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**TDC/EED
TRADE DEVELOPMENT CENTER PROGRAM
EXPORT ENTERPRISE DEVELOPMENT
PROJECT**

PLANTING GUIDE TO NDG MELON GROWERS

**Prepared For:
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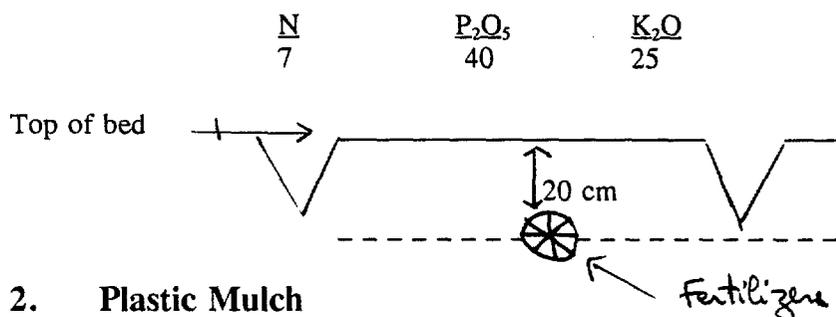
**Submitted by:
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CHEMONICS INTERNATIONAL INC.**

1993-1994

Planting Guide to NDG Melon Growers

1. Land Preparation and Basic Fertilization

- 1.1 The fields (and greenhouses) should be subsoiled till 40-50 cm depth.
- 1.2 Manure should be applied and incorporated to the soil at a rate of 25-30 m³/feddan
- 1.3 At the time of bed preparation, in the center of the bed at 20cm depth, in a very narrow band to apply the following amounts of fertilizers:
kg or pure units/feddan



2. Plastic Mulch

- 2.1 Generally, I also recommend the use of black plastic mulch for both: greenhouses and low tunnels only at the greenhouse of Mr. Ayman Korra, where he already applied Methyl Bromide I recommend to make a direct seeding with transparent mulch.
- 2.2 The plastic mulch should be put on top of beds after first fertilization (see 1.3) and after laying and checking the drip irrigation lines

3. Irrigation and Fertilization

- 3.1 Before planting: to irrigate for 10/12 hours till there is enough moisture at one meter depth.
- 3.2 After seeding or transplanting: the idea is that in this irrigation, we, again, supply enough water to have a uniform layer of moisture till one meter depth, the amount of hours is going to depend on how many days the interval with the first irrigation.

With this irrigation, through the drip irrigation system, we are going to apply the following fertilizers:

| FERTILIZER | QTY/FEDDAN |
|-------------------------------|---------------|
| Phosphoric Acid | 8.5 liters |
| N (pure units) | 2.25 Kg |
| K ₂ O (pure units) | 4.50 Kg |
| Micro elements | 4-4.5 Lt (Kg) |

The above fertilizers should be applied in the middle of the irrigation as a "sandwich". Let's say that we irrigate for 6-8 hours, the first 2 hours and the last one without fertilizers, that means that they are going to be applied during 3-5 hours in between.

4. Spacing

4.1 Greenhouses

At Mr. Ayman Korra's farm, the melons are going to be grown on trials (perpendicular).

At Mr. Hamed El Shiaty's farm, the greenhouse is not strong so they have to grow on the ground (horizontal).

In both places

Distance between rows: 1.4 meters
 Distance between plants: 2 plants together every 50 cm.

4.2 Low Tunnels:

Distance between rows: 1.80 meters
 Distance between plants: 2 plants together every 50 cm.

5. Nursery

The plants should be grown in trays, being the size of each individual cell one square inch by 1 1/2 inch depth, or in individual pots. In trays to put 2 seeds together per cell. In the pots to put 3 seeds together and to cut one plant before transplanting. The plants should have 2-4 true leaves. At the nursery, I recommend to fertilize daily with the irrigation:

50 ppm of N P K at a ration of (1-1-1)

Two days before taking the plants out for transplanting to apply daily:

100 ppm of N P K at a ration of (1-1-1).

2

6. Time of Planting

6.1 Greenhouses: Immediately (as soon as possible)

6.2 Low Tunnels: to transplant between the 15-25 of January 94, that means that should be seeded at nursery between Dec. 25, 93 to Jan. 5, 94.

7. Varieties

Looking for export to the European market, the most suitable varieties are Galia types. I suggest to follow the program we made together according to the seeds available.

I'll try to finalize and send if possible some of the Israeli Galia's (new varieties).

8. Fertilization Program

Is going to be developed with the crop, according to weather conditions and state of development of the plants and recommendations will be followed after my visits.

Other General Recommendations

Dale points out and I agree with the following:

- To protect plants at the nursery from white fly and aphids
- To use phosphoric acid or sulfur containing fertilizers to lower PH.
- To keep daily temperatures: maximum/minimum at ambient, greenhouses, tunnels and soil.

ENG. HAMED EL SHIATY

2 - 400 sq m each unheated Greenhouses - 3,500 seeds needed.

NUNHEMS

| | | |
|-----|--|------------|
| 285 | | 13-80 |
| 500 | | 0261 |
| 200 | | Charentias |
| 150 | | Sakatta |

SLUIS & GROOT

| | | |
|-----|-----|-------|
| 600 | | Galia |
| | 200 | Vital |
| | 200 | Alma |
| | 200 | Galia |

PETOSEED

| | | |
|------|--|---------|
| 1750 | | Galicum |
|------|--|---------|

R. ZWAN

| | | |
|-----|--|--------|
| 125 | | Melina |
| 100 | | Dikti |

MR. HUSSEIN EL AGUIZY

2 - 500 sq. m. each unheated greenhouses - 4,000 seeds needed - 2 low tunnels - 1,200 both (seeds)

R. ZWAN

500
500

Melina
Dikti

PETOSEED

1700

Galicum

NUNHEMS

200

Charentias

SLUIS & GROOT

Galia
150
150
150

Vital
Alma
Galia

5

MR. SHERIF ELMAGHRABY

2 - 400 sq m each unheated Greenhouses - 3,500 seeds needed.

NUNHEMS

| | | |
|-----|--|------------|
| 200 | | Charentias |
| 150 | | Sakata |
| 100 | | 0261 |

SLUIS & GROOT

| | | |
|-----|-----|-------|
| 600 | | Galia |
| | 200 | Vital |
| | 200 | Alma |
| | 200 | Galia |

PETOSEED

| | | |
|------|--|---------|
| 1750 | | Galicum |
|------|--|---------|

R. ZWAN

| | | |
|-----|--|--------|
| 300 | | Melina |
| 300 | | Dikti |
| 300 | | 34-40 |

MR. AYMAN KORRA

5000
5000
5000
200
4800

R. ZWAN
R. ZWAN
R. ZWAN
R. ZWAN
PETOSEED

Melina
Dikti
34-40
Moncayo
Gallicum

Appendix: Trip Notes

November 14, 1993

MFR: Notes from Rick Miller Meeting

- Rick explained to me the TDC concept, how EED fits in and what is the New Desert Growers Co. and how it is to be structured with only six original associates and more to be brought in as the company grows in export volume.

- Legge of Mack Multiple had mentioned the Ein Dor melon as a preferred for the European market. I looked it up in the Zeimar catalog to see that it is an Ananas type with white flesh and is a normal shipper as opposed to a good shipper.

- We discussed the other melon possibilities posed by the U.K. buyers; Yellow Canary, Galia, Charentais and Cantaloupe.

- Rick had been in touch with the local representative of Sluis & Groot Seed Co., a Mr. Tadros L. Magar, about variety trials. Mr. Magar knows all of the New Desert Grower principals and has his own technical assistance group to support his seed sales. We called Mr. Magar and made arrangements for him to meet with me on Thursday, November 18. He will collect me at the Ramsis Hilton at 10:00 and will be driving a blue Buick.

- Rick advised me that Nunhems Seed Co. had also been interested in conducting variety trials and had been in contact with him from U.K.

- Rick would like to look at the Mid-East market for melons, from Turkey to North Africa including Yemen and the Gulf. Because he is limited to the European and local/regional markets, I supported him in this idea. Specially since most of the 'normal' melon production is harvested in late May, June and July. We discussed what information would be needed to look at this market. Rick asked that I draw up a guideline for Howayda to follow when seeking information from the neighboring countries or from regional data banks.

- I mentioned that we might want to look at ice-box watermelons for the European market, but only if they are also acceptable in the local/regional market because the watermelon market is so fickle.

- We discussed many of the pieces of information that I would need in order to make a proper assessment of the situation, and that it would be easier for an Arabic-speaker to get the information locally. He asked that I draw up a list of requirements for his assistant, Howayda, to work on.

- We discussed the banavac concept for shipping cantaloupe melons to distant markets. I explained the concept of modified atmosphere that was originally

developed for bananas and which had subsequently been used to good advantage in melons. I agreed to get some more detailed information from Andy Medicott of FINTRAC (which is a sub-contractor on EED) and to get price information from Guatemala.

- WE discussed means to get the desired information on pesticide residues and quality standards from the EC. I suggested that we could ask FINTRAC. The Washington, D.C. telephone number for FINTRAC is (202) 462-8475 and fax at 8478. I also suggested that we ask David Levine who is supposed to be the U.K. organizer for NDG product into the supermarket system in U.K. I agreed to write faxes for Rick's signature for each of these contacts.

- We discussed NDG principals. Hussein El Aguizy was mentioned as one that might be difficult because of his mercurial nature, e.g., he had fired his entire 250-person work force all at once due to what he perceived as poor performance. Nevertheless, Hussein is already one of the largest melon producers and has a new cold room and post harvest handling facility.

- Rick would like me to look at and include in my report:

- The agronomic picture at present.
- Plans for the future.
- Post harvest handling requirements and guidelines.
- A review of inland and ocean transport.

- We discussed the objective in the original SOW to develop a production guide for each farm or production site. We agreed that it would be more useful to develop this production guide as a general guide, and that I would give specific recommendations for each farm visited. I also advised that David Talmor would probably be the person that would have to put the details into this production guide because of his experience with desert agriculture and with the Galia melon.

- Some of the information that I will need for this production guide are listing of insect pests and diseases found in Egypt on melons. Some of this I will be able to get from the growers but we should seek a more formal source as well.

- We agreed that David Talmor could be utilized for specific visits to the growers and to help with this production guide but that the first visit would probably have to be paid for by the growers themselves because of the delays in getting USAID approval at this late hour. We called David and got his agreement to come to Egypt if he could get his visa arranged in time.

November 17, 1993

MFR: Visit to Farm of Hamed A. El Shiaty

We went with Rick Miller, Howayda Edriss, Hamed Shiaty and his technical manager (whose name I did not catch but who has a Ph.D. in plant taxonomy from SouthHampton University in U.K. I did not get a lot of information on Hamed's farm and will have to go back to him to fill in the gaps. Hamed's farm is in the desert reclamation area in the NuBarea area, I think. He has irrigation water from deep wells and not from Nile River canals. He has trial or semi-commercial plantings of several different crops but his main crop seems to be grapes of the King Ruby Seedless variety. (I need to check these grape varieties as there seems to be some confusion on my part about the different adjectives for the Ruby grape.)

