oil has slowed down because the prices are so high," said Mel Weitz, president, Melmarkets, East Rockaway, N.Y.

Weitz' comment was echoed by Steve Heckendorf, grocery buyer, New Deal Markets, Modesto, Calif., who said sales of olive oil were "poor" and that the segment had "not appealed to our working class clientele."

Al.

ANNEX E

Short List of Olive Oil Importers

Key:

I	=	Importer
M	=	Manufacturer
D	=	Distributor
E	=	Exporter
DFB	=	Domestic Food Broker
IA	=	Import Agent

Only firms identified with these symbols are handling olive oil.

Source: Association of Food Industry 1988.

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Mr. Guy Peronard

SUMMIT IMPORT CORPORATION
413 Greenwich Street
New York, NY 10013
Phone: 212-226-1862
Telex: RCA: 233578 SUMM UR
ITT: 423357 SUMM UR
Fax: 212-825-0589
Mr. Lin Chen, President
Mr. Whiting Wu, Vice President

SURACE INC., PAUL
Sub. of Camerican
P.O. Box 218 480 Alfred Avenue
Teaneck, NJ 07666
Phone: 201-433-2000
Mr. Paul Surace

T

TAORMINA SALES COMPANY, INC.
P.O. Box 148, 174 Westwood Avenue
Westwood, NJ 07875
Phone: 201-864-4884
Telex: 8101008448 Western Union Easy Link
Mr. Joseph A. Taormina, President
Ms. Helena Dene, Sales Representative
Ms. Marie Cattabiani, Import Manager

TEE PEE OLIVES, INC.
108 Montgomery Ave.
Scarsdale, NY 10583
Phone: 914-723-8800
Telex: (TEE PEE SCDL) TLX 131432
Fax: 914-723-2837
Mr. David N. Cory, President
Mr. Emil Ceko, Vice Pres. & Sec'y

TOP FOOD DISTRIBUTING CO.
3720 Boston Road
Bronx, NY 10469
Phone: 212-882-4500
Mr. Gerrit H. Vonderheyde

TOWER BROKERAGE, INC.
701 Palisade Ave
Englewood Cliffs, NJ 07632
Phone: 201-884-1177
Telex: 218322 TOWER UR
Fax: 871-3126
Mr. Torikild Albertsen, President

TRANSMED FOODS
7 West Hill Street
Baltimore, MD 21203-5782
Phone: 301-837-3330
Fax: 301-837-3332
Mr. Barry Dixon, Director

U

ULTRAMAR MARKETING CORP.
P.O. Box 495
Princeton, NJ 08542
Phone: 201-329-6776
Telex: 8858045 ARCE UW
Easy Link 62951614
Mr. Claudio R. Arce, Presi

V

VILLAMARIN GUILLEN INC.
28 Bay Street
Staten Island, NY 10301
Phone: 718-720-0128
Telex: ITT: 424200
WU: 125041
Fax: 718-720-0317
Mr. Lester T. Frey, President

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W.L.W. TRADING CO., INC.
2 Overhill Road
Scarsdale, NY 10583
Phone: 914-723-7775
Mr. Walter L. Willner

WALLEN CONSOLIDATED MERCANTILE CO.
401 Broadway
New York, NY 10013
Phone: 212-888-0280
Mr. Jack Fraenkel

WHITE & CO., INC., LN.
225 W. 34th Street
New York, NY 10001
Phone: 212-226-7474
Mr. Arnold Gabel

WORLD PRIDE FOODS
101 Maiden Lane
New York, NY 10038
Phone: 212-483-8900
Telex: 277 212-AMS BACK ALSCHUR
Fax: 212-843-1480
Mr. Alfred Schaefer, President
Mr. Ted de Lya, Chairman

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ANNEX F

**Nielson National Scantrack Service
Supplemental Detail Report**

Example for using these tables:

One page bottom is listed Bertolli. The first listing, in bold type, is an aggregate for all container sizes sold. The data under the farthest right-hand column label "52 Week Ending" is the figure for all of 1987. These numbers represent U.S. retail sales only and omit consumption in restaurants and manufacturing. Nielsen estimates that 98 percent of US retail sales are represented by these figures.

The pertinent rows may be read as follows:

DC - dollar share of retail sales -	30.5%
PS - volume share of retail sales -	26.0%
SP - average retail price/ounce, in \$ -	\$.17
%S - percent of stores carrying brand -	81%

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**NATIONAL SCANTRACK SERVICE
SUPPLEMENTAL DETAIL REPORT**

FOR

GOVERNMENT OF TUNISIA

CATEGORY: OLIVE OIL
MARKET: NATIONAL
PERIODS: 52 WEEKS ENDING 12/26/87
REPORT BASIS: PHYSICAL BASIS VOLUME / SHARE - OUNCE BASIS
SELL PRICE - OUNCE BASIS
PERCENT OF STORES - ACV BASIS

NOTE: ALL INDICATED FACTS WERE PROCESSED FOR THIS REPORT. FACTS WITH O'S OR SPACES FOR ALL REPORT PERIODS HAVE BEEN SUPPRESSED.

REPORT FACT KEY

DV - DOLLAR SALES VOLUME
DS - DOLLAR SALES SHARE
PV - PHYSICAL BASIS VOLUME
PS - PHYSICAL BASIS SHARE
SP - SELL PRICE
%S - PERCENT OF STORES SELLING

THIS PROJECTED NATIONAL SCANNING DATA
HAS BEEN ADJUSTED TO REFLECT SALES
THROUGH ALL GROCERY STORES

S U P P L E M E N T A L D E T A I L R E P O R T

CLIENT - GOVERNMENT OF TUNISIA CATEGORY - OLIVE OIL

REPORT BASED ON WEEK(S) ENDING 01/03/87 THRU 12/26/87

ITEM DESCRIPTION	KEY	13 WEEK	13 WEEK	13 WEEK	13 WEEK	52 WEEK										KEY
		ENDING 03/28 1987	ENDING 06/27 1987	ENDING 09/28 1987	ENDING 12/26 1987	ENDING 12/26 1987										
TOTAL MARKET	DV	29,219M	31,617M	35,375M	34,962M	121MM										DV
	PV	200MM	209MM	237MM	233MM	879MM										PV
	XS	100	100	100	100	100										XS
ALESSI	DV	110,961	86,426	91,683	77,794	366,865										DV
	DS	.4	.3	.3	.2	.3										DS
	PV	531,278	415,678	439,830	370,099	1,757M										PV
	PS	.3	.2	.2	.2	.2										PS
	SP	.21	.21	.21	.21	.21										SP
	XS	6	7	6	6	8										XS
ALESSI OLIVE OIL	DV	110,961	86,426	91,683	77,794	366,865										DV
17 OZ	DS	.4	.3	.3	.2	.3										DS
	PV	531,878	415,678	439,830	370,099	1,757M										PV
	PS	.3	.2	.2	.2	.2										PS
	SP	.21	.21	.21	.21	.21										SP
	XS	6	7	6	6	8										XS
BASSO	DV	5,081	41,437	101,352	83,587	231,437										DV
	DS	#	.1	.3	.2	.2										DS
	PV	64,847	604,331	1,499M	1,177M	3,345M										PV
	PS	#	.3	.6	.5	.4										PS
	SP	.08	.07	.07	.07	.07										SP
	XS	3	5	5	5	5										XS
BASSO OLIVE OIL	DV	5,061	41,437	101,352	83,587	231,437										DV
128 OZ	DS	#	.1	.3	.2	.2										DS
	PV	64,847	604,331	1,499M	1,177M	3,345M										PV
	PS	#	.3	.6	.5	.4										PS
	SP	.08	.07	.07	.07	.07										SP
	XS	3	5	5	5	5										XS
BERTOLLI	DV	7,857M	9,784M	11,260M	11,155M	40,058M										DV
	DS	28.9	30.9	31.8	31.9	30.5										DS
	PV	43,789M	55,346M	64,447M	65,347M	229MM										PV
	PS	21.9	28.4	27.2	28.1	26.0										PS
	SP	.18	.18	.17	.17	.17										SP
	XS	78	80	78	78	81										XS
BERTOLLI OLIVE OIL	DV	1,349M	1,438M	1,707M	1,515M	6,009M										DV
8 OZ	DS	4.6	4.5	4.8	4.3	4.6										DS
	PV	5,930M	6,287M	7,794M	7,107M	27,117M										PV
	PS	3.0	3.0	3.3	3.1	3.1										PS
	SP	.23	.23	.22	.21	.22										SP
	XS	50	47	46	46	52										XS

S U P P L E M E N T A L D E T A I L R E P O R T
C L I E N T - G O V E R N M E N T O F T U N I S I A C A T E G O R Y - O L I V E O I L
R E P O R T B A S E D O N W E E K (S) E N D I N G 0 1 / 0 3 / 8 7 T H R U 1 2 / 2 8 / 8 7

ITEM DESCRIPTION		KEY	13 WEEK ENDING 03/28 1987	13 WEEK ENDING 06/27 1987	13 WEEK ENDING 09/26 1987	13 WEEK ENDING 12/26 1987	52 WEEK ENDING 12/26 1987												KEY		
BERTOLLI OLIVE OIL	8.5 OZ	DV	200,970	316,228	282,575	368,411	1,188M												DV		
		DS	.7	1.0	.8	1.1	.9												DS		
		PV	915,945	1,699M	1,359M	1,823M	5,797M													PV	
		PS	.5	.8	.6	.8	.7													PS	
		SP	.22	.19	.21	.21	.20													SP	
		XS	9	11	10	9	12													XS	
BERTOLLI OLIVE OIL	17 OZ	DV	4,136M	4,741M	5,705M	5,614M	20,196M													DV	
		DS	14.2	15.0	16.1	16.1	15.4													DS	
		PV	23,058M	24,225M	29,082M	28,726M	104MM													PV	
		PS	11.0	11.6	12.3	12.3	11.8													PS	
		SP	.19	.20	.20	.20	.19														SP
		XS	71	73	72	71	75														XS
BERTOLLI OLIVE OIL	34 OZ	DV	1,590M	2,348M	2,393M	2,469M	8,799M													DV	
		DS	5.4	7.4	6.8	7.1	6.7													DS	
		PV	9,732M	14,376M	15,113M	16,076M	55,297M													PV	
		PS	4.9	6.9	6.4	6.9	6.3													PS	
		SP	.16	.16	.16	.15	.16														SP
		XS	29	30	33	35	34														XS
BERTOLLI OLIVE OIL	68 OZ	DV	124,102	242,712	278,711	198,495	844,019													DV	
		DS	.4	.8	.8	.6	.6													DS	
		PV	842,266	1,745M	1,991M	1,458M	6,037M													PV	
		PS	.4	.8	.8	.6	.7														PS
		SP	.15	.14	.14	.14	.14														SP
		XS	8	9	8	6	9														XS
BERTOLLI OLIVE OIL	101 OZ	DV	425,248	655,344	867,459	839,954	2,888M													DV	
		DS	1.5	2.1	2.5	2.7	2.2													DS	
		PV	3,955M	6,575M	8,844M	9,837M	29,211M													PV	
		PS	2.0	3.1	3.7	4.2	3.3													PS	
		SP	.11	.10	.10	.10	.10														SP
		XS	23	21	22	21	23														XS
BERTOLLI OLIVE OIL	128 OZ	DV	30,839	42,717	26,621	31,427	131,604													DV	
		DS	.1	.1	.1	.1	.1													DS	
		PV	334,971	433,463	263,167	319,381	1,351M													PV	
		PS	.2	.2	.1	.1	.2														PS
		SP	.09	.10	.10	.10	.10														SP
		XS	2	3	1	1	3														XS

S U P P L E M E N T A L D E T A I L R E P O R T

C L I E N T - G O V E R N M E N T O F T U N I S I A C A T E G O R Y - O L I V E O I L

R E P O R T B A S E D O N W E E K (S) E N D I N G 0 1 / 0 3 / 8 7 T H R U 1 2 / 2 8 / 8 7

ITEM DESCRIPTION	K E Y	13 WEEK	13 WEEK	13 WEEK	13 WEEK	52 WEEK									K E Y
		ENDING 03/28 1987	ENDING 06/27 1987	ENDING 09/26 1987	ENDING 12/26 1987	ENDING 12/26 1987									
CALLISTO FRANCESCO NI EXTRA 1	DV	18,048	38,155	34,594	26,323	117,118									DV
	DS	.1	.1	.1	.1	.1									DS
	PV	70,973	151,675	134,301	110,616	487,586									PV
	PS	#	#	.1	#	.1									PS
	SP	.25	.25	.28	.24	.25									SP
	XS	2	2	2	1	2									XS
CLSTO FRNCSCNI EX-1 OLIVE OIL 17 OZ	DV	18,048	38,155	34,594	26,323	117,118									DV
	DS	.1	.1	.1	.1	.1									DS
	PV	70,973	151,675	134,301	110,616	467,566									PV
	PS	#	.1	.1	#	.1									PS
	SP	.25	.25	.26	.24	.25									SP
	XS	2	2	2	1	2									XS
CARAPELLI	DV	0	4,199	83,550	90,807	178,556									DV
	DS	.0	#	.2	.3	.1									DS
	PV	0	34,873	675,084	758,115	1,468M									PV
	PS	.0	#	.3	.3	.2									PS
	SP	.00	.12	.12	.12	.12									SP
	XS	0	1	3	3	2									XS
CARAPELLI OLIVE OIL 17 OZ	DV	0	4,199	83,550	90,807	178,556									DV
	DS	.0	#	.2	.3	.1									DS
	PV	0	34,873	675,084	758,115	1,468M									PV
	PS	.0	#	.3	.3	.2									PS
	SP	.00	.12	.12	.12	.12									SP
	XS	0	1	3	3	2									XS
CARBONELL	DV	17,600	5,130	2,946	6,745	32,421									DV
	DS	.1	#	#	#	#									DS
	PV	143,547	41,725	20,856	52,744	258,872									PV
	PS	.1	#	#	#	#									PS
	SP	.12	.12	.14	.13	.13									SP
	XS	2	2	1	2	2									XS
CARBONELL OLIVE OIL 24 OZ	DV	17,600	5,130	2,946	6,745	32,421									DV
	DS	.1	#	#	#	#									DS
	PV	143,547	41,725	20,856	52,744	258,872									PV
	PS	.1	#	#	#	#									PS
	SP	.12	.12	.14	.13	.13									SP
	XS	2	2	1	2	2									XS

SUPPLEMENTAL DETAIL REPORT
CLIENT - GOVERNMENT OF TUNISIA CATEGORY - OLIVE OIL
REPORT BASED ON WEEK(S) ENDING 01/03/87 THRU 12/26/87

ITEM DESCRIPTION	KEY	13 WEEK	13 WEEK	13 WEEK	13 WEEK	52 WEEK										KEY
		ENDING 03/28 1987	ENDING 06/27 1987	ENDING 09/26 1987	ENDING 12/26 1987	ENDING 12/26 1987										
COLAVITA	DV	95,688	182,441	305,887	529,144	1,093M										DV
	DS	.3	.5	.9	1.5	.8										DS
	PV	389,010	780,912	1,575M	3,119M	5,844M										PV
	PS	.2	.4	.7	1.3	.7										PS
	SP	.28	.21	.19	.17	.19										SP
	XS	4	7	9	12	13										XS
COLAVITA OLIVE OIL 8.5 OZ	DV	3,654	20,811	10,642	18,254	53,362										DV
	DS	#	.1	#	.1	#										DS
	PV	17,207	91,131	44,148	75,791	228,276										PV
	PS	#	#	#	#	#										PS
	SP	.21	.23	.24	.24	.23										SP
	XS	1	1	1	1	1										XS
COLAVITA OLIVE OIL 16.9 OZ	DV	1,408	20,619	58,958	104,706	185,692										DV
	DS	#	.1	.2	.3	.1										DS
	PV	8,558	117,607	355,493	624,900	1,107M										PV
	PS	#	.1	.2	.3	.1										PS
	SP	.18	.18	.17	.17	.17										SP
	XS	1	2	3	4	5										XS
COLAVITA OLIVE OIL 17 OZ	DV	64,703	39,103	58,470	68,586	230,862										DV
	DS	.2	.1	.2	.2	.2										DS
	PV	215,587	147,849	203,270	283,740	850,446										PV
	PS	.1	.1	.1	.1	.1										PS
	SP	.30	.26	.29	.24	.27										SP
	XS	6	2	6	6	8										XS
COLAVITA OLIVE OIL 34 OZ	DV	25,921	81,908	177,816	321,810	607,455										DV
	DS	.1	.3	.5	.9	.5										DS
	PV	127,658	424,325	972,576	1,950M	3,475M										PV
	PS	.1	.2	.4	.8	.4										PS
	SP	.20	.19	.18	.16	.17										SP
	XS	4	7	8	9	10										XS
COLAVITA OLIVE OIL 128 OZ	DV	0	0	0	15,787	15,787										DV
	DS	.0	.0	.0	#	#										DS
	PV	0	0	0	183,875	183,875										PV
	PS	.0	.0	.0	.1	#										PS
	SP	.00	.00	.00	.09	.09										SP
	XS	0	0	0	1	1										XS

