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TABLE GRAPE PRODUCTION IN EGYPT

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Dr. Sayed Badr
Fintrac

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Preliminary Report
on

Table Grape Production in Egypt

Sayed A. Badr Ph.D.
Professor of Viticulture
Chairman of the Department of Plant Science
California State University, Fresno,
California, USA. 93740 -0072

INTRODUCTION

Grapes have been grown in Egypt since the early days of the Egyptian civilization. During the 1940's and 50's, several varieties were available in the local markets. These were mostly local varieties known by their Arabic names. The list included "Banati", "Muscat Iskendreyya", "Fayyoumy", "Rumi Ahmer", and "Biz-al-Anza" to name a few. However during a recent visit in the late 1980's it was noted that most of the table grape acreage was planted using two varieties, namely Thompson Seedless, also known as "Banati", and the "Rumi Ahmer" or "Rumi Red". Thompson Seedless was planted primarily in the Delta region, while the Rumi Red variety has been the traditional variety in southern Egypt, mostly in the Bani- Swaif and Menya region.

Beginning in mid to late 1980's, the Ministry of Agriculture personnel, and few growers began to introduce new cultivars, most of which were brought from California. Flame Seedless, Ruby Seedless, and Thompson Seedless are the major table grape varieties currently planted in Egypt on a large commercial scale.

During the period from March 28 through April 10, I visited several vineyards in the new land region, which extends from Nubareyya ,in the north, to Sadat City in the south. Other study tours were made to Perlette vineyards in Bani-Swaif. Most of these vineyards were developed within the past 5 to 8 years. More than 35 people from the ministry personnel, professional viticulturist, and grape growers attended each of the tours, particularly the tours which were planned by the NARP/TTC staff.

BEST AVAILABLE COPY

The present assignment ,which was co-sponsored by the New Desert Growers (NDG) thru an AID project, and the National Agricultural Research Project / Technology Transfer Component, In 1989 /90, I visited and provided technical consulting, as a Farmer-to-Farmer volunteer through ACDI- Program, to growers in the major table grape production areas in the Delta and Menya regions in June-July, 1989, and again in December 1989- January 1990., hereafter called the 1989 /90 visit.

Therefore, this report is a summary of my observations of the newly developed vineyards, with some reference to observations made during the 1989/1990 visits to demonstrate the advances in table grape production in the past few years. A final report will be prepared at a later date. Since most tours of this assignment were video-taped, I expect that copies be made available to interested individuals. However, I would kindly ask for an opportunity to review these tapes and have them properly edited prior to releasing any tapes for public viewing . Due to the time constrains, and some technical difficulties, it was not be possible to do any review or editing while I was in Egypt. Therefore, I would respectfully ask that copies of all vedio tapes be mailed to me at my address in California for review and comments prior to releasing any of the tapes for public viewing, and also to help me to prepare a detailed final report.

OBJECTIVES

The purposes of this assignment were to study and learn about the current status of the table grape industry in Egypt, and to provide suggestions and to explore ideas for further studies and areas of cooperation to support the development of table grape production in Egypt. The ultimate goal of the growers in Egypt is to take advantage of the unique climatic and soils conditions to produce high quality table grapes to meet the demands and the standards of the export markets, particularly during the early season for consumers in Europe

VINEYARD TOURS AND OBSERVATIONS

Several study tours were organized by the National Agricultural Research Project/Technology Transfer Component (N.A.R.P./T.T.C.) staff to a number of commercial vineyards located in

key areas that represent a cross-section of the major centers of table grape production in Egypt. Other vineyard study tours were arranged by members of the New Desert Growers (NDG). A copy of the itinerary is attached to this report.

VARIETIES

The following list of varieties were observed during the tours : Thompson Seedless, Flame Seedless, Ruby Seedless, Perlette, Exotic, Ribier, and in a few cases young (non-bearing) vines of the Crimson Seedless, and Fantasy Seedless cultivars. Superior and Early Superior Seedless vines were also found in one vineyard. This is quite a contrast from the situation in 1989. At that time only Thompson Seedless and Rumi Red were the dominant varieties in the vineyards of Egypt, with Thompson Seedless being in the Delta and the Rumi Red being almost the only variety in Upper Egypt(i.e. Al-Menya). During the summer of 1989, and winter of 1989/1990, other varieties were observed at only one farm, which included Red Globe, Christmas Rose, Centennial, and Emperor.