We passed new plantings of Annona trees (the custard apple, I believe). I asked Hamed why he didn't plant the much-favored Cherimoya (a cross between two annonas) instead of the run-of-the-mill annona. He said that the local market was used to this type and not to the Cherimoya and that the Cherimoya had a chilling requirement. This puzzled me because I believe we are planting Cherimoya in Guatemala and other Central American countries that will not have cold periods anywhere near what Egypt has. If possible to produce Cherimoya here, I would recommend this to Hamed. The fruit is much better than the average annona and it also has a growing export market that is being developed by California and Hawaii.

Hamed told me that he has a tissue culture laboratory where they primarily do meristem tip culture for his bananas but they also give service to other industries, i.e., the ornamental plant growers.

We saw his banana plantation of small plants just transplanted from the hardening process. He replants every year from fresh meristems and bananas are produced here as an annual crop. They generally can only harvest once a year in the winter after the bananas have grown during the hot summer. My assumption is that the plants in the field now will grow very slowly or not at all during the winter and then accelerate during the spring to have fruit for harvest in January, or thereabouts.

Mr. Shiaty has Bananas, avocados, grapes, granadilla (passion fruit), mangoes, Annona, citrus and other crops as well.

We viewed the area where he will plant his melon variety trials as part of New Desert Growers Co. He will only plant a small area this year and suggested that one irrigation riser serving 5 feddans would be the area planted. It was not clear whether he would plant all 5 feddans in December on mulch and low tunnels or whether he would leave some for the March planting. He does not really want to plant over the winter because of the high winds in that area, but I think that he will give it a go.

The melon industry for export will not prosper unless this December planting is possible for the March-April export market. There should be other plantings as well in September-October for the January-February market.

Hamed would like to put in his own pre-cooling and cold storage facility in the future but would use Hussein El Aguizy's in the meantime.

At dinner the same day with Hamed, we discussed again the issue of Cherimoya and he asked if I could provide him with sources of Cherimoya bud wood for grafting onto the annonas that he already has planted. I told him that I would check for the sources that we are using for the Central American introductions.

We also discussed the new Sigatoka-resistant banana that had been developed at FHIA in Honduras. I mentioned that he could get this variety through Agristar Tissue Culture Laboratories in Houston, Texas. Hamed said that he actually had been in touch with Agristar about his own tissue culture business. Nevertheless, he asked me to talk to the breeder, Dr. Phillip Rowe, as well in the hopes that he could get material from one source or the other.

November 18, 1993

MFR: Sluis & Groot/Paul Torfs/Teemag/Tadros Magar/Melon/EED

I met with Tadros L. Magar, owner, and Khamis Sakr, Sales Manager, of Teemag, representatives for Sluis & Groot in Egypt.

It took quite a while to establish bona fides and get to know one another during which time the conversation ranged from the problems of the seed agents in Egypt to the competence of some of the growers associated with New Desert Growers. This company has its own field technicians which are divided into 4 regional groups and give service to their clients.

I was told that any new variety that one wishes to introduce into Egypt must be field-tested by the Ministry of Agriculture for at least two years before being registered for import.

We talked about peas and fresh beans in the pod, all of which Sluis & Groot sells. I was told that Hussein El Aguizy grows the Asgrow variety of snow pea called Bronco. I had difficulty explaining to them what I meant by the immature French bean but we finally communicated. I feel that there is not a good perception of these specialty, edible-pod (or mangetout) legumes in Egypt. This should be remedied because the market is quite acceptable for these products throughout the year. They mentioned some of the bean varieties that they handle, e.g., Forum, Vivien, Seville and Serbo.

We talked about onions. Again, I had a difficult time explaining to them the concept of sweet, short-day onions. They told me that it was impossible to import onion seed into Egypt because the seed for the Egyptian variety Giza was produced in-country and sold for EL 15.00/kg (\$4.48/kg). Not only is it difficult to meet that low price, but the Egyptian authorities do not allow the imports. However, some people are exporting green bunching onions so some seed must be entering the country, probably in suitcases of travelers and not through the official system.

The Giza onion is apparently a short-day onion as well with two planting seasons during the year; one in December-January for a spring harvest and another in August-September for a winter harvest. Onions in the market in the summer months of June - October are storage onions. Also the months of February to May are principally storage onions. It is said that the Giza onion has storage shelf-life of 9 months, which is very long for a short-day onion. This onion is said to be quite pungent, which would explain its long shelf-life.

I told them that they should be asking Sluis & Groot for onions similar to the Texas 1015 and the Y-43 releases, as well as more intermediate-day onions in the event that MFG/EED are able to get field trials in place by next August, 1994.

Tadros asked if I could send some information and maybe some seed of these varieties to him through Sluis & Groot or possibly to his home in England. I promised to try on the seed and would certainly send him the information.

We turned to melons and they advised me that they had two principal varieties of the Galia-type that were included in the variety trials on the farm of El Roda owned by Dr. Tariq Nadir. This farm is located near Alexandria and is on my itinerary of visits. The varieties being tested are Vital (MG 502) F1 Hybrid and Regal (M 442) F1 Hybrid. Dr. El-Sayed Kassem Hashem is in charge of the trials. While looking at a prospectus for Vital I noticed that it had virus resistance for the Melon Necrotic Spot Virus (MNSV). Neither Tadros nor Khamis could give me any information on this virus, which was new to me, so they decided to call their Sluis & Groot contact in Holland, Paul Torfs.

Paul was caught at home instead of at his office and was a little short with my questions. He was able to tell me, however, that the virus MNSV was considered to endemic in the Mid-East and was transmitted by a soil borne fungus, Olpidium sp. He said that this virus is not a problem if planting on virgin soils and that the Israelis routinely sterilize their one-meter, plastic-mulched beds to control this problem as well as Fusarium wilt. They also transplant into the mulch for shorter time to production. He could not or would not give me more in depth information on this particular point.

Torfs and I discussed the appropriate melons for Egypt winter planting. He advised against Charantais as being too difficult to harvest and ship. However, if we wished to try a netted Charantais, they have a new variety called Pancha F1 Hybrid that is a medium early producer with round fruit, slightly netted greenish-yellow rind and deep orange flesh that is very sweet. He claims that it is a good shipper and is a cross between a Charantais and an open-pollinated Western U.S. Shipper Cantaloupe. (The Teemag people did not know this variety but it is listed in the catalog that they have in their office.) Torfs also mentioned Maestro as a Charantais type that could be tested. There was no information available in Teemag on this variety at all.

We discussed Western Cantaloupes and he said that we should try the varieties Primo and Solid Gold that they were offering from their sister U.S. company Northrup King. Apparently Sandoz has bought NK, S&G and a few other seed companies. Primo is a tried and true U.S. Hybrid that is very early and has large fruit. This variety is recommended for planting where cold temperatures preclude getting good size on other varieties. Solid Gold is a newer Hybrid that has shown good promise in California and Texas production sites as well as in Central America. Solid Gold has resistance to races 0 & 2 of Fusarium, races 1 & 2 of the powdery mildew fungus, and has tolerance to the downy mildew fungus. It is also a good, strong shipper.

In watermelons Torfs recommended their NK Imperator (W 0123) F1 Hybrid. This is a sugar baby type which could work well in greenhouses. (If it is decided to try ice-box watermelons, this is one of the varieties that should be tested.) He also mentioned another watermelon, Norma, which I do not know and for which I do not

have any information.

Torfs and I briefly discussed the concept of sweet onions. He could not capture the concept either and was adamant that the Egyptian system would not let anything usurp the Giza onion. Nevertheless, he would search his and his sister companies' sources for the type of yellow onion recommended, the Texas Early Grano/Granex types. I'm quite sure that NK has some of these varieties in their offerings.

I tried to get prices out of Teemag but they were reluctant to give me any. They said that their prices were normally negotiated between themselves and their customers. I assured them that I would use their baseline prices only for my background information and would not pass the information on to anyone else. Mr. Magar agreed to contact S&G for recent prices and give me a listing by next Monday. he will send it to my hotel.

It was determined that S&G could provide some limited seed for trials but that seed for semi-commercial plantings would have to be purchased. I agreed that this is fair.

I finished my 2 1/2 hour meeting with the Teemag people by assuring them that I would arrange a meeting between them and David Talmor of Israel who is supposed to be visiting next week to give more detailed technical assistance on the Galia production.

November 20-21, 1993

MFR: Visit to Roda Farms

I left the Ramsis Hilton at 09:00 on Nov. 20 and was driven in a chauffeured Mercedes-Benz car to the Roda Farm facilities on the desert road to Alexandria. The total trip took about 2 hours and was not rigorous. I was met there by the executive manager, Tarek Negm and the production staff consisting of Dr. El-Sayed Kassem Hashem (a plant breeder), Dr. Osama B. Nassef (Pest Control) and Dr. Mohamed M. Shehata (Production).

After tea we reviewed their 7 acre plastic house with different varieties of cucumber under production for the local market. The plants were mostly in good shape except for some downy mildew. There was one variety with nutrient deficiency symptoms but I could give them little advice, other than to have a foliar analysis done to determine the deficient element.

We discussed disease control measures and I gave them some alternate fungicide spray programs for the control of downy mildew in their cucumbers. If this is the only fungal problem that they have, I believe that it would be better to scout the crop for presence of the disease before spraying, rather than using many preventive sprays. The symptoms are quite distinctive and most of the fungicides used against this particular fungus have curative action which allows the grower to eliminate the infection completely with one proper application of fungicide.

Their main production is grapes but they dabble in other crops as well, like the cucumbers. Last year they had planted open-field melons for the local market and had not made money because the market was abnormally depressed. They do not plan to make commercial plantings this season for the local market. They do have a 1 ha green-house at a nearby farm with melon trials underway. We will see that tomorrow.

They take all of their water from a canal off the Nile River. We went to see the filtering and pumping facilities which were quite impressive. They run the water from a settling tank through pre-filters and then pass it through a set of reverse osmosis filters to eliminate the salts. The water is then passed through another set of particulate filters and pumped through-out the farm.

We went to see their packing facilities which are designed primarily to handle their grape production. The grape packing line is adequate but would be difficult to adapt for melons. They do have a home-built melon packing line which I critiqued. I felt that it was too elaborate for their needs and their rustic sizing and chuting systems actually caused more damage to the melons through bruising than was desirable. I recommended that they put it in mothballs and use a more simplistic but less-damaging system. I offered plans if necessary but I think my oral description was

enough for them to act upon. My recommendation was for a manual wash tank, if necessary, from which the melons would be passed to a slanted, foam rubber and plastic-covered grading table from which they would be directly packed into shipping crates. They should also build or buy a wax/fungicide applicator.