DATA ROUNDED TO ZERO

Nilsen Marketing Research

SUPPLEMENTAL DETAIL REPORT
CLIENT - GOVERNMENT OF TUNISIA CATEGORY - OLIVE OIL
REPORT BASED ON WEEK(S) ENDING 01/03/87 THRU 12/26/87

ITEM DESCRIPTION	KEY	13 WEEK	13 WEEK	13 WEEK	13 WEEK	52 WEEK												KEY
		ENDING 03/28 1987	ENDING 08/27 1987	ENDING 09/26 1987	ENDING 12/26 1987	ENDING 12/26 1987												
COSMOS	DV	7,284	3,382	3,438	7,745	21,828												DV
	DS	#	#	#	#	#												DS
	PV	39,107	18,049	18,448	41,582	117,184												PV
	PS	#	#	#	#	#												PS
	SP	.19	.19	.19	.19	.19												SP
	XS	1	1	1	1	1												XS
COSMOS OLIVE OIL 8 OZ	DV	7,284	3,362	3,436	7,745	21,826												DV
	DS	#	#	#	#	#												DS
	PV	39,107	18,049	18,446	41,582	117,184												PV
	PS	#	#	#	#	#												PS
	SP	.19	.19	.19	.19	.19												SP
	XS	1	1	1	1	1												XS
DA VINCI	DV	83,819	85,520	96,178	128,865	394,541												DV
	DS	.3	.3	.3	.4	.3												DS
	PV	353,135	368,412	363,848	577,375	1,897M												PV
	PS	.2	.2	.2	.2	.2												PS
	SP	.24	.23	.24	.23	.23												SP
	XS	8	8	7	12	13												XS
DA VINCI OLIVE OIL 8 OZ	DV	29,716	22,733	23,209	32,994	108,652												DV
	DS	.1	.1	.1	.1	.1												DS
	PV	116,280	87,530	86,113	133,253	423,175												PV
	PS	.1	#	#	.1	#												PS
	SP	.26	.26	.27	.25	.26												SP
	XS	6	3	3	6	7												XS
DA VINCI OLIVE OIL 12 OZ	DV	54,103	62,947	72,967	95,872	285,889												DV
	DS	.2	.2	.2	.3	.2												DS
	PV	236,856	278,882	313,736	444,122	1,274M												PV
	PS	.1	.1	.1	.2	.1												PS
	SP	.23	.23	.23	.22	.22												SP
	XS	4	4	5	9	9												XS
DELIZIA OLLANDO	DV	0	21,831	158,483	191,293	371,408												DV
	DS	.0	.1	.4	.5	.3												DS
	PV	0	140,955	1,026M	1,205M	2,371M												PV
	PS	.0	.1	.4	.5	.3												PS
	SP	.00	.15	.15	.18	.18												SP
	XS	0	1	3	3	3												XS

SUPPLEMENTAL DETAIL REPORT
CLIENT - GOVERNMENT OF TUNISIA CATEGORY - OLIVE OIL
REPORT BASED ON WEEK(S) ENDING 01/03/87 THRU 12/26/87

ITEM DESCRIPTION	KEY	13 WEEK	13 WEEK	13 WEEK	13 WEEK	52 WEEK										KEY
		ENDING 03/28 1987	ENDING 08/27 1987	ENDING 09/26 1987	ENDING 12/26 1987	ENDING 12/26 1987										
DELIZIA OLLANDO OLIVE OIL 26 OZ	DV	0	21,631	158,483	191,293	371,408										DV
	DS	.0	.1	.4	.5	.3										DS
	PV	0	140,855	1,026M	1,205M	2,371M										PV
	PS	.0	.1	.4	.5	.3										PS
	SP	.00	.15	.15	.16	.16										SP
	XS	0	1	3	3	3										XS
DELL'ALPE	DV	92,725	149,789	183,118	125,151	530,780										DV
	DS	.3	.5	.5	.4	.4										DS
	PV	598,607	980,478	1,078M	802,086	3,460M										PV
	PS	.3	.5	.5	.3	.4										PS
	SP	.15	.15	.15	.16	.15										SP
	XS	6	6	6	6	6										XS
DELL'ALPE OLIVE OIL 17 OZ	DV	78,942	119,240	129,026	104,142	429,349										DV
	DS	.3	.4	.4	.3	.3										DS
	PV	448,370	704,612	770,630	614,526	2,538M										PV
	PS	.2	.3	.3	.3	.3										PS
	SP	.17	.17	.17	.17	.17										SP
	XS	5	6	6	6	6										XS
DELL'ALPE OLIVE OIL 34 OZ	DV	759	11,858	10,823	8,615	32,055										DV
	DS	#	#	#	#	#										DS
	PV	6,016	91,666	82,753	65,238	245,672										PV
	PS	#	#	#	#	#										PS
	SP	.13	.13	.13	.13	.13										SP
	XS	1	1	1	1	1										XS
DELL'ALPE OLIVE OIL 101.4 OZ	DV	15,023	18,691	25,267	12,394	69,376										DV
	DS	.1	.1	.1	#	.1										DS
	PV	145,221	184,200	224,910	122,321	676,653										PV
	PS	.1	.1	.1	.1	.1										PS
	SP	.10	.10	.10	.10	.10										SP
	XS	3	3	3	2	3										XS
EDEN	DV	701	2,737	3,802	792	8,032										DV
	DS	#	#	#	#	#										DS
	PV	18,788	65,487	85,348	17,290	184,892										PV
	PS	#	#	#	#	#										PS
	SP	.04	.04	.04	.05	.04										SP
	XS	2	2	2	2	2										XS

S U P P L E M E N T A L D E T A I L R E P O R T
C L I E N T - G O V E R N M E N T O F T U N I S I A C A T E G O R Y - O L I V E O I L
R E P O R T B A S E D O N W E E K (S) E N D I N G 0 1 / 0 3 / 8 7 T H R U 1 2 / 2 6 / 8 7

ITEM DESCRIPTION	K E Y	13 WEEK	13 WEEK	13 WEEK	13 WEEK	52 WEEK									K E Y
		ENDING 03/28 1987	ENDING 06/27 1987	ENDING 09/26 1987	ENDING 12/26 1987	ENDING 12/26 1987									
EDEN OLIVE OIL 50 OZ	DV	701	2,737	3,802	792	8,032									DV
	DS	#	#	#	#	#									DS
	PV	16,768	65,487	85,346	17,290	184,892									PV
	PS	#	#	#	#	#									PS
	SP	.04	.04	.04	.05	.04									SP
	XS	2	2	2	2	2									XS
FASOLINO	DV	1,592	0	0	0	1,592									DV
	DS	#	.0	.0	.0	#									DS
	PV	17,009	0	0	0	17,009									PV
	PS	#	.0	.0	.0	#									PS
	SP	.09	.00	.00	.00	.09									SP
	XS	1	0	0	0	1									XS
FASOLINO OLIVE OIL 101.4 OZ	DV	1,592	0	0	0	1,592									DV
	DS	#	.0	.0	.0	#									DS
	PV	17,009	0	0	0	17,009									PV
	PS	#	.0	.0	.0	#									PS
	SP	.09	.00	.00	.00	.09									SP
	XS	1	0	0	0	1									XS
FERRARA	DV	0	10,921	6,231	1,292	18,444									DV
	DS	.0	#	#	#	#									DS
	PV	0	25,175	11,619	2,443	39,237									PV
	PS	.0	#	#	#	#									PS
	SP	.00	.43	.54	.53	.47									SP
	XS	0	1	1	1	1									XS
FERRARA OLIVE OIL 17 OZ	DV	0	6,586	6,231	1,292	14,109									DV
	DS	.0	#	#	#	#									DS
	PV	0	12,454	11,619	2,443	26,517									PV
	PS	.0	#	#	#	#									PS
	SP	.00	.53	.54	.53	.53									SP
	XS	0	1	1	1	1									XS
FERRARA OLIVE OIL 33.8 OZ	DV	0	4,335	0	0	4,335									DV
	DS	.0	#	.0	.0	#									DS
	PV	0	12,720	0	0	12,720									PV
	PS	.0	#	.0	.0	#									PS
	SP	.00	.34	.00	.00	.34									SP
	XS	0	#	0	0	#									XS

SUPPLEMENTAL DETAIL REPORT

CLIENT - GOVERNMENT OF TUNISIA CATEGORY - OLIVE OIL

REPORT BASED ON WEEK(S) ENDING 01/03/87 THRU 12/28/87

ITEM DESCRIPTION	KEY	13 WEEK	13 WEEK	13 WEEK	13 WEEK	52 WEEK									KEY
		ENDING 03/28 1987	ENDING 06/27 1987	ENDING 09/28 1987	ENDING 12/28 1987	ENDING 12/28 1987									
FILIPPO BERIO	DV	7,051M	7,416M	7,772M	7,315M	28,554M									DV
	DS	24.1	23.5	22.0	20.9	22.5									DS
	PV	53,234M	58,668M	58,113M	54,863M	223MM									PV
	PS	26.6	27.1	24.6	23.5	25.3									PS
	SP	.13	.13	.13	.13	.13									SP
	XS	44	43	45	44	46									XS
FILIPPO BERIO OLIVE OIL 3.25 OZ	DV	340	5,605	21,263	33,212	60,420									DV
	DS	#	#	.1	.1	#									DS
	PV	1,242	15,308	57,111	93,445	167,106									PV
	PS	#	#	#	#	#									PS
	SP	.27	.37	.37	.36	.36									SP
	XS	#	1	3	6	4									XS
FILIPPO BERIO OLIVE OIL 3 OZ	DV	21,425	7,222	11,432	14,079	54,158									DV
	DS	.1	#	#	#	#									DS
	PV	81,022	24,774	41,284	55,635	202,715									PV
	PS	#	#	#	#	#									PS
	SP	.26	.29	.28	.25	.27									SP
	XS	3	3	3	3	3									XS
FILIPPO BERIO OLIVE OIL 8.5 OZ	DV	957,949	969,756	1,058M	1,049M	4,035M									DV
	DS	3.3	3.1	3.0	3.0	3.1									DS
	PV	4,975M	4,976M	5,414M	5,363M	20,728M									PV
	PS	2.5	2.4	2.3	2.3	2.4									PS
	SP	.10	.19	.20	.20	.19									SP
	XS	28	28	32	36	37									XS
FILIPPO BERIO OLIVE OIL 16 OZ	DV	76,797	68,085	98,711	119,552	363,145									DV
	DS	.3	.2	.3	.3	.3									DS
	PV	441,272	393,815	567,060	668,725	2,071M									PV
	PS	.2	.2	.2	.3	.2									PS
	SP	.17	.17	.17	.18	.18									SP
	XS	3	3	6	6	6									XS
FILIPPO BERIO OLIVE OIL 17 OZ	DV	2,921M	2,861M	3,082M	2,752M	11,617M									DV
	DS	10.0	9.0	8.7	7.9	8.9									DS
	PV	19,310M	18,032M	20,048M	17,212M	74,603M									PV
	PS	9.7	8.6	8.5	7.4	8.5									PS
	SP	.15	.16	.15	.16	.16									SP
	XS	37	37	38	37	37									XS

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SUPPLEMENTAL DETAIL REPORT
 CLIENT - GOVERNMENT OF TUNISIA CATEGORY - OLIVE OIL
 REPORT BASED ON WEEK(S) ENDING 01/03/87 THRU 12/26/87

ITEM DESCRIPTION	KEY	13 WEEK	13 WEEK	13 WEEK	13 WEEK	52 WEEK										KEY
		ENDING 03/28 1987	ENDING 06/27 1987	ENDING 09/26 1987	ENDING 12/23 1987	ENDING 12/26 1987										
FILIPPO BERIO OLIVE OIL 25.5 OZ	DV	1,134M	1,321M	1,446M	1,242M	5,143M										DV
	DS	3.9	4.2	4.1	3.6	3.9										DS
	PV	8,127M	9,409M	10,277M	8,244M	36,057M										PV
	PS	4.1	4.5	4.3	3.5	4.1										PS
	SP	.14	.14	.14	.15	.14										SP
	XS	16	17	19	18	18										XS
FILIPPO BERIO OLIVE OIL 32 OZ	DV	424,313	343,263	297,978	314,003	1,380M										DV
	DS	1.5	1.1	.8	.9	1.1										DS
	PV	3,187M	2,561M	2,160M	2,208M	10,114M										PV
	PS	1.6	1.2	.9	.9	1.2										PS
	SP	.13	.13	.14	.14	.14										SP
	XS	6	6	5	8	8										XS
FILIPPO BERIO OLIVE OIL 64 OZ	DV	25,343	39,516	18,528	0	83,387										DV
	DS	.1	.1	.1	.0	.1										DS
	PV	182,445	284,481	133,384	0	600,310										PV
	PS	.1	.1	.1	.0	.1										PS
	SP	.14	.14	.14	.00	.14										SP
	XS	2	2	2	0	2										XS
FILIPPO BERIO OLIVE OIL 101 OZ	DV	16,009	14,011	17,502	19,619	67,142										DV
	DS	.1	#	#	.1	.1										DS
	PV	145,795	127,607	159,400	192,505	625,307										PV
	PS	.1	.1	.1	.1	.1										PS
	SP	.11	.11	.11	.10	.11										SP
	XS	1	1	1	2	2										XS
FILIPPO BERIO OLIVE OIL 128 OZ	DV	1,473M	1,787M	1,720M	1,771M	6,751M										DV
	DS	5.0	5.7	4.9	5.1	5.1										DS
	PV	16,783M	20,842M	19,256M	20,627M	77,508M										PV
	PS	8.4	10.0	8.1	8.9	8.8										PS
	SP	.09	.09	.09	.09	.09										SP
	XS	23	21	22	22	23										XS
GAETA ITRI	DV	0	0	0	4,673	4,673										DV
	DS	.0	.0	.0	#	#										DS
	PV	0	0	0	11,334	11,334										PV
	PS	.0	.0	.0	#	#										PS
	SP	.00	.00	.00	.41	.41										SP
	XS	0	0	0	1	1										XS

SUPPLEMENTAL DETAIL REPORT
CLIENT - GOVERNMENT OF TUNISIA CATEGORY - OLIVE OIL
REPORT BASED ON WEEK(S) ENDING 01/03/87 THRU 12/28/87

ITEM DESCRIPTION	KEY	13 WEEK ENDING 03/28 1987	13 WEEK ENDING 08/27 1987	13 WEEK ENDING 09/28 1987	13 WEEK ENDING 12/28 1987	52 WEEK ENDING 12/28 1987												KEY
GAETA ITRI OLIVE OIL 8.45 OZ	DV	0	0	0	690	690												DV
	DS	.0	.0	.0	#	#												DS
	PV	0	0	0	1,218	1,218												PV
	PS	.0	.0	.0	#	#												PS
	SP	.00	.00	.00	.57	.57												SP
	XS	0	0	0	1	1												XS
GAETA ITRI OLIVE OIL 17.5 OZ	DV	0	0	0	3,983	3,983												DV
	DS	.0	.0	.0	#	#												DS
	PV	0	0	0	10,116	10,116												PV
	PS	.0	.0	.0	#	#												PS
	SP	.00	.00	.00	.39	.39												SP
	XS	0	0	0	1	1												XS
GOLOSO	DV	1,170	10,026	17,193	6,295	34,684												DV
	DS	#	#	#	#	#												DS
	PV	5,666	48,549	83,258	30,481	167,953												PV
	PS	#	#	#	#	#												PS
	SP	.21	.21	.21	.21	.21												SP
	XS	1	1	1	1	1												XS
GOLOSO OLIVE OIL 16.9 OZ	DV	1,170	10,026	17,193	6,295	34,684												DV
	DS	#	#	#	#	#												DS
	PV	5,666	48,549	83,258	30,481	167,953												PV
	PS	#	#	#	#	#												PS
	SP	.21	.21	.21	.21	.21												SP
	XS	1	1	1	1	1												XS
GONDOLA	DV	77,080	73,350	66,870	24,980	241,980												DV
	DS	.3	.2	.2	.1	.2												DS
	PV	524,892	428,568	351,827	121,894	1,427M												PV
	PS	.3	.2	.1	.1	.2												PS
	SP	.15	.17	.19	.20	.17												SP
	XS	4	4	2	2	4												XS
GONDOLA OLIVE OIL 8 OZ	DV	53,887	34,902	37,789	11,589	138,167												DV
	DS	.2	.1	.1	#	.1												DS
	PV	298,261	181,665	193,846	55,738	729,509												PV
	PS	.1	.1	.1	#	.1												PS
	SP	.18	.19	.19	.21	.19												SP
	XS	2	2	2	2	2												XS