PLANTING DENSITY

In most vineyards, Row spacing was 4 meter, and the space between vines within a row was1 meter. This resulted in a planting density of about 1000 vines per feddan. A feddan is approximately 1.1 acres. This planting density (1000 vines per acre) was common among vineyard for all varieties, regardless of vine vigor or the soil conditions. A study of the proper spacing for the different varieties should be set up to determine the appropriate planting density for each variety on the different types of soils, both in the Delta and the new desert regions.

TRELLIS SYSTEMS (Vine Support)

The most commonly used trellis system is the Y system. There were a few vineyards that had a double cross arm T-trellis system. Also a few vineyards were experimenting with the "Gable" trellis system. Yet other vineyards were converting an existing two wire vertical trellis to an over-head "Arbor" trellis system. During the 1989 /90 study tours only a single or a vertical double wire trellises were the most common systems. In a few cases, a two wire T-trellis system was used , the latter is commonly called the telephone

system, because it resembles telephone poles.

ROOTSTOCKS

All vines were planted on their own roots, no rootstock are used for planting commercial vineyards at the present time. The Ministry of Agriculture was in the process of importing new rootstocks. However, no attempts have been made to study the spread of soil-born pests.

SOILS AND IRRIGATION

With almost no exceptions, all vineyards in the new lands are on sandy soils with very low levels of clay and organic matters. Evidence of moderate to high levels of salts was observed, and in many cases the soil pH was slightly to moderately alkaline. The Delta region soil are mostly clay or loamy clay type, with evidence of high salinity problems.

Almost all vineyards are set up with tickle (drip) irrigation systems, particularly in the newly developed land in the desert region. Flood irrigation is still the most common system in the old land of the Delta region.

PRUNING AND TRAINING SYSTEMS

Traditional pruning and training systems are being used for the different varieties. Bilateral and quadrilateral training are used for spur pruned vines (e.g. Flame Seedless, Ruby Seedless, Ribier, and Perlette varieties). while all Thompson Seedless vineyards are head trained and cane pruned.

COMMON PROBLEMS

There were variations in vineyards from grower to grower that might be attributed to differences in climate, soil, cultural practices, management policy, and marketing strategies (e.g. production for export vs. domestic markets). However, with a few exceptions, most vineyards had healthy vines. There was no evidence of severe nutritional problems, and most vineyard appeared to be in a much better shape than those observed in the Delta and Menya regions in 1989/90. Nevertheless, a few common problems in many vineyards

are listed and briefly discussed below.

The most common problems are :

* Irrigation . This is probably one of the most serious problems facing grape growers in Egypt. Vine stress due to lack of water was rare to see in the toured vineyards. However, over-irrigation (applying too much water) appeared to be a common problem. No scientifically-based information is available to the growers. There seem to be a lack of understanding of the basic concepts of irrigation, even though a modern system of water delivery is being used in most vineyards(i.e. drip irrigation, pumps, filters, etc.).. This is an area where growers need the most help to maximize efficiency of using the limited supply of water.

* Fertilizer(s) . This was a very serious and common problem during my 1989/1990 visit in both the Delta and the Menya regions. Excessive use of nitrogen and water were common practices in most vineyards. While there is evidence for progress, and change in attitude among some growers, particularly those who traveled to Chile and California, the majority of grape growers, and managers who supervise the day-to-day operations still believe in applying large quantities of fertilizers. A frequently asked question was "how much fertilizers should I use?, when should it applied ? Again, fertilizer practices are not based on any scientific foundation. The efficiency of fertilizer(s) use is not being considered or addressed in any discussion. Again, fertilizer practices are not based on any scientific foundation. Issues of the potential for underground water contamination due the exeessive use of nitrogen fertilizers should be considered for future recommendations.

A proposal to set up a long term vineyard fertilizers trial was discussed with Ministry of Agriculture personnel, who indicated a strong interest in such trials. The use of tissue analysis as a tool to diagnose nutritional problems and to develop fertilizers program was repeatedly explained during lectures and vineyard tours presentations and discussions. The need for reliable laboratory facilities to do tissues analysis work, and to help interpret the data was pointed out by all concerned.

