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# FARMER TO FARMER PROGRAM

GRANT NO. 263-0225-G-00-4021-00



ANNUAL REPORT

YEAR II

SEPTEMBER 1994 - AUGUST 1995

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Picture on cover page is of US Volunteer, Pat Rowe, Potato Extensionist, accompanied by FtF Alexandria Field Assistant, Adham El Sherbini (right, bending), during a farm visit to one of FtF's core group farmers in Behera governorate.

# **Farmer To Farmer Program**

## **Annual Report**

**September 1994 - August 1995**

### **Executive Summary:**

The FtF Program aims to increase food production and improve the economic well-being of Egyptian farmers through the provision of training and technical assistance to farmers and agribusinesses. FtF technical assistance in Egypt is targeted at the fruit, vegetable, livestock, beekeeping and aquaculture sub-sectors. It reaches a broad spectrum of farms in eleven governorates in the Nile Delta, the reclaimed desert "New Lands", and increasingly, Upper Egypt. The program is exceeding targets in technology transfer and outreach. Based on comments received from U.S. volunteers, Egyptian farmers and Ministry officials, FtF training and technical assistance have resulted in positive changes in income, yields, natural resource management, information linkages, and cultural understanding.

While directly targeting a group of over 600 core group farmers, the program also reaches other farmers (non core group farmers) who benefit by attending seminars presented by U.S. experts, FtF core group farmers, FtF Field Assistants and MOA extension agents. The program aims to select core group farmers who are potential leaders in their area, and have the means both to implement the recommendations emerging from the program and to disseminate them to a wider group of non core group farmers. FtF is currently expanding the outreach capacity of these leader farmers, enabling them to improve their access to in-country technical information and to serve as a catalyst for their communities.

## **Expected Achievements During Year II**

**September 1994 - August 1995**

### **1. Program Management:**

- Hire New FtF Staff
- Receive new vehicles and procure other equipment for the FtF offices
- Submit Annual Work Plan for Year III
- Submit Year II Funding Obligation Request
- Submit Year III Funding Obligation Request
- Respond to FAST Report
- Travel to the United States by FtF Program Director
- Travel to the United States by VOCA Program Coordinator

### **2. Farmer Selection:**

Identify 200 core group farmers  
Identify 4,000 non core group farmers

The Program will increase its efforts to reach women farmers by targeting women farm owners and managers.

### **3. Commodity Selection:**

FtF will concentrate on the following commodities:

- |              |                    |
|--------------|--------------------|
| ● Tomato     | ● Potato           |
| ● Cucurbits  | ● Citrus           |
| ● Grapes     | ● Deciduous Fruits |
| ● Beekeeping | ● Fish             |
| ● Livestock  | ● Tropical Fruits  |

**4. U.S. Volunteers Technical Assistance:**

Make arrangements for 62 volunteers to undertake technical assistance assignments in Egypt.

**5. Participant Training Program:**

45 farmers and extension agents will travel to the United States to receive on-farm training in the following commodities:

- Deciduous Fruits
- Citrus
- Sheep & Goat
- Tomato
- Potatoes
- Beekeeping Production
- Grapes

**6. Technology Advancement:**

**a) Training Sessions:**

400 training sessions will be conducted by volunteers, core group farmers and FtF Field Assistants.

**b) Training of Trainers:**

100 core group farmers will participate in the Training of Trainers Program, bringing the total number of farmers who have received outreach training to 220.

**c) Resource Materials:**

Six training videos will be produced during Year Two, and FtF staff will make arrangements for the translation, printing and distribution of brochures and leaflets.

**7. Linkages:**

The program will continue to strengthen and expand its links with Egyptian and U.S. government agencies, ARCs, ACIDI member organizations, and other NGOs and development projects in Egypt.

## **8. Associations**

The FtF Program will continue to encourage the establishment of democratic, farmer-owned associations.

## **9. Technology Transfer:**

Transmit 186 new technologies, of which, 150 are expected to be adopted. The number of core farmers adopting one or more technology is expected to be 510, while the number of non core farmers adopting one or more technology is expected to be 3,000.

## **10. Monitoring:**

The MIS Consultant will upgrade and enhance the system to ensure that it meets evolving program needs.

## **11. Follow Up**

The FtF staff and volunteers will follow up with core group farmers who attended training sessions and were visited by volunteers to determine whether recommendations have been adopted. Each core group farmer should be visited by a volunteer at least once during Year II, while FtF Field Assistants visit each of the 50 core group farmers they monitor at least four times.