SUPPLEMENTAL DETAIL REPORT
CLIENT - GOVERNMENT OF TUNISIA CATEGORY - OLIVE OIL
REPORT BASED ON WEEK(S) ENDING 01/03/87 THRU 12/26/87

ITEM DESCRIPTION	KEY	13 WEEK	13 WEEK	13 WEEK	13 WEEK	52 WEEK									KEY
		ENDING 03/28 1987	ENDING 06/27 1987	ENDING 09/28 1987	ENDING 12/28 1987	ENDING 12/28 1987									
GONDOLA OLIVE OIL 16.9 OZ	DV	12,231	24,398	13,812	8,774	59,213									DV
	DS	#	.1	#	#	#									DS
	PV	64,799	129,245	84,204	46,481	334,729									PV
	PS	#	.1	#	#	#									PS
	SP	.19	.19	.15	.19	.18									SP
	XS	1	1	1	1	1									XS
GONDOLA OLIVE OIL 17 OZ	DV	2,735	7,833	14,369	4,618	30,155									DV
	DS	#	#	#	#	#									DS
	PV	11,653	33,373	63,777	19,675	128,478									PV
	PS	#	#	#	#	#									PS
	SP	.23	.23	.23	.23	.23									SP
	XS	1	1	1	1	1									XS
GONDOLA OLIVE OIL 128 OZ	DV	8,206	6,219	0	0	14,425									DV
	DS	#	#	.0	.0	#									DS
	PV	150,269	84,285	0	0	234,553									PV
	PS	.1	#	.0	.0	#									PS
	SP	.05	.07	.00	.00	.06									SP
	XS	1	2	0	0	2									XS
GOURMET AWARD	DV	822	0	0	0	822									DV
	DS	#	.0	.0	.0	#									DS
	PV	4,669	0	0	0	4,669									PV
	PS	#	.0	.0	.0	#									PS
	SP	.13	.00	.00	.00	.13									SP
	XS	1	0	0	0	#									XS
GOURMET AWARD OLIVE OIL 16.9 OZ	DV	622	0	0	0	622									DV
	DS	#	.0	.0	.0	#									DS
	PV	4,669	0	0	0	4,669									PV
	PS	#	.0	.0	.0	#									PS
	SP	.13	.00	.00	.00	.13									SP
	XS	1	0	0	0	#									XS
GOYA	DV	339,312	328,179	354,944	389,349	1,390M									DV
	DS	1.2	1.0	1.0	1.1	1.1									DS
	PV	2,280M	2,035M	2,193M	2,227M	8,714M									PV
	PS	1.1	1.0	.9	1.0	1.0									PS
	SP	.15	.18	.18	.17	.18									SP
	XS	15	12	15	14	16									XS

SUPPLEMENTAL DETAIL REPORT
CLIENT - GOVERNMENT OF TUNISIA CATEGORY - OLIVE OIL
REPORT BASED ON WEEK(S) ENDING 01/03/87 THRU 12/26/87

ITEM DESCRIPTION	KEY	13 WEEK	13 WEEK	13 WEEK	13 WEEK	52 WEEK											KEY			
		ENDING 03/28 1987	ENDING 06/27 1987	ENDING 09/26 1987	ENDING 12/26 1987	ENDING 12/26 1987														
GOYA OLIVE OIL 8 OZ	DV	191,867	175,162	174,037	182,811	723,877														DV
	DS	.7	.6	.5	.5	.6														DS
	PV	1,236M	1,041M	1,025M	1,043M	4,344M														PV
	PS	.6	.5	.4	.4	.5														PS
	SP	.16	.17	.17	.18	.17														SP
	XS	13	11	13	13	14														XS
GOYA OLIVE OIL 12 OZ	DV	0	17,715	29,437	23,897	71,048													DV	
	DS	.0	.1	.1	.1	.1													DS	
	PV	0	109,013	181,148	161,061	451,222													PV	
	PS	.0	.1	.1	.1	.1													PS	
	SP	.00	.16	.16	.15	.16													SP	
	XS	0	1	1	1	1													XS	
GOYA OLIVE OIL 16 OZ	DV	111,106	106,129	127,619	127,976	472,830													DV	
	DS	.4	.3	.4	.4	.4													DS	
	PV	718,459	666,449	810,763	762,267	2,958M													PV	
	PS	.4	.3	.3	.3	.3													PS	
	SP	.15	.16	.16	.17	.16													SP	
	XS	8	6	8	7	10													XS	
GOYA OLIVE OIL 32 OZ	DV	36,340	27,173	23,851	34,665	122,029													DV	
	DS	.1	.1	.1	.1	.1													DS	
	PV	305,118	218,332	176,576	261,010	961,036													PV	
	PS	.2	.1	.1	.1	.1													PS	
	SP	.12	.12	.14	.13	.13													SP	
	XS	2	3	3	3	3													XS	
HAIN	DV	15,973	10,293	8,160	10,825	45,052													DV	
	DS	.1	#	#	#	#													DS	
	PV	49,909	33,801	25,157	33,131	141,998													PV	
	PS	#	#	J	#	#													PS	
	SP	.32	.30	.32	.32	.32													SP	
	XS	3	3	2	4	5													XS	
HAIN OLIVE OIL 6 OZ	DV	1,023	0	0	0	1,023													DV	
	DS	#	.0	.0	.0	#													DS	
	PV	2,464	0	0	0	2,464													PV	
	PS	#	.0	.0	.0	#													PS	
	SP	.41	.00	.00	.00	.41													SP	
	XS	1	0	0	0	#													XS	

S U P P L E M E N T A L D E T A I L R E P O R T
C L I E N T - G O V E R N M E N T O F T U N I S I A C A T E G O R Y - O L I V E O I L
R E P O R T B A S E D O N W E E K (S) E N D I N G 0 1 / 0 3 / 8 7 T H R U 1 2 / 2 6 / 8 7

ITEM DESCRIPTION	K E Y	13 WEEK	13 WEEK	13 WEEK	13 WEEK	52 WEEK									K E Y
		ENDING 03/26 1987	ENDING 06/27 1987	ENDING 09/26 1987	ENDING 12/26 1987	ENDING 12/26 1987									
HAIN OLIVE OIL 16 OZ	DV	14,951	10,293	8,160	10,625	44,029									DV
	DS	.1	#	#	#	#									DS
	PV	47,445	33,801	25,157	33,131	139,534									PV
	PS	#	#	#	#	#									PS
	SP	.32	.30	.32	.32	.32									SP
	XS	3	3	2	4	5									XS
IBERIA	DV	7,679	67,724	40,351	0	115,754									DV
	DS	#	.2	.1	.0	.1									DS
	PV	77,275	1,085M	646,424	0	1,809M									PV
	PS	#	.5	.3	.0	.2									PS
	SP	.10	.06	.06	.00	.06									SP
	XS	#	1	1	0	1									XS
IBERIA OLIVE OIL 16 OZ	DV	7,679	0	0	0	7,679									DV
	DS	#	.0	.0	.0	#									DS
	PV	77,275	0	0	0	77,275									PV
	PS	#	.0	.0	.0	#									PS
	SP	.10	.00	.00	.00	.10									SP
	XS	#	0	0	0	#									XS
IBERIA OLIVE OIL 128 OZ	DV	0	67,724	40,351	0	108,075									DV
	DS	.0	.2	.1	.0	.1									DS
	PV	0	1,085M	646,424	0	1,731M									PV
	PS	.0	.5	.3	.0	.2									PS
	SP	.00	.06	.06	.00	.06									SP
	XS	0	1	1	0	1									XS
ITALIA	DV	243,112	268,694	242,204	206,053	958,062									DV
	DS	.8	.8	.7	.6	.7									DS
	PV	1,451M	1,652M	1,453M	1,141M	5,698M									PV
	PS	.7	.8	.6	.5	.6									PS
	SP	.17	.16	.17	.18	.17									SP
	XS	6	5	5	6	6									XS
ITALIA OLIVE OIL 8 OZ	DV	98,994	120,467	109,476	102,783	431,718									DV
	DS	.3	.4	.3	.3	.3									DS
	PV	514,847	662,549	592,914	514,363	2,285M									PV
	PS	.3	.3	.3	.2	.3									PS
	SP	.19	.18	.18	.20	.19									SP
	XS	3	2	2	2	2									XS

S U P P L E M E N T A L D E T A I L R E P O R T
C L I E N T - G O V E R N M E N T O F T U N I S I A C A T E G O R Y - O L I V E O I L
R E P O R T B A S E D O N W E E K (S) E N D I N G 0 1 / 0 3 / 8 7 T H R U 1 2 / 2 8 / 8 7

ITEM DESCRIPTION	KEY	13 WEEK	13 WEEK	13 WEEK	13 WEEK	52 WEEK										KEY
		ENDING 03/28 1987	ENDING 08/27 1987	ENDING 09/28 1987	ENDING 12/28 1987	ENDING 12/28 1987										
ITALIA OLIVE OIL 17 OZ	DV	144,118	146,227	132,728	103,270	526,344										DV
	DS	.5	.5	.4	.3	.4										DS
	PV	935,376	899,682	880,402	626,495	3,413M										PV
	PS	.5	.5	.4	.3	.4										PS
	SP	.15	.15	.15	.16	.15										SP
	XS	4	3	3	3	4										XS
LA ANDALUZA	DV	2,218	12,828	23,715	22,458	61,218										DV
	DS	#	#	.1	.1	#										DS
	PV	45,791	111,245	205,661	194,744	557,441										PV
	PS	#	.1	.1	.1	.1										PS
	SP	.05	.12	.12	.12	.11										SP
	XS	1	1	3	4	3										XS
LA ANDALUZA OLIVE OIL 32 OZ	DV	2,218	12,828	23,715	22,458	61,218										DV
	DS	#	#	.1	.1	#										DS
	PV	45,791	111,245	205,661	194,744	557,441										PV
	PS	#	.1	.1	.1	.1										PS
	SP	.05	.12	.12	.12	.11										SP
	XS	1	1	3	4	3										XS
LA MASIA	DV	688	1,098	0	0	1,786										DV
	DS	#	#	.0	.0	#										DS
	PV	4,419	7,352	0	0	11,771										PV
	PS	#	#	.0	.0	#										PS
	SP	.16	.15	.00	.00	.15										SP
	XS	#	#	0	0	#										XS
LA MASIA OLIVE OIL, 16 OZ	DV	688	1,098	0	0	1,786										DV
	DS	#	#	.0	.0	#										DS
	PV	4,419	7,352	0	0	11,771										PV
	PS	#	#	.0	.0	#										PS
	SP	.16	.15	.00	.00	.15										SP
	XS	#	#	0	0	#										XS
LA PREFERIDA	DV	11,133	10,801	14,589	9,002	45,305										DV
	DS	#	#	#	#	#										DS
	PV	52,700	48,923	61,072	35,920	198,614										PV
	PS	#	#	#	#	#										PS
	SP	.21	.23	.24	.25	.23										SP
	XS	2	3	4	4	5										XS

SUPPLEMENTAL DETAIL REPORT
CLIENT - GOVERNMENT OF TUNISIA CATEGORY - OLIVE OIL
REPORT BASED ON WEEK(S) ENDING 01/03/87 THRU 12/26/87

ITEM DESCRIPTION	KEY	13 WEEK	13 WEEK	13 WEEK	13 WEEK	52 WEEK									KEY
		ENDING 03/28 1987	ENDING 08/27 1987	ENDING 09/28 1987	ENDING 12/26 1987	ENDING 12/26 1987									
LA PREFERIDA OLIVE OIL 8 OZ	DV	11,133	10,601	14,569	9,002	45,305									DV
	DS	#	#	#	#	#									DS
	PV	52,700	46,923	61,072	35,920	196,614									PV
	PS	#	#	#	#	#									PS
	SP	.21	.23	.24	.25	.23									SP
	XS	2	3	4	4	5									XS
LACO	DV	22,122	16,738	16,500	11,519	66,379									DV
	DS	.1	.1	#	#	.1									DS
	PV	240,421	178,047	160,910	104,339	683,718									PV
	PS	.1	.1	.1	#	.1									PS
	SP	.09	.09	.10	.11	.10									SP
	XS	1	1	1	1	1									XS
LACO OLIVE OIL 25 OZ	DV	13,424	11,936	16,500	11,519	53,379									DV
	DS	#	#	#	#	#									DS
	PV	133,705	118,888	160,910	104,339	517,842									PV
	PS	.1	.1	.1	#	.1									PS
	SP	.10	.10	.10	.11	.10									SP
	XS	1	1	1	1	1									XS
LACO OLIVE OIL 128 OZ	DV	8,698	4,802	0	0	13,500									DV
	DS	#	#	.0	.0	#									DS
	PV	106,717	59,159	0	0	165,876									PV
	PS	.1	#	.0	.0	#									PS
	SP	.08	.08	.00	.00	.08									SP
	XS	#	#	0	0	#									XS
LAURENT	DV	5,388	28,955	10,757	0	45,098									DV
	DS	#	.1	#	.0	#									DS
	PV	20,273	123,198	43,711	0	187,181									PV
	PS	#	.1	#	.0	#									PS
	SP	.27	.24	.25	.00	.24									SP
	XS	1	1	1	0	1									XS
LAURENT OLIVE OIL 16.9 OZ	DV	5,386	13,577	5,151	0	24,114									DV
	DS	#	#	#	.0	#									DS
	PV	20,273	51,102	19,387	0	90,762									PV
	PS	#	#	#	.0	#									PS
	SP	.27	.27	.27	.00	.27									SP
	XS	1	1	1	0	1									XS

S U P P L E M E N T A L D E T A I L R E P O R T
C L I E N T - G O V E R N M E N T O F T U N I S I A C A T E G O R Y - O L I V E O I L
R E P O R T B A S E D O N W E E K (S) E N D I N G 0 1 / 0 3 / 8 7 T H R U 1 2 / 2 6 / 8 7

ITEM DESCRIPTION	KEY	13 WEEK	13 WEEK	13 WEEK	13 WEEK	52 WEEK									KEY
		ENDING 03/28 1987	ENDING 06/27 1987	ENDING 09/26 1987	ENDING 12/26 1987	ENDING 12/26 1987									
LAURENT OLIVE OIL 33.8 OZ	DV DS PV PS SP XS	0 .0 0 .0 .00 0	15,378 # 72,094 # .21 1	5,606 # 24,325 # .23 1	0 .0 0 .0 .00 0	20,985 # 96,419 # .22 1									DV DS PV PS SP XS
MAMA GINA	DV DS PV PS SP XS	3,802 # 18,103 # .24 1	0 .0 0 .0 .00 0	0 .0 0 .0 .00 0	37,628 .1 285,477 .1 .13 3	41,430 # 311,580 # .13 3									DV DS PV PS SP XS
MAMA GINA OLIVE OIL 16.9 OZ	DV DS PV PS SP XS	3,802 # 18,103 # .24 1	0 .0 0 .0 .00 0	0 .0 0 .0 .00 0	1,535 # 6,502 # .24 1	5,337 # 22,605 # .24 1									DV DS PV PS SP XS
MAMA GINA OLIVE OIL 33.8 OZ	DV DS PV PS SP XS	0 .0 0 .0 .00 0	0 .0 0 .0 .00 0	0 .0 0 .0 .00 0	36,093 .1 288,975 .1 .12 2	36,093 # 288,975 # .12 2									DV DS PV PS SP XS
MANTOVA	DV DS PV PS SP XS	12,797 # 46,165 # .28 2	7,895 # 31,051 # .26 2	2,998 # 12,697 # .24 2	0 .0 0 .0 .00 0	23,790 # 89,913 # .26 2									DV DS PV PS SP XS
MANTOVA OLIVE OIL 16.9 OZ	DV DS PV PS SP XS	12,797 # 46,165 # .28 2	7,895 # 31,051 # .26 2	2,998 # 12,697 # .24 2	0 .0 0 .0 .00 0	23,790 # 89,913 # .26 2									DV DS PV PS SP XS