The rest of the day was spent in conversation with the production staff on various aspects of melon production. We also discussed banana production.

The following day I was collected at 09:00 by the driver and taken to Tropicana Farm which is closer to Alexandria (about 30 km) than El Roda. This farm boasts a 1 ha greenhouse that has computer controlled environment. The house is presently planted with melon variety trials (as outlined in the information packet given to me by Roda), in sand culture and on vertical wires. The planting area is sand-box style with cement box length 1/2 the width of the house and the width of the box about 2 feet. The boxes were planted with a double row of melons, each box constituting one replication per variety in the trial, four replications in all. The rest of the greenhouse was planted with Galia melons but I didn't get the variety.

Although the replications in the trial were chosen randomly, this trial will still be difficult to manage statistically because they have not accounted for 'in-field' diversity, i.e., all of their replications run the full half-width of the greenhouse. Also, it is impossible to consider the normal procedure of leaving border rows because of the design of the greenhouse. Also, they have 'fudged' the trials somewhat by replanting where plants have died. Nevertheless, I believe the data that they receive from these trials will be valuable, even if not scientifically reliable. The planting itself was in very good shape and I could find no problems at that stage of growth.

We discussed soil fumigation for wilt fungi. I recommended that they try soil solarization and explained the principal and technique to them. It was also suggested that they take advantage of the drain tubes that they have installed at the bottom of the sand-boxes. This is a ribbed, hard plastic tube with slits at intervals, about 2 inches in diameter, with a port above the sand at one end of each box. They have a steam source on the farm and it is possible that they could run steam through these drain tubes in order to pasteurize the sand.

We discussed white fly control and I recommended that they get information on a new Bayer product called Applaud which had been used successfully in California to control white fly in melons.

I asked for and received a copy of their fertilization schedule for the greenhouse melons. They mix up a batch of fertilizer in the irrigation water and feed this fertilizer to the plant dependent on its requirements for water, based on evapo-transpiration pans. I asked for a pesticide spray schedule but they react to problems and do not have a spray calendar.

I promised that I would send them a copy of the EC regulations concerning pesticide

residues in melons so that they could adjust their programs accordingly. They will probably not export to Europe this season because of the limited area planted but are hoping to make money in the local market with their early melons.

We spent an hour or so looking at greenhouse bananas. These are Williams varieties primarily, in unheated plastic houses with the same sand-box arrangement, only with larger sand boxes. They buy hardened-off banana plantlets from a tissue culture laboratory and plant them in the greenhouse for winter harvest. They had banana stems on most of the plants which will be ready for harvest in a month or so. The production looked good with average size stems.

I was shown a leaf-edge necrosis which they thought might be Sigatoka. I believe that it was not Sigatoka but I took photographs and promised to send literature on the identification of the fungus that causes Sigatoka Leaf Spot of banana as well as descriptions of the symptoms.

I made some recommendations on propping of the banana plants when in fruit. They are using wooden poles which are unwieldy and are also causing pressure and abrasion damage to the bananas. They could easily go to a system of using plastic twine to support the plants. This system is being used in the Maghraby farm. I also recommended that they go to a better system of timing their harvest by using colored ribbons to indicate the date of fruit shooting and an accounting system for number of stems for each ribbon. This allows accountability and harvest scheduling.

They have a problem of premature ripening of some bananas in the stem. I could not help them in this matter but I have seen this as a physiological/genetic problem in meristem-tip culture bananas. I also observed that there were some banana plants with distorted fingers or fruit, distorted in a whorl pattern on the stem. I have also observed this in meristem-tip culture bananas when not properly done.

We discussed their participation in the melon variety trials. Although they do not plan to plant any more commercial melons this season they would be willing to participate in low-tunnel trials at Roda to start in December/January. They could provide at least one acre for the trials.

We discussed the costs of growing melons. Although they did not have definitive costs they thought that they could give me a general outline:

Cost of 1 acre on low tunnels

| | |
|--------------|----------|
| Fixed Costs | LE 1,000 |
| Overhead | LE 1,000 |
| Salaries | |
| Running Cost | |
| Fruit Cover | LE 1,800 |
| Seeds | LE 400 |

| | |
|---|----------------------------|
| Manure | LE 400 |
| Fertilizer | LE 500 |
| Labor (seasonal) @ LE 6.00/day of 8 hrs | LE 500 |
| Machinery (Rental or depreciation) | LE 200 |
| Pest Control (chemicals only) | LE 700 |
| Greenhouse Cost | LE 70/m ² fixed |
| Plastic cost is LE 6,000/MT | |
| Packing (at 20 MT/acre) | |
| Box | LE 2.00 |
| Labor, 15 persons for 3 months | |

Time to harvest is normally 6 months,i.e., from December to June.

I was driven back to Cairo, departing at 16:40 and arrived at the hotel by 19:20.

November 22, 1993

MFR: Visit to Maghraby Farm

Mr. Maghraby sent me with his driver to his farm which is off the desert road near the signpost 90 km from Alexandria (160 km from Cairo). I met with the farm administrator or manager, a Mr. Abdul Hamid Demerdash, who is a banker by training and has been at this farm for 5 years. Although it was not immediately clear what Mr. Demerdash's title is, it was clear that he was the local boss. He gave me some information on the farm.

It has 1500 feddans now planted, mostly in citrus, olives and bananas. They plan to open another 6,000 feddans, that have just been purchased. They do not yet have the irrigation water system installed. They expect to produce grapes and vegetables for export, i.e., onions, garlic, tomatoes, asparagus and melons. Phase 1 of the new project will be 2,400 feddans and will include 800 feddans for vegetables. They have a French group giving them advice on the vegetables to plant and, predictably, they have recommended Charantais melon and French asparagus.

I reviewed my objections to Charantais as a melon for beginners but he argued that the French advisors could probably bring the crop to harvest. I agreed, but cautioned that he would need help in production and harvest and that he should ship only by air and probably only to the French market.

I also recounted that the French asparagus varieties had not performed well in diverse field trials around the world and that they should probably consider some of the more proven varieties such as UC-157 F1 Hybrid from the University of California, or the Jersey varieties developed by Rutgers University in New Jersey, or some of the desert varieties used to produce in California, Arizona and New Mexico. This was not based on nationalist pride but from familiarity with worldwide variety trials and growers' observations.

The water for irrigation comes from a side canal off of the main Nile canal and is passed through a very impressive filtering and pumping station all over the farm. Near the plastic houses there is a water holding tank to provide water to these houses when the canals are periodically closed for 10 days at a time to clean the canals.

I asked about his mandarin orange production. He said that the trees produced the local varieties well but they were changing to the satsuma variety because it was practically seedless whereas the local variety was full of seeds.

We reviewed the grapes in plastic houses being readied for transplanting to the field. They have mostly the Ruby and Flame Ruby seedless but also have a seeded variety from Italy that produces very early. Although seeded, they think that this variety (the

name escapes me) will make money for them in the early market when California is not in harvest yet and Chile's storage grapes had petered out in the market. I assume that this market window would be in April and May.

We went to see the banana production area, which is quite impressive and well managed. We also saw the tissue culture laboratory which receives technical assistance from the Israelis and is quite state-of-the-art. This laboratory is used primarily to produce banana plants from meristem tip culture. They have tried several cycling methods to produce bananas during the fall and winter months and have succeeded in reaching 4 harvest in 5 years. The fields that I saw had 2 plants in the same mat and no suckers were being allowed to grow. The plants had already shot and the stems were covered with blue, perforated, plastic bags to create a micro-climate around the fruit and maintain it at higher temperature than ambient. This fruit will be harvested in January-February, I think. They are producing primarily the Grand Nain clone and not Williams.

We discussed melons and Mr, Demerdash was eager to get as much cost and sales information as possible so that they could plan their project to be planted next August. They plan to plant 40 feddans on plastic mulch in September, 1994 for the December-January export market, and 40 feddans in November, 1994 for the export market in March and April. I assured him that he would receive a copy of the cost structure line items with my report and that he would have to fill in the blanks according to his particular situation.

He asked about pre-cooling and cold storage. They do not have any cold storage infrastructure yet but they are in the planning stage for their grapes. I suggested to him that they should plan their facility to be multi-purpose in order to handle all of their product line that they will develop, and spread the investment out among many crops. They will do this but I had the impression that, at least Mr. Demerdash, had not thought much about the matter, or at least was ignorant of cooling requirements. Assuming that his main job is financial managing, that is not surprising.

Although they do not plan to plant any melons before August, I asked him they could possibly run irrigation water to 5 feddans (the normal area served by a riser) so that we could include some field variety trials of melons on this farm this season. I would like to get some trials in the ground in December on plastic mulch and low tunnels and also in March for the local/regional market. I explained that the trials would be a test not only of varieties but of production during the winter months. Plus it would be a valuable learning experience, which is always necessary when asking plantation managers to become horticulturists overnight. The intensity and care given to a melon crop is nothing like the care of orchard or plantation crops.

He agreed that this could be done but it was apparent that I would have to talk directly with Mr. Maghraby to get the final approval.

I agreed to send Mr. Demerdash a copy of the price history for Galia melons.

I called David to ask some questions about melons in the mid-east:

- 1) What about Charentais? David has grown this melon in Dominican Republic and has friends that have produced it in Israel. He says that it is not hard to grow and is fairly hardy in the field. I had thought that it is prone to diseases but David did not have this experience. The growing time is probably longer than Galia but he was not sure. The experience is that the harvest is the most difficult point. If it is harvested too early it will not be sweet. When harvested at the right point it is soft and difficult to ship. This melon should be shipped only by air and not by sea, and probably only for the French market.
- 2) Cantaloupe? David agrees with me that cantaloupe should not be considered at this time for Egypt. The transportation time is too long at 14 days and the European market demand is not good for U.S.-type cantaloupe.
- 3) Watermelon? Israelis prefer the large watermelon and there is a good market for this size. He doesn't know the preferences of the rest of the region. He doesn't think that the ice-box melon will sell well in the region and the large melon will not sell in the European market. I had thought that ice-box watermelons would be good to try with the option of selling locally but David's comments changed my mind.
- 4) Fertilizers for Galia melons? They also feed the melons continuously through drip irrigation and with the same concentrations and ratios of fertilizer throughout the cycle. They put the phosphorous in the soil before planting and maintain a mixture of 3 parts K to 1 part N.
- 5) Bees? They maintain the bees in the field all through the cycle, especially in the plastic house culture. They essentially take two harvests off the same planting.
- 6) Plastic mulch? All of the Israeli Galias are grown on plastic mulch, whether under tunnels or in the open field.
- 7) Soilborne virus? David doesn't know anything about this virus, Melon Necrotic Spot Virus (MNSV), that the Sluis & Groot seedman told me was a problem in the region and transmitted by the soil borne fungus Olpidium sp.
- 8) When will David or his partner be in Egypt? Perez Moshe, David's partner, will ask for a visa tomorrow and hopefully will be here within a week. David will be back from Honduras (he is leaving tomorrow) on December 3.
- 9) Planting Time? David is in harvest right now from August-September plantings on plastic mulch but without tunnels. Very few plant during November-December but

plant in January. This allows them to be in the market in April and May. It is too cold to plant earlier unless in heated greenhouses.

