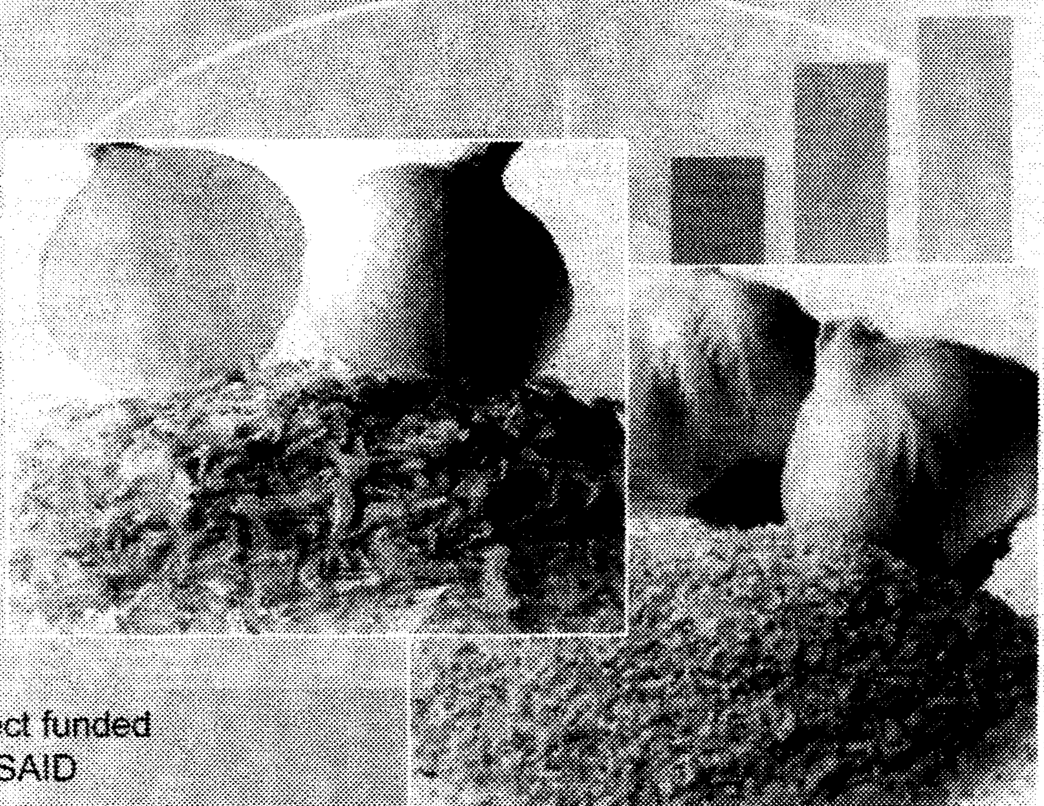
PN-ADC-544

Agriculture-Led Export Businesses

Supporting Egypt's Processed Foods Export Industry

Dehydrated Vegetables

Situation & Outlook



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2002

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Processed Products 2

Dehydrated Vegetables & Dried Herbs

Export Market Potential and Opportunities

Prepared in cooperation with Agriculture-Led Export Businesses; USAID funded project; implemented by Abt Associates, Inc.

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Preamble

The dehydrated vegetables world market is very large and growing. As an example, the following graphs summarizes world production and world demand for dehydrated onions, which show very clearly the expected gap between demand and supply for this important food item. The following figures show world production and growth and projections of for dehydrated onions, indicating increasing demand.

Figure 1. World production of dehydrated onions

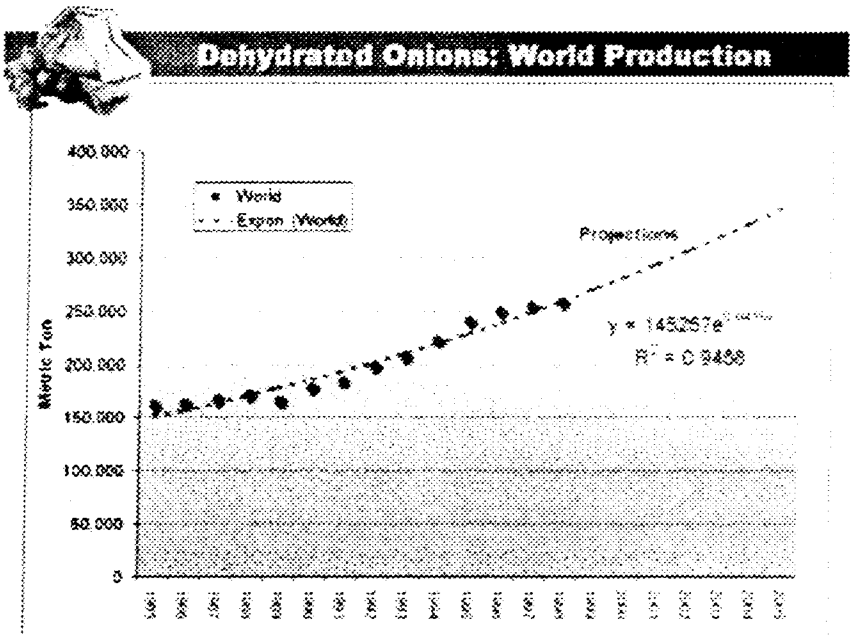
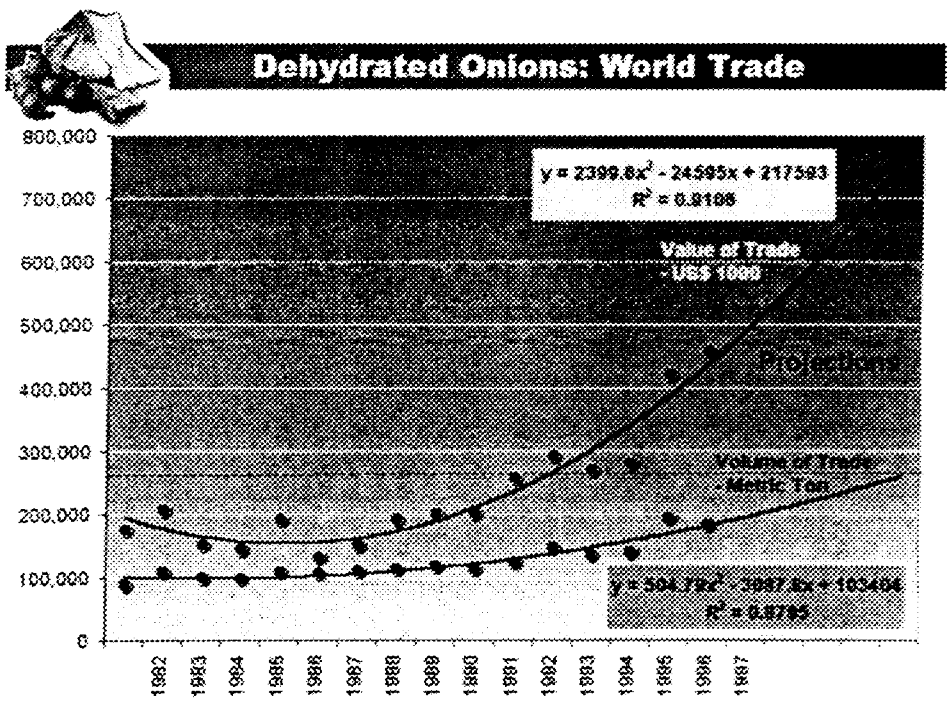


Figure 2. World trade of dehydrated onions – growth and projections

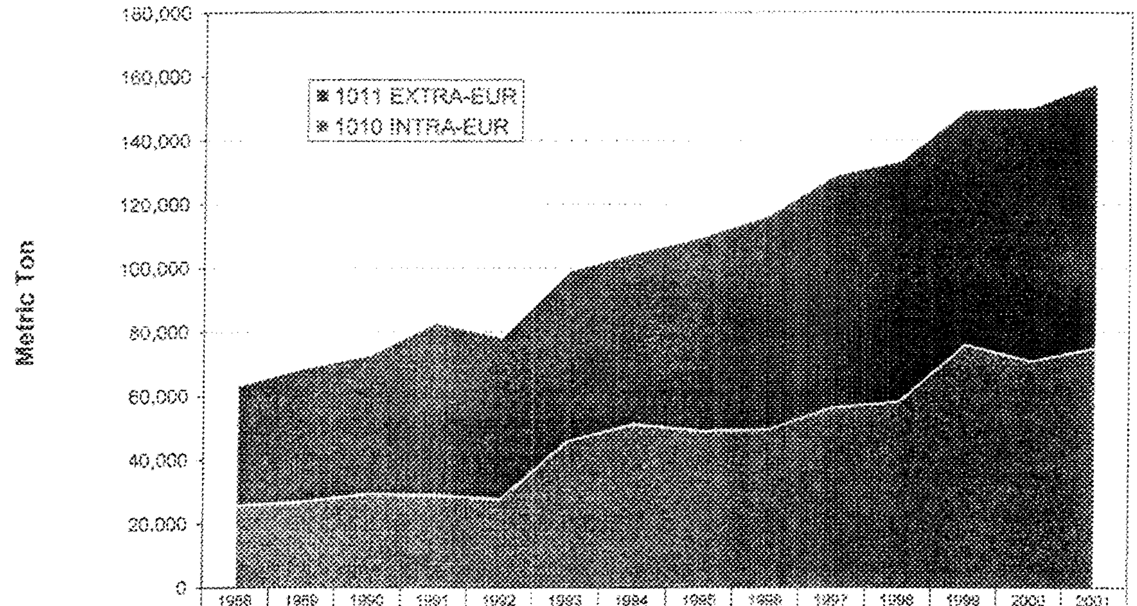


For as long as can be remembered, man has dehydrated vegetables to preserve them for after the harvest. Preserving foods by drying is still very practical and in growing demand worldwide. Increasing demand for American types of food (known worldwide as Fast Food) is contributing significantly to increasing demand for dehydrated vegetables, as dehydrated vegetables constitute a significant part of ingredients added to this type of food. The growing soup industry, as a result of an increasing number of workingwomen in Western developed countries, is also contributing significantly to increasing demand for dehydrated vegetables.

Dehydration, as a technique for preserving vegetables, has many advantages over other food preserving techniques. It is convenient, inexpensive, and requires less storage space than traditional canning.

The following analysis summarizes the world trade of dehydrated vegetables and potential for Egypt with a special focus on large importers in Europe and Japan.

Figure 3. European Union dehydrated vegetable imports



	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
1011 EXTRA-EUR	37,562	41,927	43,658	54,183	50,914	53,182	53,531	60,612	66,998	72,704	76,368	73,577	78,692	83,089
1010 INTRA-EUR	25,546	26,708	29,057	28,646	27,478	46,783	51,052	49,023	49,240	56,197	58,039	75,676	70,783	74,979

Trade flow statistics are reported by a number of international reporting agencies. For purposes of this report, we have used the United Nations Center for Trade and Development, World Trade Organization statistical offices, which is the most widely used source for world trade data. Specific European Union trade flows were extracted from ComExt of EuroStat, the statistical office of the European Union.

Table 1. List of exporters for the selected product in 2001
Product : 071220 Onions dried but not further prepared

Exporters	Value exported in 2000, in US$ thousand	Quantity exported in 2000	Quantity unit	Unit value (US$/unit)	Annual growth in value between 1996-2000, %	Annual growth in quantity between 1996-2000, %	Share in world exports, %
World estimation	152,573	85,208	Tons	1,791	0	4	100
United States of America	67,230	31,176	Tons	2,156	-2	0	44
France	19,978	11,049	Tons	1,808	15	27	13
Egypt	16,512	10,938	Tons	1,510	0	4	11
India	11,502	9,263	Tons	1,242	10	20	8
Germany	8,707	3,596	Tons	2,421	4	9	6
Hungary	4,966	1,639	Tons	3,030	-12	-15	3
Netherlands	4,142	2,775	Tons	1,493	5	19	3
China	2,577	2,430	Tons	1,060	-10	-11	2
Peru	2,520	123	Tons	20,488	-25	-51	2
Argentina	2,167	897	Tons	2,416	5	10	1
United Kingdom	1,709	611	Tons	2,797	-3	-4	1
Spain	1,672	780	Tons	2,144	69	69	1
Belgium	1,624	591	Tons	2,748	-6	5	1
Uzbekistan	1,228	649	Tons	1,892	4	17	1
Poland	607	72	Tons	8,431			0
Syrian Arab Republic	486	286	Tons	1,699	-28	-30	0
Malaysia	443	336	Tons	1,318	71	113	0
El Salvador	383	169	Tons	2,266	56	76	0
Myanmar	300	1,314	Tons	228	203	184	0
Bulgaria	257	119	Tons	2,160	-23	-29	0
Brazil	240	1,188	Tons	202	31	195	0
Philippines	239	117	Tons	2,043	3	-11	0
Italy	230	236	Tons	975	-17	1	0
Costa Rica	197	61	Tons	3,230	18	21	0

Source: UNCTAD/WTO Comtrade

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Table 2. List of importers for the selected product in 2001
Product: 071220 Onions dried but not further prepared

Importers	Value imported in 2000, in US$ thousand	Quantity imported in 2000	Quantity unit	Unit value (US$/unit)	Annual growth in value between 1996-2000, %	Annual growth in quantity between 1996-2000, %	Share in world imports, %
World estimation	164,574	96,987	Tons	1,697	1	7	100
Germany	30,500	15,949	Tons	1,912	-2	3	19
United Kingdom	19,402	8,773	Tons	2,212	-2	-2	12
Japan	13,950	5,177	Tons	2,697	-3	-2	8
Netherlands	12,814	9,117	Tons	1,406	3	18	8
Canada	12,530	6,159	Tons	2,034	4	5	8
Australia	5,489	2,592	Tons	2,118	2	1	3
Brazil	4,677	2,232	Tons	2,095	10	18	3
Sweden	4,039	1,724	Tons	2,343	3	6	2
France	3,771	1,705	Tons	2,212	-11	-14	2
Belgium	3,681	3,509	Tons	1,049	4	15	2
Indonesia	2,989	2,493	Tons	1,199	-10	2	2
Switzerland	2,908	1,229	Tons	2,366	-1	1	2
Poland	2,836	1,495	Tons	1,897	26	34	2
Ireland	2,517	1,156	Tons	2,177	20	23	2
Austria	2,026	919	Tons	2,205	-8	-5	1
Italy	1,954	1,563	Tons	1,250	-6	9	1
Finland	1,856	792	Tons	2,343	-4	-4	1
Israel	1,840	0	No quan.		1		1
Philippines	1,816	910	Tons	1,996	-15	-10	1
Russian Federation	1,746	1,534	Tons	1,138	5	29	1
New Zealand	1,668	754	Tons	2,212	12	16	1
Denmark	1,568	826	Tons	1,898	1	6	1
Norway	1,504	587	Tons	2,562	-1	0	1
Korea, Rep. of Korea	1,497	1,080	Tons	1,386	1	6	1
Spain	1,449	1,109	Tons	1,307	-2	-2	1
Croatia	1,398	593	Tons	2,358	-10	-12	1
Singapore	1,388	1,649	Tons	842	2	28	1
Czech Republic	1,237	554	Tons	2,233	-3	0	1
Côte d'Ivoire	1,184	744	Tons	1,591	30	36	1
South Africa	1,150	677	Tons	1,699	-3	0	1
Hungary	1,112	457	Tons	2,433	90	106	1
United States of America	1,019	540	Tons	1,887	24	42	1
Malaysia	997	2,665	Tons	374	28	94	1
Argentina	991	645	Tons	1,536	48	66	1
Mexico	946	2,714	Tons	349	18	39	1
Colombia	914	467	Tons	1,957	0	2	1
Greece	799	2,034	Tons	393	3	13	0

Source: UNCTAD/WTO Comtrade

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World Markets of Dehydrated Vegetables

Production and exports

It is not possible to give an overall view of world production of dehydrated vegetables, as very few countries publish production statistics on this product group. The quantities are usually fairly small compared with those of other processed vegetables. However, three of the markets covered by this survey, i.e. Germany, the Netherlands and the United States of America, are producers of the products in question. Some production data are, therefore, given in the relevant country chapters.

According to the FAO Database, world trade in dried/dehydrated vegetables reached $736 million in 2001, up from $264 million in 1990.

Developing countries/areas, taken as a group, increased their share in total world exports from about 52% in 1982 to 65% in 2001. The share of developed countries fell from about 44% to around 30% during the same period. Eastern Europe's share in world exports increased from about 3% in 1988 to 4.5% in 2001.

China is by far the largest exporter of dried/dehydrated vegetables, accounting for 36.2% of total world exports in 1999, corresponding to about $196 million. Two thirds of this was exported to Japan and Hong Kong. The main export items to Japan were *shiitake* mushrooms, "other vegetables", osmund, bamboo shoots, Jew's-ear mushrooms and onions. Exports to Hong Kong were also various forms of mushrooms, edible marine vegetables, white cabbage and vegetables. Similar products were exported to Singapore and the Republic of Korea, the third and fourth largest markets for China. The four markets covered by this survey were supplied with onions, garlic, mushrooms and various unspecified herbs and vegetables.

The second largest exporter is the United States, with about $141 million in 2001, or 9.8% of the total.

France is the third largest supplier; exports increased considerably in 2001 to $42 million. Japan is the largest export market for this source, absorbing about three quarters of the total. The biggest item was bamboo shoots, followed by "other vegetables" and Jew's-ear. Among the other major markets for France are the United States, Malaysia, Germany and Hong Kong.

Next in importance as suppliers in 2001 was Hong Kong with $42 million and Germany with $41 million. Germany exported onions, mushrooms, sweet corn, carrots, tomatoes, potatoes and "other vegetables" (including a full range of dehydrated vegetables and culinary herbs].

Japan has traditionally been amongst the five largest exporters, but exports fell considerably over the period to just $1.9 million in 2001. The main export item is *shiitake* mushrooms (re-exports).

Egypt is the eighth largest dehydrated vegetable exporter with $ 22.4 million in 2001. And when dried herbs and spices are added to this category, Egypt exported $39.8 million in 2001.

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There are a large number of exporters, including many developing countries/areas, e.g. the Republic of Korea, Chile, India, Morocco, Mexico and Hong Kong (all of which exported more than $10 million in 2001). The import tables in the country chapters indicate which types of products these suppliers are exporting.

Imports

As stated above, total world trade in dried/dehydrated vegetables reached $723 million in 2001. Industrialized countries accounted for close to 71% of total world imports of dried/dehydrated vegetables in 2001, whereas the developing countries/regions accounted for close to 29%. The transition economies in Eastern Europe and the former USSR accounted for only about half a per cent.

The five largest markets, viz., Japan, Germany, USA, UK, and Hong Kong, absorbed 46.1% of the total in 1999, whereas the ten largest markets together accounted for 80.9% of total imports.

Germany, the Netherlands, the United Kingdom and the United States – together imported $283.6 million worth of dehydrated vegetables (26.8% of total world trade) in 2001, compared with $204 million (25.5%), in 1998. Details on each of these markets are given in the country chapters.

Imports into Japan amounted to $160 million in 2001. The main items, in value terms, are bamboo shoots, "other vegetables", *shiitake,* osmund, Jew's-ears and onions.