DATA ROUNDED TO ZERO

Nilsen Marketing Research

S U P P L E M E N T A L D E T A I L R E P O R T
C L I E N T - G O V E R N M E N T O F T U N I S I A C A T E G O R Y - O L I V E O I L
R E P O R T B A S E D O N W E E K (S) E N D I N G 0 1 / 0 3 / 8 7 T H R U 1 2 / 2 6 / 8 7

ITEM DESCRIPTION	KEY	13 WEEK	13 WEEK	13 WEEK	13 WEEK	52 WEEK									KEY
		ENDING 03/28 1987	ENDING 06/27 1987	ENDING 09/26 1987	ENDING 12/26 1987	ENDING 12/26 1987									
MEZZETTA	DV	0	0	0	16,529	16,529									DV DS PV PS SP XS
	DS	.0	.0	.0	#	#									
	PV	0	0	0	64,498	64,498									
	PS	.0	.0	.0	#	#									
	SP	.00	.00	.00	.26	.26									
	XS	0	0	0	#	#									
MEZZETTA OLIVE OIL 17 OZ	DV	0	0	0	16,529	16,529									DV DS PV PS SP XS
	DS	.0	.0	.0	#	#									
	PV	0	0	0	64,498	64,498									
	PS	.0	.0	.0	#	#									
	SP	.00	.00	.00	.26	.26									
	XS	0	0	0	#	#									
MONINI	DV	0	0	1,301	0	1,301									DV DS PV PS SP XS
	DS	.0	.0	#	.0	#									
	PV	0	0	5,009	0	5,009									
	PS	.0	.0	#	.0	#									
	SP	.00	.00	.26	.00	.26									
	XS	0	0	1	0	1									
MONINI OLIVE OIL 16.9 OZ	DV	0	0	1,301	0	1,301									DV DS PV PS SP XS
	DS	.0	.0	#	.0	#									
	PV	0	0	5,009	0	5,009									
	PS	.0	.0	#	.0	#									
	SP	.00	.00	.26	.00	.26									
	XS	0	0	1	0	1									
MONTERRAT	DV	3,007	7,065	4,918	6,563	21,553									DV DS PV PS SP XS
	DS	#	#	#	#	#									
	PV	12,773	30,010	19,834	23,037	85,654									
	PS	#	#	#	#	#									
	SP	.24	.24	.25	.28	.25									
	XS	1	1	1	2	2									
MONTERRAT OLIVE OIL 12.7 OZ	DV	3,007	7,065	4,918	6,563	21,553									DV DS PV PS SP XS
	DS	#	#	#	#	#									
	PV	12,773	30,010	19,834	23,037	85,654									
	PS	#	#	#	#	#									
	SP	.24	.24	.25	.28	.25									
	XS	1	1	1	2	2									

DATA ROUNDED TO ZERO
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S U P P L E M E N T A L D E T A I L R E P O R T
C L I E N T - G O V E R N M E N T O F T U N I S I A C A T E G O R Y - O L I V E O I L
R E P O R T B A S E D O N W E E K (S) E N D I N G 0 1 / 0 3 / 8 7 T H R U 1 2 / 2 6 / 8 7

ITEM DESCRIPTION	KEY	13 WEEK	13 WEEK	13 WEEK	13 WEEK	52 WEEK								KEY
		ENDING 03/28 1987	ENDING 05/27 1987	ENDING 08/26 1987	ENDING 12/26 1987	ENDING 12/26 1987								
MUSA	DV	1,478	0	0	0	1,478								DV
	DS	#	.0	.0	.0	#								DS
	PV	8,498	0	0	0	8,498								PV
	PS	#	.0	.0	.0	#								PS
	SP	.17	.00	.00	.00	.17								SP
	XS	1	0	0	0	1								XS
MUSA OLIVE OIL	DV	1,476	0	0	0	1,476								DV
8 OZ	DS	#	.0	.0	.0	#								DS
	PV	8,498	0	0	0	8,498								PV
	PS	#	.0	.0	.0	#								PS
	SP	.17	.00	.00	.00	.17								SP
	XS	1	0	0	0	1								XS

NAPOLEAN	DV	489,772	439,852	519,375	399,188	1,848M								DV
	DS	1.7	1.4	1.5	1.1	1.4								DS
	PV	2,899M	2,488M	2,913M	2,161M	10,541M								PV
	PS	1.5	1.2	1.2	.9	1.2								PS
	SP	.18	.18	.18	.18	.18								SP
	XS	5	5	5	5	5								XS
NAPOLEAN OLIVE OIL	DV	185,871	172,591	173,508	154,262	686,231								DV
8 OZ	DS	.6	.5	.5	.4	.5								DS
	PV	933,634	778,643	783,789	676,006	3,172M								PV
	PS	.5	.4	.3	.3	.4								PS
	SP	.20	.22	.22	.23	.22								SP
	XS	4	4	4	4	4								XS
NAPOLEAN OLIVE OIL	DV	181,029	156,410	233,297	146,550	717,286								DV
16 OZ	DS	.6	.5	.7	.4	.5								DS
	PV	1,062M	871,930	1,326M	799,575	4,059M								PV
	PS	.5	.4	.6	.3	.5								PS
	SP	.17	.18	.18	.18	.18								SP
	XS	4	4	4	4	4								XS
NAPOLEAN OLIVE OIL	DV	122,872	110,651	112,570	98,356	444,449								DV
32 OZ	DS	.4	.3	.3	.3	.3								DS
	PV	1,003M	816,932	803,623	685,711	3,310M								PV
	PS	.5	.4	.3	.3	.4								PS
	SP	.12	.14	.14	.14	.13								SP
	XS	2	2	2	2	2								XS

SUPPLEMENTAL DETAIL REPORT
 CLIENT - GOVERNMENT OF TUNISIA CATEGORY - OLIVE OIL
 REPORT BASED ON WEEK(S) ENDING 01/03/87 THRU 12/26/87

ITEM DESCRIPTION	KEY	13 WEEK	13 WEEK	13 WEEK	13 WEEK	52 WEEK									KEY
		ENDING 03/28 1987	ENDING 06/27 1987	ENDING 09/26 1987	ENDING 12/26 1987	ENDING 12/26 1987									
OLD MONK	DV	126,800	107,289	137,307	105,594	477,090									DV
	DS	.4	.3	.4	.3	.4									DS
	PV	377,028	307,334	380,309	312,783	1,377M									PV
	PS	.2	.1	.2	.1	.2									PS
	SP	.34	.35	.36	.34	.35									SP
	XS	13	11	15	16	17									XS
OLD MONK OLIVE OIL 10 OZ	DV	121,208	104,078	127,141	101,696	454,123									DV
	DS	.4	.3	.4	.3	.3									DS
	PV	357,499	299,576	356,818	303,469	1,317M									PV
	PS	.2	.1	.2	.1	.1									PS
	SP	.34	.35	.36	.34	.34									SP
	XS	12	11	15	16	16									XS
OLD MONK OLIVE OIL 16 OZ	DV	5,692	3,211	10,166	3,899	22,967									DV
	DS	#	#	#	#	#									DS
	PV	15,528	7,757	23,492	9,294	60,072									PV
	PS	#	#	#	#	#									PS
	SP	.29	.41	.43	.42	.38									SP
	XS	3	2	3	2	3									XS
OLIVORO	DV	0	0	6,334	33,104	39,438									DV
	DS	.0	.0	#	.1	#									DS
	PV	0	0	43,244	222,171	265,415									PV
	PS	.0	.0	#	.1	#									PS
	SP	.00	.00	.15	.15	.15									SP
	XS	0	0	1	1	1									XS
OLIVORO OLIVE OIL 17 OZ	DV	0	0	6,334	33,104	39,438									DV
	DS	.0	.0	#	.1	#									DS
	PV	0	0	43,244	222,171	265,415									PV
	PS	.0	.0	#	.1	#									PS
	SP	.00	.00	.15	.15	.15									SP
	XS	0	0	1	1	1									XS
PASTENE	DV	187,758	188,353	202,485	218,184	804,780									DV
	DS	.7	.6	.6	.6	.6									DS
	PV	1,547M	1,345M	1,450M	1,512M	5,854M									PV
	PS	.8	.6	.6	.6	.7									PS
	SP	.13	.14	.14	.14	.14									SP
	XS	5	5	6	6	6									XS

S U P P L E M E N T A L D E T A I L R E P O R T
C L I E N T - G O V E R N M E N T O F T U N I S I A C A T E G O R Y - O L I V E O I L
R E P O R T B A S E D O N W E E K (S) E N D I N G 0 1 / 0 3 / 8 7 T H R U 1 2 / 2 6 / 8 7

ITEM DESCRIPTION	K E Y	13 WEEK	13 WEEK	13 WEEK	13 WEEK	52 WEEK												K E Y	
		ENDING 03/28 1987	ENDING 08/27 1987	ENDING 09/28 1987	ENDING 12/26 1987	ENDING 12/26 1987													
PASTENE OLIVE OIL 8.25 OZ	DV	16,020	15,780	10,145	14,820	56,766												DV	
	DS	.1	#	#	#	#												DS	
	PV	90,996	83,932	53,359	82,132	310,419												PV	
	PS	#	#	#	#	#												PS	
	SP	.18	.19	.19	.18	.18													SP
	XS	3	2	2	2	2													XS
PASTENE OLIVE OIL 16.75 OZ	DV	101,545	108,848	96,073	132,604	439,068												DV	
	DS	.3	.3	.3	.4	.3												DS	
	PV	708,188	707,342	625,927	878,234	2,920M												PV	
	PS	.4	.3	.3	.4	.3												PS	
	SP	.14	.15	.15	.15	.15													SP
	XS	5	5	4	4	5													XS
PASTENE OLIVE OIL 33.5 OZ	DV	24,399	11,462	10,505	7,969	54,335												DV	
	DS	.1	#	#	#	#												DS	
	PV	186,192	86,571	76,671	58,161	407,595												PV	
	PS	.1	#	#	#	#												PS	
	SP	.13	.13	.14	.14	.13													SP
	XS	2	2	#	#	2													XS
PASTENE OLIVE OIL 100.5 OZ	DV	55,784	52,265	85,761	60,791	254,611												DV	
	DS	.2	.2	.2	.2	.2												DS	
	PV	561,242	467,043	694,391	493,751	2,216M												PV	
	PS	.3	.2	.3	.2	.3												PS	
	SP	.10	.11	.12	.12	.11													SP
	XS	3	2	4	4	4													XS
POMPEIAN	DV	6,872M	6,482M	7,109M	7,180M	27,422M												DV	
	DS	22.8	20.4	20.1	20.5	20.9												DS	
	PV	37,788M	34,390M	37,788M	38,044M	148M												PV	
	PS	18.8	18.4	18.0	18.3	18.8												PS	
	SP	.18	.19	.19	.19	.19													SP
	XS	87	86	87	87	89													XS
POMPEIAN OLIVE OIL 2 OZ	DV	26,863	20,319	13,939	14,450	75,571												DV	
	DS	.1	.1	#	#	.1												DS	
	PV	90,606	61,935	41,608	42,527	236,678												PV	
	PS	#	#	#	#	#												PS	
	SP	.30	.33	.33	.34	.32													SP
	XS	2	1	1	1	1													XS

DATA ROUNDED TO ZERO

Nielsen Marketing Research

S U P P L E M E N T A L D E T A I L R E P O R T
C L I E N T - G O V E R N M E N T O F T U N I S I A C A T E G O R Y - O L I V E O I L
R E P O R T B A S E D O N W E E K (S) E N D I N G 0 1 / 0 3 / 8 7 T H R U 1 2 / 2 8 / 8 7

ITEM DESCRIPTION	K E Y	13 WEEK	13 WEEK	13 WEEK	13 WEEK	52 WEEK									K E Y
		ENDING 03/28 1987	ENDING 06/27 1987	ENDING 09/28 1987	ENDING 12/28 1987	ENDING 12/28 1987									
PRIDE OF SPAIN OLIVE OIL 8 OZ	DV	7,257	8,408	16,478	14,196	46,337									DV
	DS	#	#	#	#	#									DS
	PV	45,994	52,128	102,190	84,439	284,752									PV
	PS	#	#	#	#	#									PS
	SP	.16	.16	.18	.17	.16									SP
	XS	1	1	1	1	1									XS
PROGRESSO	DV	1,398M	1,567M	1,903M	1,871M	6,539M									DV
	DS	4.8	5.0	5.4	4.8	5.0									DS
	PV	9,377M	11,042M	15,287M	13,530M	49,216M									PV
	PS	4.7	5.3	6.8	5.8	5.6									PS
	SP	.15	.14	.12	.12	.13									SP
	XS	40	41	43	43	46									XS
PROGRESSO OLIVE OIL 4 OZ	DV	142,884	138,341	137,392	115,108	533,725									DV
	DS	.5	.4	.4	.3	.4									DS
	PV	669,239	654,429	653,934	545,636	2,523M									PV
	PS	.3	.3	.3	.2	.3									PS
	SP	.21	.21	.21	.21	.21									SP
	XS	21	18	17	17	22									XS
PROGRESSO OLIVE OIL 8 OZ	DV	313,284	305,761	398,822	350,080	1,368M									DV
	DS	1.1	1.0	1.1	1.0	1.0									DS
	PV	1,635M	1,609M	2,070M	1,836M	7,150M									PV
	PS	.8	.8	.9	.8	.8									PS
	SP	.19	.19	.19	.19	.19									SP
	XS	23	25	28	29	30									XS
PROGRESSO OLIVE OIL 12 OZ	DV	407,396	453,221	394,431	387,619	1,643M									DV
	DS	1.4	1.4	1.1	1.1	1.3									DS
	PV	2,425M	2,757M	2,410M	2,395M	9,986M									PV
	PS	1.2	1.3	1.0	1.0	1.1									PS
	SP	.17	.16	.16	.16	.16									SP
	XS	13	12	12	13	13									XS
PROGRESSO OLIVE OIL 16 OZ	DV	17,761	10,750	10,236	7,084	45,830									DV
	DS	.1	#	#	#	#									DS
	PV	89,747	53,989	50,868	34,156	228,760									PV
	PS	#	#	#	#	#									PS
	SP	.20	.20	.20	.21	.20									SP
	XS	6	3	3	3	7									XS

S U P P L E M E N T A L D E T A I L R E P O R T
C L I E N T - G O V E R N M E N T O F T U N I S I A C A T E G O R Y - O L I V E O I L
R E P O R T B A S E D O N W E E K (S) E N D I N G 0 1 / 0 3 / 8 7 T H R U 1 2 / 2 6 / 8 7

ITEM DESCRIPTION		KEY	13 WEEK ENDING 03/28 1987	13 WEEK ENDING 08/27 1987	13 WEEK ENDING 09/26 1987	13 WEEK ENDING 12/26 1987	52 WEEK ENDING 12/26 1987												KEY
PROGRESSO OLIVE OIL 25 OZ	DV		218,515	219,412	265,791	194,747	896,466											DV	
	DS		.7	.7	.8	.6	.7											DS	
	PV		1,558M	1,589M	1,849M	1,323M	6,319M											PV	
	PS		.8	.8	.8	.6	.7											PS	
	SP		.14	.14	.14	.15	.14											SP	
	XS		8	7	8	7	8											XS	
PROGRESSO OLIVE OIL 32 OZ	DV		107,622	177,276	130,060	93,653	508,612											DV	
	DS		.4	.6	.4	.3	.4											DS	
	PV		866,336	1,392M	1,028M	746,068	4,032M											PV	
	PS		.4	.7	.4	.3	.5											PS	
	SP		.12	.13	.13	.13	.13											SP	
	XS		8	10	9	8	11											XS	
PROGRESSO OLIVE OIL 101 OZ	DV		169,693	262,412	561,828	522,349	1,516M											DV	
	DS		.6	.8	1.6	1.5	1.2											DS	
	PV		1,850M	2,986M	7,161M	6,650M	18,647M											PV	
	PS		.9	1.4	3.0	2.9	2.1											PS	
	SP		.09	.09	.08	.08	.08											SP	
	XS		7	7	8	8	9											XS	
PROGRESSO OLIVE OIL 128 OZ	DV		23,202	0	4,631	0	27,833											DV	
	DS		.1	.0	#	.0	#											DS	
	PV		283,635	0	45,633	0	329,268											PV	
	PS		.1	.0	#	.0	#											PS	
	SP		.08	.00	.10	.00	.08											SP	
	XS		5	0	2	0	5											XS	
RACCONTO	DV		0	0	0	37,523	37,523											DV	
	DS		.0	.0	.0	.1	#											DS	
	PV		0	0	0	360,743	360,743											PV	
	PS		.0	.0	.0	.2	#											PS	
	SP		.00	.00	.00	.10	.10											SP	
	XS		0	0	0	3	3											XS	
RACCONTO OLIVE OIL 16.9 OZ	DV		0	0	0	37,523	27,523											DV	
	DS		.0	.0	.0	.1	#											DS	
	PV		0	0	0	360,743	360,743											PV	
	PS		.0	.0	.0	.2	#											PS	
	SP		.00	.00	.00	.10	.10											SP	
	XS		0	0	0	3	3											XS	