OTHER CULTURAL PRACTICE

The use of plant growth regulators (Gibberellic acid, Dormex,) is becoming a common practice in most vineyards. This is quite different from the trends and the thinking of growers whom I met during the 1989/90 visit. However, there is obvious lack of experience in the technology of using gibberellic acid to improve the quality of table grapes to meet the demands of the export market. Other practices such as girdling, shoot thinning, leaf removal and hand thinning of clusters are important practices, which are not fully understood, and in very few cases not fully appreciated. However, some growers have good grasp of the importance of these practices, and will improve with experience.

Girdling is a technique that requires a lot of skill and experience. Training of worker to do girdling should be a high priority among growers, particularly those who will rely heavily on the export market to sell their crop. A proposal to train vineyard managers in modern viticultural practices was discussed with NDG leaders. The consensus was that such a program would be helpful and favorably considered.

Because of the time of the season (early bud break, and bloom period), discussion of pest management was limited. There was no evidence of severe insect or disease problems. Growers have access to a wide range of insecticides and fungicides, most of which are imported from Europe. There evidence for resistance development in populations of insect pests (grape leaf hoppers). There was indications for the use of integrated pest management (IPM) programs. The concepts of IPM and biological control in agriculture should be topics of future seminars and discussion.
Product safety for the domestic and export markets should given a very high priority in educational programs for growers.

POTENTIAL FOR DEVELOPMENT

These are many positive signs that indicate a high potential for the advancement of the table grape industry in Egypt. A partial list includes the following :

1. There is a wide range of climatic and soil conditions, which may create unique opportunities to produce high quality table grapes over a wide range of marketing period(s). Early and late varieties would be of great value for the export markets. The new land offer an early production window, while the Delta region with its relatively cooler climate and fine textured soils provide another window of opportunity in the late market period.

2. There is a new generation of grape growers, who are highly motivated, well educated, open minded, and are welling to try and adopt new technologies to their local conditions. While the scope of this study was on the technical side of grape production, it was evident that financial resources are available to acquire new equipment and tools needed to adopt new technologies, which would in the long run improve productivity and efficiency of the new growers.

3. All the growers that I have met ,and exchanged ideas with have an exceptional spirit of cooperation, which will eventually lead to positive impacts on the development of the table grape business in Egypt. This was evident in the open and frank discussions that typically took place in the fields, during travel time, and during hospitality time. Growers recognize that cooperation between them will strengthen their position in solving common problems, and gives a bargaining power that none of them can achieve by himself. This is a positive development.

4. There has been significant infrastructure improvements, which is necessary to support agricultural development. This includes means of transportation, communications, cold storage facilities, and a sound base of technical support. Local and international experts are being sought to provide technical advice to improve methods and techniques to improve production and quality of table grapes. Seminars are well attended, and growers travel abroad to gain

knowledge and import new equipment and new ideas to use and modify to adopt to their own situations. For example, all bananas planted in Egypt are virus free plants which were propagated through tissue culture technique in a local tissue culture laboratory. Most of these improvements were not evident during the 1989/90 visits.

4. The average vineyard in the new land area has significantly increased during the past five years, which will improve the efficiency of adopting new technologies. While most of the farms that I visited in 1989/90 were relatively small (5 to 40 feddans), the newly developed vineyards range from 300 to over 1000 feddans. In a few cases the expansion may have been too large and too fast to keep up with the demand for labor to do certain operations on time.

SUGGESTIONS AND RECOMMENDATIONS

Several suggestions and specific recommendations were made during each of the field trips and the lectures and meetings with NDG leaders. . Response to specific questions were provided as much as possible at the different sites. The questions covered a wide range topics including cultural practices, the basic physiology of the grape vine.

During my final meeting with members of the New Desert Growers and Chemonics staff, it was agreed that the problem identified were of high priority, and possible options we suggested to deal with them. A summary of those recommendation and suggestions are listed below.

1. Technical Training for Vineyard Managers / Technical Staff

A proposal to provide a specially deigned course in table grape production, to be offered by California State University, Fresno will be presented to appropriate agencies for consideration. The course will emphasize the " technical and the know how and why", so that managers can then properly teach their workers and associates.

2. Adoption and Application of Modern Irrigation Technologies

A program to improve current irrigation practices will include providing hands-on experts in irrigation practices, as well as the use of current irrigation tools to improve irrigation efficiency. A proposal to develop and implement irrigation technology programs (frequency, quantity and scheduling of vineyard with the aid of specialists and proper tools and instruments) will be submitted to appropriate agencies and interested groups in the near future for implementation during the 1996 growing season.