Germany is listed as the second largest market, with imports of $89 million in 2001. The main import items are those mentioned above as being supplied by China, in particular various forms of mushrooms. Large part of imports (more than third by value) is re-exported.

Hong Kong is the fifth largest import market with $44.4 million in 2001. Imports are obtained largely for consumption in the country. Imports consist mainly of *shiitake,* other mushrooms and "other vegetables". China is the main supplier of all product categories.

Other major markets are Western European countries, Canada, the Republic of Korea, Australia and Malaysia, which each imported more than $10 million worth of dehydrated vegetables in 1999. As shown in table 2, several other countries also import significant amounts of dehydrated vegetables.

Market characteristics

Types of vegetables in demand and their origins

The countries covered by this survey import the whole range of dehydrated vegetables and culinary herbs. The main items are those that are listed in the import tables provided in the country chapters.

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Onions are the single largest import item in all markets with the exception of the United States, both by quantity and in value terms. Germany and the United Kingdom are by far the biggest markets. Major suppliers are the United States, Egypt, India, Hungary, Mexico and China.

Tomatoes are the largest import item in the United States, by both quantity and value. They are also an important item in the other markets. The major suppliers to the United States include Spain, Morocco, Switzerland and Portugal, whereas mainly Italy, Spain and France supply Europe. Some importers indicated an interest in sun-dehydrated tomatoes, though the market is very small.

Mushrooms and truffles are the second or third largest import item (by value) in the markets covered. Important suppliers among developing countries/regions include China, Taiwan Province (China), Chile and the Republic of Korea.

Garlic is listed separately only in the United States, though it is also a significant import item in the European markets. China, Egypt, India and Mexico are leading developing country suppliers. The United States is also a large exporter to Europe.

Carrots are fairly important in all markets, of which Germany is by far the biggest. Suppliers are mainly European countries, Poland being the largest.

Olives (mainly from Morocco and Spain) and herbs (not powdered) are listed separately only in the United States, which imports mainly from Egypt, Israel, France and India. Potatoes and sweet corn are listed in all countries, though quantities are insignificant.

All other vegetables and culinary herbs are grouped together under the category "other" and accounted for between 25% and 38% of the total import value in each of the four markets. In the markets other than the United States, this heading covers vegetables and herbs, including leeks, celery, bell peppers, cabbage, green beans, asparagus, broccoli, parsley, chives and horseradish. In the United States, herbs are categorized separately. The country chapters provide additional information.

Market segments and end-users

It is difficult to make a clear distinction among the various market segments, as there are a large number of different end-uses involving most types of food industries. The importance of the various segments also varies with the type of vegetable and the market. However, on the whole, the market segments discussed below are common to the countries surveyed.

The soup industry

This industry is the largest end-user of dehydrated vegetables in all four markets surveyed. The main products are soups (dehydrated) including soup bases; instant soups (dehydrated); canned soups and, to some extent, frozen soups. Dried/dehydrated soups account for the bulk of soup sales, though instant soup is also important. Some quantities of dehydrated vegetables are used in canned soups.

The soup industry uses most types of dehydrated vegetables, especially potatoes, onions, tomatoes, leeks, carrots, peas, mushrooms, asparagus, garlic, parsley, bell peppers, cabbage and cauliflower. Broccoli has become popular in recent years. Most vegetables are processed by hot air; however, freeze-dehydrated and other instant products, e.g., puff-dehydrated and precooked, are used in instant soups requiring rapid re-hydration.

It should be noted that a few large multinational companies dominate the soup industry worldwide. These are CPC International Inc. (Knorr), Nestle (Maggi), Unilever (Brook Bond, Lipton, etc.] and Campbell Soup.

Food processors (other than of soup)

The distinction between the soup industry and other food industries is not always clear, since the former produces a wide range of products containing dehydrated vegetables or herbs, including sauces, dressings and ready meals. These include such items as rice mixes, sauce mixes, ready pasta dishes and pasta sauces, microwave dishes and dinner-entrees.

Since dehydrated vegetables, especially onions and garlic, are also used as seasonings, most food processors use some quantities in their products. The following food industries all utilize most types of dehydrated vegetables and herbs in one way or another: processors of meat and fish products, processors of prepared meals, bakery products, dairy products, baby food, etc. The pet food industry uses mainly carrots, garlic and onions.

Finally, the spice industry utilizes dehydrated vegetables and culinary herbs in the production of seasonings and flavourings, salad dressings, etc. Culinary herbs (mainly air-dehydrated but also freeze-dehydrated) complement their spice assortments, whether for retail or catering/food service.

The food service/institutional trade

In all markets covered, this sector is extremely important and may account for up to one third or more of all dehydrated vegetables consumed. Canteens, cafeterias and other eateries use these products as a raw material replacing fresh produce in the preparation of meals. Increasing variety and reducing wastage, labor and storage space, they are also simple to use and have a much longer shelf life than fresh vegetables.

In addition to its requirements for dehydrated vegetables as a raw material in food preparation, this sector also uses large amounts of dehydrated soups, sauces and other prepared foods that are produced and sold in catering packs by the food industry.

The retail trade

With the exception of instant potato products, mushrooms and culinary herbs, very little dehydrated vegetables as such are sold in retail packages. Mushrooms may be sun-dehydrated, air-dehydrated or freeze-dehydrated, depending on the variety in question and the source of supply.

In addition to these products, the retail trade offers the full range of processed food products containing the dehydrated vegetables referred to above in the section on market segments/end-uses

Market requirements

There are no international or national standards for dehydrated vegetables, but the end-users have their own, usually very strict, specifications, which suppliers have to meet. These specifications may stipulate cut/style, grade, color, moisture content, bacterial count, content of extraneous matter, packaging, etc. Examples of such specifications are given in the annex to the chapter on the United Kingdom.

Since the food industry is responsible for ensuring that its end products satisfy food laws and regulations in the markets concerned, food processors insist that their specifications are complied with, and that the goods correspond to the agreed sample. Lack of conformity will result in the goods being refused or accepted at considerably lower prices for further processing. It should be noted that the food manufacturers' specifications have become increasingly stringent in recent years. As a result, producers of dehydrated vegetables must constantly try to improve the quality of their products in order to meet their customers' requirements.

Packaging

Dehydrated vegetables used to be largely packed in hermetically sealed rigid containers of metal, steel or plastic since the presence of oxygen and moisture vapor leads to deterioration in the quality of the vegetables. However, this method of packaging has become expensive and its use has declined dramatically owing to competition from lower-cost packaging.

The use of polyethylene as a packaging material has increased in recent years since it is relatively cheap and provides a good barrier against moisture. It is generally used in the form of a closed bag inside paperboard cartons, fibreboard corrugated boxes (bag-in-box system) or multi-wall sacks. Polyethylene liners may be heat-sealed to give an air-tight closure although some air permeates gradually through the polyethylene itself.

Vacuum packaging is not generally used for dehydrated vegetables. However, this method has certain advantages, notably the preservation of quality and the compression of pieces of dehydrated vegetables into a smaller volume (which may reduce breakage and allow savings in freight costs).

It should be noted that packages suitable for palletization are gaining in popularity since they reduce handling costs and damage to the produce. Rectangular boxes are more suitable for palletization than paper sacks or drums (which are relatively wasteful of freight space).

Packages normally vary between 5 kg and 25 kg; however, importers usually prefer sizes of 5-10 kg. Food service/catering companies often require smaller packages, usually of 500 g to 3 kg. However, dehydrated vegetables for this sector are usually imported in bulk; they are then selected, blended, sieved and repacked.

Competition and prices

Competition

Exporters from developing countries trying to enter the markets covered by this survey and other similar markets will face competition from numerous sources. First, there is domestic production in Germany, the Netherlands and, in particular, the United States. Neighboring countries, such as Canada and Mexico in North America and France and Spain within the EEC, also produce high-quality products.

Second, the transition economies in Eastern Europe are also expected to develop into very strong competitors in the future, in particular in Europe, though they have experienced considerable problems in recent years as a result of ongoing political and economic changes.

Third, new suppliers will face strong competition from other developing countries/region, such as China, Taiwan Province (China), the Republic of Korea, Egypt, Chile, India and Morocco, many of which have managed to gain substantial market shares for certain items owing to competitive prices and an acceptable level of quality in many cases.

Suppliers of dehydrated vegetables must also compete with suppliers of fresh produce, which is available in large quantities during the season, and with frozen vegetables, which are available throughout the year.

Prices

Export/import prices vary according to a number of factors such as the type of vegetable, variety, method of processing (hot-air-dehydrated, freeze-dehydrated), cut./style, grade, quality and source of supply. Transportation and storage costs, customs duties, etc. are all factors with a bearing on the prices that a producer may receive. It is therefore impossible to quote general price levels.

However, recent price quotations are given for a number of major items in the chapters on Germany and the United States. It must be stressed that these prices are meant to be merely indicative owing to the price fluctuations and product variations that may occur. Furthermore, price levels in the two markets are not necessarily directly comparable.

New suppliers of dehydrated vegetables will have to price their products competitively in relation to domestic production and products imported from traditional suppliers.

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Distribution channels

Though distribution channels may vary somewhat from one market to another and with the type of product and end-use, the general picture described below emerges in the countries covered by this survey.

Intermediaries

In general, intermediaries handle most imports of dehydrated vegetables, whether they be agents/brokers working on commission or importers trading on their own account (some buy on a back-to-back basis). Some of these companies specialize in dehydrated vegetables, but most also trade in other similar products. e.g. dehydrated fruit or spices. Often an intermediary will be the sole agent or representative in his or her market for one or more foreign producers.

In the three EU markets covered by this survey, there are some specialized companies that perform a variety of functions; they may produce, import, reprocess, act as wholesaler/distributor and even export dehydrated vegetables. These companies will reprocess the products they import if this is necessary to satisfy their customers' requirements.

The food industry

The food processors obtain their supplies partly from domestic producers and partly (mainly in some European countries) from foreign producers. Although they may import certain quantities direct, they mostly obtain their requirements through intermediaries as discussed above.

The main concerns of the food industry are that their high-quality requirements are met and that agreed delivery schedules and other obligations are fully complied with.

The institutional sector and the retail trade

Canteens, cafeterias, restaurants and others in the institutional sector, which absorb a very large share of sales of dehydrated vegetables, usually obtain imported dehydrated vegetables through specialized catering or food service companies. These companies in turn mostly obtain their supplies through agents/brokers and importers; they rarely import direct.

As explained earlier, the retail trade as such sells small quantities of dehydrated vegetables. Processed foodstuffs containing dehydrated vegetables are bought direct from food manufacturers or through brokers.

Market access

For Germany, the Netherlands, the United Kingdom and other EU countries, the general tariff rate is 16% *ad valorem*. Most products from 69 African, Caribbean and Pacific (ACP) countries signatory to the Lomé Convention, as well as from overseas countries and territories associated with the EU, are granted duty-free access. In addition, preferences are granted to a number of countries on a bilateral basis. Finally, the EU Generalized System of Preferences (GSP) is applied to some products and duty-free access is granted to least developed countries for most products. See the appendix.

In the United States, tariffs may be as high as 35% *ad valorem* for onions and garlic and 13% or less for other products. Some products enter duty free under the GSP scheme.

Concerning food laws and regulations, see the relevant sections in the country chapters.

Market analysis of the major target markets

Germany

Supply and demand

Domestic production by type of product

Considering the size of Germany, production of dehydrated vegetables (potatoes excluded) is fairly small, mainly because of high labor and raw material costs. During the 1970s and early 1980s annual production ranged from 1,000 to 2,000 tons. Between 1985/86 and 1989/97, it fluctuated between 2,270 and 2,912 tons.

In the 1998/99 growing season, total production amounted to 1,534 tons, down from 2,713 tons in 1995/96. Production figures for 1999/2000 (1997/1998) were as follows (in tons):

Table 3. German domestic production of dehydrated products

Product	99/00	97/98	Product	99/00	97/98
Parsley	354.3	(544.9)	Beans	23.5	(191.7)
Spanish	255.0	(240.0)	Chervil	15.0	(35.9)
Celery root	167.7	(263.1)	Pulses	7.4	
Carrots	146.4	(356.3)	Onions	6.0	(18.9)
Other Herbs	125.1	(248.1)	Other cabbage	1.3	(5.6)
Celery leaves	110.9	(175.9)	Green Cabbage	1.5	(1.0)
Leeks	109.2	(236.7)	Parsley root	0.2	(0.7)
Parsnips	81.0	(276.6)	Mushrooms		(0.1)
Chives	45.5	(51.4)	White Cabbage		(5.0)
Asparagus	42.0	(38.9)	Savoury cabbage		(5.0)
Other Vegetables	34.5	(16.3)	Cauliflower		(0.8)

Source: ZMP

Domestic manufacturers

The following companies produce dehydrated vegetables and/or culinary herbs:

- Bruckner-Werke KG, Hamburg, is the biggest domestic producer. It has two factories, one in Nortorf and one in Buttenheim [Bavaria). Bruckner-Werke KG is also an important producer of dehydrated potatoes and it imports, processes and exports dehydrated vegetables. It owns a plant in Spain: Agrotecnica Extremena, S.A., Badajoz.

- Grossmarkt Kitzingen GmbH, in Bavaria, is owned by the local cooperative and mainly dehydrates vegetables that are not sold on the fresh vegetable market.

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The balance of domestic production is accounted for by a number of companies, some of which specialize in certain vegetables or various herbs. They include:

- Trocknungswerk Volpel, Freising (mainly organically grown vegetables and herbs)
- R. Steinicke KG. Luchow/Seerau (mainly culinary herbs)
- Dr. Otto Suwelack Nachf. GmbH & Co., Billerbeck (freeze-dehydrated vegetables)
- Georg Rugamer Ohg, Schwebheim (mainly medicinal herbs)
- Christoph Mix, Abstwind (vegetables and herbs
- Karl Ostman Trocknungswerk, Kachtenhausen (medicinal and culinary herbs)
- Freeze-Dry Foods GmbH, Greven
- Mawea Majoranwerk Aschersleben GmbH, Aschersleben (herbs).

Whereas dehydrated vegetables are sold almost entirely as raw materials to the food processing and catering industries, dehydrated potato products are also sold on the retail market, which accounts for a major part of total sales. The leading manufactures of dehydrated potato products [including instant potatoes] are listed below:

- Pfanni-Werke Otto Eckart KG (CPC), Munich (brand: Pfanni)
- Maizena-Knorr (CPC), Heilbronn (brand: Stocki)
- Nahr-Engel, Darmstadt
- Bruckner-Werke KG, Hamburg
- Mecklenburger Kartoffelveredlung GmbH, Hagenow

Imports, re-exports and apparent consumption

Since domestic production is insufficient to meet demand, large quantities of dehydrated vegetables are imported into Germany. During the period 1990 to 2001 total imports, including dehydrated potatoes, increased steadily from 20,438 tons, valued at DM 119.9 million, to 33,073 tons, valued at DM 169.6 million

Exports, including dehydrated potatoes, also increased during the period 1990 to 2001, from 10,234 tons, valued at DM 76.8 million, to 22,876 tons, valued at € 107.9 million, and fell in 1992 to 10,406 tons, valued at DM 87 million. The export figures in table 5 cover mainly re-exports, most of which are reprocessed in Germany. Exports by type and origin are discussed further below.

Apparent consumption fluctuated considerably over the period. The peak of 19,660 tons in 1995 mainly reflected an increase in stocks rather than an increase in consumption.

Imports by type and origin

Onions are the single largest import item; imports rose steadily over the period under review to 11,840 tons, valued at € 46.6 million, in 2001. This corresponded to 39.7% of total imports by quantity and 27.6% by value. The United States remained the largest supplier throughout the period. Close to half of the total was supplied by developing countries, mainly Egypt, India and the Syrian Arab Republic. Hungary was the second largest supplier until 1992, when it ranked third.

Only 1,298 tons of potatoes were imported in 2001, supplied by neighboring countries. Imports of mushrooms and truffles amounted to just 1,614 tons in 2001, corresponding to a share of 5.4%. However, owing to the high unit value, the total import value amounted to € 38.7 million, equivalent to 23% of imports. China remained by far the largest supplier throughout the period under review.

Sweet corn is imported in very small quantities – the United States being the major supplier.

Imports of carrots amounted to 2,856 tons (9.6%), valued at € 8 million (4.8%), in 2001. Poland was the largest source, though the unit value of supplies from this country is fairly low. Other countries, including the Netherlands, Spain, France and the United States, supplied smaller quantities of products of higher value.

Imports of tomatoes amounted to 1,308 tons, valued at € 11.6 million in 2001. Italy was by far the most important supplier. Sources among developing countries included Chile and Turkey.

Imports of "other" vegetables increased steadily over the period under review to 10,855 tons, valued at € 60.1 million, in 2001. China was the largest supplier by quantity with 3,228 tons in 2001, though the Netherlands was the biggest in terms of value. As shown, several other countries, notably France, the United States, Spain, Peru and Belgium, supply small quantities at very high prices. These include high-quality products such as freeze-dehydrated vegetables and culinary herbs.

Exports (re-exports) by type and destination

Onions and potatoes are the major export items, together accounting for one third of the total quantity in 2001. Other EU countries are the main markets, followed by EFTA countries. Mushrooms are the second largest exports by value (€ 25.3 million in 2001). About 40% of this is exported to other EU markets; the other important markets are Switzerland and Poland. Sweet corn, carrots and tomatoes are likewise exported mainly to EU. The EU also absorbs about 60% of the "other" vegetables. Other major markets include the United States, the EFTA countries, Indonesia and Australia.

Market characteristics

Types of vegetables in demand

Germany imports the whole range of dehydrated vegetables and herbs. The main types of imports are described above in the section on imports by type and origin.

There is a vast range of products available on the German market:

- **Vegetables:** asparagus, beetroot, blanched celery, black salsify, celery roots, parsnips, swedes, turnips, vegetable blends, broccoli, cabbage, cauliflower, courgettes, cucumber, eggplant, maize, bell pepper, spinach, tomatoes, carrots, leeks, beans, lentils and peas.
- **Potatoes:** in various forms, including potato cubes, croquets, dumplings, mashed potatoes, potato pancakes and potato salad.

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- **Onions:** toasted onions, fried onions, shallots (in slices, kibbled, chopped, minced, granulates, powder, etc., depending on the customer's requirements).
- **Mushrooms:** *Boletus edulis, Boletus luteus,* chanterelles, morels, Craterellus, mixed mushrooms, *champignon de Paris.*
- **Herbs/spices:** basil, capers, chervil, dill, garlic, summer savory, tarragon, celery leaves, chives, lemon balm, rosemary, sage, thyme, herb blends, *herbes de Prouence,* bay leaves, green pepper, horseradish, lovage, marjoram, parsley and wild marjoram.

Most of these products, in particular onions and other vegetables, are imported in dehydrated form. Some of the mushrooms are in sun-dehydrated form. Various cuts and product forms throughout this assortment are freeze-dehydrated, specially the more expensive vegetables and culinary herbs.

Market segments and end-users

The soup industry

This industry, which also produces sauces, seasonings and similar products, is by far the largest user of dehydrated vegetables. It may account for two thirds or more of total imports of dehydrated vegetables.