10) Production/Harvest times? In greenhouses it is possible to harvest for 6-8 weeks, basically two cycles. In row cover plantings the harvest is usually for only 3 weeks.

11) Yields? Galia in greenhouses should yield about 60-80 tons per hectare; under tunnels about 20-25 tons/ha.

12) Pre-cooling Galia? If shipped by air, and the pulp temperature is not too hot, David recommends that the melon not be cooled at all. The melon will continue to develop physiologically and be in good shape for the market without problems of condensation from cooling and un-cooling, i.e., the aroma will be better. This is only for melons that go directly to the airport and then directly to market.

13) David Machelo? I asked if David knew David Machelo who is an Israeli and representative of Pioneer Seeds. He has been to the farm of Sherif A. El Maghraby to give advice on melons. David does not know him.

MFR: Sudden Wilt/Galia/Gallicum/Aguizy/Plant Pathology Research Center

November 24, 1993

In response to my request for better diagnostic services on a very serious wilt disease in Aguizy's melons, Rick Miller called a contact in USAID, Doug Clark, who mentioned that we should call a Lowell Lewis (Consortium for International Development). Lowell appears to be the administrator of an umbrella agricultural research improvement program. Mr. (Dr.?) Lewis suggested that he consult with Dr. Magdy Madkour who is a bio-engineer on his staff. Dr. Madkour recommended that we contact Dr. Hamid Mazeid of the Plant Pathology Research Institute who could put us in contact with Dr. Nabil Sobhy, head of the bacteriology section of the institute. Dr. Mazeid's telephone number is 724893. Dr. Mazeid was out of office and Dr. Sobhy was in England, so we talked with Dr. Sabek, a virologist. We agreed that I would bring plant samples to his laboratory on Sunday, November 28, and that he would have the diagnosis done. He gave the address as in front of the zoo, at Cairo University Street and Giza Square, enter the first gate beside the El Saydia (sp?) School and go directly to the last building and turn to the right between the building and the fields. Ask for the Virus Department.

I asked Dr. Sabek if he knew anything about the virus Melon Necrotic Spot Virus (MNSV), reported to be prevalent in the Mid-East and vectored in the soil by a fungus, Olpidium sp. He did not.

MFR: Petoseed/Sam Trade/Melons/Onions November 24, 1993

Myself and Howayda met with Ehab Ramsis and M. Attia Tawfik of Sam Trade. This company represents several major companies throughout the region in agricultural inputs and has different representations depending upon the country in the region, i.e., they represent PetoSeed in Egypt but maybe not in Jordan where they may represent Asgrow.

They also lamented the situation with the MAG in Egypt concerning the importation and registration of varieties. They had imported 50 kg of a particular zucchini variety two years ago for a local grower, under export regulations, and this year the same request by the grower through Sam Trade was rejected by MAG.

We spoke about the disease situation that is facing Hussein Alguezy with his greenhouse Galia and Gallicum melons this season. They related that last season, a Dr. Abdel Kader Hadim had also planted in greenhouses (in the Dashur area 50 kms beyond Giza towards Upper Egypt) for this season and had had the same disease problem. The scientific community could not work out the problem and it was blamed on the time of the year. I do not accept this very superficial explanation. Dr. Hadim is an ex-minister in the government and is now in charge of the main effort of reform of agricultural research in Egypt. Apparently all the scientific force that MAG could bring to bear could not solve this disease problem. Recent tests indicate that this disease may be caused by the bacteria Erwinia tracheaphilia (sp?). The vines did fine until they were charged with melons and then they suddenly collapsed.

We discussed their participation in December melon variety trials. They agreed to provide seed for the following varieties at the amounts listed:

| | |
|-------------------------|--------|
| Durango Cantaloupe | 6,000 |
| HyMark Cantaloupe | 6,000 |
| Gallicum (Galia type) | 15,000 |
| Gold King (Yellow HDew) | 15,000 |
| Fiesta (Orange Flesh) | 15,000 |
| Pata Negra Watermelon | 15,000 |

They asked that I send a letter to their company requesting this assistance, which they would forward to Asgrow. I agreed to do this.

They mentioned that the usual planting density for tunnels is 5-6,000 plants/feddan.

They did not know the Durango Cantaloupe variety and they will request information from the U.S. I gave them a photocopy of the Durango flyer that I had as well as a photocopy of the 1989 PetoSeed brochure listing several European type melons

available.

We discussed the sweet onion concept and they asked that I include a paragraph in the letter outlining our plans so they could request short-day onion seeds from Asgrow for the trials that will probably start in August-September, 1994. They mentioned the complete ban on onion seed imports to Egypt. We will have to find a way to combat this.

MFR: Vilmorin/Harris Moran Seeds - Mohammed Elkorma November 24, 1993

Myself and Howayda met with Mr. Elkorma with the mistaken idea that he was the representative of Nunhems Seed Co. in Egypt. He had been the representative but no longer worked with them. He feels that their seed is too expensive for Egypt.

He does work with Harris Moran and Vilmorin. He also handles agriculture pesticides.

He feels that no seed company can compete with the Israeli companies Hazera and Zeraim on Galia seed prices.

He will be in contact with the Hazera and Zeraim companies in Israel to try to represent them in Egypt in the matter of Galia melons.

He says that seed is not the problem in Egypt but lack of management. We discussed this awhile and we hold similar viewpoints that city farmers who pay small salaries to semi-educated farm managers is the problem.

He says that the desert reclamation project growers use EL 12 million in agricultural inputs per year and it is a big industry.

Vilmorin does handle a Juane Canary or Spanish Yellow type as well as a non-proprietary Galia melon.

The Vilmorin Galia sells for about FFr 12,000/kg, which is 5 times the Israel price.

We agreed that he will try to provide 2,000 seeds each of the Yellow Spanish and the Galia for field trials in December.

We also talked about Vilmorin as a supplier of seeds for French Beans and edible-pod peas such as snow peas and sugar peas. I recommended this company to Howayda as a good source of seeds for these crops. M. Elkorma will send a catalog.

We discussed the difficulty of seed agents in Egypt because of government policies that require onerous testing of varieties and that prohibit the import of some seeds and that allow land-owners to import seed free of regulation if it is for an export crop.

We talked briefly about Sweet onions and the short and intermediate day onions that Harris Moran has available for the trials that we hope to do next season.

MFR: Asgrow Seeds/Hatem Quneby/Agricultural Materials Co. Ltd.

November 24, 1993

Myself and Howayda met with Mr. Quneby who is a representative of a Jordanian company offering agricultural inputs from a variety of major companies, one of which is Asgrow Seed Co. They also represent Sandoz of Switzerland and Bronzem (?) of Holland.

They have provided 3 tons of green bean seed Bronco to Hussein Alguizy who is planting right now. Hussain actually has beans in flower at this time.

Mr. Quneby made a point of complaining about the difficulty of doing seed business in Egypt because of the requirement of three years field testing by the MAG before the variety can be 'registered' for import and production. By the time the testing period is over the variety may have gone out of style. This is specially true for the export varieties that are wanted in the European market.

Another problem is that Egypt is allowing certain farmers to multiply seed locally and enter the market at a very reduced price in comparison to the seed produced from foundation seed at the company's multiplication site. This requires a special license from the MAG.

There is a mechanism for seed, but not for other agricultural inputs that allows a landowner/exporter to import seed as long as the crop is designated for export. This can be done even if the crop/variety is not registered for Egypt.

Also, seed that enters Egypt must be approved both for germination and phytosanitary. The percent germination received locally is what the seller must put on the label and not the average germination that was taken at the production site. In other words, if not done in Egypt the phytosanitary and germination tests have no validity.

The general equation for melon seed is that 1 gram = 35 seeds.

We agreed that Quneby would provide the project with enough seed to perform variety trials in 5 farms. We agreed that we would include the Western Cantaloupe variety Mission, and the Amarelo and that he would provide 15,000 seed of each variety. He also agreed to get the information on the variety Oro Dulce for which we have seed but no information. This will also be included in the trials.

We discussed onion varieties for the sweet onion trials of the future, probably in

August-September of 1994. He will be willing to provide seed for the yellow grano/granex types that Asgrow handles for these trials.

TALMOR

Melons!

MFR: Visit to Ayman Korra Farm (Pearl Farm)

November 27, 1993

I was collected at my hotel at 09:00 by Mohammed Ayman Korra, in his Mercedes-Benz, and driven to his farm in the Nu Barea area, just off the main highway. During the 1 hour trip, Mr. Korra utilized the time to ask me close questions on melon production, from A to Z. He took copious notes as we went along. I was careful to qualify that I was relating from my experience and learning in a different production system but that many of the procedures were basic to melon production the world over.

Upon arrival, we met with three of his farm technicians and a friend and partner, Dr. Tarek Kassem (a surgeon well-versed in agriculture). Dr. Kassem was the only person present conversant in English, aside from Mr. Korra, and he asked most of the clarifying questions as Mr. Korra gave the gist of our in-car conversation to his technicians.

We discussed field preparation, area to be planted, soil sterilization using fumigants and soil solarization, incorporation of manures, fertilization schedules, disease control, white fly control, transplanting, plastic mulches, row covers, vine management, , and a variety of other details.

Mr. Korra will have 1/2 to 3/4 feddan available for the planting. He had just fumigated a greenhouse area with Methyl Bromide (500 m²) in anticipation of planting in the green house. We discussed low tunnel planting with mulch as an alternative although we could utilize the green house as well. We definitely would use the green house for producing the transplant seedlings.

Korra and Kassem have a system of producing transplants that uses small yogurt cups as pots. They say that they have not been able to get plug trays with the desired depth of about 3 inches. They asked about the proper planting mix to use but I did not have any ready answers. I prefer a soil/perlite/peat mixture but don't know what is available in Egypt. It is important that the mixture allow the roots to be lifted entire with the soil for transplanting because bare-rooted cucurbits do not transplant well.

We went to the field to see the set-aside production area and a very nice field of processing tomatoes. These are the California type of processing tomatoes that are round, not the Roma types. Apparently Dr. Kassem manages this planting and it was very impressive, planted on black plastic mulch on raised beds with drip irrigation/fertigation. I enquired whether he adjusted his fertilizer mix as he went along and he replied that he did. This is the first grower I have found who does this.

We saw a few young tomato plants that were infected with a girdling stem canker that was diagnosed as Dr. Kassem as *Alternaria* Stem Canker. I have never seen the fungus *Alternaria* manifest itself in this form before, normally it causes only leaf and fruit spots.