3. Application of Fertilizers on Scientific Basis

The use of tissue analysis and other techniques should adopted to develop scientifically based recommendations to use fertilizers efficiently . Contacts with commercial private laboratories have been made to assist existing owner /managers of laboratories in Egypt, by providing technical and management assistance. This was arranged at the request of NDG members. A scientist from Egypt is currently visiting commercial agricultural services laboratories in California to develop working relations, and gain first hand knowledge of tissue , soil , and water analysis methods in California.

4. Use of Rootstocks.

As noted earlier, all commercial vineyards in Egypt were established using own rooted vines (i.e, cuttings or rootings).
While most growers claim that phylloxera does not exist in Egypt, most agree that nematodes do exist in vineyards, particularly those established in the sandy soils in the new land region. In fact some are using biological methods to control the spread of nematodes. With the current trends toward the reduction of use of chemicals, rootstocks provide an alternative for chemicals to keep phylloxera and nematodes under control. It is equally important to select the proper rootstocks for each condition.

Every effort should be made to encourage use of appropriate rootstocks. A brief training program on grafting technique including "bench grafting is being proposed for winter-spring of 1996.

5. MARKETING

Almost all new planting of table grapes are destined for the export market. Most growers feel that the prevailing prices in the domestic market do not justify the expenses of producing high quality table grapes. Therefore, they feel that the only way to make profit would be by exporting their crop abroad. However, high quality products were observed in the local markets. For example, apples imported from Washington, USA,, and were sold everywhere in Cairo for about $ 1.00 per pound, and imported grapes were over $ 1.30 per pound, which suggest that some consumers are willing to pay for high quality products.

The current expansion in planting table grape require careful planning and market studies to insure that the significant increase in production will be matched by increased demand and expansion of markets for the table grape, both in the export and the domestic market. Vines planted in the past three years will come into production soon, which means more grapes to sell. Consumer education is an area that need to be addressed. There are people who are willing to pay for high quality products.

CONCLUDING REMARKS AND ACKNOWLEDGMENTS

This brief assignment has been a rewarding and a challenging professional experience. In spite of a number problems, the advancement in the production of table grapes in Egypt has been remarkable. I have been very impressed by the progress and the adoption of new technologies made by the new land growers in almost a record time. With careful planning, and the new spirit of "Pioneerism and Cooperation", leaders of the table grape industry have begun on the road in the right direction to develop a successful table grape business in Egypt. I do not mean to undermine the challenges and the problems that lie ahead, but the signs point to more positive developments.

Much of the credit for what I have been able to contribute in my professional career goes to the many individual who contributed to my education starting in Egypt, and continuing at the University of California at Davis. The learning process with focus on viticulture

/table grape applied research and production has been an ongoing process in my cuurent position as Professor of Viticulture and Table Grape Specialist at California State University, Fresno.

In this regard, I wish to acknowledge my former Professor, His Excellency, Prof. Dr. Yousef Amin Wally, Deputy Prime Minister, And Minister of Agriculture and Food Security. He was instrumental in steering me in the right direction in my early years in college. Dr. Wally is the Professor who planted the seed of Horticulture in my heart and mind some 35 years ago. He again expressed strong interest in my assignment, and the outcome of this study.

I wish to sincerely acknowledge the support and the kindness of my classmate and good friend Dr. Mohammed El-Beltagy , Director Of the NARP, And The Department of Horticulture at The Ministry of Agriculture in Egypt. His staff did an outstanding job in making the local arrangements for the field tours and the two seminars presented at The Agriculture Research Center in Giza.

I sincerely appreciate the time and effort of the New Desert Growers (NDG) for their support, particularly Mr. Sherif E-Beltagy for his tireless efforts in arranging and rearranging my schedule to make it enjoyable inspite of the long hours.

The opportunity to study and evaluate the status of the table grape industry in Egypt is greatly appreciated. Making new friends and the renewal of old ones have added to the enjoyment of this assignment. While the pressure of limited time and the stress of long distance travel with a packed schedule, the signs of progress made the efforts worthwhile. Most of all, the hospitality and expressions of appreciation will be with me for a long time to come.

To the pioneers of modern table grape production in Egypt, go my best wishes for continued success and prosperity.

To everyone who was involved in this brief assignment, thanks a lot you and God Bless You All