## **Progress Achieved During Year II**

### **September 1994 - August 1995**

#### **1. Program Management:**

- *FtF Staff:* FtF filled the following positions that became vacant during Year II: two FtF Alexandria Field Assistants, one FtF Ismailia Field Assistant and one driver.
- *Receive Vehicles:* Four new 4 wheel drive vehicles were delivered during the month of January 1995. A heavy duty printer, cameras for each field office and two air conditioners were also purchased during Year Two.
- *Submit Annual Work-Plan for Year Three:* The Annual Work-Plan for Year III was not submitted to USAID until October 1995.
- *Submit Year Two Funding Obligation Request:* The Year II Funding Obligation Request was developed, submitted and approved by USAID during the first quarter of Year II.
- *Submit Budget Modification Proposal:* The Year III Funding Obligation requested was submitted to USAID in August 1995.
- *Respond to FAST Report:* In early December 1994, ACDI submitted to USAID its response on the FAST (Financial Analysis Support Team) review of FtF Phase II expenditures.
- *Travel to the United States by FtF Program Director:* Mahmoud Kamel traveled to the United States from March 15 through April 12, 1995. The purpose of his visit was to review participant training program implementation, discuss volunteer recruitment procedures with VOCA, and develop plans for Year III. He attended orientation and debriefing sessions for the Tomato and Grape participant groups, who were there during his visit, met with ACDI and VOCA staff in Washington, and visited VOCA's regional office in California.

- *Travel to the United States by VOCA Program Coordinator: Ahmed Roushdy traveled to the United States during the same period as the FtF Program Director. During his visit, he received an updated orientation to both VOCA and ACDI, and reviewed recruitment procedures with VOCA program staff in Washington and the two regional offices selected to focus on Egypt. He also worked with the US based staff on plans for Year III.*

## **2. Farmer Selection:**

### **a) Core Group Farmers:**

The FtF staff selected 160 core group farmers, to bring the total to 675 to date, exceeding the LOP targets of 600, but falling short of the Year II target of 200.

A total of 10 core group women farmers were selected during Year Two and a women's participant training program took place in the field of tomato production. The group consisted of eight participants (6 core farmers and two extension agents).

### **b) Non Core Group Farmers:**

Exceeding the Year II target of 4,000, FtF staff selected 5,303 non core group farmers during this period, to bring the total of non core group farmers to 11,207 to date.

## **3. Commodity Selection:**

The FtF Program focused on the following commodities during the Year:

- Tomato
- Cucurbits
- Grapes
- Beekeeping
- Livestock
- Potato
- Citrus
- Deciduous Fruits
- Fish
- Tropical Fruits

5A



Picture # 1

Core group farmer pruning a grape vine during a farm visit conducted by Grape Production Specialists John Henry and Henry Bowden

#### **4. US Volunteer Technical Assistance:**

44 US volunteers completed assignments in Egypt during the year, providing technical assistance in fruits, vegetables, beekeeping, livestock and aquaculture. The goal was for 62 volunteers but recruitment fell short for a variety of reasons that included adverse US weather conditions that affected prospective volunteers' crops, concerns about security in Egypt, health problems, and general scheduling conflicts. The total number of volunteers is thus 69 to date. (Appendix C presents a list of the volunteer assignments).

The 44 volunteers conducted a total of 1,008 farm visits and 267 training sessions which were attended by core group farmers, extension agents and non core group farmers, in nine governorates. Highlights of two volunteer assignments that occurred during Year II are as follows:

##### **Sheep & Goat Production:**

Mary Gessert, Sheep and Goat Veterinarian, and Fremont Bell, Sheep and Goat Extension Agent, worked as a team in conducting 60 farm visits and five training sessions. During their assignment, they found that very few Egyptian farmers were aware of the production levels of their flock or its profitability. "Without this information it is impossible to evaluate the economic impact of a management decision. For example the effectiveness of a parasite control program must be evaluated on the basis of its cost/benefit ratio. To determine this, production must be known," said Gessert and Bell.<sup>1</sup>

They stated that some of the Bedouins reported serious problems with abortion outbreaks affecting up to 30% of the flock. While samples had been sent to the diagnostic lab, no diagnosis had been made. Previous volunteers have reported inadequate and outdated laboratory facilities. In some regions farmers also reported that the veterinarians were unable to perform fecal examinations for internal parasite diagnosis. Diagnosis of diseases is necessary before treatment and prevention strategies can be designed. Gessert and Bell therefore recommended:

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<sup>1</sup>Mary Gessert and Fremont Bell, "Final Report: Egypt Sheep and Goat Project", August, 1995.

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**Picture # 2**

Mary Gessert, Sheep and Goat Veterinarian, (left) doing a medical check up on a goat, during her farm visit to one of the FtF core group farmers in Ismailia.