There was a pile of manure near the field that will be planted with melons but I felt that it was not completely composted yet. If this manure is to be used to provide organic matter to the soil I would recommend that it be applied to the field either complete or in the bed, watered, and incorporated with nitrogen in the form of urea for several weeks before planting. This will give time for the manure to be completely broken down so that the composting action will not rob nutrients from the transplants.

This field had been sub-soiled with a single chisel in a cross-hatch pattern as recommended. The width between chisel passes was about 5 meters which I think might be too wide. I will check on this.

We talked about bed sizes. The most commonly used size is 2m wide and at least 30cm high. In California, with furrow irrigation, the beds may be as high as 60cm. The tomatoes were on 1.5m beds and they asked if they could plant the melons on this size bed. I mentioned that, if they did, they would have to send people to train the melon vines on the beds because the growth habit of the plant is fan-shaped and the vines would be running into the furrows between the beds.

We discussed bees for pollination. They do have some hives on the farm but they will have to be instructed as to when to place them in the melons. They also need instructions on which pesticides they should not use when bees are working. I promised to send them a listing that I have in my papers in Cairo of pesticides and their effects on bees.

Korra also has 60 acres each of Anna Apples and a range of peach varieties with early and medium length production timing. Most of the peach varieties are those developed in Florida with lessened chilling requirements. His peach orchards looked to be very well maintained and Mr. Korra fancies himself to be somewhat of an expert on this crop. He can get production as early as 20Apr to 15May. He uses KNO_3 to induce flowering and is seeking earlier harvest in some varieties. The peaches were in the process of being pruned and he is trying several pruning designs (which determine the structure of the tree) for optimum results in management. At this type he favors the open vase type. He has to control brown spot and a few other minor diseases but does not have many problems from that quarter.

The apples looked quite young yet and were burned back with high concentration urea applications for defoliation. He claims to get a respectable yield and good quality fruit from this orchard.

We discussed berries and I promised to send him information on the Texas varieties

of blackberries and raspberries that might function in this climate. Worth a try, based on our Central American experience.

We agreed that I would provide them with a list of the varieties to be tested and a preliminary production guide so that they can get started with the trials. I will try to do this before departing Egypt.

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MFR: Aguizy/Ghabour/December Planting November 30, 1993
(049) 200917/..918/..919 from Cairo

I called Eng. Ibrahim Khatib, the field manager of Aguizy's melon operation, to ask some questions. Aguizy himself is out of contact for the day.

Ibrahim told me that they had had another visit from Dr. El-Sayed from Roda concerning their wilting problem in the melons. Dr. El-Sayed said that they had isolated a bacteria from the plants but not yet identified it. He, however, does not think that the bacteria is the main cause of the wilting syndrome but possibly a contributing factor. He also checked the salt levels in the soil near the roots and found that it was high, but not extremely high, in the root zone of 6-14cm depth. He recommends that two greenhouses be set aside for passing excessive water, without fertilizers, through the system to try and leach the salts out of the root zone. Ibrahim objects because they feel that the soil is too wet anyway - a true dilemma. They have ceased to irrigate for three days and the soil is still wet on the surface of the beds. They have also dug deeper drainage ditches between the beds. They sprayed all of the plants with streptomycin to control the possible bacterial infection. Ibrahim says that he has noted an improvement in the plants.

I asked him to advise Hussein Aguizy that I had given him the wrong name for a new insecticide being used to control white fly in California. I had given him the name Applaud but upon checking my notes, I saw that the name is really Admire and that the active ingredient is Imidacloprid.

I asked him about Mr. Rauf Ghabour who will be planting 50 acres of Gallicum melons. I asked when he planned to plant and what type of tunnel he will use. Ibrahim understands that he will plant in mid-December and that he will probably use low tunnels of 1m width and 75cm height. He should put down a mulch of either black or clear plastic before planting. I asked how Aguizy's staff had managed the clear plastic mulch that they have in their high tunnels. They did not try to control the weeds before planting and now have problems, as I had noted when in their fields. They should have allowed the weed seeds to germinate and killed them back with herbicide, or incorporated a safe herbicide before planting.

I asked the size of Aguizy's high tunnels and was told that they are 3.5m wide, 50m long and the melons are planted at 40cm intervals in a straight line centered on 80cm beds. They must guide the vines to keep them on the mulch and not in the center furrow or walk-way.

MFR: Hamed Shiaty/Variety Trials

November 29, 1993

I spoke with Hamed about participating in the field variety trials to be planted in December. He had thought that the trials would be in March and he had put aside 5 feddans for this trial. He would be willing to collaborate on about 800 m² (about 1/5 acre) under a low greenhouse of 8m wide, 2m high and 50m long. These he will build to use for banana nurseries and he can use some for the field trials. We agreed that we would test 4 varieties of Galia and Spanish types and that he would start the seeds in pots of 5cm deep X 5cm diameter, hold them in a greenhouse or in the nursery tunnels, and then transplant them to the field under the nursery tunnels. They will put plastic bags over the pots and water them by placing in pans of water. Fertilization will be by the same method. He does not have temperature data for his area and usually uses Cairo weather which is only 40 km away. He is not convinced that melons can be produced over the winter without heated greenhouses. I will leave a research plan with Hamed (who will be leaving the country December 11 for awhile) but further communication should be with Dr. Adel Khatib who will be the manager of the trials.

MFR: Roda/Tarek Nadim/Field Trials November 29, 1993

Dr. Tarek returned my telephone call. I asked him if he would participate in the December field variety trials and whether he thought that it will be possible to produce over the winter for the March-April market. He remarked that he would not be able to participate because his land was all committed for seed production through the summer.

X (Also, He has been trying to produce early melons for 7 years by planting Galia melons (Holy Land and Hazera varieties) on plastic mulch under tunnels 90cm wide and 40cm high. Planting by 19Nov gives harvest not before 15Apr. Last year he planted 200 acres on 25Nov and still did not get a respectable harvest until 15Apr although some melons came off earlier.

I mentioned Aguizy's walk-through tunnels that allow for two melon beds. Tarek said that he agreed that higher or larger tunnels might be the answer because on the smaller tunnels, the plastic must be removed in March because the melons are growing out of the tunnel or the leaves against the inside of the tunnel are being burned. The days can still be cold in March and larger tunnels might protect the melons better. He does think that they may be too expensive and not cost-effective.

He is making his own trials with the heated greenhouse at Tropicana and believes that this is the answer. This system will, of course, have to be assessed for cost versus return as well.

I asked if he had temperature data for his area and he said that they had it for 10 years from government sources. He will send it to Rick Miller to be forwarded to me by pouch. Hopefully he will send his farm weather information as well.

TDC - EGYPT

TRADE DEVELOPMENT CENTER - EGYPT

Farm Visit Report
by
Mr. David Talmor, Melon Expert
January 10 - 13, 1994

1. Mr. Hussein El Aguizy Farm

There is a change from the original program, only one Greenhouse (500 sqm.) is going to be planted.

They start seeding on trays Jan.12. On the Nursery, plants are going to be ready for transplanting in 20-24 days.

2. Mr. Hamed El Shiaty Farm

The soil and Green Houses are prepared now and are going to be ready at the end of the week.

They seed on trays Jan/1/1994, the germination is very good of all varieties. The trays were together with Banana plants in a complete close Green House with 100% humidity, was to wet for Melons.

To take care in the right way the trays were moved to a small tunnel where conditions of aeration and humidity can be under control.

Fertilization at nursery is going to start as soon as the moisture at the trays is the correct one:

100 ppm/day of N-P-K (1-1-1)

2-3 days before transplanting

200 ppm/day of N-P-K (1-1-1)

transplanting is going to start in 10 -14 days.

3. Mr. Ayman Korra Farm

Green house

Time of seeding : 21/12/1993

Germination : 28-31/12/1993

In general the germination is very good and also the plants look very good, there has been some damage due to rats,

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however they seed again and germination is O.K. There has been some misunderstanding about the size of the beds and they are too high, I recommended to fill the paths between beds. The area was treated with M.B.

The fertilization before planting broadcast:

6m³ of manure
50 KG of phosphorus 37%
25 KG of potassium Sulfate 40%

In the beds:

15 Kg of phosphorus 37%
4.5 Kg of ammonium Sulfate 20.5%
6 Kg of potassium Sulfate 40%

Fertilization With seeding irrigation:

Water : 1.4 m³/hour/Green House, in 10 hours of irrigation: 14 m³

Fertilizers : 1.25 KG of 12-4-41
1 LT of phosphoric acid,

Two days later: 6 hours of irrigation
(8.4m³)

Fertilizers : 1.25 KG of 12-4-41
1 LT of Phosphoric Acid.

Two days later: 6 hours of irrigation
(8.4m³).

Two days later: 150 gram of Benlate in 10 minutes of irrigation.

1/2 Liter of green zit to be applied immediately

Nursery : The germination is very Good (2 plants per pot) and plants look also very good.

The fertilization program the same as recommended for Mr. Hamed El Shiaty.

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Tunnels : The area is already with black plastic mulch and ready for transplanting. Land preparation and beds and plastic laying are very well done. The following fertilizers were applied

Broadcast **Quantity / feddan**

Manure: 35 m³

700 KG of Phosphorus 37%
700 KG of Potassium Sulfate 40%
200 KG of Ammonium Sulfate 20.5%

Recommendation for next month

1. Fertilization program for green houses and low tunnels:

Following the recommendation of December 20, 1993 (of fertilization before planting and at seeding or planting) the program for the growing period:

1- 10-15 days after germination (direct seeding) or transplanting:

25 Kg of potassium nitrate / feddan
10 Kg of ammonium nitrate / feddan
5 LT of green zit / feddan

2- From setting of fruit: (qty/feddan) 4 applications (every 4-6 days) of:

25 KG of Potassium Nitrate (13-0-46)
10 KG of Ammonium Nitrate (33.5-0-0)
10 LT of Phosphoric Acid (85%)

3- After 16-24 days, 4 applications of:

25 KG of Potassium Nitrate/feddan.

All the above recommendations are guide lines and adjustment are going to be made according to the development of the plants.

2. Phytosanitary Control

1- To follow a preventative control of insects and plant diseases, at the first month/ application every two weeks.

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- 2- 25-30 days after germination or transplanting to wash the main stem on the basis with a solution of water with Benlate at a concentration of 0.1% (1/1000), 300 cc of the solution per plant (0.3 grams of Benlate per plant). To repeat after 15-25 days.

3. Irrigation

I recommend to all the growers the use of tensiometers to have a better reading of the needs of the plant.

Normally we put 2 tensiometers in the center of the bed, 10-20 cm apart (one from the other) one at 30 cm depth and the second at 60 cm depth. The one at 30 cm is going to indicate When to irrigate.

The one at 60 cm is going to indicate with how much water to irrigate.