Dehydrated soup is by far the most important item as far as dehydrated vegetables are concerned, though dehydrated vegetables and culinary herbs are used in seasonings and sauces as well.

The comparative importance of dehydrated soups and of canned soups can be seen in the figures given in terms of ready-to-eat soups. Based on 2001 statistics, it would appear that 890 million liters of ready-to-eat soup were prepared from dehydrated soup, and just 140 million liters from canned soup. In recent years dehydrated soup production has been relatively stable, though there was a considerable increase in 2001.

The soup industry supplies the retail trade as well as the catering and institutional sector. In 2001 the catering trade absorbed 15% of the total production of soups, seasonings and sauces.

Other food industries

Various dehydrated vegetables are also used in a number of other food industries, notably the baby food, meat and fish industries. In general, the pet food industry uses vegetables (e.g. carrots) of lower quality.

The catering and institutional sector

This is the second largest market segment for imported dehydrated vegetables. It consists of canteens, hospitals, cafeterias, restaurants, hotels and similar institutions. According to trade sources, canteens and hospitals absorb most of the dehydrated vegetables sold to this market, whereas restaurants use only limited quantities. The main items sold are: onions, beans, carrots and some cabbage, both red and green.

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It should be noted that a substantial part of the dehydrated soup and sauces produced in Germany is sold in catering packages.

Retail trade

Apart from instant potato products, very little dehydrated vegetables are sold in retail packages. Moreover, spice packers complete their assortment with certain vegetables and specialty culinary herbs. Various types of mushrooms, including sun-dehydrated *Boletus*, freeze-dehydrated cultivated mushrooms and juliennes account for a large part of the total.

In addition, the retail sector obviously offers the full range of manufactured foodstuffs with dehydrated vegetables as ingredients. Most dehydrated vegetables are eventually sold this way.

The following packs, available in supermarkets, indicate the type of product available on the market:

- UNOX. Vegetable noodle soup. Ingredients include dehydrated vegetables, i.e. leeks, carrots, peas, celery leaves.
- Maggi. Chinese vegetable soup. Among the ingredients are the following dehydrated vegetables and seasonings: leeks, onions, cauliflower, paprika and tomatoes.
- Knorr. Cauliflower-broccoli soup

Importers' requirements

Importers, pre-processors and users purchase dehydrated vegetables according to samples and/or their own specifications. End-users, e.g. soup and baby food manufacturers, have very strict specifications that suppliers must meet. Examples of such specifications are given in annex III to the chapter on the United Kingdom.

Generally, the food industry prefers to obtain its supplies from well-known, reliable companies in Germany and neighbouring countries rather than to import direct from developing countries.

Importers/pre-processors therefore import dehydrated vegetables of high quality when possible, but mostly they obtain qualities that need to be upgraded as described, for example, in the section below on importers and pre-processors, in order to satisfy the food industry.

Competition and prices

Prices vary enormously with the type of vegetable, cut/style, quality, source of supply, etc. With a few exceptions, price increases have been modest between 1990 and 2001, both in deutsche mark and in United States dollars. In a few cases prices have actually fallen. This helps illustrate that the dehydrated vegetable business is highly competitive.

Distribution channels

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Owing to the size of the market and to its well-established connections in producing countries, Germany plays a significant role in the European trade in dehydrated vegetables.

Agents and Importers

Some companies specialize in dehydrated vegetables, whereas others include this product group in their assortment of food raw materials. Agents act as intermediaries for exporters seeking to secure orders. They operate on commission. Importers buy on their own account and normally carry stocks. This type of importer does not usually process the product in any way, but sells it to pre-processors or direct to end-users. Some companies may work as both agents and importers.

Importers and pre-processors

In addition to the normal importer, there are some companies that have several other functions as well, e.g. they may produce, import, reprocess, wholesale and export dehydrated vegetables. The leaders among such companies include:

- Bruckner-Werke KG, Hamburg
- E.H. Worlee & Co. [GmbH & Co.), Hamburg
- Diafood GmbH, Heidelberg
- Tro-Kost GmbH, Sandhausen

All these companies reprocess the products they import if they consider this necessary to meet the requirements of their customers. All shipments are inspected and analyzed with a view to further processing, repacking and end-use, and it seems that most imported dehydrated vegetables are reprocessed in some way, for example as follows:

- Products with too high a humidity content are further dehydrated to reach the required level
- Products are usually metal detected
- Products may be cleaned, selected and graded, and some may be blended/mixed or presented in different cuts or powder to meet customers' requirements.

In general, these companies undertake a considerable amount of work to improve the quality of imported products, which they include in their assortments of dehydrated vegetables.

Food manufacturers and processors

The German food industry consists of a large number of small and large companies, including many that use dehydrated vegetables and culinary herbs in one way or another. However, because of increased competition and the general trend of concentration in the food industry, relatively few companies – often the multinationals – tend to dominate their respective industries.

There are an estimated thirty soup manufacturers, the three largest ones being Maggi GmbH (Nestle), C.H. Knorr GmbH (Maizena-CPC) and Union Deutsche Lebensmittelwerke GmbH (Unilever). For dehydrated soups the first two are the most important ones. All three companies and/or other companies within the same groups manufacture a range of other foodstuffs using dehydrated vegetables and herbs, e.g. sauces, pastas and ready meals.

The spice industry – comprising an estimated fifty companies – produces a number of products that use dehydrated vegetables and culinary herbs as ingredients, such as flavourings, seasonings and dehydrated sauces. Culinary herbs are also packed in catering and retail packs. Major companies in this industry include: Alba, Fuchs, Hagesud, Moguntia, Ostmann, Ubena (CPC] and Raps.

By far the largest number of end-users of dehydrated vegetables is located in western Germany. They supply the whole country. Three large end-users, i.e. Thuringer Gewurzwerk, Schonbrunn (which belongs to Fuchs), Maizena GmbH, Auerbach (part of CPC), Bekina Lebensmittel GmbH & Co. KG, Beelitz (associated with Milupa AG), are located in eastern Germany.

The addresses of these and other companies are given. Additional names can be obtained from the relevant trade associations.

The catering and institutional sector

Two companies appear to be the most important suppliers of dehydrated vegetables to this sector, viz., Nahr-Engel GmbH (Darmstadt) and Bruckner-Werke KG, the latter through its subsidiary DNG-Farmland in Buttenheim. However, importers/processors of dehydrated vegetables also supply significant quantities of dehydrated vegetables to the catering sector, either direct or through wholesalers.

Other companies specializing in catering sales in general, e.g. ETOI Nahrungsmittel, also supply dehydrated vegetables.

Market Access

Customs duties

Germany applies the EU common external tariff.

Food laws and regulations

All foodstuffs offered for sale in Germany must comply with the provisions of the German Food Act (Deutsche Lebensmittelrecht). This is a general law, which is supplemented by a number of regulations and ordinances concerning, for example, the use of preservatives, coloring agents and other additives, maximum levels of pesticides and labeling.

As these and other relevant regulations are complex and cannot be dealt with in detail in this survey, exporters are advised to seek information from experienced importers in Germany, who, under the German Food Act, remain responsible for ensuring that the goods conform to the relevant laws and regulations. Information can also be obtained from appropriate official bodies.

It should be pointed out that food laws and regulations are being harmonized within EU.

Finally, there are also quality standards for dehydrated vegetables, including beans, carrots, cabbage, peas, spinach, celery roots, onions, leeks, asparagus and herbs. Though they do not have the character of legal provisions, they may be taken into account in legal disputes.

DEHYDRATED HERBS

Germany is the second largest consumer of herbs after France. There are two wholesale and retail markets for herbs: one for the green fresh plants, which are either not packed or packed in plastic boxes; and another one for dehydrated herbs. The markets have different trade and distribution channels, with the fresh herb trade frequently resembling the vegetable trade. It was not possible to assess the fresh herb market for this report. Hamburg has the largest wholesale market for fresh vegetables and herbs and EDEKA, an association of cooperatives, is the largest outlet in this sector.

Domestic production

No official figures are available on domestic production of herbs. Among the herbs cultivated domestically are parsley (estimated at 1,300 tons yearly), dill (150 tons), savory (50 tons), thyme (30 tons) and tarragon (5 tons). All German processors give their first preference to domestic herbs because, despite their higher prices, they are of top quality.

Current market and share of imports

According to trade estimates, the German market for dry herbs and spices amounts to DM 1 billion, of which half (DM 500 million) corresponds to the retail market, 30% (DM 300 million) to the industrial food manufacturing sector and 20% (DM 200 million) to the catering and cash-and-carry sector.

In terms of tonnage, the market is currently estimated at 5,320 tons of herbs, of which 71.1% (3,785 tons) is supplied from imports while local growers provide 28.9% (1,535 tons).

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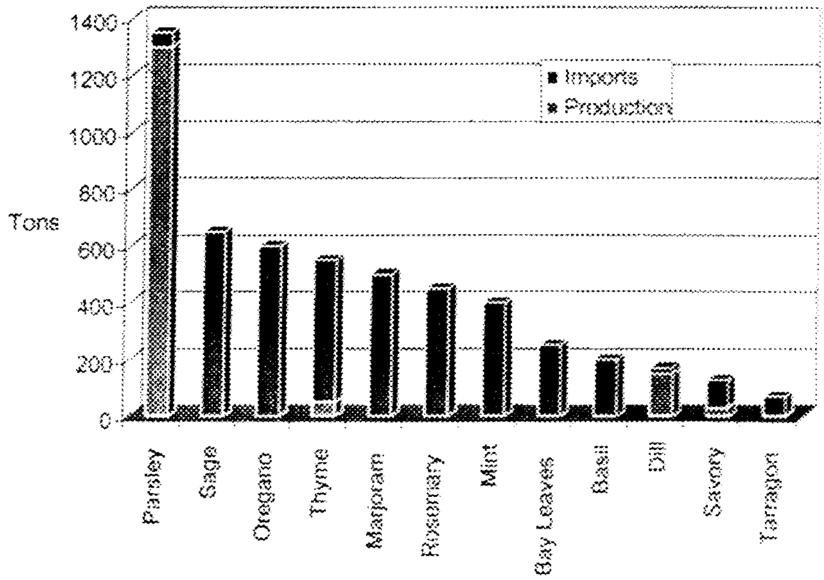
Figure 4. Germany market size for dried herbs



The most widely used herbs are parsley, sage, oregano, thyme, marjoram and mint. Sage is the largest import, followed by oregano, thyme, marjoram and mint.

Thyme imports averaged 462.6 tons yearly over the period, of which 58.5% was crude thyme, 32.5% ground or crushed thyme, and 9% the wild varieties. Imports of crushed and ground thyme increased 2.6 times over the five years, from 83 tons in 1990 to 315 tons in 2001. Germany exported an average of 76 tons of thyme a year to other EU and non-EU countries.

Imports of bay leaves averaged 253 tons annually over the period, with a slight tendency to decrease. About 61 tons of bay leaves were exported yearly.

Main origins of Imports

German importers and herb processors have long-established links with exporters of herbs from Eastern European countries – Hungary and Poland in particular. Morocco is also a supplier. Trade relationships with Morocco have recently been strengthened as a result of the installation there of operations by Knorr, the mother company of Ubena, one of Germany's largest importers and processors of herbs and spices. The company has also recently expanded its facilities in Germany itself with the purchase of a plant in the former German Democratic Republic, in the past a major source of imports.

Import origins are less diversified than in the United Kingdom. The major suppliers of each of the herbs considered in this report are listed below.

Parsley	*As the country is almost self-sufficient in this herb, only very small quantities are imported from Hungary and from France (in the freeze-dehydrated form).*
Sage	*Albania and Greece supply the wild variety and Turkey the cultivated variety.*
Oregano	*Obtained almost exclusively from Turkey*
Thyme	*Spain provides thyme in the middle and high qualities. Between 50 and 100 tons yearly are supplied by Morocco and Poland.*
Marjoram	*Egypt is the main supplier; very small quantities are obtained from Hungary and Poland.*
Rosemary	*Mainly Spain*
Mint	*Morocco is the main supplier. Small quantities are provided by Spain.*
Bay leaves	*Turkey provided over 96% of all imports between 1990 and 2001. Morocco is the other supplier.*
Basil	*Largely Egypt*
Dill	*As demand is met mainly by domestic production, only small quantities are imported from France and Hungary.*
Savory	*Mainly Hungary.*
Tarragon	*France, from which supplies include the freeze-dehydrated product*

German processors export a much larger part of their production than do their counterparts in the United Kingdom. Among their export destinations are Austria, Belgium, Italy, Luxembourg, the Netherlands, Spain and the United Kingdom. Ostmann Gewiirze Co., another of the leading processors in Germany, also operates in the United Kingdom.

Unlike those in the United Kingdom, German grinders/processors make less use of direct trade channels. They purchase a more significant part of their needs from importers, partly in order to minimize their stock costs and partly to ensure that they are provided with the required qualities of herbs.

Figure 5. Germany Sage Import Volume: Major Countries of Origin, 2001

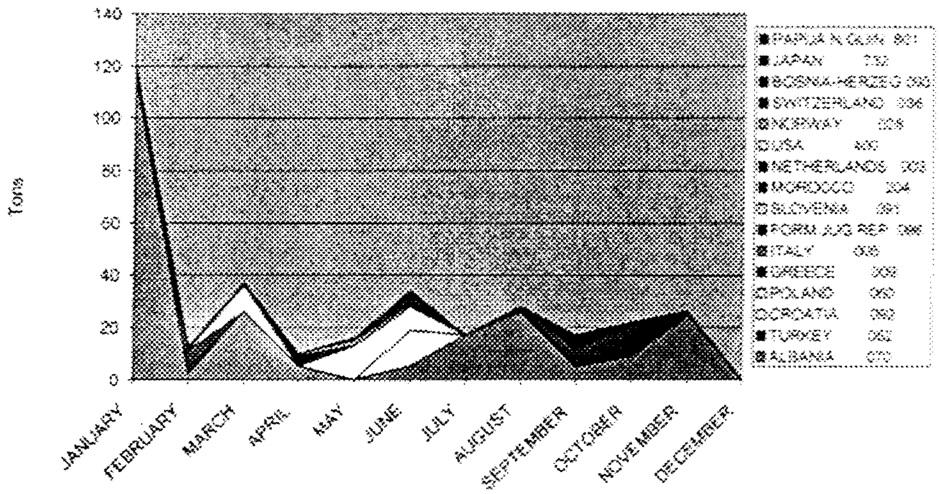
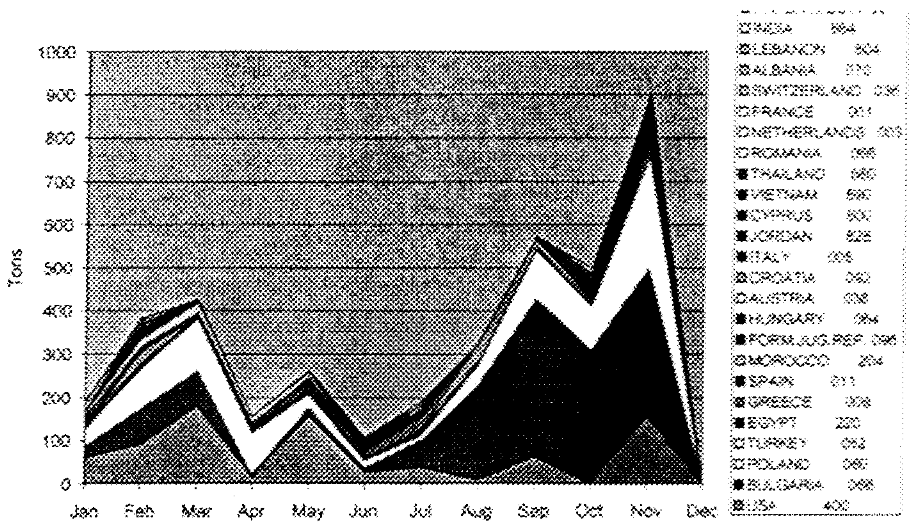


Figure 6. Germany Sage Import Value: Major Countries of Origin, 2001



The general analytical requirements for herbs imported into Germany are given in appendix III. It should, however, be kept firmly in mind that the large grinders/processors have their own quality requirements. Several importers have had to equip themselves with cleaning and grading equipment in order to satisfy the requirements of their customers.

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Figure 7. Germany Marjoram Import Volume: Major Countries of Origin, 2001

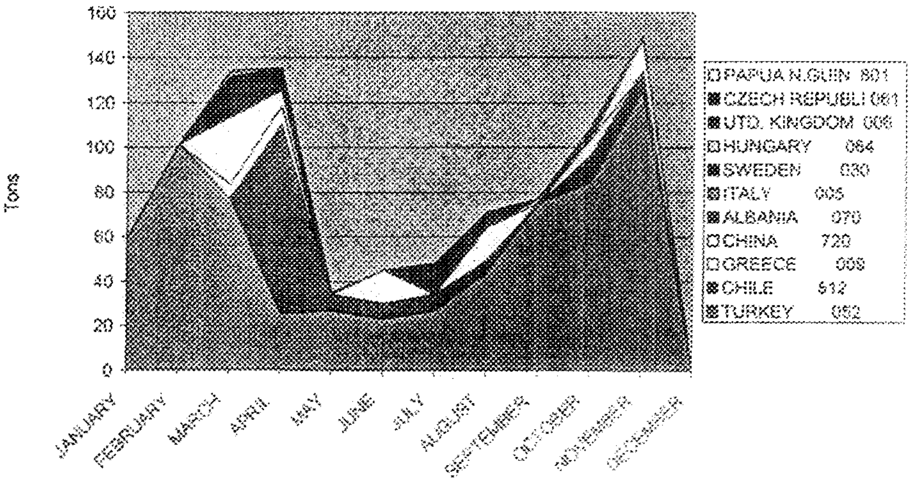
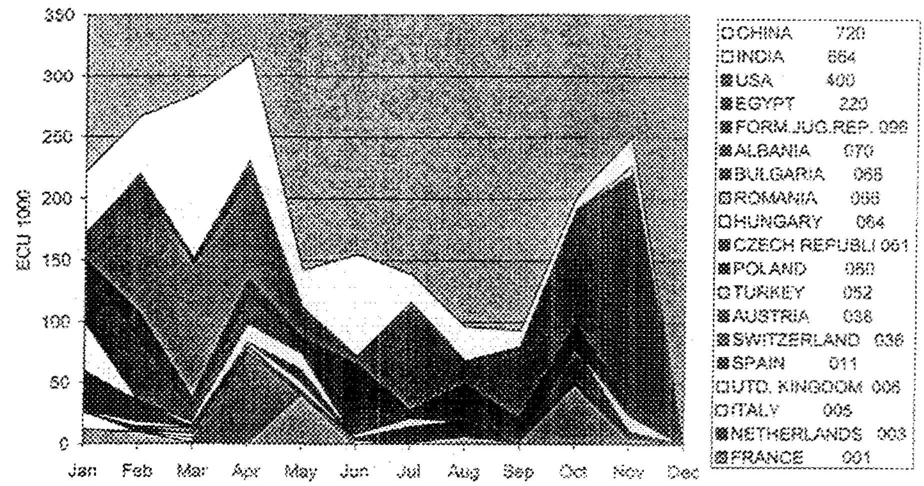


Figure 8. Germany Marjoram Import Value: Major Countries of Origin, 2000



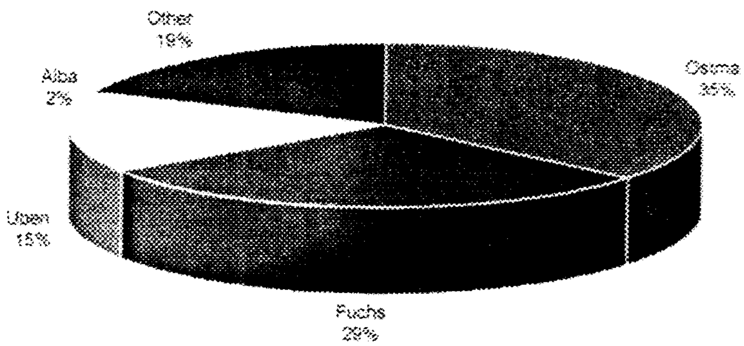
Major grinders/processors and trade brands

The largest German grinders and processors in terms of production volumes are as follows (in descending order of importance): Ubena (which forms part of the Maizena/Knorr group), Ostmann Gewürze and Fuchs. Together, they cover an estimated 80% of the retail market (currently valued at a total of DM 500 million); they also have important shares in the catering and industrial food sectors.