- Give high priority to modernization of veterinary diagnostic laboratories.
- Train local veterinarians in the proper collection and handling of blood and tissue samples.
- Recruit a veterinary pathologist familiar with the needs of a diagnostic lab to serve as an advisor in carrying out the above plans.

Gessert and Bell also stated that good health depends on fresh air, wholesome food and clean water. In many cases attention to these basics is lacking. Livestock are often closed in barns with no ventilation and poor sanitation. Feed is placed on the ground and water is contaminated with manure. Pneumonia and parasites are common diseases that result from such conditions. The solution is to teach farmers about the importance of proper ventilation and sanitation. Extension personnel should use demonstration farms to show farmers proper housing and feeder construction.

#### **Tomato Production:**

Bobby Hathcock and Alfred Skala worked as a team on a tomato assignment. The purpose of their assignment was to address pest identification, pest management and pesticide safety with Egyptian tomato farmers and extension personnel through farm visits, village training sessions and seminars.

Hathcock and Skala focused on the fact that white-fly was a problem in almost every field they visited and efforts must be made to get this pest under control.<sup>2</sup> Some farmers were having better success than others. It appeared there were problems with effective products available for control, application techniques, timing and application frequency. Their recommendation to prevent this problem is to try to improve application techniques and equipment to deliver the products to the underside of the leaves. Farmers should start using the following products to control white fly: Thiodan, Malathion, Diazinon, Karate and Guthion.

Another problem, identified by Hathcock and Skala is the rate and timing of fertilizer application. They discovered that there is a lack of proper timing of nitrogen application and, in some instances, phosphorus and potassium. They also observed magnesium and some micronutrient deficiencies on isolated fields. They provided guidelines on the correct timing and quantity for nitrogen applications, pointing out that tomatoes do not need large amounts of nitrogen while they are young. Too much nitrogen at early stages

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<sup>2</sup>Bobby Hathcock and Alfred Skala, "Final Report: Egypt Tomato Project," July, 1995.

is not only wasteful but can also contribute to flower abortion. High temperatures already cause a major problem in this area and the producer does not need to add to the problem with too much nitrogen.

## **5. Participant Training Program:**

### **a) On-Farm Training in the United States**

A total of 43 farmers and extension agents travelled to the United States to receive on-farm training in the fields of fruits, vegetables and beekeeping. This fell slightly short of the goal for the year, which was 45. Highlights of a program for beekeepers in July 1995 and a program for tropical fruit production are presented below. (Appendix D contains a table listing all participant groups who travelled to the United States to date).

#### **Beekeeping Group:**

Six Egyptian beekeeping farmers, one extension agent, and the ACIDI escort/interpreter, arrived in the United States on June 29, 1995 to participate in a month long training program in beekeeping production. The group visited Washington and Ohio state, where they learned about queen rearing, disease control, nutrition and apiary development.

The group spent six days in Washington D.C. at the beginning of their program, during which they were given a briefing at ACIDI, and an orientation to American culture by Lobna Ismail. The group also spent two days at the bee laboratories of the Beltsville Agricultural Research Center, where Dr. Hashiro Shimanuki, Head of Bee Research, and his colleagues presented a series of lectures and laboratory demonstrations on disease diagnosis, queen breeding, and parasite control.

Mr. Michael Sayers, former VOCA volunteer, was the group's local coordinator in Ohio, where he arranged various visits to local apiaries, as well as the Ohio State Bee laboratory, and other research facilities. The Ohio program focused on artificial insemination, honey packing, beekeeping equipment, and entomology.

The Washington State program was arranged by Mr. James Bach and Mr. Robert Zahler, also former VOCA volunteers. The group learned about pollination, honey production, extraction and packing. They visited various apiaries, as well as the Washington State Research Station.

Mr. Salah Mohamed, an apiary owner and manager, learned many new techniques which will help him to strengthen his colonies and increase his production. The American



Picture # 3

Michael Sayers, Local Coordinator in Ohio State, (wearing sun glasses) with participants, Marawan El Badrey, (right) and Salah Malek, (left), during a Participant Training Program in the United States.

beekeepers he met advised him to extract only half of his honey at one time, leaving the rest for his bees to feed on. He plans on implementing this practice upon his return, as it will strengthen his bees and save him the cost of feeding them. He will also replace all of his queen bees every year, as opposed to replacing only 50% of them every year, as he does now. He is convinced that this will strengthen his colonies and increase the number of worker bees, allowing him to sell more bee packages. Furthermore, he will unite his weak colonies, creating fewer but stronger ones.