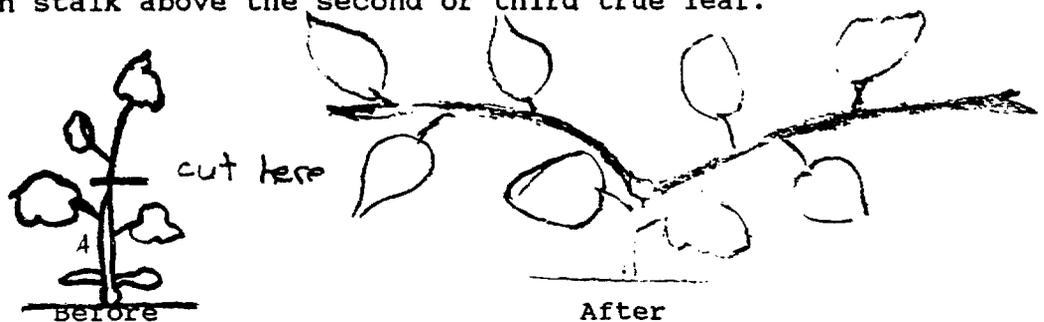
The tensiometers should be read daily and to keep a graph for each of them.

Pruning

It improves fruit setting by reducing the competition between vegetative and generative phases.

1. Low tunnels (*) Also for Hamed El Shiaty low green house, and for all horizontal growing.

To prune once when the plants have 4 true leaves by cutting the main stalk above the second or third true leaf.

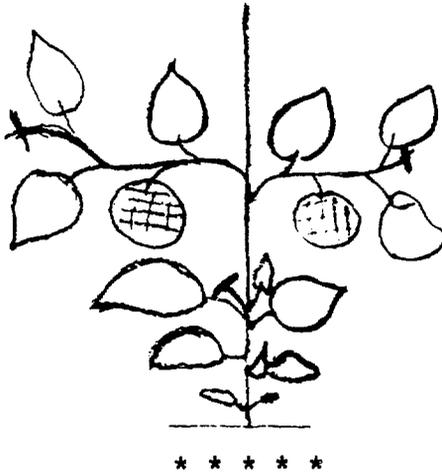


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2. Green houses - Vertical System

- a- Laterals before 5th-7th nodes should be pinched off at a young stage.
Leaves before 5th node should be eliminated during net formation.
- b- Laterals with fruit should be cut after two leaves.



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TRADE DEVELOPMENT CENTER - EGYPT

Farm Visit Report
by
Mr. David Talmor, Melon Expert
February 7 - 10, 1994

1. Mr Hussein El Aguizy Farm

Date of seeding on trays: 1-12-1994

conditions of plants: some varieties look good and others with very poor germination- The conditions at the nursery were not the best, should be improved in the future.

The greenhouse is ready for transplanting but was over irrigated so it is important to wait till the soil has less moisture before transplanting.

2. Mr. Hamed El Shiaty Farm

Date of transplanting: 2-3-1994

The land preparation and beds were very well done. The transplanting is O.K. most of the varieties with no problems, the only variety with high percentage of dead plants is the charentais.

Next application of fertilizers according to the original program, the 2-13-1994 with half hour of irrigation. If developments of plants is weak, to repeat the application after 10 days.

To make an extra application of Bemlate with half the doses is recommended and to follow the program with regular applications.

Pruning: in each variety to leave 2 meters without pruning.

3. Mr. Ayman Korra Farm

All the work in the farm was done in a very professional way.

Greenhouse: The plants are already 40 days old- There are serious problems with different varieties in different areas of the greenhouse.

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The plants are dying without showing any problem of diseases in the roots and the main stalk.

We checked the roots of these plants and found out that the root development was very weak - The question is Why? I will try to identify the problem with some of the research agricultural institutions in ISRAEL.

If T.D.C. has contacts with some laboratories in Egypt or Europe I recommend to send plants, in a stage of start showing the problem, to be analyzed for diseases or toxicity.

The developments of the plants that are in good conditions is very good, nice color, good size of leaves and hopefully we will have a good reading from this healthy plants about the potential of the crop.

Low Tunnels:

Date of transplanting: start the 2-6-1994 and finish the 2-9-1994

The plants of all varieties look very good.

They are following the program according to previous recommendations.

The land preparation, the beds, the mulch and the tunnels are very well done, and also the irrigation before transplanting.

In general the developments of the plants is very slow and is normal for this time of the year, temperatures at night are around 3.5 degrees centigrade and the soil is very cold.

I would like to mention that in the farms are doing very interesting trials with many different vegetables that looks very positive from the point of view of production, quality and with a potential to develop export projects for some of the crops.

The crops that are growing are:

- . Iceberg Lettuce
- . Brussels Sprout
- . Broccoli
- . Zucchini
- . Coliflower
- . Butternut Squash
- . Winter Squash
- . Red Cabbage

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4. Dr. Raouf Ghabbour Farm

Approximately 60 feddan are in different stages of growing in low tunnels.

All the area was directly seeding and the general impression in this first visit is very positive.

Details of varieties, area and dates of planting as follow:

| <u>VARIETY</u> | <u>AREA</u> (FEDDAN) | <u>DATE OF SEEDING</u> |
|--------------------|-------------------------|------------------------|
| Gallicum-Petoseed | 22 | 12-18 Dec/93 |
| Galia - Hazera | 10.5 | 19-22 Dec/93 |
| Arava - Hazera | 7.5 | 22-23 Dec/93 |
| Galia - Zraim | 4.5 | 31 Dec/93 |
| Galia c-8- Hazera | 14.0 | 12-15 Jan/94 |
| Dikiti- Rijk Zwaan | 2.0 | 14 Jan/94 |

The germination of all the varieties was O.K. beside the gallicum that germinated only 65%.

Applications: Before Seeding:

(in the center of the bed)

Quantities / Feddan

7m³ poultry manure
20m³ cows manure
250 KG of super phosphate (15.5%)
150 KG of nitrate sulfate (20.5%)
100 KG of potassium sulfate (48%)

After Germination (starting 1-1-94)

Every two days with one hour of irrigation:

2.5 KG of Agromor (11 55 0)
2.5 KG of Ammonium nitrate (33.5 0 0)

Recommendations:

1. For young fields (before setting of fruit) to keep the program of the farm but to put the fertilizers every 10-15 days with minimum amount of water.

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To try to space the irrigation as much as possible (may be 20-30 days)

2. For fields that start setting fruit
25KG of 13 4 42+Mg
10Kg of 33.5 0 0 (Am. Nit)
8lt of phosphoric acid (85%)
every 6-7 days to repeat four times with the fourth application to add 10 Kg of Calcium Nitrate.
3. The gallicum variety already has female flowers, is very important to put 2-4 hives per feddan immediately - The bees are not to active in cold weather so we have to put enough hives to increase pollination.

To allow the bees to go into the tunnels windows should be done as was shown to the technicians in the farm.

* * * *

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Jan /16/94

To: Rick Miller
 From: David Talmor

(2 pages)

Rick good morning:

Please ad the follow instructions about pruning to my report of last visit.

Pruning

Pruning improves fruit setting by reducing the competition between vegetative and generative phases.

1. Low stems (X)

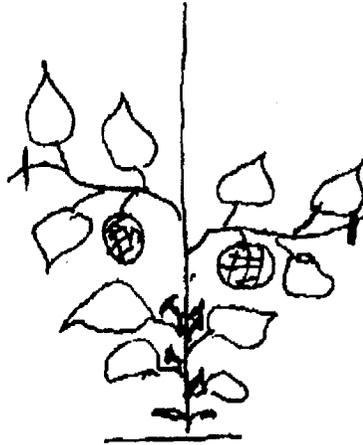
To prune once when the plants have 4 true leaves by cutting the main stalk above the second or third true leaf.



(X) also for Hamad Ah Shiady low green house, and for all horizontal growing.

2. Greenhouses - vertical system

- a. Laterals before 5th-7th nodes should be pinched off at a young stage. Leaves before 5th node should be eliminated during net formation.
- b. laterals with fruit should be ~~pinched~~ cutted after two leaves



Regards

David Talmon

TDC - EGYPT

TRADE DEVELOPMENT CENTER - EGYPT

Farm Visit Report
by
Mr. David Talmor, Melon Expert
March 6 - 9 , 1994.

1. Mr. Hussein El Aguizy Farm.

The development of the plants is normal.
Recomendation for next 2 weeks to apply the following:

fertilizers every two days with 1 hour of irrigation (with only one drip line)

3 Kg. of potassium nitrate

1.25 Kg. of amonium nitrate

1.25 Lt. of phosphoric acid

0.6 Lt. of greenzit

all the above products per greenhouse (500 sq.m.)

2. Mr. Hamed El Shiaty Farm

The plants are very small. Many factors contribute to the poor development of the plants like the type of green house, the type of plastic and mulch. The root system is not deep enough and did not reach the fertilizers applied under the plants. To push the plants I recomend to start to apply the following fertilizers every two days with one hour of irrigation:

5 Kg of Delta Spray (19 6 20 + 4)
2 - 2.5 Lt of phosphoric acid.
1/2 - 1 Lt of Greenzit

all the above products for the two greenhouses (1,000 Sq.m.)

3. Mr. Aynan Korra Farm

Greenhouse.

The development of the crop is very good. In some varieties we already can find 2 - 3 melons per plant. The areas where the plants died, were replanted and only few plants show some problems of toxicity. The laboratory that analized the plants found 100 ppm of bromide, (above 25 - 30 is enough to cause a damage to the plants)

Now that the plants have a good set of fruit, it is very important to feed and irrigate them properly.

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I recomend to apply the following fertilizers per greenhouse :

(500 sq.m) with 3 m³ of water every 3 - 4 days

3 Kg of potassium nitrate

1.25 Kg of amonuium nitrate

1.25 Lt of phosphoric acid.

(+ micro elements by spraying)

once a week: 0.5 - 0.6 Kg of calcium nitrate

Note:

To watch the amount of water and the needs of the plants, as we are going to a much warmer weather and with the setting of fruit they will need more water.

Low Tunnels

The crop looks very good. It started already flowering, thus it is very important to open windows (or totally during the day) to let the bees go into the tunnels - 2-4 hives per feddan.

To apply the same fertilizers as at the greenhouse every 3 days with 18 m³ / feddan.

25 Kg of potassium nitrate

10 Kg of amonuium nitrate

10 Lt of phosphoric acid

5 Lt greenzit.

Approximately after two weeks when the fruit is the size of an egg (lemon) to add to the above fertilizers once a week 4-5 Kg of calcium nitrate / feddan

4. Dr. Raouf Ghabbour Farm

The crop in general looks very good. The set of fruit in the first plot is satisfactory. The windows in the plastic were done properly and allow the bees to perform well.

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Recommendations:

1. For the areas that are programmed for export the nitrogen should be taken out from the fertilization program 3-4 weeks before harvesting.
2. Application of benlate to protect the plants from "stem blight" I recommend to "wash" the main stem on the basis with a solution of water with benlate (or similars) at a concentration of 0.1% (1 gram / liter) 300 cc of the solution per plant. To the old fields to apply once and in the young fields to repeat after 15 - 25 days.
3. To increase the amount of hives and to put them around the field.