These and other large companies sell their products under their own brand names, in all types of packages and formulations. Culinary herbs are advertised mainly by radio and television and at sales points. In addition, promotional programmes are organized for different occasions (spring, Easter, the Christmas sales, launching of new products, ethnic cooking weeks, etc.)

Processors of dehydrated herbs generally specialize by end-use sector. Estimates of shares in the retail sector are given below.

Figure 9. Germany: Herbs major grinders/processors and trade brands



Among the companies serving the catering and cash-and-carry sector are Hermann Laue, Raps, Ostmann, Fuchs and Ubena. Hagesiid, Moguntia, Raps, Hermann Laue, Fuchs, Ubena and Ostmann supply the industrial food sector.

Some small companies specialize in herbal and spice formulations for specific industrial end uses. Stockmeyer, Wildmann, Nolke Reinhart, Schilte and Bucholzhauser, for example, service the sausage industry; Strottmann and Humana provide herbal and spice mixtures for milk-based products.

Prospects for Egypt

With imports of dehydrated vegetables amounting to approximately 30,000 tons, valued at $108 million in 2001, Germany is the third largest import market in the world and the largest in Europe.

Though imports have risen considerably between 1990 and 2001, mainly as a result of the unification of east and west Germany which created a much larger home market, trade sources indicate that imports are unlikely to grow much in the near future, if at all. Much will, of course, depend on how the economic situation develops in Germany and the rest of the world.

Some importers have suggested that imports may rise in the longer run, as the German food industry expands exports of soups and other foodstuffs to new markets in Eastern Europe and the Far East.

Germany will remain an attractive market for dehydrated vegetables, owing to its size and overall importance in the European food business. Exporters should continue to upgrade quality and follow market developments closely in order to take advantage of market opportunities and meet their customers' needs.

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USA Market for Dehydrated Vegetables and Dried Herbs

Supply and demand

Commercial production

The United States is one of the world's major producers of vegetables, with an annual average output of 23.7 million tons of vegetables. In the latter year, production reached 25.6 million tons, 41% of which was sold on the fresh vegetable market and the balance used for processing. In addition, it produced 340,000 tons of mushrooms, 19 million tons of potatoes, 509,000 tons of sweet potatoes and 1.5 million tons of dry edible beans. It is not clear how much of these itemized products were used for processing.

Official statistics on the production of dehydrated vegetables are difficult to obtain. American Dehydrated Onion and Garlic Association (ADOGA) provided some production information for the two most important vegetables, onions and garlic. According to those estimates the production of dehydrated onions has fluctuated somewhat, it clearly increased considerably over the period under review.

The largest share in production of dehydrated onions and garlic is sold on the domestic market. In 2001 exports of onions amounted to about one quarter of the total value of sales of this product, whereas exports of garlic were around 15% of total garlic sales.

Domestic manufacturers of dehydrated vegetables

California is the country's largest producer of vegetables. A relatively small number of companies produce dehydrated vegetables. Among the main ones are the following:

- **Basic Vegetable Products, California (associated with Basic American Food Co.)**, is one of the world's largest suppliers of dehydrated potatoes, and onion and garlic products. The company has a number of processing plants, including plants in Mexico and Poland. In early 1993 it acquired California Vegetable Concentrates (CVC), Modesto, California, which is the largest dehydrator of vegetables other than onions, garlic and potatoes.

- **Gilroy Foods, Inc.**, Gilroy, California, is a subsidiary of McCormick & Co., Inc, and offers a full range of dehydrated onion and garlic products. It has a plant in Mexico and also owns a number of other companies, e.g.:
    - Cade Grayson, Inc., Vista, California, which is the second largest dehydrator of vegetables other than onions, garlic and potatoes.
    - Armonino Farms of California, Inc., Fremont, is a major producer of freeze-dehydrated vegetables and herbs.
    - Haas Foods, Inc., Yakima, Washington, is a producer of dehydrated onions and garlic.

- Rogers Food Division, Universal Foods Corporation, Turlock, California, is also a major producer of dehydrated onions and garlic.

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- Basic Vegetable Products, Gilroy Foods and Rogers Foods are all members of the American Dehydrated Onion and Garlic Association (ADOGA). Other producers of dehydrated vegetables and herbs include:

- De Francesco & Sons, Firebaugh, California (onions, garlic, parsley, etc.)
- Van Drunen Farms, Momence, Illinois (produces a range of freeze-dehydrated vegetables, spices and fruits)
- Oregon Freeze Driers, Albany, Oregon (mushrooms)
- Lancaster Food, Lancaster, Pennsylvania (mushrooms)
- Integrated Ingredients, Alameda, California [division of Burns Philp Bc Company, Inc., San Francisco] (carrots and potatoes).
- Minnesota Dehydrated Vegetables, Fosston (carrots and potatoes).

Imports and exports

Though domestic production of most dehydrated vegetables is large, imports into the United States are considerable. During the period 1982 to 2001 total imports of dehydrated vegetables fluctuated in the range of 20,556 tons to 28,991 tons. The peak was reached in 1990, when the total import value amounted to almost $100 million. Imports may fluctuate somewhat according to the size of domestic production.

Exports of dehydrated vegetables increased from 31,184 tons, valued at $63 million in 1982, to 57,103 tons, valued at about $129 million in 1998. In 2001 there was a small decline to 54,706 tons, valued at about $127 million. Exports are considerably larger than imports: during the five-year period under review exports averaged 46,289 tons ($103.2 million) annually, compared with an average of 23,373 tons ($82.9 million) for imports.

Imports by type and origin

Imports of onions fluctuated over the period under review, reaching 2,209 tons, valued at $2.7 million in 2001. This corresponds to just 9.4% and 3.0% respectively of total imports. Mexico is by far the largest supplier, accounting for over 95% of imports by quantity in 2001. Exports from this source have increased, to a very large extent owing to the establishment of American dehydration plants there. Most Mexican supplies are delivered to the mother company in the United States, rather than imported direct by the food industry.

Just 1,442 tons of mushrooms and truffles were imported in 2001, corresponding to 6.1% of the total imported quantity. However, because of the high unit value of this product, total imports by value amounted to almost $20 million in 2001, or 22.1% of the total import value. As shown, import's fluctuated somewhat over the period. In most years Japan was the largest supplier (with a share of about one third in 2001). However, developing countries and areas (mainly in the Far East) together supplied about half of the total in 2001.

Carrots are a fairly small import item, with imports amounting to only 898 tons, valued at $2.3 million, in 2001. Developing country suppliers are insignificant.

Having fluctuated considerably during the period under review, imports of garlic amounted to 3,811 tons (16.1 %), valued at $3.8 million (4.3 %), in 2001. China is by far the largest supplier, though it should be noted that Mexico has increased its exports considerably in recent years. At least one of the major American producers have a dehydration plant in Mexico. The output is delivered to the American mother company, rather than exported direct to the end-users. Imports from Hong Kong are re-exported products from China.

Imports of herbs (not in powder) increased over the period and reached 1,774 tons, valued at $4.6 million in 2001. This item includes lower-priced dehydrated products from Egypt and India, as well as high-value, mainly freeze-dehydrated products, from Israel and France, the two latter being the largest exporters in value terms.

Tomatoes are the biggest import, with considerable fluctuations and changes in the supply pattern taking place throughout the period. Spain remained the largest supplier, but imports from Morocco almost doubled from 1997 to 2001. Other developing country suppliers include Chile (which also increased exports substantially), Turkey and Mexico.

Imports of sweet corn (for sowing) are insignificant.

All "other" vegetables (i.e., other than those mentioned above) are grouped together. Imports fluctuated strongly over the period reviewed, and reached 4,705 tons (19.9% of the total), valued at about $23 million (25.4%), in 2001. The wide range of products in this category includes high-value products from Chile and Mexico, for example, and lower-priced products from China. Developing countries and areas, taken as a group, accounted for 72.6% by quantity and 73.2% by value of total imports in 2001, compared with 57.9% and 60.9% respectively in 2000. Among the imports under this heading are bell pepper, leeks, celery, cabbage and green beans.

Exports by type and destination

With exports amounting to 54,706 tons, valued at $127 million in 2001, the United States was the world's second largest exporter of dehydrated vegetables, a position it has maintained since 1990.

Exports of potatoes increased steadily over the period under review and reached 6,121 tons in 2001, the major markets being Canada (1,483 tons) Japan (1.286 tons) and Sweden (1,000 tons).

Onions are by far the most important export item, accounting for about 41% of total exports (quantity and value) in 2001. About one third of this is onion powder or flour. The main markets are the United Kingdom (1,300 tons), Japan (985 tons) and the Netherlands (881 tons). The remaining two thirds of onion exports consist of other forms of dehydrated onions, e.g. granulated, ground, minced, chopped, diced and sliced products. The main markets (2001) were Canada (4,500 tons), Germany (2, 120 tons), Japan (2,096 tons), the United Kingdom (1,344 tons) and Australia. For both categories of onion products there are a large number of other important markets in Europe and elsewhere.

Exports of mushrooms are small at 289 tons, valued at $1.7 million, in 2001. Canada was the largest market (131 tons), followed by Switzerland (46 tons) and Mexico (36 tons).

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With exports amounting to 6,989 tons, valued at $17.4 million, in 2001, garlic is an important item. About 61% of the total consisted of garlic powder or flour. The main markets were Canada (2,075 tons) and the United Kingdom (771 tons). Other important markets included the Netherlands, Australia and Germany. The remaining 39 % of total exports of garlic consisted of granulated, ground, minced, chopped and other product forms. The main markets were the United Kingdom (715 tons), Australia (449 tons) and Germany (332 tons).

Exports of sweet corn (for sowing) amounted to 12,142 tons in 2001. Among the main markets were Mexico (5,694 tons), Belgium (2,475 tons) and Canada (1,525 tons).

Finally, exports of other vegetables amounted to 6,724 tons, valued at $23.6 million, in 2001. This group consists of a large range of dehydrated items, including many freeze-dehydrated and other high-value products. The main markets were Japan (3,515 tons), Canada [810 tons) and the United Kingdom (517 tons), followed by Jamaica (431 tons) and Germany (327 tons).

Market characteristics

Types of vegetables in demand and their origins

The United States imports the whole range of dehydrated vegetables to complement domestic production.

The following product assortment of a major supplier to the United States market (comprising imported and some domestic products) illustrates the broad range of dehydrated vegetables available in the market place:

Green beans: cross cut, French cut, powder
Beetroot: granules, powder
Bell pepper: (field run, red, green): dice, granules, powder
Cabbage: (green and white): flakes, granules, powder
Carrots: cross-cut, dice, granules, powder
Celery root: dice, granules, powder
Celery stalk: cross-cut, canners' cut, granules
Celery stalk and leaf: flakes, granules, powder
Chives: flakes, rings
Dill weed: whole, powder Horseradish: flakes, granules, powder
Leeks (green, green and white, white): flakes, granules, powder
Mushrooms: sliced, kibbled, powder
Green onions: minced, powder
Green garden peas: whole, powder
Shallots: flakes, granules, powder
Spinach: flakes, powder
Tomatoes: flakes, granules

This is far from being a complete list of the products demanded by the American food industry. Other products include, for example, asparagus, broccoli, cauliflower, parsley, onions and garlic obviously form part of most companies' product assortments, though local producers mainly supply these items.

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Some products, i.e. the more expensive vegetables and culinary herbs, are also offered in freeze-dehydrated form. Some, like broccoli (pieces, beads, florets), are usually offered freeze-dehydrated, for reasons of color, flavor, "piece integrity", low moisture content, etc.

One of the principal food manufacturers indicated that his major requirements were as follows: garlic, onions, carrots, red bell pepper, green bell pepper, broccoli, celery, peas and corn (most of which he bought locally, though certain products were imported), tomato powder (domestic and imported). Other companies may have different requirements.

Special mention should be made of mushrooms, which is the single most valuable import item (about $20 million in 2001). Both cultivated and wild mushrooms are imported, either in dehydrated or in freeze-dehydrated form. The main species include *champignon de Paris* (mainly from China and India), *shiitake* (China and Japan), *Boletus luteus* (Chile) and *Boletus edulis* (Italy).

Market segments and end-users

It is difficult to make any clear distinction between the various market segments since there are a very large number of different end-users involving most food processing companies in the country. The importance of a particular market segment or end-use also varies according to the vegetable in question.

The food industry

Though probably relatively less important than in the major European markets, the soup industry is one of the principal food industries using dehydrated vegetables in the United States. In addition to canned soups, this industry prepares the normal dehydrated soups, as well as instant soups and soup bases. It supplies food service companies and the retail trade. Of the two, the retail sector is believed to be the larger. Up-to-date figures are not available, but according to trade sources total retail sales of soup amounted to about $2,960 million in 2001. One quarter of this was dehydrated soup, the balance consisting mainly of canned soups as well as of instant bouillon and cubes.

Most types of vegetables are used as ingredients in dehydrated soups though tomato soup seems to be produced in fairly small quantities in the United States; most of the demand for this item is satisfied by imports from Europe. Certain amounts of dehydrated vegetables are also used in canned soups.

The following Knorr (CPC) soup packs, seen in a major supermarket in the United States, illustrate the range of dehydrated soups available:

- Knorr Hot and Sour Soup mix. Ingredients include dehydrated vegetables (onions, *shiitake* mushrooms, seaweed, tomatoes, leeks) packed in 1.3 oz (38 g) boxed sachets.
- Other Knorr Soup mixes in similar packs: Vegetable, Leek, French Onion, Chicken Noodle, Mushroom, Spinach, Fine Herb, Tomato with Basil, Asparagus, Cauliflower, Chick'N Pasta, Minestrone, Country Barley, Oxtail, Tortellini in Brodo, Spring Vegetable.

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Another food manufacturer offered a range of instant noodle soups with corn, carrots, green peas with vegetable powder, tomatoes, onion, and garlic.

A large number of other various food products use dehydrated vegetables and herbs as ingredients. The following products, seen in a major supermarket, all have some dehydrates: salad toppings, salad dressing mixes, pasta dressing, Mexican-style rice dish (onions, garlic, red and green bell peppers), spaghetti sauce, seasoning mix, sauce mix, bread stuffing mix (onions, garlic, parsley), canned Italian style tomatoes (garlic), microwave dishes (onions and garlic), various dinner entrees and other ready-meals.

The above-mentioned food items are far from forming a complete list of products containing dehydrated vegetables and herbs. Other important products are baby food, which require high-quality raw materials; retail-packed freeze-dehydrated specialty vegetables and culinary herbs; and even pet food (mainly carrots, garlic and onions), produced for example by Quaker Oats.

The food service/institutional trade

Restaurants, canteens, cafeterias, schools, hospitals, prisons and similar institutions use dehydrated vegetables as a raw material for meals. In addition, this sector also uses considerable amounts of dehydrated soups, sauces, dressings, seasonings and other food products packed in catering packs by the food industry.

The retail trade

Excluding instant potato products, very little dehydrated vegetables as such are sold in retail packs. Mainly the spice packers who complete their assortment with certain vegetables supply the retail market and, in particular, culinary herbs, which may, for example, be freeze-dehydrated. These products are sold as seasonings rather than vegetables.

In addition a range of various mushroom products are sold in retail packs for home cooking. Such products include wild and cultivated species, and they may be sun-dehydrated, air-dehydrated or freeze-dehydrated, depending on the product in question.

As indicated above, most processed foodstuffs containing dehydrated vegetables as ingredients are eventually sold through the retail trade.

Market requirements

End-users of dehydrated vegetables usually have their own very strict specifications that suppliers have to meet. These may specify grade, cut, colour, moisture content, allowable levels of extraneous matter and bacteria count, packaging and storage requirements, etc.

Food manufacturers stress that in general, dehydrated products should be as close to the fresh product as possible. For most end-uses a short rehydration time is of great importance.

Most vegetables are marketed in different forms. For example, one major domestic producer offers onions in the following main forms: powdered, granulated, ground, minced, chopped, diced and sliced. This company also offers powdered, granulated, ground, minced and chopped garlic. Domestic producers have issued official standards and methods for dehydrated onion and garlic products through ADOGA.

Competition and prices

The products covered by this survey face competition from fresh produce grown in the United States and to some extent from canned or frozen vegetables, whether imported or produced locally. As domestically dehydrated vegetables and herbs are usually of high quality and most items are easily available, new suppliers will find this market very competitive and difficult to enter. In addition, customs duties are high for some products, notably onions and garlic. Detailed analysis of price developments is outside the scope of this survey, but some indicative prices (one American producer's sales prices) are given below.

Table 5. USA indicative prices of selected dehydrated vegetables (US$/lb)

Product	Price	Product	Price
Beet powder	2.20	Celery, stalk & leaf	
Bell peppers		Dice	4.67
Green, dice	6.02	Granules	5.30
Green, granules	6.76	Parsley	
Green powder	6.49	Flakes	2.65
Red, dice	5.60	Granules	3.11
Red, granules	6.20	Powder	3.02
Red powder	6.02	Spinach	
Red & green, dice	4.72	Flakes	3.88
Red & green, granules	4.90	Powder	3.91
Powder	4.7	Onions	
Carrots		Powder	1.16
Dice	2.34	Granulated or ground	1.45
Flakes	2.34	Chopped or minced	1.50
Shoe-string	2.63	Dice	1.57
Granules	2.48	Sliced	1.73
Powder	2.40	Garlic	
Celery		Powder	1.63
Cross-cut	5.89	Granulated or ground	1.68
Double-cut	5.68	Minced	1.69
Granules	6.24	Chopped	1.73

[A] 2.2046 lb = 1 kg
[B] Free carrier. Under this condition, the buyer assumes responsibility for goods upon delivery to designated pier or carrier

These price examples should be considered indicative only, since price levels vary according to quality, sources of supply, quantity, etc. Individual discounts may be given to big buyers.