Mr. Hamdy Gizawy, an apiary owner and manger, also learned a great deal about strengthening hives. He will unite his weak colonies, and has learned the importance of choosing his queens well. He will begin replacing only 50% of his queens every year, as opposed to 30%. He will also concentrate much more on the extraction, packaging and marketing of his honey. During his stay in the United States, he purchased a filter, which will allow him to produce higher grade, more expensive honey. He will pack the honey in small plastic containers instead of tin cans as he currently does, to make it more appealing to the buyer and to give the Egyptian customer the option of purchasing smaller, cheaper amounts of honey.

Mr. Reda Soudy, the extension agent, was interested in disease detection and treatment. He learned how to diagnose diseases in the laboratory at the Agricultural Research Center in Beltsville, instead of relying solely on symptoms. Upon his return, he will begin making use of an Egyptian facility for disease detection. Mr. Soudy also learned how to control trachemite by making patties of soybean flower and vegetable oil. He was introduced to the idea of collecting pollen. He works in eight different areas, some of which are rich in pollen, others very poor. Upon his return to Egypt, he will encourage pollen collection, and will show his beekeepers how to place pollen traps at the entrance of their hives.

Mr. Abdelati Abdallah, an apiary owner and manager, also learned a great deal about disease detection at the Beltsville Agricultural Research Center. This was the first time that Mr. Abdallah had used a microscope, and he was extremely impressed. He will now begin sending samples to the lab instead of just relying on the symptoms to do his own diagnosis. He will also start to sterilize his frames to avoid the spread of disease. He learned that he must replace the queen if the bees are not happy with her. This entails adding a new queen while the old one is still there. The stronger queen will survive.

### **Tropical Fruit Group**

Four Egyptian tropical fruit growers, one extension agent and an ACIDI Escort/Interpreter, arrived in the United States on August 20 to participate in a three week training program. The group travelled to Miami, Florida and San Diego, California and learned many new techniques in the production of mangoes and various other tropical fruits.

The Florida program was arranged by Mr. Roy Nelson, a former VOCA volunteer to Egypt. The ten day training focused on mango production and the group learned a great deal about pruning and training, grafting, scion selection and disease control. Despite the fact that a large portion of Florida's mangoes were destroyed by the hurricane a few years ago, Mr. Nelson was able to arrange many visits to mango groves, research centers and nurseries.

The California portion of the program was coordinated by Dr. Gary Bender from the Cooperative Extension Office in San Diego. The participants studied sub-tropical fruits, mainly avocados and custard apples (*Annona*). They learned about disease control, irrigation with reclaimed water, and pruning.

One of the participants, Mr. Ibrahim Ghounim aimed to learn as much as possible about custard apples. He learned the importance of topping because it encourages new growth. He used to only trim a few random branches around the edges. Mr. Ibrahim also observed that the American growers have micro sprinklers called protectors attached to their drip irrigation pipes. The sprinklers raise the level of humidity in the field which improves the quality of the fruit and offers protection against the cold. Mr. Ghounim, who already has a drip irrigation system, will attach sprinklers to the pipes.

Mr. Hassan Abdel Gawwad came to the United States hoping to learn as much as possible about mangoes. He learned how to diagnose Anthracnose disease by observing the symptoms on the leaves and fruit. He also found out how to solve the big problem of snails in Egypt, which attach to fruits and vegetables. This can be achieved by coating the tree trunk with a mixture of white paint and copper sulphate, which deters snails from climbing up to where the fruit and leaves are.

Mr. Zakaria Shehata was interested primarily in learning new techniques for growing citrus. He found out while visiting growers in California that he can use gibberillic acid and 2, 4 D, both growth regulators to delay coloring in citrus fruits. He already uses these two chemicals, but only to increase his yield. This new use will allow him to introduce his fruit on the market with optimal colour.

Mr. Mohamed El Ghabosh was impressed with the American fertilizer factories, where mixtures are custom made according to each farmer's individual need. In Egypt, the factories only manufacture three or four different fertilizer mixtures. Upon his return, Mr. Ghabosh will begin doing soil and leaf analysis and will attempt to convince one of the small factories in his area to create a mixture which will give his soil the nutrients it needs.

Mr. Ghabosh will also change his method of making compost when he returns to Egypt. He learned that it is more beneficial to dig a long trench and turn the compost over every week instead of making it in a deep hole. This exposes it more to the air, speeding up the composting. Mr. Ghabosh had also hoped to learn more about using reclaimed sewer water during his visit to the United States. He found out that it is worth using in areas where there is no water, but that when added to regular water, it can reduce the yield by up to 30%.