S U P P L E M E N T A L D E T A I L R E P O R T
C L I E N T - G O V E R N M E N T O F T U N I S I A C A T E G O R Y - O L I V E O I L
R E P O R T B A S E D O N W E E K (S) E N D I N G 0 1 / 0 3 / 8 7 T H R U 1 2 / 2 8 / 8 7

ITEM DESCRIPTION	K E Y	13 WEEK	13 WEEK	13 WEEK	13 WEEK	52 WEEK											K E Y
		ENDING 03/28 1987	ENDING 06/27 1987	ENDING 09/26 1987	ENDING 12/26 1987	ENDING 12/26 1987											
RIENZI	DV	218,211	284,584	431,042	402,367	1,336M											DV
	DS	.7	.9	1.2	1.2	1.0											DS
	PV	2,211M	3,243M	5,597M	4,965M	15,016M											PV
	PS	1.1	1.5	2.4	2.1	1.8											PS
	SP	.10	.09	.08	.08	.08											SP
	XS	7	6	6	7	7											XS
RIENZI OLIVE OIL	DV	218,211	190,522	198,723	226,724	834,179											DV
34 OZ	DS	.7	.6	.6	.6	.6											DS
	PV	2,211M	1,752M	1,781M	2,105M	7,849M											PV
	PS	1.1	.8	.8	.9	.9											PS
	SP	.10	.11	.11	.11	.11											SP
	XS	7	6	6	7	7											XS
RIENZI OLIVE OIL	DV	0	94,062	232,319	175,643	502,024											DV
128 OZ	DS	.0	.3	.7	.5	.4											DS
	PV	0	1,491M	3,816M	2,860M	8,167M											PV
	PS	.0	.7	1.6	1.2	.9											PS
	SP	.00	.06	.06	.06	.06											SP
	XS	0	2	6	7	7											XS
SANTA SABINA	DV	114,252	166,949	129,374	177,852	588,427											DV
	DS	.4	.5	.4	.5	.4											DS
	PV	629,617	802,897	613,260	872,729	2,919M											PV
	PS	.3	.4	.3	.4	.3											PS
	SP	.18	.21	.21	.20	.20											SP
	XS	8	8	8	10	9											XS
SANTA SABINA OLIVE OIL	DV	731	192	0	0	923											DV
3 OZ	DS	#	#	.0	.0	#											DS
	PV	2,464	648	0	0	3,112											PV
	PS	#	#	.0	.0	#											PS
	SP	.30	.30	.00	.00	.30											SP
	XS	1	1	0	0	1											XS
SANTA SABINA OLIVE OIL	DV	7,145	12,479	18,651	8,175	46,450											DV
3.38 OZ	DS	#	#	.1	#	#											DS
	PV	23,822	42,551	58,800	24,782	149,955											PV
	PS	#	#	#	#	#											PS
	SP	.30	.29	.32	.33	.31											SP
	XS	3	4	4	4	4											XS

S U P P L E M E N T A L D E T A I L R E P O R T
CLIENT - GOVERNMENT OF TUNISIA CATEGORY - OLIVE OIL
REPORT BASED ON WEEK(S) ENDING 01/03/87 THRU 12/28/87

ITEM DESCRIPTION	KEY	13 WEEK ENDING 03/28 1987	13 WEEK ENDING 06/27 1987	13 WEEK ENDING 09/26 1987	13 WEEK ENDING 12/26 1987	52 WEEK ENDING 12/26 1987												KEY
SANTA SABINA OLIVE OIL 8.45 OZ	DV	35,062	54,578	31,584	49,170	170,394												DV
	DS	.1	.2	.1	.1	.1												DS
	PV	173,864	233,875	136,553	216,469	750,761												PV
	PS	.1	.1	.1	.1	.1												PS
	SP	.20	.23	.23	.24	.23												SP
	XS	2	3	3	3	3												XS
SANTA SABINA OLIVE OIL 16.9 OZ	DV	0	22,378	27,951	57,351	107,680												DV
	DS	.0	.1	.1	.2	.1												DS
	PV	0	101,451	130,625	279,334	511,411												PV
	PS	.0	#	.1	.1	.1												PS
	SP	.00	.22	.21	.21	.21												SP
	XS	0	1	#	2	2												XS
SANTA SABINA OLIVE OIL 17 OZ	DV	22,240	14,580	17,845	28,864	83,529												DV
	DS	.1	#	.1	.1	.1												DS
	PV	127,795	81,788	104,972	169,943	484,498												PV
	PS	.1	#	#	.1	.1												PS
	SP	.17	.18	.17	.17	.17												SP
	XS	1	1	#	2	1												XS
SANTA SABINA OLIVE OIL 33.8 OZ	DV	33,335	44,764	20,217	18,384	116,700												DV
	DS	.1	.1	.1	.1	.1												DS
	PV	183,095	223,044	95,038	86,424	587,601												PV
	PS	.1	.1	#	#	.1												PS
	SP	.18	.20	.21	.21	.20												SP
	XS	1	2	1	1	2												XS
SANTA SABINA OLIVE OIL 101.4 OZ	DV	15,739	17,978	13,125	15,908	62,750												DV
	DS	.1	.1	#	#	#												DS
	PV	118,577	119,540	87,273	105,776	431,165												PV
	PS	.1	.1	#	#	#												PS
	SP	.13	.15	.15	.15	.15												SP
	XS	1	1	1	1	1												XS
SAPIO	DV	8,178	1,541	54,482	30,839	83,020												DV
	DS	#	#	.2	.1	.1												DS
	PV	52,334	10,087	382,714	223,487	688,602												PV
	PS	#	#	.2	.1	.1												PS
	SP	.12	.15	.14	.14	.14												SP
	XS	1	1	1	2	2												XS

DATA ROUNDED TO ZERO

Nielsen Marketing Research

S U P P L E M E N T A L D E T A I L R E P O R T

CLIENT - GOVERNMENT OF TUNISIA CATEGORY - OLIVE OIL

REPORT BASED ON WEEK(S) ENDING 01/03/87 THRU 12/28/87

ITEM DESCRIPTION	K E Y	13 WEEK	13 WEEK	13 WEEK	13 WEEK	52 WEEK									K E Y
		ENDING 03/28 1987	ENDING 06/27 1987	ENDING 09/28 1987	ENDING 12/28 1987	ENDING 12/28 1987									
SAPIO OLIVE OIL 16.9 OZ	DV	0	711	22,105	10,705	33,520									DV
	DS	.0	#	.1	#	#									DS
	PV	0	5,029	175,509	87,315	267,852									PV
	PS	.0	#	.1	#	#									PS
	SP	.00	.14	.13	.12	.13									SP
	XS	0	1	1	1	1									XS
SAPIO OLIVE OIL 17 OZ	DV	0	830	32,358	20,134	53,322									DV
	DS	.0	#	.1	.1	#									DS
	PV	0	5,058	207,205	136,153	348,416									PV
	PS	.0	#	.1	.1	#									PS
	SP	.00	.16	.16	.15	.15									SP
	XS	0	1	1	2	1									XS
SAPIO OLIVE OIL 33.8 OZ	DV	6,178	0	0	0	6,178									DV
	DS	#	.0	.0	.0	#									DS
	PV	52,334	0	0	0	52,334									PV
	PS	#	.0	.0	.0	#									PS
	SP	.12	.00	.00	.00	.12									SP
	XS	1	0	0	0	1									XS
SASSO	DV	211,888	318,015	415,095	457,127	1,403M									DV
	DS	.7	1.0	1.2	1.3	1.1									DS
	PV	1,025M	1,648M	2,219M	2,448M	7,342M									PV
	PS	.5	.8	.9	1.1	.8									PS
	SP	.21	.19	.19	.19	.19									SP
	XS	10	13	12	15	19									XS
SASSO OLIVE OIL 8.4 OZ	DV	37,035	29,472	24,688	29,632	120,826									DV
	DS	.1	.1	.1	.1	.1									DS
	PV	169,635	122,067	113,402	166,672	571,777									PV
	PS	.1	.1	#	.1	.1									PS
	SP	.22	.24	.22	.18	.21									SP
	XS	5	4	2	6	7									XS
SASSO OLIVE OIL 8.5 OZ	DV	1,550	984	1,283	1,247	5,064									DV
	DS	#	#	#	#	#									DS
	PV	7,059	4,204	5,664	5,513	22,441									PV
	PS	#	#	#	#	#									PS
	SP	.22	.23	.23	.23	.23									SP
	XS	2	2	3	3	2									XS

DATA ROUNDED TO ZERO

Nelson Marketing Research

SUPPLEMENTAL DETAIL REPORT
CLIENT - GOVERNMENT OF TUNISIA CATEGORY - OLIVE OIL
REPORT BASED ON WEEK(S) ENDING 01/03/87 THRU 12/26/87

ITEM DESCRIPTION	KEY	13 WEEK	13 WEEK	13 WEEK	13 WEEK	52 WEEK											KEY
		ENDING 03/28 1987	ENDING 06/27 1987	ENDING 09/26 1987	ENDING 12/26 1987	ENDING 12/26 1987											
SASSO OLIVE OIL 16.9 OZ	DV	114,486	232,425	318,647	347,394	1,013M											DV
	DS	.4	.7	.9	1.0	.8											DS
	PV	548,090	1,233M	1,763M	1,877M	5,422M											PV
	PS	.3	.6	.7	.8	.6											PS
	SP	.21	.19	.18	.19	.19											SP
	%S	6	10	11	15	17											%S
SASSO OLIVE OIL 33.8 OZ	DV	50,888	34,421	70,479	78,855	234,644											DV
	DS	.2	.1	.2	.2	.2											DS
	PV	255,018	166,618	336,594	399,546	1,158M											PV
	PS	.1	.1	.1	.2	.1											PS
	SP	.20	.21	.21	.20	.20											SP
	%S	5	4	4	5	6											%S
SASSO OLIVE OIL 67.75 OZ	DV	8,039	21,712	0	0	29,751											DV
	DS	#	.1	.0	.0	#											DS
	PV	45,426	122,683	0	0	168,109											PV
	PS	#	.1	.0	.0	#											PS
	SP	.18	.18	.00	.00	.18											SP
	%S	2	2	0	0	2											%S
SAVOIR FAIRE	DV	18,085	11,320	8,844	18,887	55,117											DV
	DS	.1	#	#	.1	#											DS
	PV	79,352	50,771	37,461	79,999	247,584											PV
	PS	#	#	#	#	#											PS
	SP	.20	.22	.24	.24	.22											SP
	%S	1	1	1	1	1											%S
SAVOIR FAIRE OLIVE OIL 16.9 OZ	DV	8,030	9,312	8,844	18,887	45,073											DV
	DS	#	#	#	.1	#											DS
	PV	34,011	39,440	37,461	79,999	190,910											PV
	PS	#	#	#	#	#											PS
	SP	.24	.24	.24	.24	.24											SP
	%S	1	1	1	1	1											%S
SAVOIR FAIRE OLIVE OIL 33.8 OZ	DV	8,035	2,008	0	0	10,044											DV
	DS	#	#	.0	.0	#											DS
	PV	45,342	11,331	0	0	56,673											PV
	PS	#	#	.0	.0	#											PS
	SP	.18	.18	.00	.00	.18											SP
	%S	1	1	0	0	1											%S

DATA ROUNDED TO ZERO

Nelson Marketing Research

SUPPLEMENTAL DETAIL REPORT
CLIENT - GOVERNMENT OF TUNISIA CATEGORY - OLIVE OIL
REPORT BASED ON WEEK(S) ENDING 01/03/87 THRU 12/26/87

ITEM DESCRIPTION	KEY	13 WEEK ENDING 03/28 1987	13 WEEK ENDING 06/27 1987	13 WEEK ENDING 09/26 1987	13 WEEK ENDING 12/26 1987	52 WEEK ENDING 12/26 1987													KEY
SELECT ORIGINS	DV	0	0	465	9,225	9,690													DV
	DS	.0	.0	#	#	#													DS
	PV	0	0	1,286	22,767	24,054													PV
	PS	.0	.0	#	#	#													PS
	SP	.00	.00	.36	.41	.40													SP
	XS	0	0	1	1	1													XS
SELECT ORIGINS OLIVE OIL 12 OZ	DV	0	0	0	870	870													DV
	DS	.0	.0	.0	#	#													DS
	PV	0	0	0	2,274	2,274													PV
	PS	.0	.0	.0	#	#													PS
	SP	.00	.00	.00	.38	.38													SP
	XS	0	0	0	1	1													XS
SELECT ORIGINS OLIVE OIL 12.7 OZ	DV	0	0	465	6,356	8,820													DV
	DS	.0	.0	#	#	#													DS
	PV	0	0	1,286	20,493	21,779													PV
	PS	.0	.0	#	#	#													PS
	SP	.00	.00	.36	.41	.40													SP
	XS	0	0	1	1	1													XS
SENSAT	DV	324,757	303,242	255,656	373,697	1,257M													DV
	DS	1.1	1.0	.7	1.1	1.0													DS
	PV	3,646M	3,403M	2,862M	4,127M	14,039M													PV
	PS	1.8	1.6	1.2	1.8	1.6													PS
	SP	.09	.09	.09	.09	.09													SP
	XS	3	4	4	4	4													XS
SENSAT OLIVE OIL 32 OZ	DV	324,757	303,242	255,656	373,697	1,257M													DV
	DS	1.1	1.0	.7	1.1	1.0													DS
	PV	3,646M	3,403M	2,862M	4,127M	14,039M													PV
	PS	1.8	1.6	1.2	1.8	1.6													PS
	SP	.09	.09	.09	.09	.09													SP
	XS	3	4	4	4	4													XS
SINATRA'S	DV	100,015	135,887	174,665	64,110	474,678													DV
	DS	.3	.4	.5	.2	.4													DS
	PV	759,825	1,233M	1,918M	627,055	4,538M													PV
	PS	.4	.6	.8	.3	.5													PS
	SP	.13	.11	.09	.10	.10													SP
	XS	3	3	2	1	3													XS

S U P P L E M E N T A L D E T A I L R E P O R T
C L I E N T - G O V E R N M E N T O F T U N I S I A C A T E G O R Y - O L I V E O I L
R E P O R T B A S E D O N W E E K (S) E N D I N G 0 1 / 0 3 / 8 7 T H R U 1 2 / 2 6 / 8 7

ITEM DESCRIPTION	KEY	13 WEEK ENDING 03/28 1987	13 WEEK ENDING 06/27 1987	13 WEEK ENDING 09/26 1987	13 WEEK ENDING 12/26 1987	52 WEEK ENDING 12/26 1987													KEY	
SINATRA'S OLIVE OIL 16.9 OZ	DV	75,449	72,392	86,002	37,957	251,800													DV	
	DS	.3	.2	.2	.1	.2													DS	
	PV	476,219	500,320	415,315	254,683	1,647M													PV	
	PS	.2	.2	.2	.1	.2														PS
	SP	.16	.14	.16	.15	.15														SP
	XS	3	2	2	1	3														XS
SINATRA'S OLIVE OIL 128 OZ	DV	24,567	63,495	108,683	26,153	222,878													DV	
	DS	.1	.2	.3	.1	.2														DS
	PV	283,606	733,086	1,503M	372,370	2,892M														PV
	PS	.1	.4	.6	.2	.3														PS
	SP	.09	.09	.07	.07	.08														SP
	XS	2	2	1	1	2														XS
SUNOLA	DV	91,472	0	0	0	91,472													DV	
	DS	.3	.0	.0	.0	.1														DS
	PV	3,562M	0	0	0	3,562M														PV
	PS	1.8	.0	.0	.0	.4														PS
	SP	.03	.00	.00	.00	.03														SP
	XS	3	0	0	0	3														XS
SUNOLA OLIVE OIL 128 OZ	DV	91,472	0	0	0	91,472													DV	
	DS	.3	.0	.0	.0	.1														DS
	PV	3,562M	0	0	0	3,562M														PV
	PS	1.8	.0	.0	.0	.4														PS
	SP	.03	.00	.00	.00	.03														SP
	XS	3	0	0	0	3														XS
SUPREME	DV	428,439	424,085	485,881	408,149	1,727M													DV	
	DS	1.8	1.3	1.3	1.2	1.3														DS
	PV	4,080M	3,989M	4,379M	3,914M	16,382M														PV
	PS	2.0	1.9	1.9	1.7	1.9														PS
	SP	.11	.11	.11	.10	.11														SP
	XS	7	7	7	7	7														XS
SUPREME OLIVE OIL 8 OZ	DV	236,367	237,055	270,690	209,505	953,616													DV	
	DS	.8	.7	.8	.6	.7														DS
	PV	2,036M	1,984M	2,263M	1,746M	8,028M														PV
	PS	1.0	.9	1.0	.7	.9														PS
	SP	.12	.12	.12	.12	.12														SP
	XS	7	7	7	7	7														XS