Distribution channels

Agents/brokers and importers

Brokers or importers who supply the food industry and the food service and institutional sector handle almost all imports of dehydrated vegetables into the United States. Owing to the relatively limited size of the dehydrated vegetable trade, most intermediaries also trade in other similar products.

Agents and brokers (who work on commission) represent one or more producer of dehydrated vegetables. One of the important companies is Henry Broch and Company, Vernon Hills, Illinois – a food broker representing several producers of dehydrated vegetables, both domestic and foreign (e.g. La Cascada, Mexico; Tro-Kost, Germany; Transa, Spain) in the United States market. It offers a full line of dehydrated vegetables and similar products.

Some importers (trading on their own account) import on an opportunistic basis, i.e., they buy when there is a shortage of a particular product, for example, because of crop problems, or when there is a niche in the market for one reason or another. Other importers tend to have a more permanent presence in the market. Importers are often strong in one or a few items. For example, Hogan Associates, Inc., San Francisco, specializes in mushrooms and A/T Products Corporation, New York, deals in spray-dehydrated tomato powder.

Other intermediaries are subsidiaries or representative offices of foreign suppliers. For instance, Pima Western (Tucson, Arizona) is owned by Prodemix of Mexico, and Interagro (Northfield, Illinois) is connected with Silva of France.

Food manufacturers and processors

The United States food industry is characterized by a considerable number of very large companies, many of which are amongst the biggest companies in the world. In recent years the industry has become even further concentrated, *inter alia,* through mergers and acquisitions. Most such large companies are "diversified food processors" involved in several different food industries, many of which use large amounts of dehydrated vegetables and/or culinary herbs.

For example, Kraft General Foods, Inc. (part of Philip Morris) – the United States' largest and the world's second largest food company – produces a wide range of food products, e.g. dinner entrees, pasta dishes, pasta salads, salad dressings and processed cheeses. Kraft Foodservice, Inc. also belongs to the group. A similar range of products, using dehydrated vegetables, is offered by Beatrice/Hunt-Wesson (division of ConAgra, the country's second largest food company).

However, the largest end-users of dehydrated vegetables are the soup manufacturers, especially Lipton and CPC. Thomas J. Lipton Company (a subsidiary of Unilever) produces three main product lines containing dehydrated vegetables, viz. Lipton Soups, Lipton Side Dishes and Wish-Bone Salad Dressings. A range of seasoning blends; dressings, barbecue sauces, etc. are sold under the Lauwry brand.

CPC International Inc. also uses dehydrated vegetables in a large number of products, including soups and sauces. Its products are produced and sold worldwide under well-known brands, such as Knorr. It also has a food service company. CPC Europe owns a dehydration plant in Poland.

Another major producer of dehydrated soups and similar products is Nestle USA, belonging to Nestle SA, Switzerland, and the world's largest food company.

The largest producers of canned soups are H.J. Heinz (which has a stake in a tomato powder plant in Hungary) and Campbell Soup (owns Mallow Foods Ltd, Ireland, a producer of dehydrated vegetables). Both companies also make other food products, some of which contain dehydrated vegetables.

The largest spice processor in the world, McCormick & Company Inc., which owns Gilroy Foods Inc., uses large amounts of dehydrated vegetables and culinary herbs in the production of seasonings and flavourings, sauces, salad dressings, etc. A range of retail-packed herbs complements their spice line. The company supplies the retail market, food processors and also has a food service division.

The companies mentioned in this section may import some of their raw material requirements direct, but most imported dehydrated vegetables appear to be handled by brokers or importers. However, the major food companies obtain the bulk of their requirements (direct or through brokers) from domestic producers, with whom they usually work very closely concerning product development, quality assurance, delivery schedules, etc. In recent years the large end-users have tended to concentrate their procurement on fewer suppliers and to stay with their traditional sources.

Food service companies and the retail sector

The major food service companies include Sysco Corp., Houston (by far the largest); Kraft Foodservice, Inc., Deerfield; Rykoff-Sexton, Inc., Los Angeles; PYA-Monarch, Inc., Greenville; and JP Foodservice, Inc., Hanover. These and similar companies usually obtain their requirements of dehydrated vegetables through brokers and importers or from domestic producers.

Though some of the major retail organizations are involved in food processing, they do not seem to be buyers of dehydrated vegetables as a raw material. They buy food products containing dehydrated vegetables from the food industry.

Market access

Customs duties

Customs duties are subject to WTO harmonized tariffs.

The North American Free Trade Agreement (NAFTA) foresees immediate tariff rate reductions for carrots (0712.90.10), parsley (0712.90.65), tomatoes (0712.90.75) and other vegetables (0712.90.BO). Phased-out tariff rates, i.e. over five years, are foreseen for potatoes (0712.10.00) and mushrooms (0712.30.20). Phased-out tariff rates (15 years) are also planned for onions (0712.20.20 – 0712.20.40) and garlic (0712.90.40).

Food laws and regulations

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All products under survey and end products containing dehydrated vegetables entering the United States are subject to inspection by the Food and Drug Administration (FDA). If the merchandise fails to pass FDA inspection, it cannot be released for use in the country.

FDA protects the consumer from unsafe or harmful food and unfair or deceptive packaging and labelling. No official standards have been issued for dehydrated vegetables as such, but the general provisions of the Food and Drug Act apply. FDA seems especially concerned with extraneous materials and pesticide residues in imported dehydrated vegetables. Further information may be obtained from FDA at http://www.fda.gov.

In addition, importers and end-users carry out their own microbiological and other tests. In order to facilitate entry into the market, exporters should follow the advice and the instructions provided by importers.

Prospects for Egypt

The United States remains a very large producer of dehydrated vegetables, onions and garlic in particular, but also of most other vegetables. In recent years some of the major companies have merged, though there are several smaller companies as well. Some companies have production facilities abroad.

Because of a strong domestic industry producing high-quality products and because of high duties in the case of onions and garlic, foreign suppliers are meeting heavy competition in the USA market. In spite of this, interesting opportunities exist for exporters in developing countries. In general, exporters are advised to develop a close relationship with an agent or importer who knows the market well, since few end-users are inclined to import this product group directly from processors/exporters.

Overall, not much growth, if any, is expected. Though some products (e.g. freeze-dehydrated broccoli) may offer better prospects than others. However, the market is large and developing countries should follow developments closely and make an effort to build up good relations in the market place and to supply high-quality products.

It is important for Egypt to develop a good strategy, clearly defining goals and means. In particular, it is essential that they take the long-term view, bearing in mind that the market is highly competitive.

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The Netherlands Market for Dehydrated Vegetables And Dried Herbs

Dehydrated/Dehydrated Vegetables

Supply and demand

Domestic production

The Netherlands produces a large quantity of vegetables, the volume of which has risen considerably over the last decade, from 2,361,000 tons in 1982 to 3,264,000 tons in 2001 (excluding potatoes). In 2001, total production reached 3,607,000 tons, and included various cabbages and leeks, cauliflower, mushrooms, pulses, carrots, onions, asparagus, cucumbers and tomatoes. The three largest single crops are tomatoes, cucumbers and onions.

There are no exact production statistics on dehydrated vegetables, as not all producers report the size of their production. However, trade sources have estimated production in the 1996/1999 season at about 4,300 tons, which included about 800 tons of air-dehydrated pulses. The estimate does not cover potatoes. Although there are some changes from year to year, domestic production is reported to be relatively stable.

The Netherlands has four major producers of dehydrated vegetables:

- Dalgety Foods Holland B.V. (Breda),
- Top Foods Elburg B.V. (Elburg),
- Dika Fabrieken B.V. (Schoonhoven), and ten Have Products B.V. (Scheemda).

The last-mentioned company deals mainly with pulses. In addition VNK UA in Elburg produces air-dehydrated herbs. Some other companies produce dehydrated potatoes almost exclusively.

The domestic industry processes a large number of vegetable products. The product range offered by a major processor illustrates this: asparagus (air-dehydrated powder and freeze-dehydrated pieces), green beans (air and freeze-dehydrated), cabbage (air and freeze-dehydrated), carrots (air-dehydrated and puffed), cauliflower (freeze-dehydrated), celery roots (air-dehydrated and puffed), green/white leeks [air-dehydrated and freeze-dehydrated), mushrooms (freeze-dehydrated) parsnips (air-dehydrated), pulses (brown beans, white beans, yellow peas, green peas and lentils), and potatoes. This and other companies also offer air and freeze-dehydrated onions, though they are imported products. Annex II gives: more detailed information on this company's product range.

No dehydrated onions are produced in the Netherlands, as the water content of onions grown domestically is too high, which would require a longer processing time, resulting in higher costs and lower quality. Furthermore, the variety grown in the country is less suited for dehydration. In general, only the more expensive high-quality products are dehydrated domestically.

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Imports, exports/re-exports and apparent consumption

Though domestic production is substantial, large quantities of dehydrated vegetables are imported into the Netherlands. Total imports, including potatoes, ranged between 8,126 tons and 11,802 tons annually during the five-year period 1998-2001. Excluding potatoes, imports fluctuated between 7,971 tons and 10,220 tons a year. Exports, including potatoes, fluctuated between 5,995 tons and 7,381 tons a year during the same period. Excluding potatoes, they ranged between 4,363 tons and 5,821 tons. Export figures include some domestic production as well as re-exports such as onions and tomatoes.

Apparent consumption (production plus imports less exports) of dehydrated vegetables, excluding potatoes, can be estimated to have averaged about 8,400 tons annually during the five years to 2001.

Imports by type and origin

Onions are the largest import item, with 4,667 tons in 2001, valued at f. 17.7 million. Their share in total imports in that year was 46% by quantity and 30.1% by value. Imports have grown steadily over the period under review. Egypt and the United States were the two largest suppliers (65.6% of the total quantity in 2001). Egypt took the lead position in 2001 in quantitative terms, though the United States continued to export products of higher value.

India is a major developing country supplier. Imports from Belgium, Germany and the United Kingdom are re-exported products.

Imports of potatoes are usually small and developing countries are of no significance as suppliers.

Though imports of mushrooms and truffles are small in quantity, imports (f. 6.7 million) amounted to 11.5% of the total value in 2001. Developing country suppliers included China and Thailand.

Sweet corn is imported in very small quantities. None came from developing countries.

Imports of carrots fluctuated considerably over the period under review and amounted to 566 tons in 1999, valued at f. 1.9 million (3.2'/o of the total value). No developing countries were reported as suppliers.

Tomatoes are the second largest single import item, with 900 tons (8.9% of total imports), valued at f. 8.9 million (15.2%), in 2001. Other EU countries supplied most of it. Two developing countries, Chile and Turkey, each provided small quantities. (It should be noted that import figures on tomato powder are also reported under HS 20.02.)

Vegetables other than the above and some culinary herbs are grouped together under the category "Other". Imports increased steadily over the period under review, from 2,415 tons (f. 17.5 million) to 3,329 tons (f. 22.1 million). Germany was the largest supplier, and accounted for 30.8% of total supplies by value in 2001. A number of developing countries were important sources, in particular China, Egypt, Morocco and Turkey. Several countries of Eastern Europe were also amongst the suppliers.

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Market requirements for specific vegetables are discussed further in the section below on market characteristics.

Exports by type and destination

Potatoes, onions and carrots are the most important individual export items. Other EU countries, particularly Germany, the United Kingdom, France and Belgium, were the main markets. In the case of mushrooms and truffles, Germany accounted for over half the exports in 2001. For tomatoes, the United Kingdom and Germany were the main markets.

The product group "other" was the biggest export item in 2001 (3,239 tons, valued at f. 29.8 million, or 45.6% by quantity and 62.7% by value. Other EU countries were the destinations for 80% of exports by quantity of this product group.

Market characteristics

Types of vegetables in demand

The Netherlands imports the whole range of dehydrated vegetables and herbs. The main items are:

- Onions. Mainly for the soup industry, but also for Indonesian ready meals, snacks, etc.
- Leeks. The importer buys these from China, Chile, Egypt and countries in Eastern Europe and blends them in order to offer a standard quality, or to meet customers' specifications.
- Carrots. Mainly 10 x 10 x 2 mm and 10 x 10 x 10 mm for human consumption when the quality and color are good, and for pet food when the quality is lower.
- Cabbage. White and Savoy (the two biggest items), green, red and kale; imported in flakes of, for example, 12 x 12 mm, though the size is not too important; used in mixed vegetables for the soup industry.
- Bell pepper. Red, green and field run (before the green turns red]; sources of supply include Chile, Turkey, Morocco and Hungary. (Hungary produces a dark red, sweeter variety).
- Tomatoes. Imported in flakes, slices and cubes from Turkey, Chile and Morocco.
- Other items including garlic, horseradish, celery, parsley and dill. Mostly in smaller quantities.

Other importers may have different requirements, but in general these are likely to be similar.

Market segments and end-users

These are basically the same as in the other EU markets covered by this study: the soup industry, other food manufacturers and processors, the pet food industry, the catering and institutional market and the retail trade.

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The soup industry is the largest end user of dehydrated vegetables, absorbing perhaps three quarters of the total. Most of the dehydrated vegetables are used in conventional, dehydrated (packet soups and the bulk of the balance in instant soups). Onions are the most important vegetable, but many others (e.g. mushrooms and asparagus) are also used, either mixed or on their own.

The following soup packs are available in the supermarkets and other retail outlets in the Netherlands:

- Honig. Vegetable soup (packet). Ingredients include dehydrated vegetables (i.e. carrots, leeks, tomatoes, garlic, green cabbage) and herbs (i.e. celery, rosemary).
- Royco. "Cup-a-Soup". Vegetable soup with croutons (instant). Ingredients include dehydrated vegetables (i.e. leeks, tomatoes, carrots, cauliflower, green cabbage, garlic, French beans, celery, spinach and parsley) and various extracts of herbs, vegetables and spices.

The soup industry, mainly consisting of large multinational companies, also produces a whole range of other food products containing dehydrated vegetables and culinary herbs. Among these products are salad dressings, rice mixes, pasta dishes and sauces. For example, Honig produces dry packed pasta and rice dishes: spaghetti, macaroni and nasi *goreng*. Knorr offers similar packs containing lasagnette, lasagne, canelloni, moussaka, tacos, paella and kip-tandoori.

Other examples of end products are the following:

- Maggi. "Jus Pikant" (sauce). Ingredients include dehydrated vegetables (e.g., tomatoes, garlic) and herbs (e.g. parsley, laurel).
- Duyvis [Unilever). "Pomodori" (dressing). Among the ingredients are tomato powder, celery, chives and basil.

The meat and the fish industries also use some dehydrated vegetables, for instance, in certain canned products and ready meals. The infant food industry is another outlet.

The catering and institutional market is also important, though it probably obtains most of its supplies in catering packs from the soup manufacturers.

Most food products that contain dehydrated vegetables are eventually sold through the retail trade. There is also a small market for certain retail-packed dehydrated vegetables sold for the camping business. Top Food produces such items. In addition, a large number of culinary herbs are obviously sold in retail packs.

According to trade sources, the pet food market has grown in importance in recent years, though it may be close to saturation point. Quaker Oats, for example, buys certain dehydrated vegetables for this purpose.

Importers' requirements

As in the other markets covered by this survey, the Netherlands food industry requires raw material of high quality. Most food companies have their own strict specifications for dehydrated vegetables, which suppliers have to meet, whether they are domestic producers or obtain their products from abroad. In many cases imported products have to be further processed: to meet requirements.

For more specific information on quality requirements in EU markets, see also the appropriate paragraphs in the chapters on Germany and the United Kingdom.

Competition and prices

Price levels are very close to those of Germany. For more details refer to the Germany part of this study.

Distribution channels

Importers

Though there are a number of importers of dehydrated vegetables in the Netherlands, a certain concentration has taken place in recent years, and a few companies handle the bulk of the business.

Some importers, e.g. Barimpex, which represents various companies in countries like Chile, Egypt and Israel, buy on their own account and keep stock. They supply end-users in the Netherlands and other EU countries direct without processing the products further.

Other companies like Dehyfood B.V. import dehydrated vegetables from a number of sources and usually reprocess and repack them before delivery to food processors and other end-users in the Netherlands and other EU countries. Through reprocessing, which involves cleaning, grading, reducing the humidity content and bacteria count, etc., they upgrade the quality of imported products in order to meet their customers' specifications.

Domestic producers also import, either direct or through importers, certain items such as onions to complete their own range of products.

The food industry

Soup and other large food manufacturers may import part of their requirements direct from source, when they are certain that the producer supplies high-quality products, such as onions from the United States, tomato powder from France or Switzerland, or freeze-dehydrated vegetables from companies in Europe or the United States. However, in most cases they obtain their supplies from domestic producers or from importers and pre-processors in Europe. The soup manufacturers and other food processors' main concern is that their specifications and delivery dates are met.

In the Netherlands, Honig (CSM), Royco (Unilever) and Knorr (CPC) are the most important soup manufacturers, followed by Maggi (Nestle) and California BV. Most of these companies are multinationals and operate throughout Europe and beyond. They also operate across borders on the buying side. CPC in Hilversheim, for example, does the buying of most dehydrated vegetables for all CPC plants in Europe.

Market Access

Customs duties

The Netherlands applies the EU common external tariff (see the appendix for detailed information).

Food laws and regulations

There is no legislation dealing specifically with dehydrated vegetables, but processed vegetables are covered by the Food and Drugs Act *(Warenwet)*, which also regulates matters related to the consumption of most foodstuff, including products with dehydrated vegetables as ingredients. Infant food is covered by the Agricultural Quality Act *(Landbouw Kwaliteitswet)*.

It is the responsibility of the food industry to ensure that food products meet the requirements of existing food regulations, which are regularly reviewed and which are being harmonized within EU. Importers and food manufacturers have their own strict specifications, which suppliers have to meet.

Dehydrated Herbs

Although by itself a small consumer of herbs and spices in comparison with its neighbours, the Netherlands is an important intermediary in the European trade in herbs and spices. Its re-export trade in these products reaches 15,000 tons yearly. Rotterdam has developed into the world's largest transhipment port for spices and herbs, and Netherlands trading houses have long experience in handling these commodities.

Domestic production

No figures are available on domestic production. However, the trade generally recognizes that demand for fresh herbs is increasing. The most used and therefore the most cultivated are parsley, celery (mainly for soups and decoration), chervil, dill weed, mint and basil.

Fresh herbs are often cultivated at home or are bought mainly in supermarkets or open markets. It is estimated that about 65% of the purchases of fresh herbs are in bunches; or in plastic trays; 10% in plastic bags and sachets, and 15% planted in pots.

The largest Netherlands producer of fresh herbs is VNK (Verenigde NL Krauter Corporation).

Imports

With the exception of parsley and dill, which are partly supplied by domestic growers and dryers, demand for dehydrated herbs is satisfied by imports. According to trade sources, current imports of dehydrated herbs amount to about 1,550 tons yearly.

Official trade statistics are available for some products like thyme and bay leaves. During the period 1990 to 2001, imports of thyme averaged 94 tons yearly, of which nearly 86% in crude thyme, not crushed or ground, and 7% each in wild and crushed thyme.