**b) In-Country Participant Training Program:**

The FtF Program initiated a new activity this year, following approval from the USAID Project Officer. It is essentially an in-country participant training program, whereby FtF staff work with core group farmers to design a week-long program in one of the targeted governorates and make arrangements for core group farmers from another governorate to participate. The program aims to provide farmers with more information on local conditions and practices, and to facilitate an exchange of experience among core group farmers.

**Sheep and Goat Group:**

In mid July, three farmers and one extension agent from Ismailia governorate participated in a local on-farm training program focusing on sheep and goats in Alexandria and Matrouh governorates. They were accompanied by the Alexandria FtF Field Coordinator and two FtF Field Assistants. During their training they attended a seminar conducted by Dr. Ibrahim El Sayed, Professor in Breeding and Feeding, at the Agricultural Research Center.

They visited a farm called El Sherouk, in Borg El Arab, where they discussed the farm's activities, including feeding issues. They also visited two sheep and goat farms, owned by core group farmers in Matrouh. The Matrouh governorate is known for its large production of sheep and goat. It exports about 15,000 - 20,000 sheep annually to Arab countries.

### **Grape Group:**

From August 19 - 24, 1995, three farmers and one extension agent from Menia governorate participated in a local on-farm training program in the field of grape production in Alexandria. The group was accompanied by the Alexandria FtF Field Coordinator and three FtF Field Assistants.

The group visited the Faculty of Agriculture, Alexandria University, where they met with Dr. Atef Ibrahim, Professor of Fruit Production. He discussed the different types of grapes that would be suitable for cultivation in Menia's dry and hot climate such as Flame Seedless, Thompson and Early Superior.

The group also visited a farm owned by FtF core group farmer, Mohamed Sabry El Shazly, at El Nahda, Alexandria. They talked about how to deal with diseases that attack the crop. There were damages on the branches of the vineyards, caused by birds and the direct sun rays. One of the group members suggested that the vineyards must be sprayed with copper and sulphate, in order to prevent mites from spoiling the crop.

They then visited a farm owned by another FtF core group farmer, Fouad Bakry in El Boustan area, Alexandria, where they learned about growing grapes on Y shaped wires, pruning techniques, and irrigation systems, including drip irrigation.

## **6. Technology Advancement**

### **a) Training Sessions**

Exceeding the Year II target of 400, a total of 426 training sessions were conducted during Year II, 267 by U.S. volunteers and 159 by FtF Field Assistants and core group farmers. The training sessions dealt with the following commodities:

- Tomato
- Cucurbits
- Grapes
- Beekeeping
- Livestock
- Potato
- Citrus
- Deciduous
- Fish
- Tropical Fruits

12A



**Picture # 4**

Extension Agent, (left) grafting the trunk of a deciduous tree. El Bayoumi Awad, FtF Field Assistant observing, (right with beard).

### b) Resource Materials

The FtF Program produced one video tape in the production of tomatoes. However, because NARP and other developmental organizations have been producing educational video films on the same agricultural commodities that FtF hoped to target in its videos, FtF has not proceeded with the production of videos as required by the grant agreement. Instead, the USAID approved ACIDI's request to use the funds as follows:

- Copy video tapes that are already produced by other organizations (NARP in particular) and distribute them to FtF core group farmers and extension agents.
- Increase training opportunities for FtF farmers, MOA extension agents and representatives. This would include activities such as training sessions, conducted by core group farmers, MOA staff and extension agents, as well as an Internal Participant Training Program, similar to the training program in the United States. The purpose of this program is to increase linkages and dissemination of information among Egyptian farmers.

The translation of brochures and leaflets was not carried out during Year II as planned, due to not finding the right printing company who could distribute and publish good quality brochures.

### c) Training of Trainers

Two Senior Consultant Trainers were hired to carry out a second cycle of the TOT Program which started during the last week of July 1995 and will continue until October 1995. 100 core group farmers have been selected to be trained during this cycle, for a total of 220 by the end of the project. The purpose of the program is to enhance the ability of the core group farmers to transfer FtF imported technologies to their farming neighbors and colleagues.

## **7. Linkages:**

The FtF Program continued to strengthen and expand its links with Egyptian and U.S. government agencies, ARCs, ACIDI member organizations, and other NGOs and development projects in Egypt. This was achieved through volunteer visits and participant training in the United States, the participation of MOA and other staff and officials in

training sessions and farm visits, and by informing university professors, research specialists, and others involved in agriculture about volunteer findings and recommendations. People in the following positions in Egypt participated in the program during Year II:

MOA Head of Central Management	Counselor to the MOA
NARP Director	NARP Head of Department
ARC Head of Institute (Director)	ARC Staff
University Deans	University Vice Deans
University Professors	MOA Under Secretaries
MOA General Managers	MOA Head of Departments
MOA Extension Agents	

The following is a sample of U.S. volunteers' official contacts during their assignments:

Mary Gessert and Fremont Bell met with Mr. Essam Shehata, Head of the Sheep and Goat Research Division at the Animal Production Research Institute. They also met with Dr. Ibrahim Ahmed El Sayed, Senior Researcher of Animal Production, at the Sheep and Goat Research Station, ARC.