S U P P L E M E N T A L D E T A I L R E P O R T
C L I E N T - G O V E R N M E N T O F T U N I S I A C A T E G O R Y - O L I V E O I L
R E P O R T B A S E D O N W E E K (S) E N D I N G 0 1 / 0 3 / 8 7 T H R U 1 2 / 2 6 / 8 7

ITEM DESCRIPTION		KEY	13 WEEK ENDING 03/28 1987	13 WEEK ENDING 06/27 1987	13 WEEK ENDING 09/26 1987	13 WEEK ENDING 12/26 1987	52 WEEK ENDING 12/26 1987									KEY
SUPREME OLIVE OIL	16 OZ	DV	115,995	108,189	105,253	95,993	425,430									DV
		DS	.4	.3	.3	.3	.3									DS
		PV	1,107M	1,024M	996,479	908,809	4,037M									PV
		PS	.6	.5	.4	.4	.5									PS
		SP	.10	.11	.11	.11	.11									SP
		XS	4	3	3	3	3									XS
SUPREME OLIVE OIL	128 OZ	DV	78,077	78,842	89,918	102,651	347,488									DV
		DS	.3	.2	.3	.3	.3									DS
		PV	937,490	930,392	1,120M	1,259M	4,297M									PV
		PS	.5	.5	.5	.5	.5									PS
		SP	.08	.08	.08	.08	.08									SP
		XS	3	3	3	3	3									XS
SWAN		DV	115	0	513	593	1,221									DV
		DS	#	.0	#	#	#									DS
		PV	184	0	1,038	1,098	2,319									PV
		PS	#	.0	#	#	#									PS
		SP	.63	.00	.49	.54	.53									SP
		XS	#	0	1	1	1									XS
SWAN OLIVE OIL	2 OZ	DV	115	0	513	593	1,221									DV
		DS	#	.0	#	#	#									DS
		PV	184	0	1,036	1,098	2,319									PV
		PS	#	.0	#	#	#									PS
		SP	.63	.00	.49	.54	.53									SP
		XS	#	0	1	1	1									XS
TIGER		DV	0	5,077	3,658	0	8,735									DV
		DS	.0	#	#	.0	#									DS
		PV	0	42,453	30,583	0	73,036									PV
		PS	.0	#	#	.0	#									PS
		SP	.00	.12	.12	.00	.12									SP
		XS	0	1	1	0	1									XS
TIGER OLIVE OIL	25 OZ	DV	0	5,077	3,658	0	8,735									DV
		DS	.0	#	#	.0	#									DS
		PV	0	42,453	30,583	0	73,036									PV
		PS	.0	#	#	.0	#									PS
		SP	.00	.12	.12	.00	.12									SP
		XS	0	1	1	0	1									XS

SUPPLEMENTAL DETAIL REPORT
CLIENT - GOVERNMENT OF TUNISIA CATEGORY - OLIVE OIL
REPORT BASED ON WEEK(S) ENDING 01/03/87 THRU 12/26/87

ITEM DESCRIPTION	K E Y	13 WEEK	13 WEEK	13 WEEK	13 WEEK	52 WEEK													K E Y
		ENDING 03/28 1987	ENDING 06/27 1987	ENDING 09/28 1987	ENDING 12/26 1987	ENDING 12/26 1987													
VIGO	DV	942,927	783,412	766,248	858,628	3,361M													DV
	DS	3.2	2.5	2.2	2.5	2.6													DS
	PV	8,639M	8,012M	8,094M	8,658M	34,403M													PV
	PS	4.8	3.8	3.4	3.7	3.8													PS
	SP	.10	.10	.09	.10	.10													SP
	XS	8	8	8	9	9													XS
VIGO OLIVE OIL	DV	39,215	47,052	41,020	51,450	178,736													DV
8 OZ	DS	.1	.1	.1	.1	.1													DS
	PV	243,196	293,501	257,614	304,508	1,099M													PV
	PS	.1	.1	.1	.1	.1													PS
	SP	.16	.16	.16	.17	.16													SP
	XS	1	1	1	1	1													XS
VIGO OLIVE OIL	DV	74,812	57,147	16,846	17,675	166,480													DV
8.5 OZ	DS	.3	.2	#	.1	.1													DS
	PV	488,777	354,596	98,888	100,828	1,023M													PV
	PS	.2	.2	#	#	.1													PS
	SP	.16	.16	.17	.18	.16													SP
	XS	3	4	2	1	4													XS
VIGO OLIVE OIL	DV	467,659	370,457	375,575	425,810	1,640M													DV
17 OZ	DS	1.6	1.2	1.1	1.2	1.2													DS
	PV	3,764M	2,936M	3,013M	3,423M	13,136M													PV
	PS	1.9	1.4	1.3	1.5	1.5													PS
	SP	.12	.13	.12	.12	.12													SP
	XS	8	8	8	9	8													XS
VIGO OLIVE OIL	DV	26,175	23,544	31,094	36,523	117,336													DV
34 OZ	DS	.1	.1	.1	.1	.1													DS
	PV	249,287	224,228	296,134	342,090	1,112M													PV
	PS	.1	.1	.1	.1	.1													PS
	SP	.10	.10	.10	.11	.11													SP
	XS	1	1	1	1	1													XS
VIGO OLIVE OIL	DV	335,065	295,212	301,713	327,168	1,259M													DV
128 OZ	DS	1.1	.9	.9	.9	1.0													DS
	PV	4,914M	4,205M	4,428M	4,487M	18,033M													PV
	PS	2.5	2.0	1.9	1.9	2.1													PS
	SP	.07	.07	.07	.07	.07													SP
	XS	5	5	5	6	6													XS

DATA ROUNDED TO ZERO
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SUPPLEMENTAL DETAIL REPORT
CLIENT - GOVERNMENT OF TUNISIA CATEGORY - OLIVE OIL
REPORT BASED ON WEEK(S) ENDING 01/03/87 THRU 12/26/87

ITEM DESCRIPTION	KEY	13 WEEK	13 WEEK	13 WEEK	13 WEEK	52 WEEK											KEY
		ENDING 03/28 1987	ENDING 06/27 1987	ENDING 09/28 1987	ENDING 12/26 1987	ENDING 12/26 1987											
VITARROZ	DV	11,774	15,137	9,889	13,237	49,837											DV
	DS	#	#	#	#	#											DS
	PV	60,771	78,128	50,006	68,318	257,223											PV
	PS	#	#	#	#	#											PS
	SP	.19	.19	.19	.19	.19											SP
	XS	3	3	3	3	3											XS
VITARROZ OLIVE OIL	DV	11,774	15,137	9,889	13,237	49,837											DV
8 OZ	DS	#	#	#	#	#											DS
	PV	60,771	78,128	50,006	68,318	257,223											PV
	PS	#	#	#	#	#											PS
	SP	.19	.19	.19	.19	.19											SP
	XS	3	3	3	3	3											XS
CTL BR	DV	884,284	871,390	879,189	1,086M	3,801M											DV
	DS	3.4	2.8	2.5	3.1	2.9											DS
	PV	7,491M	5,540M	5,222M	6,443M	24,696M											PV
	PS	3.7	2.6	2.2	2.8	2.8											PS
	SP	.13	.16	.17	.17	.15											SP
	XS	11	12	14	20	20											XS
CTL BR OLIVE OIL	DV	18,202	16,043	14,220	13,144	61,609											DV
4 OZ	DS	.1	.1	#	#	#											DS
	PV	90,883	70,166	62,668	55,742	279,457											PV
	PS	#	#	#	#	#											PS
	SP	.20	.23	.23	.24	.22											SP
	XS	2	2	2	1	2											XS
CTL BR OLIVE OIL	DV	97,067	100,629	98,861	62,363	358,920											DV
8 OZ	DS	.3	.3	.3	.2	.3											DS
	PV	534,066	543,009	535,611	330,499	1,943M											PV
	PS	.3	.3	.2	.1	.2											PS
	SP	.18	.19	.18	.19	.18											SP
	XS	4	4	4	3	4											XS
CTL BR OLIVE OIL	DV	158,017	134,899	152,745	182,157	625,818											DV
8.33 OZ	DS	.5	.4	.4	.5	.5											DS
	PV	667,777	541,788	591,962	721,905	2,523M											PV
	PS	.3	.3	.3	.3	.3											PS
	SP	.23	.25	.26	.25	.25											SP
	XS	3	3	5	9	8											XS

SUPPLEMENTAL DETAIL REPORT
CLIENT - GOVERNMENT OF TUNISIA CATEGORY - OLIVE OIL
REPORT BASED ON WEEK(S) ENDING 01/03/87 THRU 12/26/87

ITEM DESCRIPTION	KEY	13 WEEK	13 WEEK	13 WEEK	13 WEEK	52 WEEK									KEY
		ENDING 03/28 1987	ENDING 06/27 1987	ENDING 09/26 1987	ENDING 12/26 1987	ENDING 12/26 1987									
CTL BR OLIVE OIL 16 OZ	DV	122,777	143,871	128,274	170,592	563,513									DV
	DS	.4	.5	.4	.5	.4									DS
	PV	970,981	1,120M	970,043	1,318M	4,380M									PV
	PS	.5	.5	.4	.6	.5									PS
	SP	.13	.13	.13	.13	.13									SP
	XS	7	7	7	7	9									XS
CTL BR OLIVE OIL 17 OZ	DV	162,830	167,980	206,449	223,421	760,680									DV
	DS	.6	.5	.6	.6	.6									DS
	PV	812,098	834,360	1,050M	1,144M	3,840M									PV
	PS	.4	.4	.4	.5	.4									PS
	SP	.20	.20	.20	.20	.20									SP
	XS	3	4	5	12	11									XS
CTL BR OLIVE OIL 24 OZ	DV	36,693	29,339	45,977	133,488	245,497									DV
	DS	.1	.1	.1	.4	.2									DS
	PV	190,539	152,356	239,914	724,100	1,307M									PV
	PS	.1	.1	.1	.3	.1									PS
	SP	.19	.19	.19	.18	.19									SP
	XS	3	3	4	10	9									XS
CTL BR OLIVE OIL 25 OZ	DV	0	5,270	31,165	25,117	61,552									DV
	DS	.0	#	.1	.1	#									DS
	PV	0	23,156	141,580	110,354	275,090									PV
	PS	.0	#	.1	#	#									PS
	SP	.00	.23	.22	.23	.22									SP
	XS	0	#	#	#	#									XS
CTL BR OLIVE OIL 32 OZ	DV	46,322	75,302	73,635	103,098	298,357									DV
	DS	.2	.2	.2	.3	.2									DS
	PV	450,550	729,555	695,077	852,823	2,728M									PV
	PS	.2	.3	.3	.4	.3									PS
	SP	.10	.10	.11	.12	.11									SP
	XS	#	#	#	#	#									XS
CTL BR OLIVE OIL 33.8 OZ	DV	82,538	92,662	47,922	42,812	265,934									DV
	DS	.3	.3	.1	.1	.2									DS
	PV	424,528	455,013	227,027	213,270	1,320M									PV
	PS	.2	.2	.1	.1	.2									PS
	SP	.19	.20	.21	.20	.20									SP
	XS	3	3	3	3	3									XS

SUPPLEMENTAL DETAIL REPORT
CLIENT - GOVERNMENT OF TUNISIA CATEGORY - OLIVE OIL
REPORT BASED ON WEEK(S) ENDING 01/03/87 THRU 12/26/87

ITEM DESCRIPTION	KEY	13 WEEK	13 WEEK	13 WEEK	13 WEEK	52 WEEK									KEY
		ENDING 03/28 1987	ENDING 06/27 1987	ENDING 09/26 1987	ENDING 12/26 1987	ENDING 12/26 1987									
CTL BR OLIVE OIL 34 OZ	DV	8,308	13,252	0	0	21,560									DV
	DS	#	#	.0	.0	#									DS
	PV	112,993	180,222	0	0	293,215									PV
	PS	.1	.1	.0	.0	#									PS
	SP	.07	.07	.00	.00	.07									SP
	XS	1	1	0	0	1									XS
CTL BR OLIVE OIL 101 OZ	DV	245,286	83,905	75,554	53,281	498,038									DV
	DS	.8	.3	.2	.3	.4									DS
	PV	3,108M	784,722	815,746	844,064	5,333M									PV
	PS	1.6	.4	.3	.4	.6									PS
	SP	.08	.11	.12	.11	.09									SP
	XS	3	3	3	3	3									XS
CTL BR OLIVE OIL 101.4 OZ	DV	8,211	8,237	6,368	16,899	39,715									DV
	DS	#	#	#	#	#									DS
	PV	128,678	125,319	92,383	128,152	474,533									PV
	PS	.1	.1	#	.1	.1									PS
	SP	.06	.07	.07	.13	.08									SP
	XS	1	1	1	2	2									XS

ANNEX G

Importers of Olive Oil

CALIFORNIA

AMERICAN INDUSTRIES CO., INC. 2045 McKinnon Avenue SAN FRANCISCO, CA. 94124 Tel.: 415/641-1040 TX.: 910-372-2247	Olive Oil, Enoclanina Italy
BERTOLLI USA INC. 1353 Lowrie Avenue SOUTH SAN FRANCISCO, CA. 94080 Tel.: 415/761-3772 TX.: 910-371-7407	Olive Oil, Vinegar, Wine Italy
GIURLANI & BROTHERS INC. 1266 Kifer Road SUNNYVALE, CA. 94086 Tel.: 408/738-0220 TX.: 35-7451	Specialty Food, Olive Oil, Onions, Peppers, Wine, Olive Wine Vinegar, Canned Fish, Pickled Vegetables Italy, Netherlands, Spain, Greece
KOVARICH BROCKERAGE CO. 4866 Valley Blvd. LOS ANGELES, CA. 90032 Tel.: 213/222-7143 TX.: 662415	Macaroni, Dried Mushrooms, Romano Cheese, Wine, Vermouth, Olive Oil, Provolone Cheese, Parmesan Cheese, Sweet Batata, Deserts, Espresso Coffee Pots, Saffron, Anchovies, Fontina Cheese, Quinces Italy, Spain, Argentina
MERCADO LATINO 2660 Southeastern Avenue CITY OF COMMERCE, CA. 90040 Tel.: 213/726-0802 TX.: 67-3509	Produce, Canned Sardines, Olives, Chillies Mexico, Costa Rica, Spain, Peru
OBERTI OLIVE OIL Div. of Tri-Valley Growers P.O. Box 899 MADERA, CA. 93639 Tel.: 209/674-8741 TX.: 910-549-1396	Olive, Olive Oil, Peppers Spain, Italy
PRIDE OF SPAIN 1774 Sky Park Cir. IRVINE, CA. 92714 Tel.: 714/957-1022	Olives, Artichokes, Olive Oil Spain
PRODUCTOS ESPANOLAS 6547 West Blvd. INGLEWOOD, CA. 90302 Tel.: 213/677-7376	Sardines, Tuna, Squid, Olives, Olive Oil, Capers, Bacalao, Pimentos, Coffee, Turrone Spain
S & J IMPORTING CO., INC. 1770 Pacific Avenue LONG BEACH, CA. 90813 Tel.: 213/599-1341	Olives, Olive Oil, Beer, Wine Greece, Yugoslavia

728

TAMA TRADING CO.
1920 E. 20th Street
LOS ANGELES, CA. 90058
Tel.: 213/748-8262

Olive Oil, Canned Goods,
Macaroni, Wine
Italy, Spain, S. America

TOSI TRADING
1499 Bayshore Hwy.
BURLINGAME, CA. 94010
Tel.: 415/697-7960
TX.: 910-371-1710