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TRADE DEVELOPMENT CENTER - EGYPT

Farm Visit Report

By

Mr. David Talmor

April 5 - 8, 1994

1. Mr. Ayman Korra Farm

Green House

The plants in general look good, except for the charantais variety.

Some of the varieties of the fruit are completely netted and should be ready for harvest in two - three days (may be earlier depending on the weather conditions) . The size of the fruit is small and can be a normal situation for early production.

Recommendations:

To irrigate 3 m³ every 3 days.

To continue with the fertilization program however adding once a week 1 Kg of potassium sulphate per green house.

After harvesting starts:

1 Kg of potassium sulphate per week.

0.25 kg of potassium nitrate with each irrigation.

Low tunnels

The crop looks very nice and starts just now setting fruit.

The fertilization and irrigation program:

To follow the recommendations for the green house.

2. Mr. Hamed El Shiaty Farm.

The vegetative development of the plants is very satisfactory.

We are now facing other problems and the reason for that is difficult to find.

As I mentioned in my last report the type of green house and the plastic mulch may be the major factors of the problem, but it also seems that there are problems of toxicity of salts or soil diseases.

I strongly recommend to analyze: The weak and strong plants

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Talmor Report, April 5-8, 1994
Page 2

One of the varieties, the oldest fruit is showing problems at the skin (like burned areas). I recommend to take away these fruits and to keep turning the young fruits to avoid this problem.

3. Mr. Hussein El Aguizy Farm.

Green House

The plants development is very nice, they have to keep the irrigation and fertilization program.

Upon going into a hotter weather increase the amount of water according to the needs of the plant.

Important: To put the bees immediately.

Open Field: 1 feddan:

Was applied in the center of the bed:

| | | | |
|----------------------|---|-------------------|----------|
| Manure | : | 15 m ³ | / feddan |
| Super phosphate(15%) | : | 200 Kg | / feddan |
| potassium sulphate | : | 50 Kg | / feddan |
| Agric sulphur | : | 50 Kg | / feddan |

After seeding to follow previous recommendations.

4. Dr. Raouf Ghabbour Farm

They start harvesting on April 1st.

The plants look very good, the set and quality of fruit is also good.

The main problem is the size of the fruit that generally tends to be small, the area that is now in harvest was all planted with the Gallicum variety.

It looks that the planting of middle of January (C-8 and Dikiti varieties) are going to have much better sizes.

There is a serious attack of aphid all over the field.

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Talmor Report, April 5-8, 1994
Page 3

For the younger fields that are at least 14 days before harvesting I recommend to apply through the drip irrigation 1.00 liter of perfection or Tameron per feddan.

5. April Planting

Before planting, in the center of the bed:

20 m³ of manure / feddan
N 10 Kg / feddan
P₂ O₅ 50 Kg / feddan
K₂ O 25 Kg / feddan

For irrigation and fertilization before and after seeding to follow previous recommendations (reports of Dec/ 93 - Jan / 94)

Spacing of seeding:

1.60 - 2.00 meter between the rows.
0.20 - 0.25 meter between the plants.

6. Harvesting

We are getting closer to harvest so it is very important to have a very good control of harvest and post harvest proceeds:

To cut the melons with a sharp seizer or blade.
1/2 - 1 cm of steam
To harvest at cool temperatures.
To transport a.s.a.p. to the shade.
(do not let the melons seating under sun radiation)

Packing:

The packing of sizes and colors is very important.
(do not mix sizes, do not mix colors)

Quick transportation to packing shade and airport.

Do not leave the fruits under an open sky at the airport especially during warm temperatures.

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Taimor Report, April 5-8, 1994
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Note:

We are working with many varieties, which complicates the work in the field and at the packing shed, thus it is going to be very important to keep records of each variety, which the only way to take advantage of the trials and effort of this year.

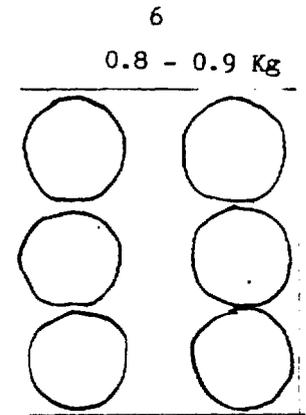
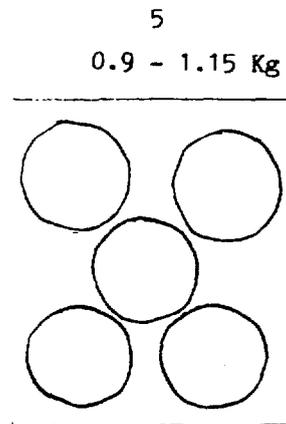
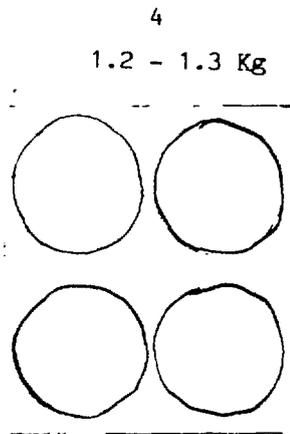
It will be extremely important to have a precise reading of the performance of each variety, to evaluate the future potential of the program.

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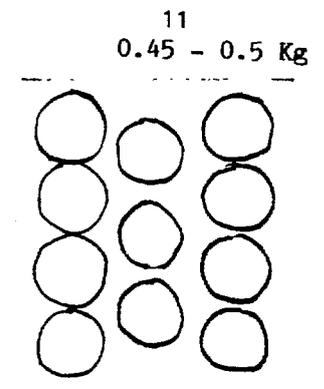
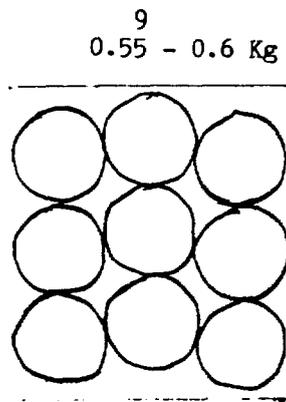
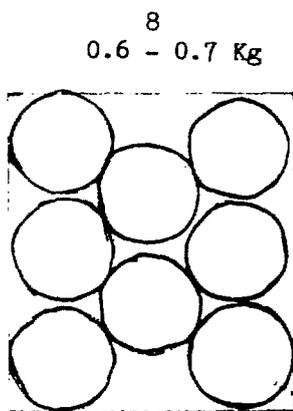
TRADE DEVELOPMENT CENTER - EGYPT

Packing 5.2 Kg / box

Size
Weight of
fruit



Size
Weight of
fruit



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Meeting MAY 10, 1994

Melons.

Complete years plan needed plus permanent crop manager.

① classify top producers - NADIM, Ghabbour, EL AQUIZEY.

② Secondary group growers - SHIRTY, EISSA, KORRA.

Varieties - temperatures maximum & minimums.

IF warm weather is not there can only begin in mid April.

Plastic, Fertilization, irrigation, spacing all needs work now.

Window - harvest Dec thru March difficult without heated green houses. - Rosetta may be the place.

Telmer ^{Committed} - harvesting Oct - mid Nov. - Planting end July to mid Aug. #1

" " ^{April - May} - Planting Jan. #2
" " ^{June - July} - " March #2
need letter asking govern. to release applaud. for melons.

Nunhems seeds best variety.

Local price in the winter 6 LE per kg.

Test plots. with heated greenhouses to produce Jan/feb./march.
Suggests 10 to 15 acres for each varieties

Expert must look at the fields once a week. - crop manager and training different people on each farm. David to come once a month.

Reporting system a necessity. especially in the field.

peach to SAUDI ^{1 or 2 tons.} - Air ~~ship~~.

Ayman to call. also white flesh.
see about Europe.

BEST AVAILABLE COPY

TALMOR

TEL NO. 972 3 6423897

May 22.94

7:37 P.01



CONSULTING
DIVISION

May, 17 / 94

Attn: Mrs Ragda Fawzy
From: David Talmor

Ragda Good Morning;

Enclosed in pages of the
report of my last visit.

If something is not
clear not hesitate to
contact me.

Thanks and
regards

David Talmor

2000 M St., N.W., Suite 200

Washington, D.C. 20036



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PAUL TALMOR

Report visit May 9-12, 1994

1. Dr Raouf Bhabbour farm

They are now in the last stages of harvest. At all the areas planted till 31 Dec 1993 the main problem was the size of the fruit in spite of the good development of the plants. It is very important to recognize that during the setting and growing of the fruit ~~with the plants are~~ the temperatures at night is still very cold.

For these early plantings it is going to be very important to work in investigation of: varieties, fertilization, spacing, type of plastic and size of low tunnels.

In the areas planted at the middle of January the size of the fruit was ideal for export (6 and 8), the varieties were C-8 from Hegea and Dikti from Rijk Zwaan.

2. Dr. Hamed El Shady farm.

2.1. Low greenhouses

Most of the varieties are now on stage of harvest.

It's going to be difficult to evaluate the potential of the ~~different~~ varieties because the problems we had, ~~at~~ ~~the~~ with the same treatment of ferti-irrigation ~~of~~ fumigation, we found areas with developed and others with very weak and dead plants.

In the areas without problems we identified varieties with ^{good} ~~very~~ potential, good sizes, good taste and well netted.

The varieties are:

Vital and Alama from Shuis and Gort.
Marian from ~~Shuis and Gort~~.

(The above are Galia types)

There are also a few meters of Clementines of navel type that look very good, these is a complete different type of navel, smooth skin ^{with a} light green ^{color} orange flesh (very well paid in France and Belgium)

2.2 Spin ~~planting~~Recommendations

a) The recommendations for sowing, irrigation before and after seeding ~~according to~~ follow the same pattern recommended in previous report, (Dec 1993).

b) after germination till the age of 35 days approximately (after setting of fruit) to apply week product qty / feddan

| | |
|--------------------|--------------|
| phosphoric acid | 6 liter |
| ammonium sulphate | 15 kilograms |
| potassium sulphate | 10 " |
| greenzit | 6 liter |

if they irrigate twice a week to apply $\frac{1}{2}$ of the above amount with each irrigation.

c) from 35 days till 45 days to apply only 10 kg of potassium sulphate / feddan.

3. Mr Hussein El Agency plan

(4)

3.1. Greenhouse

In general the plants have a normal development. The leaf-miner has ~~caused~~ done severe damages with some varieties been much more susceptible than others.

Alma, Gallium and Galie (Sand G.) with very few leaf miners.

One week before harvesting we ~~can~~ ~~point~~ ~~see~~ that Vital and Alma are very good

we can see that from the Galie types the best are Vital and Alma, and after them Galie, Dikti and Melin. The character type looks very good beside being ^{very} susceptible to leaf miner.

The temperatures inside the greenhouse in the last week were ranging between 40-43° C. max to 10-13° C. min.