Bobby Hathcock and Alfred Skala met with Dr. Mohamed Thanaa Hassan, Regional Director of the Agriculture Research Station (ARC), in Alexandria.

#### **8. Associations::**

The development of private, member-owned and managed associations is something completely new to Egyptian farmers, but with the help of the FtF Program, a number of core group farmers have succeeded in forming their own cooperative associations as follows:

- The Fruit and Vegetable Marketing Cooperation, Alexandria  
Chairman: Hazem Abou Ras
- The Graduates Association for Meat & Milk Production, Alexandria  
Chairman: Moustafa el Messeiri
- The Honey Bees Association, Gharbia  
Chairman: Abdel Hadi El Khatieb

- The Horticultural Exporters Association, Gharbia  
Chairman: Ali Abou Gazia
- The Farmers Association for Development, Alexandria  
Chairman: Assem Abdel Gabbar
- The Fish Growers Association, Siwa  
Chairman: Mohamed Omar Idris

#### **9. Technology Transfer and Economic Impact:**

During Year II, 294 new technologies were introduced to Egyptian farmers by U.S. volunteers. From the 456 technologies transferred to date, 389 or 85% have been adopted. Of the 675 core group farmers reached to date, 548 or 82% have adopted at least one of the new technologies introduced.

The Implementation Plan states that FtF will track related indicators that reflect FtF's impact in a variety of areas, from investment to cultural understanding. Examples of impact in these areas during Year II include the following:

##### **a) Technology Transfer in Action:**

Beekeeper and core group farmer, Nabil Ibrahim Mohamed, owns 25 hives in Village # 16, Bangar El Sokar and has participated in many FtF training programs in the fields of beekeeping management, queen rearing, and controlling varroa. In addition, he participated in an on-farm training program in the United States through the FtF Program in 1993, where he visited research centers, universities, large beekeeping operations and packing and processing operations.

Mr. Mohamed became a key farmer in his area, where he introduced beekeeping as a new activity and shared what he learned with his colleagues and neighbors. He held many training sessions and field demonstrations for beginners. He also conducted experiments to introduce bees for pollination of cucurbits under green houses, and estimates that this resulted in a 70% increase in cucurbit yield.

He has been visited by several volunteer beekeeping teams who have recommended the following:

- Add warm sugar syrup (35 - 38<sup>o</sup>c) directly to the empty cells next to the board
- Eliminate shade
- Select bees for temperament or buy gentle queens
- Unite hives for strong colony
- Use pollen supplement
- Change queens every year or every other year
- Feed bees if the frames for honey are light or not full
- Introduce high quality combs
- Use apistan properly: place one apistan strip in each colony of the entire apiary annually, avoid introducing apistan during nectar flow; and leave the strip for a minimum of 39 days and not longer than 60 days

Prior to introducing these changes, Mr. Mohamed's honey production averaged 6 kgs/hive/year. Applying the volunteers' recommendations has resulted in a 50% increase in yield, to 9 kgs/hive/year. With his honey selling at LE 15/kg, Mr. Mohamed's revenues have increased by over LE 1,000/year.

**b) Increased Yield of Targeted Commodities:**

Core group farmer, Khalil Ibrahim El Masry, owns a 40 feddan farm of apples and grapes in El Boustan. As a result of applying several recommendations from US volunteers in deciduous fruits, his apple yield this year was around 26 - 30 tons/12 feddans, compared to 10 tons/12 feddans last year. He found that this season's apples have a better quality in size and colour than the previous season. He attributes this to the better pruning practices he started on his farm this year.

Core group farmer, Mohamed Ismail Belal, owner of a fish farm in Edco, Behera has applied the following recommendations which increased his yield by 10%.

- Decrease the pond size (5-10 cm) to ease management.
- Purchase water quality testing equipment to facilitate monitoring.
- Construct brood ponds of 1-10 feddans, for monosex tilapia.
- Use fertilization rather than manufactured feed.

c) Impact of Participant Training:

- *Improved Herd Health and Increased Income:*

Khamis Youssef, a returning participant from an on-farm training program in the United States in the production of sheep and goat, has made significant changes to his sheep operation in El Nigila desert in Matrouh governorate. New management has improved herd health and his income.