Olive Oil
Italy, Spain

VILLA D'ORO OLIVE OIL CO.
P.O. Box 126
OROVILLE, CA. 95965
Tel.: 916/533-1822

Olive Oil
Spain

WARD & SONS., E. WALDO
P.O. Box 266
SIERRA MADRE, CA. 91024
Tel.: 213/355-1218

Olives, Onions, Olive Oil
Spain, France, Netherlands

CONNECTICUT

ARGUIMBAU & CO., V.C.
4 Davenport Avenue
GREENWICH, CT. 06830
Tel.: 203/661-7080

Olives, Cherries, Onions,
Pepperoncini, Pickled Olive Oil
Netherlands, Spain, Greece

SCLAFANI CORP.
482 Glenbrook Road
P.O. Box 276
STAMFORD, CT. 06904
Tel.: 203/324-7373

Artichokes, Lupine Beans, Cheese,
Tomatoes, Olive Oil, Olives,
Macaroni, Anchovies, Dry Cod Fish,
Canned Mushrooms, Dried Figs
Italy, Spain, Portugal, Morocco,
Taiwan, Norway, England, Turkey,
Greece

SORRENTO IMPORTING CO.
2487 Main Street
BRIDGEPORT, CT. 06606
Tel.: 203/333-9217

Cheese, Tomatoes, Olive Oil,
Macaroni
Italy

FLORIDA

CALDERON INC., V.M.
1272 N. Palm Avenue
SARASOTA, FL. 33577
Tel.: 813/366-3708
TX.: 52684

Olives, Olive Oil, Sardines,
Anchovies, Fillets, Artichoke Hearts,
Bottoms, Pepperoncini, Gherkins,
Peeled Tomatoes, Tomato Paste,
Pimentos, Capers, Tuna Fish,
Mackered Fillet, Smoked Oysters,
Silverskin Onions, Canned Tomato
Products, Tomato Puree, Paste and
Sauce

Spain, Portugal, Morocco, Malaysia,
Korea, India, Netherlands, Norway,
Greece, Tunisia, Chile Argentina,
Central and South America

DEL RIO PRODUCTS INC.
P.O. Box 75245
TAMPA, FL. 33675
Tel.: 813/247-4534
TX.: 52417

Vegetables, Olives, Peppers, Brine
and Boiled Onions, Canned Hearts of
Palms, Capers, Giardiniera, Canned
Pimentos, Olive Oil, Canned
Artichoke Hearts, Carrots
Spain, Greece, Netherlands,
Morocco, Israel

DIANA FOODS INC.
Div. of Goya Foods, Inc.
1900 N.W. 92nd Avenue
MIAMI, FL. 33172
Tel.: 305/592-3150

Canned Seafood, Olives, Olive Oil,
Cider, Wine
Spain, Argentina, Chile

VIGO IMPORTING CO.
4701 W. Commanche Avenue
P.O. Box 25584
TAMPA, FL. 33684
Tel.: 813/884-3491
TX.: 568315

Olive Oil, Olives, Cheese,
Canned Ham
Italy, Spain, Greece,
Netherlands, Denmark

ILLINOIS

ANTOGNOLI & CO., JOSEPH
310 W. Superior Street
CHICAGO, ILL. 60610
Tel.: 312/787-7990

Cheese, Olive Oil, Sardines,
Anchovies, Macaroni
Italy, Portugal, Spain, Greece,
Norway

CONWAY IMPORT CO., INC.
11051 W. Addison Street
FRANKLIN PARK, IL. 60131
Tel.: 312/455-5600

Olives, Olive Oil, Anchovies
Spain

GRAZIANO GROCERY CO.
910 W. Randolph Street
CHICAGO, ILL. 60607
Tel.: 312/666-4587

Cheese, Olive Oil, Macaroni,
Fish, Food Products
Italy, Portugal, Spain, Greece

MID AMERICA SALES CO.
1750 Dewes Street
GLENVIEW, ILL. 60025
Tel.: 312/729-4500

Cheese, Olive Oil, Candy, Caviar,
Olives, Anchovies, Macaroni,
Capers, Sardines, Artichokes,
Pimentos, Coffee, Peperoncini,
Tomatoes
Italy, Spain, France, Portugal,
Greece, Denmark, Norway

SPECIALTY FOOD PACKING & IMPORTING CO.
P.O. Box 1564
MELROSE PARK, IL

Olives, Olive Oil, Artichokes,
Cooking Wine, Onions
Spain, Netherlands

URSINI CO.
937-939 W. Randolph
CHICAGO, ILL. 60607
Tel.: 312/243-8070

Cheese, Tomato Products, Olive Oil,
Fish Products
Italy, Spain

LOUISIANA

PROGRESS GROCERY
915 Decatur
NEW ORLEANS, LA 70116
Tel.: 504/525-6627

Artichokes, Black Olives, Macaroni,
Anchovies, Olive Oil, Hearts of Palm
Mushrooms
Spain, Greece, Italy, Brazil, France

MARYLAND

PASTORE WHOLESALE GROCER
815 E. Pratt Street
BALTIMORE, MD 21202
Tel.: 301/752-2388

Tomato Products, Olive Oil, Cheese,
Macaroni, Coffee Pots, Noodle
Machines, Olives
Italy, Greece

POMPEIAN INC.
4201 Pulaski Hwy.
BALTIMORE, MD. 21224
Tel.: 301/276-6900
TX.: 87940

Olive Oil, Olives
Spain, Italy

MASSACHUSETTS

CALIFORNIA OLIVE OIL CO., INC.
134 Canal Street
SALEM, MA. 01970
Tel.: 617/745-7840

Olive Oil, Cheese
Italy, Canada

DANIELE IMPORTS INC.
15 Warriner Avenue
SPRINGFIELD, MA. 01105
Tel.: 413/737-9315

Italian Peeled Tomatoes,
Olive Oil, Pasta, Chestnuts
Europe

HELLENIC PRODUCTS
75 Charles Street
S. BOSTON, MA. 02210
Tel.: 617/426-5766

Ceramics, Olive Oil, Olives, Honey
Greece

METAFORA CO., INC.
214 Commercial
MALDEN, MA. 02148
Tel.: 617/324-7033
TX.: 949309

Cheese, Olive Oil, Tomato Paste,
Tomatoes, Anchovies, Artichokes
Italy, France, Spain

RUSSO IMPORTS, ALBERT A.
88 Cottage Street
EAST BOSTON, MA. 02128
Tel.: 617/569-6995

Anchovies, Tomatoes, Olive Oil,
Noodle Making Machinery,
Stainless Steel Coffee Pots,
Aluminum Coffee Pots
Spain, Italy, Argentina

MICHIGAN

ARABIAN VILLAGE MARKET
10040 Dix Street
DEARBORN, MI. 48140
Tel.: 313/841-4650

Olives, Olive Oil
Greece

GABRIEL IMPORTING CO.
2461 Russell Street
DETROIT, MI. 48207
Tel.: 313/567-2890

Pistachio Nuts, Olives, Olive Oil,
Spices, Grains
Greece

LOMBARDI FOODSERVICE
2465 23 Mile Road
UTICA, MI. 48087
Tel.: 313/254-3550

Olives, Cheese, Peppers, Seafood,
Olive Oil
Italy, Spain, Greece, Bulgaria

NEW JERSEY

GOYA FOODS
100 Seaview Drive
SECAUCUS, N.J. 07094
Tel.: 201/348-4900

Olive Oil, Olives, Canned Goods,
Capers, Salt Fish, Corned Beef,
Tropical Fruit, Canned Fish,
Spices, Cooking Wine
Worldwide

LA CENA FINE FOODS LTD.
4 Rosol Lane
SADDLE BROOK, N.J. 07662
Tel.: 201/797-4600
TX.: 134362

Olives, Canned Fish, Canned
Vegetables, Olive Oil, Cooking
Wine, Canned Pimentos, Paprika,
Fruit Nectars, Cheese, Table Wine
Spain, Netherlands, Dominican
Republic

ORLAND FOOD CORP.
28 Fairview Terrace
PARAMUS, N.J. 07652
Tel.: 201/369-9197

Marinated Artichokes, Tomato
Products, Cheese, Macaroni,
Olive Oil, Beans, Anchovies
Worldwide

PROGRESSO QUALITY FOODS
Div. of Ogden Food Corp.
365 W. Passaic Street
ROCHELLE PARK, N.J. 07662
Tel.: 201/368-9450

Olive Oil, Olives, Artichokes,
Canned Tomatoes
Italy, Spain, Portugal, Mexico,
Greece, Israel, England

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PUIG CO., VINCENTE
4 Rosol Lane
SADDLEBROOK, N.J. 07662
Tel.: 201/797-4600
TX.: 134362

RAMIREZ, ZAYAS & CO.
2021 40th Street
NORTH BERGEN, N.J. 07047
Tel.: 201/864-4338
TX.: 710-992-8834

SCHROEDER FRADER INC.
140 Rte. 17 N.
PARAMUS, N.J. 07652
Tel.: 201/967-5120

TRIUNFO FOODS
3235 Liberty Street N.
NEWARK, N.J. 07105
Tel.: 201/622-7403

NEW YORK

AMER-ITAL FOODS LTD.
34-56 58th Street
P.O. Box 408
WOODSIDE, N.Y. 11377
Tel.: 212/779-2700
TX.: 62341

ANTOLINI & CO. LTD.
401 Broadway, Rm. 1112
NEW YORK, N.Y. 10013
Tel.: 212/925-4905

ASARO BROTHERS INC.
449 Irving Avenue
BROOKLYN, N.Y. 11237
Tel.: 212/386-2481

Olives, Canned Fish, Canned
Vegetables, Olive Oil, Cooking
Wine, Canned Pimentos, Paprika,
Fruit Nectars
Spain, South Africa, Taiwan,
Dominican Republic, Australia,
Morocco

Olive Oil, Cakes, Nougats, Chocolate,
Hard Candy, Candied Fruit, Espresso
Coffee, Antipasto, Anchovies,
Artichokes, Prepared Rice, Prepared
Spices, Camomile Tea, Instant
Polenta, Potato Gnocchi, Espresso
Coffee Machines, Mineral Water,
Soft Drinks, Fruit Syrup, Macaroni
Products, Noodle Machines, Beer,
Cider, Wine, Spanish Red Peppers,
Olives, Malt Beverages, Canned Fish,
Preserves
Italy, Spain, Dominican Republic,
Colombia, Venezuela, Argentina,
Japan, West Germany

Olive Oil, Dairy Products, Tomatoes,
Tomato Paste, Olives
Europe

Fish, Flour, Olive Oil, Olives, Candy,
Macaroni, Communion Wafers
Portugal, Norway, Brazil, Italy,
Canada

Olive Oil, Cheese, Mineral Water,
Macaroni Products, Provolone
Cheese, Tomatoes, Coffee
Italy, Argentina, France, Spain

Cheese, Olive Oil, Chestnuts
Italy, Argentina

Cheese, Olive Oil
Italy, Spain

BELTHOR TRADING CORP.
1800 Shames Drive
WESTBURY, N.Y. 11590
Tel.: 516/333-3030
TX.: 649022

Wood Products, Canned Fruit, Olive
Oil
Japan, Korea, Spain

BERIO IMPORTING CORP.
109 Montgomery Avenue
SCARSDALE, N.Y. 10583
Tel.: 212/986-8816
TX.: RCA 131432

Olive Oil, Wine Vinegar
Italy

BIG ALPHA FOODS, INC.
4706 Northern Blvd.
LONG ISLAND CITY, N.Y. 11101
Tel.: 212/729-7900
TX.: RCA 22551

Olives, Olive Oil, Cheese, Food
Products
Greece, Italy, Spain

CARAGOL INC., JOSEPH
84 North Park Avenue
ROCKVILLE CENTRE, N.Y. 11570
Tel.: 516/678-6706
TX.: 221754-4758180

Anchovies, Pimentos, Artichokes,
Olive Oil, Paprika, Textile
Machinery, Tomatoes, Tomato Paste,
Canned & Dried Apricots, Madarin
Oranges, Olives
Spain, Turkey

CONDAL IMPORTS INC.
531-591 Dupont Street
BRONX, N.Y. 10474
Tel.: 212/378-1200

Malt Beverages, Beer, Wine,
Pimentos, Olives, Soda, Olive Oil,
Edible Canned Goods, Malt Extract
West Germany, Netherlands

CORRAO OIL CORP. ANTONIO
253 36th Street
BROOKLYN, N.Y. 11232
Tel.: 212/768-2962

Olive Oil
Italy, Spain

CORY IMPORT CORP., ALBERT N.
109 Montgomery Avenue
P.O. Box 239
SCARSDALE, N.Y. 10583
Tel.: 212/986-8816
TX.: 131438

Olives, Olive Oil
Italy, Spain

DELLA CELLA CO., INC. L.
100 E. Old Country Road
MINEOLA, N.Y. 11501
Tel.: 516/742-5400
TX.: 143120

Cheese, Vegetables, Macaroni,
Tomatoes, Olive Oil
Europe, South America

DORIC FOODS, INC.
47-08 Northern Blvd.
LONG ISLAND CITY, N.Y. 11101
Tel.: 212/729-3800

Olives, Cheese, Olive Oil, Peppers
Greece, Italy, Spain, Chile

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FANTIS FOODS INC.
179 Franklin Street
NEW YORK, N.Y. 10013
Tel.: 212/966-5186
TX.: 12-7870

Cheese, Olives, Canned Fish,
Olive Oil, Figs, Food Products
Italy, Greece, Spain, Chile,
Yugoslavia

FRAGOLA INC., JOSEPH
94 Walton Street
BROOKLYN, N.Y. 11206
Tel.: 212/782-1555

Cheese, Tomatoes, Olive Oil
Italy, Spain

GEM PACKING CORP.
83 33rd Street
BROOKLYN, N.Y. 11232
Tel.: 212/788-1160

Olive Oil
Spain, Greece, Tunisia

GITTO SONS INC., JOSEPH
38 Brooklyn Terminal Market
BROOKLYN, N.Y. 11236
212/241-3353

Olive Oil, Tomatoes, Nuts, Cheese,
Dried Fish, Olives, Beans, Farina
Italy, Greece, Spain

INDELICATO FOOD DISTRIBUTORS, INC.
72-02 51st Avenue
WOODSIDE, N.Y. 11377
Tel.: 212/592-5800

Tomatoes, Cheese, Anchovies,
Olive Oil, Mushrooms
Italy, Spain

KORBRO-OIL CORP.
120-19 89th Avenue
RICHMOND HILL, N.Y. 11418
Tel.: 212/849-1600

Olive Oil
Spain, Italy, Greece

KRINOS FOODS INC.
47-00 Northern Blvd.
LONG ISLAND CITY, N.Y. 11101
Tel.: 212/729-9000

Cheese, Peppers, Olives, Olive Oil
Greece, Italy, Spain, Romania

LUPARELLO & CO., INC. P.
1676 62nd Street
BROOKLYN, N.Y. 11204
Tel.: 212/256-9896

Tomatoes, Pimentos, Artichokes,
Anchovies, Olive Oil
Italy, Spain

MARCO POLO MARKETING LTD.
175 Fifth Avenue
NEW YORK, N.Y. 10013
Tel.: 212/239-8077
TX.: 420709

Confectionery, Coffee, Mineral
Rice, Spices, Canned Goods, Food
Posters, Vinegar, Olive Oil
Italy

MOSCAHLADES BROTHERS INC.
28 N. Moore Street
NEW YORK, N.Y. 10013
Tel.: 212/226-5410
TX.: 666919

Olives, Cheese, Olive Oil, Canned
Fish, Preservatives
Italy, Greece, Morocco, Romania

MUSCO & CO.
5612 58th Street
MASPETH, N.Y. 11378
Tel.: 212/326-1070

Cheese, Olives, Anchovies, Tomatoes,
Food Specialties, Olive Oil, Tomato
Paste
Italy

NAPOLI FOODS INC.
461 Railroad Avenue
WESTBURY, N.Y. 11590
Tel.: 516/334-7740

Tomatoes, Cheese, Olive Oil
Italy, Spain, South America

PASTENE & CO., INC.
152 Franklin Street
NEW YORK, N.Y. 10013
Tel.: 212/925-5338
TX.: 12-7751

Canned Fish, Wine, Cheese, Olive Oil
Canned Vegetables, Food Specialties
Europe, South America