Imports of wild thyme, although small in quantity, rapidly increased from two tons in 1990 to 13-14 tons a year in 2000 and 2001, mostly supplied by Spain. Nearly 46% of the imports of crude thyme were supplied by Spain (an average of 32 tons a year). Owing to quality problems, imports from non-EU countries were almost discontinued and replaced with supplies from France and Germany. Imports of crushed or ground thyme remained very small, averaging 5 tons/year over the period.

Turkey is the largest single supplier of bay leaves to the Netherlands, accounting for about 70% of all imports over the five-year period reviewed. Average annual imports amounted to 66 tons, of which 46 tons from Turkey. However, imports from this country generally fluctuated downward, to the advantage of Egypt, Israel and intra-EC trade.

On average, 13 tons/year of crude and crushed thyme and 7 tons/year of bay leaves were re-exported by the Netherlands.

Major grinders/processors

There are two very large grinders and processors of culinary herbs. They have integrated facilities and different processing lines for cleaning, grinding, processing and packaging herbs and spices, and for the manufacture of sauces, seasonings and special formulations for industrial use in meat, sausages, bakery products, milk-based items, etc. They are the largest suppliers spices and herbs to the Netherlands market and their shares have been estimated by the trade to be about 55% in regard to industrial food processing, 35/o in the retail trade and 10% in the institutional catering sector.

One of these companies is Verstegen Specerijen, in Rotterdam. The other is Euroma International, with grinding, mixing and packaging facilities in its Wapenveld plant and facilities for producing special mixtures and components of soups, sauces, ragouts and meals in its Schijndel factory. Both companies have modern equipment, sophisticated quality-control laboratories and research and development facilities. They tend to purchase the largest proportion of their requirements of herbs and spices direct from the producers. They cooperate closely with large overseas suppliers and provide technical services to exporters particularly on quality problems.

The largest importer of culinary herbs into the Netherlands is the Van Eeghen group of companies. Founded in 1662, this highly specialized group buys herbs to their own strict specifications. It has its own cleaning facilities. In addition to supplying grinders and processors, they supply the largest end-users of culinary herbs, i.e. companies like Maggi and Unilever in the industrial food sector.

Although freeze-dehydrated herbs offer the advantages of quality and economy of use, the trade regards the Netherlands market as essentially price driven. Consumers will not purchase freeze-dehydrated products at prices 10% to 20% higher than the prices of air-dehydrated herbs.

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Prospects for Egypt

With imports of dehydrated vegetables averaging about 10,100 tons annually over the last five years, the Netherlands falls into the category of a medium-sized European market. Consumption appears to be relatively stable, and not much growth, if any, is expected, though the development of new products and end-uses may affect the market positively.

It should be noted that the Netherlands plays a very important role in the European food industry. As other markets for soups and similar products using dehydrated vegetables develop, for example in southern and eastern Europe, companies in the Netherlands may be able to exploit some of these opportunities. This in turn could result in increased imports of dehydrated vegetables in the longer run.

Egypt should monitor the market closely and, in cooperation with an importer, identify market possibilities for specific products. Exporters should constantly try to improve quality and service the market well, in order that good long-term business can be developed.

The French Market for Dehydrated Vegetables and Dried Herbs

Supply and Demand

France is the second largest European market for Dehydrated/dehydrated vegetables and dehydrated culinary herbs and is a major exporting country.

The French market for dry herbs has stabilized, with the estimated annual growth in tonnage not exceeding 2% per year. The prices of dry products have been low in the past two-three years because of strong competition, not only from Mediterranean countries such as Morocco, Turkey, Egypt or Israel, but also from European suppliers such as the Netherlands and Germany. The rise in the prices of sage and oregano in early 1990, for example, led to a drop in purchase from more expensive origins and a shift towards the lower-priced ones, rapidly pulling prices down to their current lower levels.

Domestic production

Parsley, tarragon and thyme are cultivated commercially on a large scale, mainly around Paris and the Provence-Alpes-Cote d'Azur region. Basil, chervil, chives, rosemary, sage and dill are cultivated on a smaller scale.

The French company Daregal is the world's leading producer of aromatic and culinary herbs. It cultivates over 1000 tons of fresh herbs annually in the Paris and Gironde areas on more than 800 ha. These are marketed in the industrial and retail sectors as fresh products, or as dehydrated, deep-frozen or freeze-dehydrated products. Processing is carried out in the company's own integrated processing units. More than 40% of the company's annual turnover comes from its export activities.

All the major French processors and end-users of herbs give their first preference to locally produced herbs. These are of top quality, although often slightly more expensive than the imported products.

A large part of the domestic supply of fresh herbs is produced by farmers under contract, for utilization as such by the food industry and the catering and retail sectors.

The largest wholesale market for fresh aromatic herbs in France is in Rungis, near Paris.

Current market and share of imports

Trade sources estimate that the retail sector consumes about 55% of the quantities available of aromatic herbs, the food manufacturing sector about 25% and the catering industries the remaining 2%.

The use of fresh and deep-frozen herbs is estimated to be much larger than in the other European countries. According to the National Association of Producers of Dehydrated Potatoes, only 400 to 450 tons of dehydrated herbs (parsley, tarragon, chives, chervil and Basil have been produced annually since 1990.

Figure 10. France: size of market for dried culinary herbs

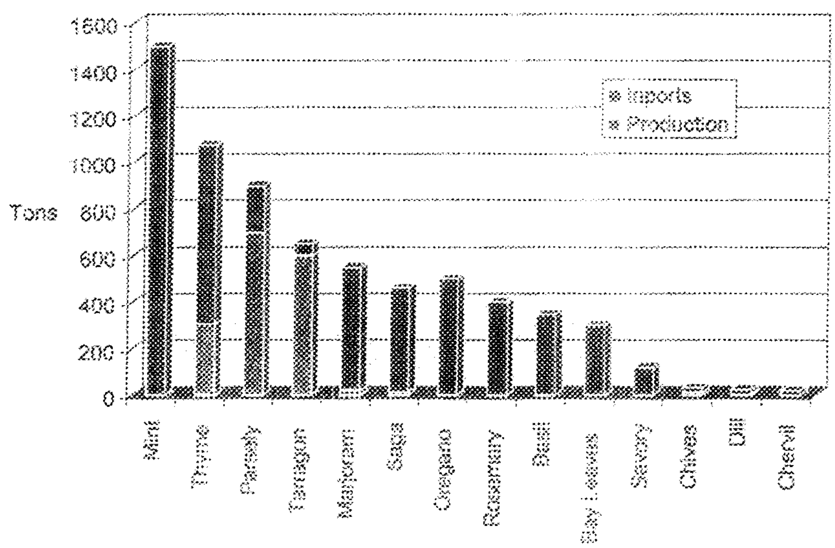

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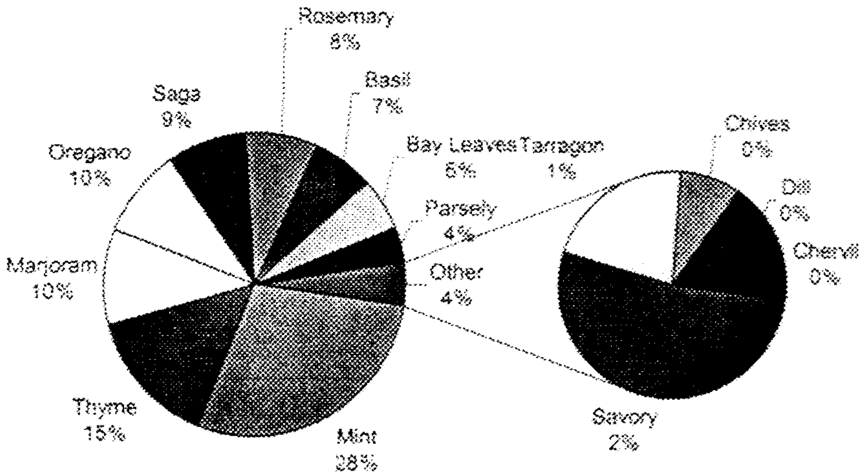
Figure 11. France: market share of the major imported culinary herbs



The growth of demand for dry herbs does not exceed an estimated 2% yearly. Consumption of deep-frozen herbs is thought to follow the annual growth rate for deep-frozen ready-cooked meals, which averages 15%.

According to trade estimates, the overall market for dry culinary herbs both domestically produced and imported currently amounts to between 5,780 and 6,880 tons per year. About 74.3% is supplied from imports.

French exports of herbs average between 1,875 and 2,505 tons yearly. This is equivalent to 34.55% of domestic production plus imports.

Mint, thyme, parsley, tarragon, marjoram, sage, oregano, rosemary and basil are the most widely used herbs. All or almost all of the mint, oregano, basil, rosemary, bay leaves, sage, marjoram, savoury and dill for domestic consumption and re-export are imported. About 72% of the total demand for thyme is likewise met by imports.

Import and export statistics on thyme and bay leaves for the period 1990-2001 revealed that on average, of the 723 tons of thyme imported annually between 1990 and 2001, 86.1% (622.6 tons) consisted of cultivated, unprocessed thyme; 10.4% of wild hand-picked thyme (75.2% tons); 3.59% of cultivated thyme crushed or ground (25.2 tons).

During the same period, an average of 348 tons yearly of thyme were exported. Of these, over 92% was in unprocessed form, 6.2% was crushed or ground and 1.3% consisted of the wild, handpicked varieties.

Imports of bay leaves averaged 317.2 tons yearly. Re-exports amounted to 138 tons a year on average.

Main origins and prices of imports and the potntial window for Egypt

Most French importers, brokers and processors of culinary and aromatic herbs are concentrated in the southeast, particularly in Marseille and the surrounding areas.

Origins of imports are not very diversified and consist mainly of Morocco, Turkey, Egypt, Chile and some Eastern European countries. The supply situation in 2001 for individual herbs is described below.

Mint

Imports in 2001 jumped to around 2817 Tons, higher than in 1995 (1,514 tons). Imports of peppermint which, mostly used for pharmaceutical purposes (as teas, etc.), decreased from about 400 tons in 1988 to 344 tons in 1989 and 169 tons in 1990. Imports increased to about to 1583 tons in 2001. The rest consisted of sweet mint (spearmint). This was supplied as fresh or frozen entire plants mainly for food use (in taboule, mint tea, etc.) from Morocco and Tunisia or as leaves or crushed for food and herbalists' shops from Egypt and Morocco. The Egyptian offer of leaves was rather limited and was negotiated at $1.964 per kg. As the offer of crushed mint from Egypt (proposed at $0.714 to $1.304 per kg) and from Morocco ($0.804 per kg) was comparatively large, prices were stable; however, the high content of pesticide residues limited the quantities purchased.

Egypt is facing difficult competition from other suppliers. New suppliers are entering the market every day. Egypt needs to improve quality to be able to catch the right market segment.

Figure 12. France Mint Import Volume – Major Countries of Origin, 2001

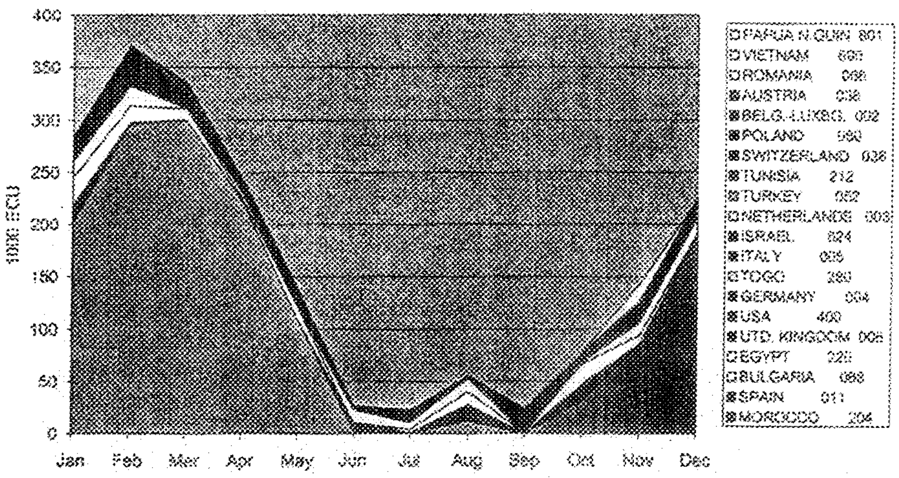
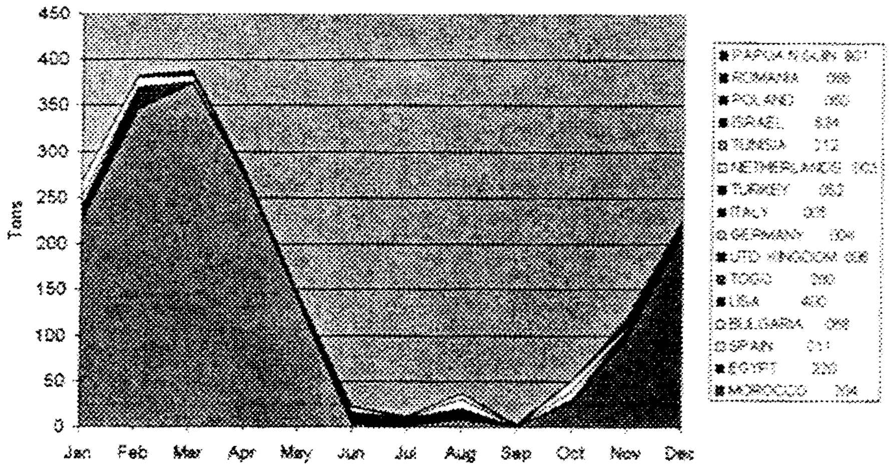


Figure 13. France Mint Import Value – Major Countries of Origin, 2001



The trade reports that no mint is currently available from Eastern Europe.

Thyme

About 6000 tons yearly of dry wild thyme leaves are consumed in France; a third of this is locally handpicked and processed, and two thirds are imported. The low prices of imported wild thyme over the last several years resulted in a drop in cultivation in France and limited domestic supplies of handpicked thyme to about 250 tons yearly. Only very small quantities of wild thyme are currently obtained from the area around Paris and commercialized in freeze-dehydrated form. About 100 tons/year of the annual garden thyme are produced under contract in the Drome area for use as a fresh herb in the manufacture of alcoholic drinks.

Figure 14. France Thyme Import Volume – Major Countries of Origin, 2000

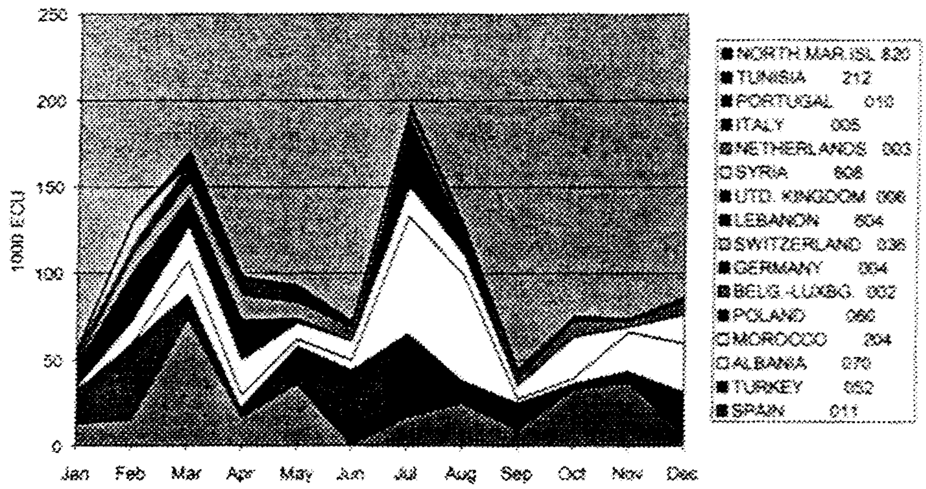


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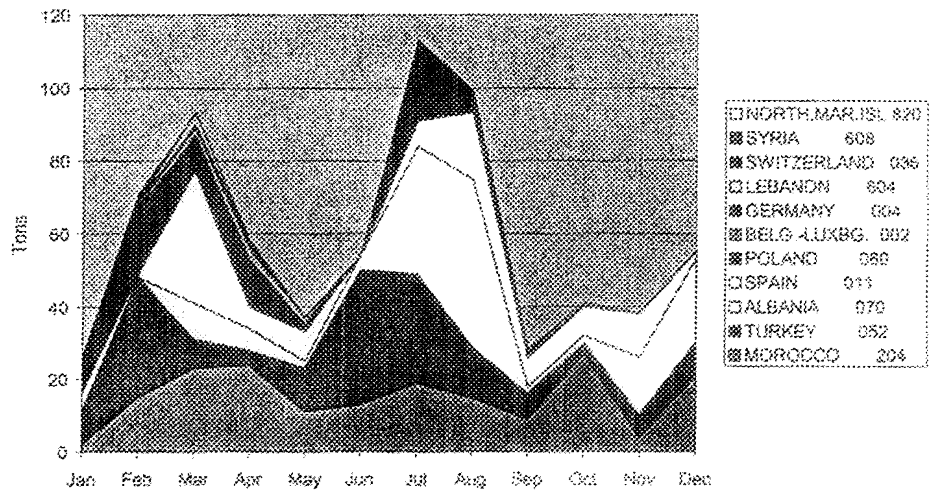
Figure 15. France Thyme Import Value – Major Countries of Origin, 2000



Morocco, Turkey, Albania and Yugoslavia were the major suppliers of wild thyme, at prices per kilogram that averaged $0.446, and $0.893 to $1.250 respectively. Small quantities were also imported from Turkey at $1.071 per kg.

Cultivated market-garden dehydrated thyme was sold at between $3.57 and $3.93 per kg, and even as high as $4.46 per kg. Consumers prefer the grey thyme from Province; this was traded at $6.25 a kg for the normal quality and $8.04 per kg for biological production.

Spain is a major producer of several varieties of thyme (about 2,000 tons). This country provided between 73% and 76% of the supplies of cultivated, unprocessed thyme to France between 1990 and 2001. Competing directly with locally produced thyme, the Spanish varieties were sold at prices per kg varying between $1.601 for ordinary thyme or mixtures with thyme already distilled at 30% to 50%, $3.929 for thyme competing with the Provence varieties and $5.714 for the best-quality thyme. Thyme from Morocco (of the Satureioides variety), mostly used in food processing, was sold at very low prices of between $0.982 and 1.250 per kg. The volume of the offer is declining owing to consistently low prices.

Parsley

Domestic prices for parsley produced on contract amounted to $4.018 per kg. Local produce from the Paris or Drome area was traded at prices per kg varying between $3,571 and $4.464, depending on variety and quality.

The leading foreign supplier of parsley to France is Israel, which provided new parsley from January onwards at $3.21 to $3.75 per kg. It was difficult to obtain good-quality parsley from Eastern Europe, Hungary in particular, during 1990s.

Tarragon

The prices of industrially cultivated tarragon were stable at between $8.928 and $12.50 a kg for the Russian fertile variety and $11.607 and $15.179 per kg for the French sterile variety. In spite of the excellent quality of the domestically produced tarragon, demand is limited by its prices, which are high in comparison with those of imported products.

The Russian fertile variety from Israel was sold, for example, at $4.25 per kg, including 16% customs' duties. The sterile French variety was also imported from the Netherlands and the Islamic Republic of Iran at prices amounting to $5.35 to $6.25 kg and $6 to $7 kg respectively.