Mr. Youseff, like most herders in his area, used to raise his rams and ewes together. Separating them except for breeding once a year has resulted in just one lambing season. This method prevents births during the hot summer months when the grasses are scarce. One lambing season also facilitates identifying the proper time for vaccination, weaning, and fattening. His improved vaccination methods have reduced the herd mortality rate by around 17%.

Mr. Youseff has started using Atriplex as another source of feed for his flock, which has not been used for feed in the past in Egypt because sheep and goat do not like the taste. At the University of Arizona, the participants learned that if they mixed the Atriplex with soybeans, molasses, and barley, the sheep and goat will eat the Atriplex. Around six of Mr. Youseff's neighbors have also started supplementing their feed with Atriplex.

The participants in Mr. Youssef's group learned about the effects of proper nutrition to the physiology of ewes before mating and shearing. Upon his return, Mr. Yousseff has increased the feed for the ewes before mating and shearing from one kilo of concentrate to one and a half kilo. As a result he has had a 10% increase in births. He has also started to grade his wool. He separates his wool into two grades, which has increased his income by 15%.

- *Higher Honey Yields:*

Mr. Mohamed Sakr, a returning participant from a Beekeeping Program in the United States, learned that he could increase his honey production by arranging the entrances to his hives so that they face different directions. This increased the hours of sunlight for the bees, making them

more productive. He also learned that using a "super size" farm produces more honey because there is less waste, and it is easier to make honey comb sections to sell.

Mr. Sakr is experimenting with the direction his hives will be facing for the most honey production. He wants to make the maximum use of the sun since much of his production is during the winter.

Besides raising bees for honey production, Mr. Sakr also sells beekeeping packages for other beekeepers to start hives. By improving his feeding methods, Mr. Sakr will be able to significantly increase his sales, especially during November and December when demand is higher. He will also maintain the health of his remaining hive. In selling packages in the past, Mr. Sakr would sell the equivalent of 1/3 of his hive rather than retrieving bees from a variety of hives. The old thinking was that bees forming different hives would kill each other. Now, he realizes this is not true. He will take one frame from two or three hives for sale in the future, and will reduce possible problems in his existing hives.

For feeding the hives when necessary, Mr. Sakr will no longer place syrup inside each hive, since syrup can ferment in the hive. Instead, he will place a sugar solution outside and accessible to all the hives.

## **10. Monitoring:**

### **Management Information System**

The part-time MIS Consultant who had been working on the system during calendar year 1994 resigned in December to move to the United States. During his assignment in the first part of Year II, he completed the following activities:

- Refresher training for the FtF staff in the Alexandria, Cairo and Ismailia offices, and initial training for new staff. The training included new system modifications.
- Creation of a slide show presentation that can be used as a demonstration for FtF visitors or evaluators. The slide show includes a large number of graphical slides which can be displayed on either the computer monitor or on a slide projector. The slide show will serve as a useful summary of project activities and their impact.

- Development of a technical manual for the FtF MIS totalling over 100 pages and providing detailed instructions on how the system can be used by headquarters and by the field offices.

A new MIS Consultant was hired in July 1995 to carry out the following tasks:

- Improve the ease, accuracy and completeness of the system to make it more user-friendly than the MIS previously in use.
- Provide methods of reporting on the economic impact of the project.
- Improve inter office data exchange by modem and e-mail or by diskette.
- Provide training in system use for FtF Field Assistants in Cairo, Alexandria and Ismailia.

b) Program Monitoring Visits:

Diana Roach and Sam Driggers, VOCA Regional Recruiters from California and Ohio offices, arrived in Cairo on June 15, 1995 and departed on July 1, 1995. They visited the Cairo, Alexandria and Ismailia offices. The purpose of their trip was to become more familiar with the FtF Program in Egypt, thus enhancing their recruiting and orientation efforts. They carried out the following scope of work:

- Gained firsthand understanding of how the FtF Program operates in Egypt.
- Viewed Egyptian agriculture in person so as to better brief and counsel volunteers before their departure.
- Worked with ACDI and VOCA staff in Egypt to streamline the recruiting and placement process of volunteers.

**11. Follow Up:**

Each of the 12 FtF staff have followed up on core group farmers to assess whether the technology transfer process is occurring and that recommendations are being adopted. 267 training sessions were conducted by US volunteers, which were attended by core and non core group farmers.