SANSONE FOOD PRODUCTS, LTD.
2147 Jericho Tpke.
GARDEN CITY PARK, N.Y. 11040
Tel.: 516/746-3696

Cheese, Salami, Tomatoes, Tomato
Paste, Macaroni, Olive Oil,
Mushrooms, Anchovies
Italy, Spain

SANTA ANITA'S FOODS, LTD.
P.O. Box 743
PORT WASHINGTON, N.Y. 11050
Tel.: 516/883-2687

Cheese, Canned Tomatoes, Olives
Canned Olive Oil
Italy, Spain, Portugal

SQUISITA FOOD CORP.
819 Garrison Avenue
BRONX, N.Y. 10474
Tel.: 212/542-9072

Tomatoes, Olive Oil, Condiments,
Spices, Canned Fish, Canned
Vegetables, Legumes, Olives
Spain, Egypt, Italy, Syria, Greece

SURACE INC., PAUL
16 Court Street
BROOKLYN, N.Y. 11241
Tel.: 212/875-3745
TX.: RCA 233504

Cheese, Olive Oil, Tomatoes, Tomato
Paste, Figs, Fig Paste, Dried Fruit,
Canned Vegetables, Lupini Beans
Worldwide

TEITEL BROTHERS
2372 Arthur Avenue
BRONX, N.Y. 10458
Tel.: 212/733-9400

Tomatoes, Olive Oil, Provlone
Italy, Spain

VACCA, INC. SALVATORE
344 N.Y. City Terminal Market
BRONX, N.Y. 10474
Tel.: 212/893-3060
TX.: WUI 666104

Fresh & Dried Chestnuts, Tomato
Products, Red Onions, Beans,
Macaroni, Olive Oil, Garlic
Italy

VILLAMARIN GUILLEN INC.
26 Bay Street
STATEN ISLAND, N.Y. 10301
Tel.: 212/447-2838
TX.: 424200-125041

Olives in Brine, Olive Oil,
Artichokes, Capers, Tomato
Products, Pimentos, Mandarin
Oranges, Mushrooms
Spain, Italy, Portugal, Morocco,
Israel, Greece

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OHO

BONAFFINNI'S IMPORTED PRODUCTS, INC.
2217 Ontario Street
CLEVELAND, OH 44115
Tel.: 216/241-2068

Cheese, Olive Oil, Olives, Wine
Italy, Greece

GALLUCCI, GUST CO.
505 Woodland Avenue
CLEVELAND, OH 44115
Tel.: 216/241-5324

Mushrooms, Cheese, Olive Oil,
Olives, Wine, Spices
Italy, Greece, Spain, Morocco,
Portugal

PENNSYLVANIA

HAZLETON MACARONI CO.
221 Noble
P.O. Box 117
HAZLETON, PA 18201
Tel.: 717/454-0401

Cheese, Olive Oil
Italy

ROSA FOOD PRODUCTS CO., INC.
1312 Federal Street
PHILADELPHIA, PA 19147
Tel.: 215/467-2214

Peeled Tomatoes, Olive Oil,
Anchovies, Beans, Artichokes,
Peppers, Candy
Italy, Spain, Portugal, Greece

STAMOOLIS BROTHERS
2020 Penn Avenue
PITTSBURGH, PA 15222
Tel.: 412/471-7676

Olives, Cheese, Peppers, Olive
Oil, Tomato Products

RHODE ISLAND

COSMOS IMPORT & EXPORT INC.
2 Crandal Road
TIVERTON, R.I. 02908
Tel.: 401/624-8451

Tea, Cigarettes, Olives, Olive Oil,
Canned Fish, Frozen Fish, Fresh Fish
Portugal, Norway, Spain

GONSALVES, CO., THE, HENRY
140 Smithfield Avenue
PAWTUCKET, R.I. 02860
Tel.: 401/725-8700

Cheese, Olive Oil, Olives, Frozen
Fish, Canned Fish, Dry Salt Cod Fish
Portugal, Norway, Canada

TEXAS

CASSO GUERRA & CO.
310 Guadalupe Street
LAREDO, TX. 78040
Tel.: 512/723-4371

Grocery Products, Olive Oil
Mexico, Spain

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TERK DISTRIBUTING CO., INC.
1008 E. 2nd Street
P.O. Box 4333
ODESSA, TX 79760
Tel.: 915/332-9183

Wine, Spirits, Fish Products,
Perfume, Tobacco, Watches, Carpet
Tools, Olive Oil
England, Italy, France, Portugal,
Spain, Mexico, People's Republic of
China, USSR, Hong Kong, Taiwan

WASHINGTON

MAGNANO & SONS INC. A.
1502 4th Avenue S.
P.O. Box 24748
SEATTLE, WA 98124
Tel.: 206/622-3021
TX.: 328-428

Fish Products, Olive Oil, Bread,
Cookies, Mustard, Scargot, Soup,
Tea, Pasta
Germany, Japan, Italy, England,
Canada, France, Spain, Norway,
Denmark, Switzerland, Formosa,
Sweden

NAPOLEON CO. THE
5933 6th Avenue
P.O. Box 81126
SEATTLE, WA 98108
Tel.: 206/762-3778
TX.: 32-1313

Olive Oil, Canned Fish, Bread,
Artichokes, Snails, Chutney,
Crackers, Cookies, Pimentos,
Asparagus, Capers, Corn, Mustard,
Sardines, Sauces, Soups, Lingon-
berries, Marmelades, Preserves
Spain, Italy, Norway, Sweden,
Denmark, France, Japan, India,
England, Taiwan, Korea, Canada

DISTRICT OF COLUMBIAWASHINGTON

GIANT FOOD INC.
P.O. Box 1804
WASHINGTON, D.C. 20013
Tel.: 202/341-4100

Spanish Olives, Olive Oil,
Artichokes, Mandarin Oranges,
Portuguese Mackerel, Preserves and
Jellies, Capers, Sardine Cat Food,
Portuguese Sardines
Worldwide

INTERNATIONAL WHOLESALERS CORP.
1238 W. Street N.E.
WASHINGTON, D.C. 20018
Tel.: 202/529-0074

Packed Coffee, Curry Powder,
Instant Chocolate, Tea Bags,
Olive Oil, Sardines, Food
Trinidad, Spain, Brazil, Nigeria,
Guyana

SUMMAR ACROPOLIS FOOD MARKET
1206 Underwood N.W.
WASHINGTON, D.C. 20012
Tel.: 202/829-1414

Food, Costume Jewelry, Olive Oil,
Bibelots
Greece, Portugal, Turkey

ANNEX H

U.S. Producers of Olive Oil

**CALIFORNIA OLIVE COMMITTEE
516 North Fulton Street
Fresno, California 93728**

OLIVE OIL PRODUCERS

**Golden Eagle Olive Products
749 North Plano
Porterville, CA 93257
Phone: (209) 784-3468**

**Nick Sciabica & Sons
P.O. Box 1246
Modesto, CA 95353
Phone: (209) 577-5067**

**Villa D'Oro Olive Oil Co.
P.O. Box 126
Oroville, CA 95965
Phone: (916) 533-1822**

**Lindsay Olive Growers
P.O. Box 278
Lindsay, CA 93247
Phone: (209) 562-5121**

**TriValley Growers
Oberti Division
P.O. Box 899
Madera, CA 93637
Phone: (209) 674-8741**

**California Olive Oil Man. Co.
1300 I
Reedley, CA 93654
Phone: (209) 638-2231**

**Woodland Olive Producers
1111 Pedegast
Woodland, CA 95695
Phone: (916) 662-6604**

**Verni Saverio & Sons
11990 Auberry Road
Clovis, CA 93612
Phone: (209) 299-0074**

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ANNEX I

**Proposal for a Joint Marketing Arrangement
With Lindsay Olive Growers
California, USA**

Robert D. Rossio
President

July 13, 1988

Rouissi M. Lakdar
Direction Generale
Office National De L'Huile
10 Avenue Mohamed V
TUNISIA

RE: OLIVE OIL

Dear Mr. Lakdar:

Thank you very much for your visit to our plant here in Lindsay, California. We were pleased to spend time with you and your party.

We appreciate the problems ahead for the EEC, their olive-growing members and those suppliers of olive oil from non-EEC member nations.

We are very interested in pursuing the possibility of a joint venture, or shared marketing effort between our two groups.

Lindsay International, Inc. is a marketing cooperative. We are prepared to oversee the marketing, sales and distribution management of products from companies who are members of the cooperative. We do this on a shared-cost basis. It is not a profit-oriented relationship so much as one of sharing cost. The profit made on the sale goes back to the company whose products were sold. It is simple, although at first glance it looks more complex.

We are interested in working with you along these lines:

1. Market your olive oil. We will undertake an analysis of the market, write a marketing plan for your advanced approval, execute that plan through our sales managers, brokers and distribution centers across the United States, Canada, Alaska and Hawaii. We are also prepared to sell your product in the Pacific Rim countries through our agents and importers, if you wish.

Lindsay Olive Growers
650 W. Tulare Road • P.O. Box 278 • Lindsay, CA 93247
(209) 562-5121 • TWX 910-541-2443 • TWX 910-541-2446 • TELEX 682-443

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Rouissi M. Lakdar
Office National De L'Huile
July 13, 1988
Page Two

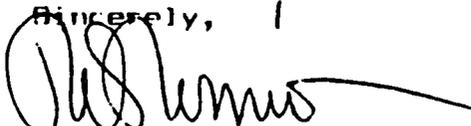
2. We would also market your table olives if they are of good quality, comparable to Spain. We are prepared to make our expertise in olive processing and production efficiencies available to you should you so desire. At one time our sales of green olives were about \$8,000,000.00 U.S. dollars. We believe they can be \$10 to \$12 million.
3. We are interested in developing a source of fresh or brined olives for pizza which would be packed bulk and finished here in California; or as monetary markets and world conditions permit, pack as finished goods there in Tunisia. We estimate we could use at least 2,000 - 3,000 U.S. tons in this manner.

Any progress along these lines will require further understanding of our mutual objectives, both short and long range.

We are prepared to assign key executives as necessary to study groups or to special fact-finding groups which would, of course, be made up of equal members from both sides.

Please let me know how we may best proceed to provide us both with those special opportunities we seek. I look forward to hearing from you.

Sincerely, /



R. D. Rossio
President

RDR:rw

cc: Jack King

ANNEX J

Terms of Reference

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Terms Of Reference

Olive Oil Export Commodity Study

I. Introduction

As part of its on-going agricultural sector structural adjustment program, the Government of Tunisia has given priority to the promotion of agricultural exports. This effort will only be effective if Tunisian exporters can maintain and increase the competitiveness of their products in their traditional markets and exploit new market opportunities, particularly in North America. It will be necessary, therefore, to understand the essential factors determining the competitiveness of Tunisian agricultural commodities entering world markets and to assess the key constraints affecting the availability, quality and export costs for these products. Effective strategies for releasing these constraints need to be developed and existing market advantages exploited, enhanced and consolidated.

This study is one of five export commodities analyses to be conducted in 1988/1989 under the GOT/AID Agricultural Policy Implementation Project. The commodities to be covered by these analyses are olive oil, wines, citrus, dates and nuts, and marine products. Each study will be composed of a Part A and a Part B. Each Part A sub-study will deal with analysis of the key factors affecting the exportability of the Tunisian agricultural commodity - i.e. its competitiveness in export markets FOB Tunis. Each companion Part B will investigate the requirements of importers in key markets and the prospects for increasing Tunisian exports. Finally, the results of the Part A and B studies will be used to develop strategic marketing recommendations for Tunisian agents involved exporting the agricultural commodities being studied.

In the particular case of olive oil, the study approach will be to assess how to maintain Tunisia's traditional market share in existing European markets while finding new strategies to penetrate or expand non-traditional markets, particularly in North America.

The terms of reference for the olive oil export study is presented in the sections below. The Part A sub-study deals with the analysis of conditions in Tunisia which affect olive oil competitiveness and the Part B sub-study concerns itself with the receptiveness of potential importers to the available commodity.

Part B Study Olive Oil Export Market Analysis

I. General Description Of The Part B Study

The objective of the Part B export marketing sub-study is to present a clear and concise description of the key factors affecting the importability of Tunisian olive oil into North American markets.

To accomplish this objective, the Part B study team will review the key trends in United States and Canadian imports of olive oil and place those trends in the context of the world market. The study team will analyze the key factors to be considered in exporting Tunisian olive oil into these markets - i.e. import restrictions, bottling and packaging requirements. It will also describe the requirements of the most important olive oil importing firms in the North American market. The study team will develop a strategic appraisal of the prospects for Tunisian olive oil to North America and a realistic market plan to permit such exports as are deemed feasible over the next five to ten years. Finally, the study team will project the macroeconomic impacts of successful implementation of the strategic marketing plan on the Tunisian economy using the World Bank multi-market economic model developed for this purpose.

II. The Objectives Of The Overall Study With Specific Questions

The ultimate objective of the overall olive oil export study is a set of concrete recommendations directed toward increasing the export competitiveness of Tunisian olive oil. The results of the competitiveness study - Part A - together with this companion export marketing study - Part B - will be used to present a detailed export marketing plan which will be both realistic and cost effective.

In order to arrive at these recommendations, a logical process must be followed of findings, conclusions and recommendations. The following sub-sections deal with the topics to be analyzed by the study team.

A. Factual Information to be Gathered

1. Identify and describe key trends in United States and Canadian imports of olive oil, including historical import trends, changing market shares of major importers, and price and exchange rate trends.
 2. Identify and describe major trends in imports, market shares, prices, etc., for selected alternative markets for major exporters to the United States and Canada.
 3. Analyze and describe key trends for substitute products - e.g. vegetable oil - in terms of price behavior, production, demand, and trade balance.
 4. Characterize current import restrictions, if any, including tariffs and quotas by country of origin.
-

- Domestic Olive Oil Refiners and Exporters
3. Sketch out a strategic action plan of practical measures for implementing the proposed recommendations with details, insofar as possible, of the plan, timing and responsibilities for implementation.

V. Methodology To Be Employed

The following general methodology will be employed by the study team in Tunisia.

- A. A document search and review will be done by the entire study team to profit from existing studies done by government agencies in the United States and Canada, agro-industrial companies, and/or private olive oil importers and trade associations. A critical synthesis of these studies will enable their findings and recommendations to be used as inputs for this Part B study and to define what additional information needs to be collected.
- B. Study findings will also be based upon interviews in United States and Canada with key persons in government and with private olive oil producers and importers.
- C. Collection and analysis of published statistics for world and North American markets on the production and marketing of olive oil, with particular attention to existing information on the structure of market costs, marketing requirements, and market demand, will be done by the team.

5. Using data from the U.S. Census of Business and similar sources from Canada, describe the North American olive oil industry in terms of numbers of firms and the market shares of the larger firms.
6. Contact trade associations for assistance in the identification of North American importers, processors and distributors, identifying where possible the proportional use of retail, institutional and manufacturing channels. Contact names in each firm will be provided when available.
7. If feasible from a budget and timing perspective, purchase retail product movement and price data by brand and region from SAMI or a competitor vendor of these data.
8. Identify and describe the requirements for entering the North American market, including quality/grade standards, packaging requirements, and pricing programs.
9. Characterize the economic and non-economic, such as loyalty, impediments to entering the North American olive oil market.

B. Conclusions Required

1. Assess the quantity demand in the United States and Canadian markets for olive oil and the changing structure of those import markets.
2. Assess the market behavior of major exporters of olive oil to the United States and Canada in selected major markets.
3. Analyze the general substitution relationships between olive oil and major substitute products in the United States and Canadian markets.
4. Determine the import restrictions by country of origin, if any, imposed by the governments of the United States and Canada and the effects these regulations have on the competitive position of olive oil from Tunisia.
5. Describe the North American olive oil market in terms of requirements of that market for grade/quality, volume, packaging, price and other relevant characteristics.
6. Characterize the availability of the North American firms importing olive oil and identify target firms for an initial export effort from Tunisia and the terms of trade and financing arrangements preferred by those firms.
7. Provide a strategic marketing plan for exporting Tunisian olive oil to the United States and Canada and an estimate of the potential market share of Tunisian olive oil.

C. Recommendations to be Made as a Result of the Overall Study

1. Propose, as appropriate, recommendations for enhancing existing competitive advantages of domestic olive oil, if they exist, and for correcting factors reducing competitiveness in export markets.
2. Indicate the implications of these actions for the following actors/agencies in the olive oil marketing chain:
 - The Government of Tunisia
 - The National Office for Edible Oils