Lower-quality tarragon of the same variety was imported from Morocco and Eastern Europe at $4.464 to $6.245 kg. The prices of very small quantities of top-quality herb from Germany amounted to $10.714 kg.

Marjoram

France was a major producer of marjoram about 25 years ago, mainly in the Avignon and Valence areas. Today domestic production does not exceed an estimated 20 tons yearly, over 96% of demand being covered by imports. Egypt is the leading supplier to France, followed by Hungary, and Tunisia which provides very small quantities.

Figure 16. France Marjoram Import Volume – Major Countries of Origin, 2001

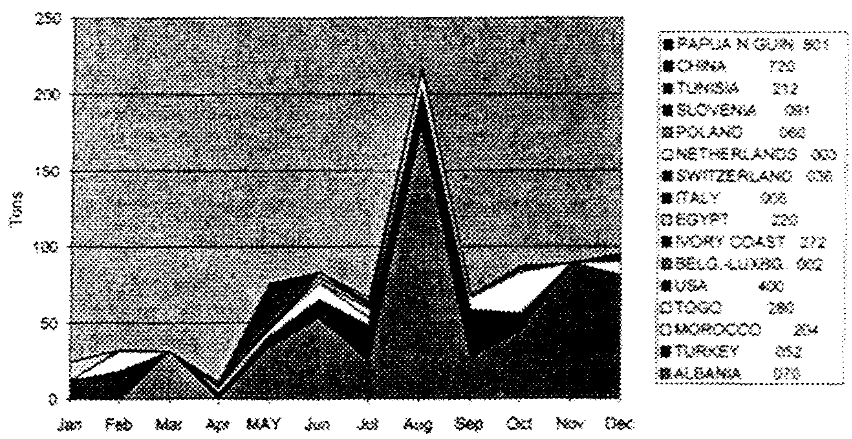


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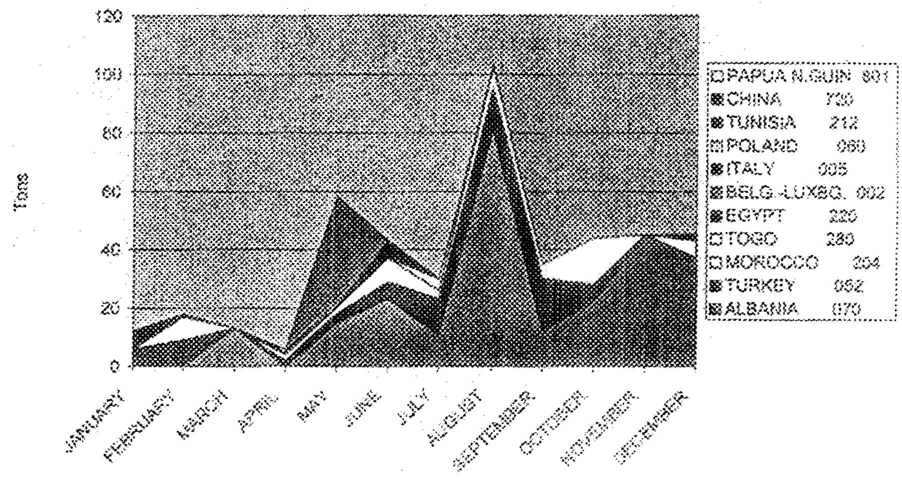
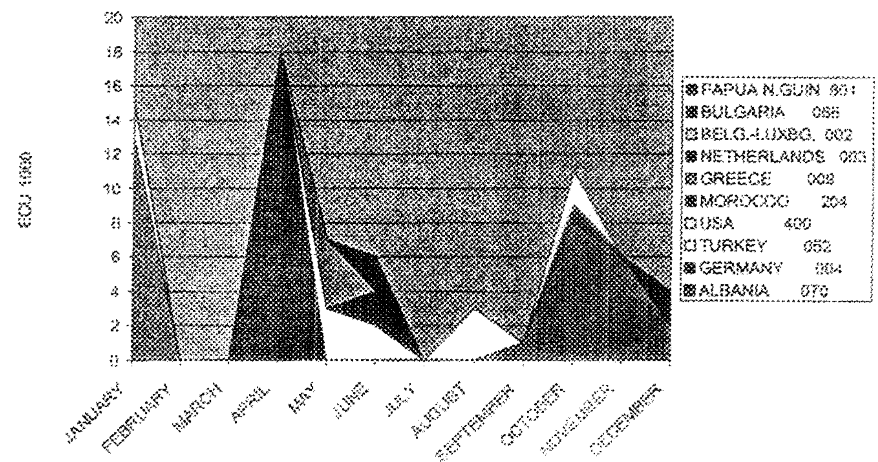
Figure 17. France Marjoram Import Volume –Major Countries of Origin, 2001



Sage

The very limited French production competes strongly with Turkish supplies. Because of the limited quantities on offer in 1995 and 1999, and strong demand from the United States of America, prices of imported Turkish sage remained high, averaging \$2.00 to \$2.50 per kg. The phytopharmaceutical ("Codex") qualities were traded at \$3.57 to \$5.36 per kg; lower qualities (i.e., with a high stem content) were priced at \$1.78 per kg.

Figure 18. France Sage Import Volume – Major Countries of Origin, 2001



Smaller quantities of sage were also imported from Albania and Yugoslavia (*Salvia officinalis* "Codex") as well as from Morocco, at prices per kg amounting to \$2.85 - \$3.39 and \$1.61 - \$2.85 respectively.

The large quantities of Turkish sage purchased by the United States during the Gulf war pushed Turkish prices up to \$2.95 a kg. The United States, the world's largest consumer of sage, uses about 4,000 tons a year. As a result, European demand shifted towards Chilean supplies, pushing the prices of these varieties up to $1.62 per kg during the same period.

Oregano

Imports are estimated to have fallen from 510 tons in 1989 (of which 275 tons from Albania and 131 tons from Turkey) to about 310 tons in 2001. Origins, prices per kg, and quantities of imports in the latter year are given below.

- 75 tons from Turkey, at an average price of $1.479 ($1.668 in 1999)
- 40 tons from Chile, at an average price of $1.75 ($1.775 in 1999)
- About 20 tons from Morocco
- About 342 tons from Albania ($1.607 to $2.643 for the top qualities)
- 11 tons from Israel, at an average price of $3.96

Albania, Chile, Morocco and Turkey are regular suppliers to the French market. Imports from Israel, Mexico and Yugoslavia are irregular.

Rosemary

Dry rosemary leaves have culinary uses. The whole dry plant is used for pharmaceutical purposes. Together with oregano, mountain savory, basil and thyme, rosemary is an ingredient *of herbs de provence* mixtures.

The trade estimates that 390 tons of rosemary was imported yearly in 1998 and 2001. The 2001 supplies originated as follows:

- 200 tons from Albania (hand-picked), at about $1.20/kg
- 150 tons from Spain, at $1.25 to $1.43 a kg
- 80 tons from Tunisia, at about $1.07 a kg
- About 55 tons from Morocco, at an average of $0.928 a kg. Moroccan production is estimated to be slightly but regularly decreasing

Basil

France produces very small quantities of basil, most of which is used fresh or freeze-dehydrated. Supplies are supplemented by imports from Albania and Egypt.

The overabundant offer and the decrease in the value of the United States dollar contributed to the low prices. Basil of the ASTA quality was imported, for example, at $0.893/kg from Egypt. It is estimated that of the 624 tons imported in 2001, 312 tons were supplied by Egypt and 200 tons by Albania. Imports in 1995 amounted to 360 tons.

Albanian products were traded at an average price of $1.304/kg.

Bay leaves

Turkey is France's major supplier of bay leaves; over 84% of imports between 1990 and 2001 originated from this source. Although import prices remained stable during 1995 and most of 2001, a price increase started at the end of 2001 because of a sharp fall in available stocks. Average prices per kg amounted to $0.929 to $1.114 for bales and $2.785 for good-quality leaves packed in cardboard boxes. Small quantities of bay leaves are also imported from Albania and Morocco.

Savory

France exports domestic savory and re-exports top-quality savory from Hungary to other EU countries. The Hungarian product was priced at $0.714/kg for the dry leaves.

The mountain or perennial savory was supplied by Albania and Yugoslavia at prices per kg averaging $0.446 and $0.893 - $1.25 respectively. Small quantities imported from Turkey were traded at $1.07 per kg.

Chervil

The market has remained relatively stable since 1992/1994. The French produce is predominant and is commercialized at $8.930 - $9.820/kg. Imports originated from the Netherlands (at $6.375/kg); Germany ($6.250 - $7.143/kg) and Eastern Europe ($5.357/kg on the average).

Chives

Imports compete with domestic production. The main sources are the northern European countries. Prices per kg from the different origins were stable, averaging $5.357 - $6.250 for chives from Germany and $6.125 for chives from Denmark and the Netherlands.

Dill

Dill tops are mainly used for flavoring vinegar and ready-made meals. The leading exporter to France is Egypt, whose prices per kg have increased from an average of $0.75 - $1.00 by the end of 1990 to $1.250 - $1.570 in 1995/1999.

Other imports originated from Israel (which provides dill of an appreciated strong green color) at $1.50/kg, the Netherlands ($2.70) and occasionally Morocco ($1.00 by the end of 1999).

Over a third of the total French supplies (domestic production plus imports) of dry herbs, i.e. between 1,875 and 2,505 tons per year, are exported mainly to the United States and Europe. Significant quantities of herbs are also exported in freeze-dehydrated (lyophilized) form.

The two leading end-users and retail distributors of herbs purchase the largest part of their requirements direct from foreign suppliers. A limited number of brokers and traders handle the import and export trade. They are listed in appendix I.

All major processors and large industrial users of herbs purchase on the basis of samples and require deliveries according to their own standard specifications and quality requirements.

Unlike all other European countries where bacteriological control is affected mainly by heat treatments, French regulations allow the ionization treatment of herbs. This treatment is used widely, although not for herbs packed for the retail trade. Labelling requirements for this trade require this treatment to be indicated if the amount of herbs so treated exceeds 5% of the quantity packed. The trade is of the opinion that French consumers would reject products treated by irradiation.

Major grinders/processors and trade brands

Two very large importers/grinders/processors of herbs and spices dominate the French market: the companies Ducros Freres and Amora (see appendix II for the address). They supply a large part of the needs of the industrial and catering sectors and together cover nearly three quarters of the retail market. Shares by brand in this market are as follows:

Ducros Freres is one of the world's largest importers of herbs and spices; these products account for over one third of the company's turnover abroad. It has subsidiaries in Belgium, Canada, Spain, Italy, Gabon and Portugal, and sales branches in Germany, the Congo, Cote d'Ivoire, Cyprus, the Middle East, Guinea, and Senegal as well as in the French overseas departments of Guadeloupe, Martinique and Reunion.

The company has developed its own brand of flavorings and seasonings under the brand name Ducros. It offers a wide range of products for all sectors of the market, including the catering sector and the food industry, through its two limited companies: Ducros Freres for general distribution and Ducros et Fils for the catering and industrial food sectors and international trade,

Amora is part of the multinational BSN group, which realized in 2001 a total turnover of about $9.5 billion. Of this 11 % was in the grocery business, which includes trade in spices and culinary herbs.

Owing to stagnant market conditions and increased competition from own-label distributors, Amora was restructured in 1990. Its operations on spices, herbs and special preparations for dessert were transferred to Chevigny.

The company purchases a large part of its needs for herbs direct from source, but it also uses the services of traders and brokers, more than Ducros does. It is estimated that annual purchases average 500 tons of herbs and spices, pepper excluded.

The United Kingdom Market for Dehydrated Vegetables and Dried Herbs

Dehydrated/Dehydrated Vegetables

Supply and demand

Domestic production

The United Kingdom has a considerable output of vegetables, which is sold fresh or processed, e.g. frozen. However, according to trade sources, dehydrated vegetables other than potatoes are no longer produced domestically. SWEL Foods Ltd., the last remaining producer, has recently discontinued production. However, Enterprise Ltd (located in Port Talbot, West Glamorgan) and Commercial Freeze Dehydrated, Ltd produce some quantities of freeze-dehydrated herbs, e.g. chives. It should also be noted that dehydrated potatoes in flakes continue to be produced to a certain extent, but production figures are not available.

Imports, re-exports and apparent consumption

In the absence of domestic production, large quantities of dehydrated vegetables are imported into the United Kingdom. Total imports, including potatoes, ranged between 14,962 tons and 16,240 tons a year during the Ave-year period 1982-1999. Excluding potatoes, imports fluctuated in the range of 13,142 tons and 14,137 tons a year.

Imports of dehydrated peas, which mostly come from Ireland, France and the Netherlands, are classified under HS 07.13. No import figures for this item are provided in this chapter.

Export (re-exports) of dehydrated vegetables fluctuated between 1,052 and 2,069 tons during the same period. Excluding potatoes, they ranged between 795 and 1297 tons.

Apparent consumption (imports less re-exports) of dehydrated vegetables, excluding potatoes, was as follows: 11,845 tons in 1988; 13,217 tons in 1989; 13,882 tons in 1990; 13,850 tons in 1991; and 13,342 tons in 2001.

Imports by type and origin

Onions are by far the largest import item with 7,468 tons in 2001, valued at £9.1 million. This is equivalent to 48.9% of total imports by quantity, and 34.4% by value. The United States remained the largest supplier over the period under review, followed by Egypt and France. Developing country suppliers include India, Mexico and China, though only small quantities came from these countries during the period reviewed. Imports from Germany and the Netherlands are re-exports.

The second largest import item by quantity is potatoes (1,129 tons in 2001) with a share of 7.4% (4% by value). The United States and Germany were the largest suppliers. No supplies were recorded from developing countries.

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Imports of mushrooms and truffles amounted to 554 tons, valued at £2.6 million, in 2001, corresponding to a market share of 3.6% by quantity, or 9.9% by value. Owing to its high unit value, this product group was the second largest import item in 2001 by value. China, the only developing country recorded as a supplier, was a major source throughout the period under review.

Sweet corn was imported in very small quantities, mainly from France and the United States.

Imports of carrots amounted to 501 tons (3.3% of total imports), valued at £ 3.9 million represent %1, in 2001. Most of this came from other EU countries. Kenya, the only developing country supplier, provided only 17 tons in 2001. Hungary also supplies carrots, according to trade sources, but does not appear in the statistical listings used as sources for this study.

Imports of tomatoes amounted to 517 tons (3.4%), valued at £1.8 million (6.6%), in 2001. Only small quantities came from developing countries: Morocco, Chile and Egypt. France supplies tomato powder. Imports from the Netherlands and Germany are re-exports.

All other vegetables are grouped together. Imports have increased over the period, from 3,749 tons (£7.4 million) to 4,983 tons (£10.1 million]. This product group comprises a large number of different vegetables and culinary herbs. The United States is the most important supplier, followed by France and Germany. Developing country suppliers include China, Turkey, Egypt and Kenya, in addition to some smaller sources not mentioned specifically.

Market requirements for specific vegetables are further discussed below in the section on types of vegetables in demand.

Exports (re-exports) by type and destination

Other EU countries are the main markets, absorbing between 55% (carrots) and 100% (mushrooms and tomatoes) of exports from the United Kingdom in 2001.

The product group "other" is the biggest export item (437 tons in 2001), accounting for 41.5% by quantity and 53.1 % by value of the total. In 2001, other EU countries accounted for about four fifths of all exports of this product group.

Market characteristics

Types of vegetables in demand

The United Kingdom imports a whole range of dehydrated vegetables and herbs in various forms.

Onions are by far the most important item. They are obtained in various forms - sliced, granulated, kibbled and in powder. They are used in soups, sauces, ready meals and many other food products. Most end users prefer white onions with a low bacteria count as supplied by the United States. Some would like a darker onion, though of a quality similar to that of the white, for certain purposes. There is also demand for

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toasted ("roasted") onions. According to trade sources, the onion market is stagnant or even declining.

Though garlic is not reported separately in the official statistics, it is an important item in the market. To a very large extent it is used in food products similar to those that utilize onions. It is mostly imported in powder form. The market is showing some growth as a result of increasing consumer acceptance of garlic-flavored products.

Carrots are also an important item, though consumption is slowly declining, except in the case of "puffed" carrots, supplied by the United States and used in instant soups. Other product forms include slices, dice and powder.

Tomatoes are mainly imported as powder but also in flakes and grits. The market is declining, according to trade sources. Some importers are interested in buying sun-dehydrated tomatoes.

Mushrooms remain an important though high-priced item. Both wild and cultivated species are imported.

Red and green bell peppers are increasingly used, both for flavor and for color. Bell peppers are used in several food products, in particular pasta and rice dishes, and demand is reported to be going up. Bell peppers are imported mainly in flakes and dice.

Among the other vegetables and culinary herbs imported are the following:

- Leeks: White or green, in flakes, diced or powdered; the market is probably stagnant.
- Swedes: Imports are falling because of a declining market for thick
- Peas: Imports are probably declining.
- Spinach: Imported as powder (dark green) for pasta; imports are increasing.
- Broccoli
- Asparagus: Obtained mainly in powder form for soups; the market for this item is small but is on the increase.
- Green beans, cabbage, horseradish, parsley, chives (freeze-dehydrated) and celery (also freeze-dehydrated).

Many other vegetables and herbs are sold on this market. Annex II (an importer's product list) gives a good indication of the products available.

Market segments and end users

Since dehydrated vegetables can be used as a substitute for fresh vegetables in a large number of food products, they are used as raw materials or ingredients, in one way or another, throughout the industry. Some of the main end-users are described below.

The soup industry

The soup industry is by far the largest end-user of dehydrated vegetables (excluding potatoes) in the United Kingdom, though the soup market in general is declining, according to trade sources. An estimated half of the total supply of dehydrated vegetables may be used for soups, whether in retail or in catering packs. The British soup market has three basic segments: packet soups (dehydrated), instant soups (dehydrated) and canned soups.

The bulk of the dehydrated vegetables that go into soup making is used in packet soups, e.g. thick vegetable soups. These may contain a mixture of several of the following: onions, carrots, peas, tomatoes, cabbage, swedes, leeks and celery. There are also a number of one-vegetable soups, e.g. tomato, leek, onions, mushroom, asparagus. Other soups, such as meat soups or chicken cream, also contain small quantities of dehydrated vegetables or herbs. Instant soups may contain the same vegetables as above. As this type of soup requires a very short rehydration time, manufacturers look for products meeting this requirement. Not all canned soups contain vegetables, and dehydrated vegetables are probably used in limited quantities.

Other food manufacturers and processors

There is no clear distinction between the soup industry and other food industries since the former produces a number of different food products with dehydrated vegetables as ingredients, e.g. salad dressings, rice mixes, sauces, sauce mixes, instant hot meals and other ready meals. Ready pasta dishes and pasta sauces are fairly new products, which seem to have a growing market. These products are produced partly by the big multinational food companies and partly by specialized food manufacturers.