Recommendations:

every 2 days with each irrigation:

a) 120 g/m² Superphosphate (15.5%) 3 kg
 potassium sulphate 1.5 "
 ammonium nitrate 300 gram

b) at harvest

potassium sulphate 0.5 kg every two days

c) after harvesting of first set of fruit

potassium sulphate 2.0 kg

super phosphate 3.0 "

ammonium nitrate 1.0 "

note: if development of plants and fruit for 2nd harvest is ok to reduce or eliminate the ammonium nitrate.

3.2 Open fields - 7 fadden

The plants look normal.

Varieties: ~~50~~ rows

| | |
|-----------------|-----------------|
| C-8 | 43 " |
| Dikity | 12 " |
| Arava | 12 " |
| Gala ? | 6 " |
| Galaxy (Hignou) | 20 " |

- for the first two weeks was applied:
product 10 kg / fadden / week

ammonium nitrate 10 kg

potassium sulphate 7.1 "

acid nitric 285 grams

- third application (21 days)

ammonium nitrate was increased to 15 kg / fadden

the other products the same

Recommendations

(6)

| <u>Product.</u> | <u>Qty / Fedden / every 3-4 days</u> |
|------------------------|--------------------------------------|
| Ammonium nitrate | 10 kg |
| Potassium sulphate | 10 " |
| Superphosphate (18.5%) | 14 " |

- 6 applications (for 3 weeks)

or alternative:

4 applications (2 weeks)

and 2 " without ammonium nitrate

- after the 6 applications, in the 4th week 2 applications of potassium sulphate at 24

4. Ammonium nitrate

4.1 Greenhouse

All the varieties are in the harvest period.

The first harvest was characterized by small fruit.

A severe attack of mites can hold back the plants - and it's important to keep a fumigation program in contact with the ...

The performance of the varieties:
Number 1380 - good sizes and netting, some
 cracking if too mature - ready for
 harvest at a green-yellow color
 of skin.

Callium, good sizes, netting and
 color (Most of these plants were
 transplanted again 2.6 weeks after
 the first date of transplanting)

Zalda (piel de sapo) - No suitable
 at all for greenhouses and for
 cold weather (sizes very small)
 This type of fruit ~~cannot~~ can not
 be sold at all in the local
 market.

Charante - the plants were
 damaged by the wind and
 we can not get any reading of
 the potential of ~~the variety~~
 the variety.

b) Low tunnels

(9)

20-25 m³ / day / feddan

potassium nitrate 70 kg / feddan / week

: sulphate 10 " " "

calcium nitrate 15 " " "

To apply for another week, if the plants respond well to continue till harvest.

~~4.2~~ 4.3open field - 1.6 acre

date of seeding: 25/4/94

varieties: Anave - 6 rows

C-8 - 21 "

- Before planting was applied:

20-25 m³ of manure

200 kg of potassium sulphate

200 kg of superphosphate 37%

- The 8/5/94 was applied:

| product | qty / feddan |
|------------------|--------------|
| phosphoric acid | 6 liter |
| ammonium nitrate | 12 kg |
| 12-3-43 | 10 kg |

- Recommendations:

a) to apply every 3 days: (6 applications,

ammonium nitrate 15 kg / feddan

phosphoric acid 6 liter / "

- b) after fruit setting:
 during 2 weeks a total of:
 potassium nitrate 45 kg / feddan
 calcium " 20 " "
- if 4 applications: (every 3 days)
 potassium nitrate 17.8 kg / feddan
 calcium " 5 " "

5 - General recommendations for open fields.

The crop is going now to a much warmer weather.

- a) If the amount of female flowers is not ~~good~~ satisfactory, to induce the plant to produce more female flowers:

1. to prune the sides of vines
2. to apply phosphoric acid.

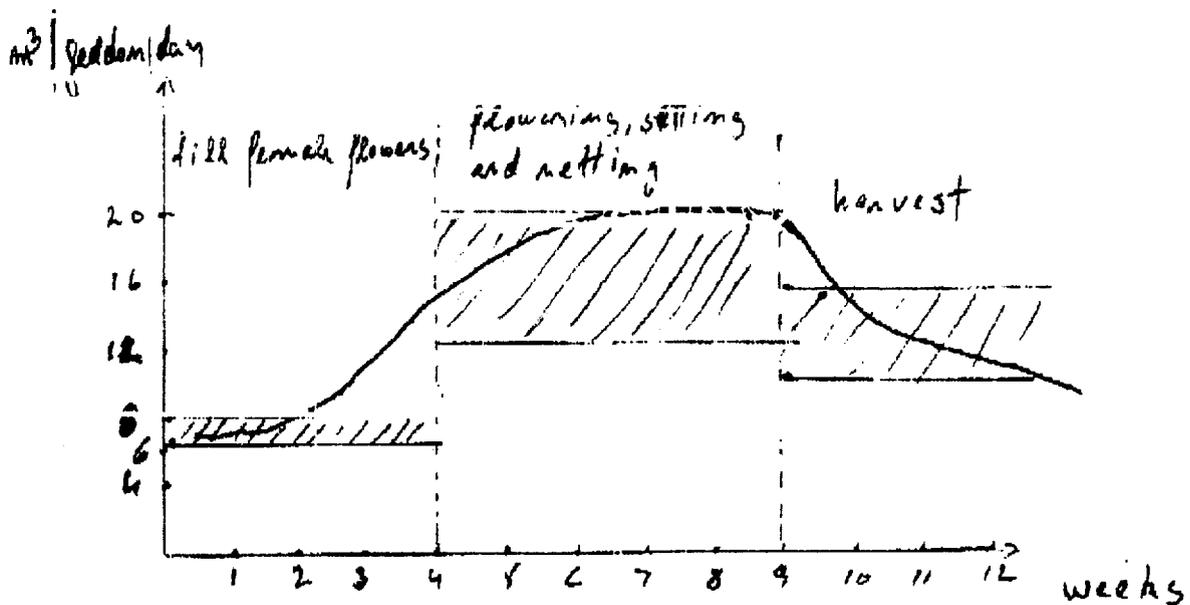
- b) irrigation.

for the warmer weather the growers will have to look very close to the needs of the plant.

We should expect that the crop will need the following amount of water according to the stage of development.

1. till flowering of female flowers:
6-8 m³ / feddan / day
2. during flowering, setting ~~of~~ of
fruit and netting:
12-20 m³ / feddan / day
3. during harvest:
10-15 m³ / feddan / day

Graph. Requirement of water for a melon crop.



SCOPE OF WORK

Melon Production and Marketing Specialist (Intermittent Short Termer)

A. BACKGROUND:

USAID/Egypt has funded the Export Enterprise Development (EED) project with the stated goal to "promote Egypt's economic growth through expanded foreign exchange earnings," and with the purpose to "increase non-traditional exports produced by Egypt's private sector." In the document prepared by Chemonics International for USAID/Egypt, titled Strategy and First Annual Work Plan, "melons for export" are targeted as one of the priority crops for immediate attention given the assumptions that a market already exists for this product, that Egyptian growers have production experience, and that there is potential for high impact in a short period of time.

Although there is production and export experience in Egypt for melons destined for the local and Middle East markets, there is little experience in Europe (the main target market for this commodity), and little experience with the varieties of melons that are preferred in Europe.

B. STATEMENT OF WORK:

This series of intermittent short-term assignments is designed to provide the necessary guidance to the private-sector melon growers in Egypt so that they can produce the appropriate melons for the European market and enter that market successfully.

C. SPECIFIC DUTIES:

1. CONDUCT GENERAL REVIEW OF MELON PRODUCTION: Continuing the work of an earlier short-term melons advisor (Mr. Dale Krigsvold - November 1993), the present intermittent melons advisor, in coordination with COP and representatives of New Desert Growers (NDG) group, will visit as many melon production areas as possible to review the state of the industry, to include available infrastructure, agronomic conditions and grower experience. Where appropriate, recommendations will be given on-site to be followed by written recommendations at a later date. Basic production practices will be reviewed for field-grown melons, with either available humidity, furrow or drip irrigation. He/she will complete the basic production guide for export melons, which was begun by Mr. Krigsvold. This guide includes separate recommendations for specific production sites. A preliminary, three-year business plan for melons will be outlined for NDG growers, with the understanding that this type of plan is dynamic and will require constant updating.

2. ASSESS VARIETY TRIALS: The melon variety trials already established will be reviewed for design and implementation. The intermittent melons advisor will continue the ongoing work to establish field variety trials for the current planting season. In any case, the intermittent melons specialist will advise on the design and implementation of variety field trials and on the proper varieties to be tested.

3. REVIEW QUALITY CONTROL GUIDELINES: The advisor will review, with the relevant growers, and with staff of NDG and the Trade Development Center (TDC), the quality norms for melons for European markets. This review will include guidelines for establishing quality control programs. Recommendations for implementation will be given relative to existing conditions. Where applicable, the review of quality norms will include pesticide residue tolerances and phytosanitary/quarantine restrictions.

4. ASSESS POST-HARVEST HANDLING: As part of the industry review, assess the available infrastructure for packing and post-harvest handling and make specific recommendations for improvement where applicable. When possible, recommendations for equipment upgrade or purchase will include sources of supply. As part of this review, advice and recommendations will be given on proper pre-cooling, packing and transport for export melons.

5. REVIEW MARKETING PLAN: In conjunction with European marketing personnel already identified by EED and NDG, review the marketing plan being developed, making comments and recommendations where applicable. Wherever information gaps are noted, the intermittent melons advisor will provide the required information to the best of his/her ability and experience, drawing on the experiences of Chemonics International staff.

6. PROVIDE ON-THE JOB TRAINING: Appropriate staff from NDG and TDC will be trained by the intermittent melons advisor in all of the processes mentioned above during the normal course of the assignment ("on-the-job" training) but not as individual training events.

D. PLACE OF WORK:

All of the intermittent assignments will be based in Cairo with routine, daily field travel to the melon production areas.

E. DURATION OF ASSIGNMENT:

Four person-days per month, for five consecutive months, for a total of twenty (20) person-days of work. The initial four-day assignment will begin on or about Sunday, January 9, 1994 and continue through Wednesday, January 12, 1994. The final intermittent assignment under this scope of work will take place during the month of May 1994. Whenever possible, the four-day assignments will begin on a Sunday or a Monday, so as to save on lodging/per diem costs.

F. REPORTING RESPONSIBILITIES:

The intermittent melon production/marketing advisor will report directly to and coordinate with the chief of party/management advisor for EED, John R. Miller.

G. QUALIFICATIONS:

- minimum eight years of experience with the production and marketing of melons for export. Experience with all phases of production, including: pre-feasibility studies; planning; organization of growing areas; construction of packing sheds, including installation of refrigeration and post-harvest systems; packing; refrigerated transportation; and management of accounting and other tracking systems for melon growers.
- familiarity with the present situation in growing melons in Egypt; actual experience in Egypt a plus.
- strong verbal communications skills (English and/or Arabic language)
- good report-writing skills (English language)