The following rice packs are examples of recently introduced products seen in supermarkets in London:

- Sainsbury's Special Recipe Rice "Caribbean". Ingredients include dehydrated (dehydrated) vegetables, i.e. tomato, green peppers, onions and garlic packed in 125 g sachets.
- Sainsbury's Special Recipe Rice "Vegetable Biryani". Ingredients include dehydrated (dehydrated) vegetables, e.g., lentils, onions, carrots, broccoli, green chillies and garlic packed in 125 g sachets.
- Batchelor's Special Fried Rice "Tandoori". Ingredients include dehydrated (dehydrated) tomato, red pepper and leek packed in 106 g sachets (net weight)

The meat and the fish industry are also major outlets for dehydrated vegetables, which are used, for example, in canned products and ready meals. Other end users include manufacturers of baby food, of instant stuffing's for meat and poultry dishes, of pies and similar products.

Finally, it should be noted that the pet food industry also uses dehydrated vegetables, especially potatoes and carrots.

The catering and institutional market

This is the second largest market segment for dehydrated vegetables, which are used as a substitute for fresh produce, for example, by canteens, cafeterias, hospitals and similar institutions. Negligible quantities are used in restaurants.

In addition to directly using dehydrated vegetables, this sector also consumes considerable amounts of ready meals, dehydrated soups and sauces, salad dressings, seasonings, etc. sold in catering packs and supplied by the food industry (see above). Pubs and restaurants also utilize these processed food products.

The retail trade

The United Kingdom appears to have a certain retail market for dehydrated vegetables (packeted vegetables), though it is very small compared with the markets for fresh, frozen and canned vegetables. As mentioned earlier there is no local production of dehydrated vegetables. However, some companies offer a limited range of packeted vegetables, mostly re-packed in the United Kingdom from imported raw materials.

Whitworths offers, for example, sliced onions (40 g), country vegetables (50 g), sliced mushrooms (20 g), quick-dehydrated sliced onions (8O g) and dehydrated mixed vegetables (80 g). J.A. Sharwood's assortment includes mixed vegetables (20 g, 50 g) and sliced onions (40 g).

Several companies offer a range of dehydrated (including freeze-dehydrated) culinary herbs. Among these are celery, parsley, basil, dill, marjoram, chives and various mixes.

In addition to consumer packs of dehydrated vegetables and culinary herbs, the retail sector offers the full range of processed food products with dehydrated vegetables as ingredients. These are referred to in the section on the soup industry and other food manufacturers.

According to a leading food manufacturer, most of the food industry's product development work is geared to the retail market, rather than to the catering and institutional sector.

Importers' requirements

End-users of dehydrated vegetables, especially manufacturers of soup and baby food, have their own strict specifications that suppliers must satisfy. These specifications normally stipulate grade, cut and dimensions, color, flavor, texture, rehydration ratio, moisture content, sulphur dioxide level, bacteria count, packaging, storage, handling, etc., all of which may vary from end-user to end-user. Annex III gives sample specifications of a major food manufacturer for onions, carrots and leeks.

Since the food industry is responsible for ensuring that its end-products satisfy the requirements of food laws and regulations, food manufacturers insist that supplies of dehydrated vegetables meet specifications and correspond to agreed samples.

Competition and prices

Price levels are very close to those of Germany. Refer to the German chapter of this report for more details.

Distribution channels

Dehydrated vegetables are obtained by end users through agents or importers, or in some cases are purchased direct from source. Distribution channels may vary somewhat with the type of product and end-use.

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Agents and importers

Some exporters, such as certain manufacturers in Europe and the United States, sell through sole agents, who then supply importers or end users, including food manufacturers and catering companies, direct. Agents normally work on commission. It is not always possible to make a clear distinction between agents and importers since some companies combine both functions.

However, importers, who hold stock and buy on their own account, probably handle the largest part of imports. Some of these companies simply trade the products, but others, in particular the more important ones, also repack, e.g. for the catering market. These companies may also reprocess imported dehydrated vegetables; they clean, grade, reduce the humidity content or the bacteria count, etc., in order to meet their own standards or their clients' requirements. They normally offer a full range of products, including air-dehydrated, spray-dehydrated and freeze-dehydrated vegetables. Some of these companies also deal in dehydrated fruit and berries.

The major importers include European Food Ingredients Ltd (in Evesham); John F Seyfried & Sons Ltd (Mickleton); J.L. Priestley & Co. Ltd (Sleaford); and R. Sarant & Co. Ltd (Basingstoke). Annex I to this chapter gives additional names.

Food manufacturers and processors

Large multinational companies, their size and importance varying with the type of food product in question, dominate the United Kingdom food industry. However, since dehydrated vegetables are used in numerous food items, a large number of medium-sized or smaller companies are also important end-users.

Brooke Bond Foods Ltd Batchelor's, which belongs to Unilever, Nestle Co. Ltd and CPC (UK) Ltd dominate the packet soup (dehydrated soup) market, which is by far the most important outlet for dehydrated vegetables. The main producers of instant soups are Brooke Bond and CPC.

H.J. Heinz Co. Ltd and Campbell are major producers of canned soup. Several other producers, e.g. W.A. Baxter & Sons Ltd, are also important companies.

Most of the companies mentioned above (or sister companies within the same groups) also produce other food products that contain dehydrated vegetables, e.g. sauces, sauce mixes, dressings, savoury rice packs, pasta dishes and ready meals.

The catering and institutional sector

This sector obtains its supplies of dehydrated vegetables from a number of different sources, including importers and re-processors in the United Kingdom.

One of the leading companies in this field is McDougalls Catering Foods Ltd, which specializes in convenience dehydrated food. The company supplies its customers with a range of dehydrated vegetables in catering packs. Using dehydrated vegetables, it also produces a range of soups and other products in catering packs.

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Some of the importers/processors mentioned above also supply dehydrated vegetables in catering packs. Likewise, several food manufacturers, e.g. Batchelor's, produce soups and similar products in catering packs for this sector.

The Whitworths Food Group packs a range of dehydrated vegetables for the catering industry as well as the retail trade. It usually obtain its supplies from importers.

Market access

Customs duties

The United Kingdom applies the EU common external tariff.

Food laws and regulations

The production and marketing of food products, whether imported or domestically produced, must comply with the Food Safety Act of 19904 as well as various other laws and regulations. All food products may be subject to controls by food inspectors. The Food Safety Act is general in nature and does not deal specifically with dehydrated vegetables. However, various statutory instruments (SI), including the following, make special references to this product group:

- The Preservatives in Food Regulations 1989 (SI 1989 No. 533, as amended by SI 1989 No. 2287), stipulating, for example, the permitted amount of sulphur dioxide in dehydrated vegetables.
- The Lead in Food Regulations 1979 (SI 1979 No. 1254, as amended by SI 1985 No. 912).
- The Arsenic in Food Regulations 1959 (SI 1959 No. 831, as amended by SI 1960 No. 2261 and SI 1973 No. 1052).

Since the food industry is responsible for ensuring that food products meet the requirements of existing food regulations, they usually have their own strict specifications, e.g., on bacterial count, which suppliers of raw material must meet.

Dehydrated Herbs

The utilization of herbs in the United Kingdom for culinary and medicinal purposes has steadily increased since the 1970s. Some of the increased demand has been satisfied by commercial and home-garden production. Because of the absence of published statistics, with the exception of import statistics on thyme and bay leaves, the market estimates given below are based on information provided by trade sources. It is practically impossible to forecast future market trends in terms of volume.

Domestic production

According to Dr. Nitya Anand of the United Kingdom Ministry of Agriculture, who has been studying demand for herbs, farmers in the United Kingdom took the opportunity for increasing their share in the domestic market by using large-scale, mechanized

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methods of cultivation. Table 13 gives estimates of the current commercial production of herbs.

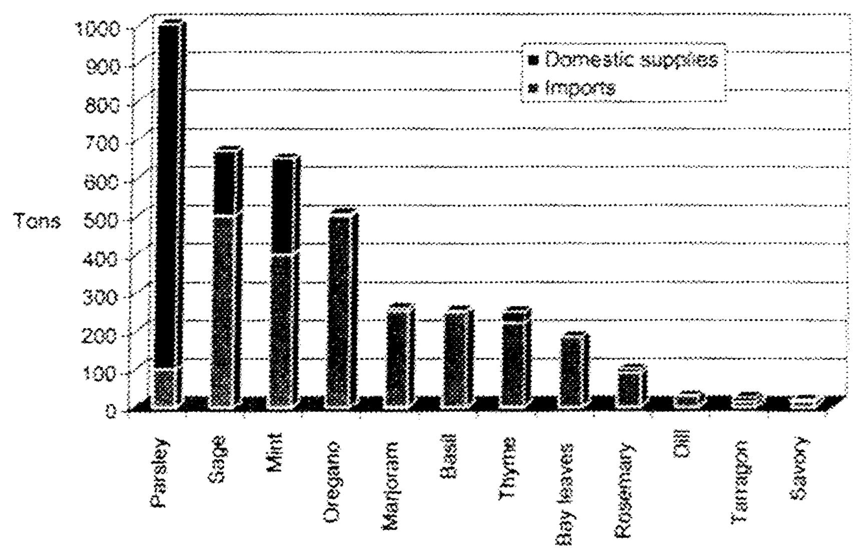
Domestic cultivation of herbs offers arable farming alternative crops with high levels of hygiene and purity. However, in the absence of any governmental protection and subsidies, the future depends on the ability of British growers to compete on price with producers from developing countries.

Current market and share of imports

According to trade estimates, the current size of the British market for herbs amounts to about 4,000 tons annually. About 65% is supplied from imports and 35% by local producers.

The respective shares of imports and of local supplies differ from herb to herb, as follows:

Figure 19. United Kingdom market size for dried herbs



The most used herbs are parsley (accounting for 25.3% of the herb market; about 90% is supplied domestically); sage (17% and 25.4% respectively); mint (16.4% and 38.5%) and oregano (12.8% of the herb market, supplied almost entirely from imports). Domestic farmers also meet half of the demand for tarragon. While the market for tarragon is small (26 tons), the herb commands the highest price.

Manufacturers of industrial food products use an estimated 1,500 to 1,600 tons of herbs, or about 40% of the market. A similar quantity is sold on the retail market and about 800 tons are sold to the food catering sector.

The only import statistics available concern imports of thyme and bay leaves.

In the case of thyme, the largest proportion of imports consists of the whole herb, which averaged 201 tons a year between 1985 and 1989, peaking at 234 tons in 1987 and falling to its lowest level of 165 tons in 2001. Exports of whole thyme (probably re-exports) averaged 27.6 tons yearly during the period.

Imports of wild thyme rose from 7 tons in 1985 to 18 tons in 1988; they fell to 15 tons in 1989, Imports of the crushed or ground herb increased 11 times over the five-year period, from 4 tons in 1998 to 45 tons in 2001.

Imports of bay leaves increased by 14% annually from an average of 117 tons in 1990 to 183 tons in 2001.

According to a Mintel analysis, the value of the market for herbs and spices rose by 18% in nominal terms and fell by 9 % in real terms over the period 1985-1990. The fall in real terms was due to the general move towards larger pack sizes, which generate less revenue per gram. All the leading packers of spices and herbs use double refill drums and plastic drums for their best-selling articles; these packages are cheaper alternatives to glass jars.

According to trade sources, the market for culinary herbs expanded by 6% yearly in nominal terms, from £10.5 million in 1997 to £11.5 million in 1998, £12 million in 1999 and £12.5 million in 2001. The market stagnated in terms of volume.

Main origins of imports

Domestic growers supply about 90% of the demand for parsley in the UK. (900 tons in 2001). About 10% of the supply (about 100 tons) is imported, mainly from the Germany and the Netherlands and partly in the freeze-dehydrated form.

Domestic farmers meet about a quarter (170 tons) of the current needs for sage, three quarters (about 500 tons) being imported. Turkey supplies mainly wild sage of good quality; the quantities traded decreased recently because of a rise in prices brought about by drought and labor problems in Turkey, The other major suppliers are Greece, Albania, Italy, Ex-Yugoslavia and Israel. While the quality of Israeli sage is considered to be below standard by the trade, the Dalmatian (Croatia) varieties command a price premium because of their quality and distinctive flavor.

Domestic producers provide about 250 tons of mint and 400 tons are imported in order to meet demand. Almost all imports consist of spearmint from two main suppliers: Egypt and Morocco. British grinders and processors have complained about the quality of the Egyptian deliveries, which have been contaminated with salmonella and have had a high content of dust, sand and gravel. Microbiological contamination is difficult to control in Egypt since treatment with ethylene dioxide is not admissible in EU and irradiation is not accepted for products imported into the United Kingdom.

Some 500 tons of oregano are currently imported, mainly from Chile, Portugal and Turkey. The Turkish product commands a premium for its distinctive flavor.

Egypt is the main supplier of marjoram to the United Kingdom. The air-dehydrated consignments are generally of good quality. However, they have occasionally been contaminated with salmonella, mainly because of the water used for cultivation.

The same problem occurs in imports of air-dehydrated basil from Egypt, the major source of supply for British grinders and processors.

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Spain has a near monopoly of the trade in thyme, including the wild variety. Very small quantities of this herb are also purchased from France, Turkey and Yugoslavia.

Turkey has a near monopoly of the supply of bay leaves. The price of deliveries increased from an average of £1,150 per ton in 1985 to about £2,337 in 1988 and £2,067 in 2001. The rise was due to sustained market demand and supply shortages resulting from over-picking, drought and mounting labor costs. Importers have complained about insect infestation of recent supplies. Small quantities of bay leaves are also imported from Eastern European countries.

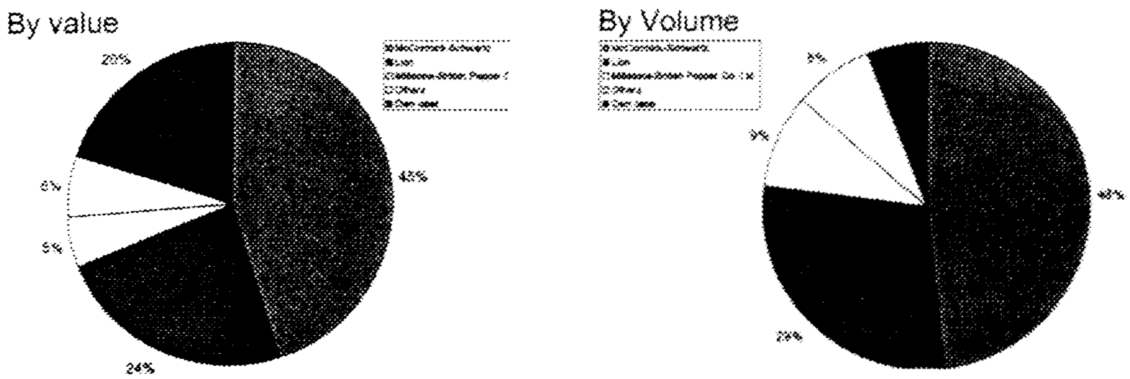
About 90 tons of rosemary, including the wild variety, is imported – mainly from Spain. The bulk of imports require re-cleaning to satisfy quality specifications in regard to ash and moisture content.

The small quantities of dill (30 tons), tarragon (10 to 15 tons) and savory (15 tons) imported into the United Kingdom originate mainly from Denmark (mostly freeze-dehydrated dill) and France (partly freeze-dehydrated tarragon).

Major grinders/processors and trade brands

The official statistics list about eight grinders/processors of herbs and spices. Three of these covers an estimated 74% of the value and 86% of the quantity of all branded herb products commercialized in the United Kingdom, as the following figures show:

Figure 20. Company share in the British herb market



The acquisition of Paterson Jenks in 1984 by the United States company McCormick & Co. brought under a single ownership and one brand name (Schwartz) the two leading brands of herb products in the United Kingdom (Schwartz and McCormick).

McCormick-Schwartz offers an extensive range of different herbs and herb mixtures for special uses, marketing them in flavor-sealed glass jars on its own display stands in all the major retail market outlets. The company has also successfully marketed spice racks to accommodate products in the kitchen as a promotional device. Economy packs in polypropylene pots and double refill packs, as well as refill drums and cartons, are an integral part of its range of products. Special mixtures of spices and herbs adapted for microwave cooking and ethnic recipes with eye-catching pack designs have rapidly penetrated the detail market. The company spent over 12 million on advertising and promotional programs in 1990, including television advertising, national promotional programs, comprehensive trade and consumer public-relations programs and after-sales services responding to consumer queries.

Lion Foods Limited, a member of the international Lion Mark Holdings food and transport group, has invested in extensive storage facilities, modem grinding, packaging and processing lines and efficient distribution networks.

Although the Lion brand has a small market share in terms of value, the company has the second largest position on the market for herbs in terms of tonnage in the United Kingdom. It is heavily involved in the purchase and distribution to the industrial sector of bulk herbs and specially developed mixes. It also has a sizeable share in the processing and supply of own-label herbs and seasonings, for which the market is expanding. Lion launched in 1986 a Gold Label range of 11 herbs. The company's strength lies in its position as a supplier to the catering and industrial food manufacturing sectors.

British Pepper & Spice Co., Ltd, the third largest company on the herb market engages in milling, blending and packaging. It is a subsidiary of the Hunter Saphir group. The company's business by value is split roughly at 58% with the retail market and 42% with the industrial food-processing sector. After a fire in 1989, the company equipped its Northampton plant with the most modern equipment. It has recently bought Euroma, the second largest herb-and-spice company in the Netherlands. British Pepper commercializes its Millstone Dehydrated Herbs brand name and is likely rapidly to increase its penetration of the domestic market.

Among the other companies trading in own-label herbs and spices are Ostmann Spices, Burgess, and Passuto. Ostmann Spices is the brand leader in herbs, spices and seasonings in Germany. Rayner Burgess launched a range of 12 liquid herbs and spices in 1996 (blends of essential oils and pure soya oil of which three drops are claimed to be equivalent to a teaspoon of dehydrated herbs). Passuto supplies both the retail and the catering trade with herbs and spices. The leading British producers of culinary herbs are listed in the appendix.

The own-label market is growing. Multiple grocers such as Asda, Fine Fare, Gateway, Presto, Safeway, Sainsbury and Tesco all have their own range of herbs at the cheaper end of the market. This has a depressive effect on the overall evolution of the market in terms of value.

Prospects for Egypt

With imports of dehydrated vegetables (including potatoes) averaging about 15,650 tons annually during the period 1982-1999, the United Kingdom was the seventh largest import market in the world, and the third largest in Europe for these products.

The general opinion of the trade is that the market is more or less stagnant and little growth, if any, is expected. However, since the market is large, it remains of interest to exporters in developing countries. Onions continue to offer good possibilities for exporters; according to industry sources there is a gap (niche) in the market between the "high-quality, high-price product" from the United States and the "lower-quality, cheaper product" from most other suppliers. Garlic is also important. According to some importers and end users, demand is growing as more and more consumers begin to appreciate garlic-flavored food and its perceived health benefits.

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At the time of the field survey for this study, the market for a few products, e.g., bell pepper, horseradish, asparagus, offered interesting prospects, though the quantities required were relatively small. Also, a firmer market for some of these products is often the result of temporary supply shortages rather than stronger demand.

In view of the high-quality requirements of the food industry and keen competition on the market, most exporters from developing countries will probably achieve the best results through careful selection of an intermediary company. Such a company would assist them in identifying market possibilities for products of interest to specific customers.

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