19a



**Picture # 5**

**Adham El Sherbeni, (center), an FtF Field Assistant, accompanying Eugene Ingalsbe (right), Cooperative Development Specialist, at the apiary farm, owned by an FtF core group farmer, Abdel Hady El Khateeb (left).**

### **Comments on Plans Versus Achievements**

- As explained above, a total of 44 volunteers undertook assignments during the year compared to the 62 originally planned. FtF expects to make up the shortfall in Year III, ensuring that the LOP target of 120 volunteers is achieved.
- In other areas, targets were exceeded. For example, 294 new technologies were transmitted to farmers instead of the 186 targeted. Similarly, the number of non core group farmers participating in the FtF activities was 5,303 as opposed to a target of 4,000. This is because core group farmers have been very active and because attendance at training sessions by non core group farmers has been very high. Also 160 new core group farmers have been selected, exceeding the target of 42.
- Appendix B contains graphs showing achievements versus targets for the year.

## **Plans For The Next Quarter**

### **September - November 1995**

#### **1. Program Management:**

- Hire new FtF staff to fill in the positions of a VOCA Program Assistant, a Driver in the Cairo office, and three personal for data entry in each office.
- Submit Year III Annual Work-Plan.
- Launch FtF Impact Assessment

#### **2. Farmers Selection:**

Identify 199 non core group farmers to bring the total to 11,406.

#### **3. U.S. Volunteers Technical Assistance:**

Make arrangements for 20 U.S. volunteer assignments in the following specializations to bring the total number of volunteers to 89.

- |   |                                   |
|---|-----------------------------------|
| ● Potato Production Specialist          | ● Potato Extension Agent          |
| ● Citrus Extension Agent                | ● Citrus Production Specialist    |
| ● Beekeeper                             | ● Bee Disease Specialist          |
| ● Tomato Production Specialist          | ● Tomato Extension Agent          |
| ● Cucurbit Extension Agent              | ● Cucurbit Production Specialist  |
| ● Fish Management Specialist            | ● Water Quality Specialist        |
| ● Tropical Fruits Production Specialist | ● Tropical Fruits Extension Agent |
| ● Grapes Extension Agent                | ● Grapes IPM                      |
| ● Deciduous Fruits Extension Agent      | ● Deciduous Fruit IPM             |
| ● Livestock Nutrition Specialist        | ● Livestock Veterinarian          |

#### **4. Participant Training Program:**

##### **a) On-Farm Training in the United States**

Arrange for two participant groups to travel to the United States to receive on-farm training in small scale vegetable production and potatoes. Each group will consist of seven participants, totalling 14. This will bring the total number of participants trained to 95.

##### **b) In-Country Participant Training Program**

Plan for three participant groups in the fields of Aquaculture, Citrus and Tomatoes, to receive in-country training in different governorates. Each group will consist of 4 core group farmers and one extension agent.

#### **5. Technology Advancement:**

*Training Sessions:* Conduct 100 training sessions by U.S. volunteers, Field Assistants and core group farmers. This will bring the total number of training sessions to 845.

*Equipment Procurement:* The FtF staff will procure small-scale equipment recommended by volunteers for use by private farmer associations working with FtF. Examples include an olive press, a pelleting unit for fish feed, and a solar dryer for fruits and vegetables. Examples of tools that might be purchased include sheers, smokers and other beekeeping equipment, and soil test kits. Training on use of the equipment will be provided by volunteers, with follow-up by FtF Field Assistants.

*TOT Program:* The Training of Trainers Program will continue until the month of October, 1995. A total of 220 farmers will be trained by the end of the project. The purpose of the of the program is to upgrade the capability of the core group farmers, thus expanding the benefits of FtF imported technologies.

#### **6. Linkages:**

The FtF Program plans to continue strengthening and expanding its links with Egyptian and U.S. government agencies, ARCs, ACDI member organizations, and other NGOs and development projects in Egypt.

**7. Associations:**

The FtF Program will continue to encourage the establishment and development of private, member-owned and managed associations. Volunteer visits and the US study tours are often catalysts for the formation of associations, and Field Assistants play an important role in following up on these developments. These associations will play a key role in institutionalizing the exchange of agricultural information and technologies in the private sector.

**8. Monitoring:**

Continue developing and updating the Management Information System, with the assistance of the MIS Consultant.

**APPENDIX A**

**ACHIEVEMENTS DURING YEAR II**

50

**Year II  
Targets and Achievements  
September 94 - August 95**

Selection of Core Group Farmers	600	515	160	675	675
Farm Visits by Volunteers	2,400	346	1,008	1,354	2,520
Volunteer Assignments	120	25	44	69	122
Participants Trained in the U.S.	120	38	43	81	120
Improved Technologies Transmitted	480	162	294	456	756
Training Sessions	900	319	426	745	900
Non Core Group Farmers	12,000	5,904	5,303	11,207	12,000

Targets.LOP

**APPENDIX B**

**ACHIEVEMENTS VERSUS TARGETS**

# Year II Achievements Versus Targets

12

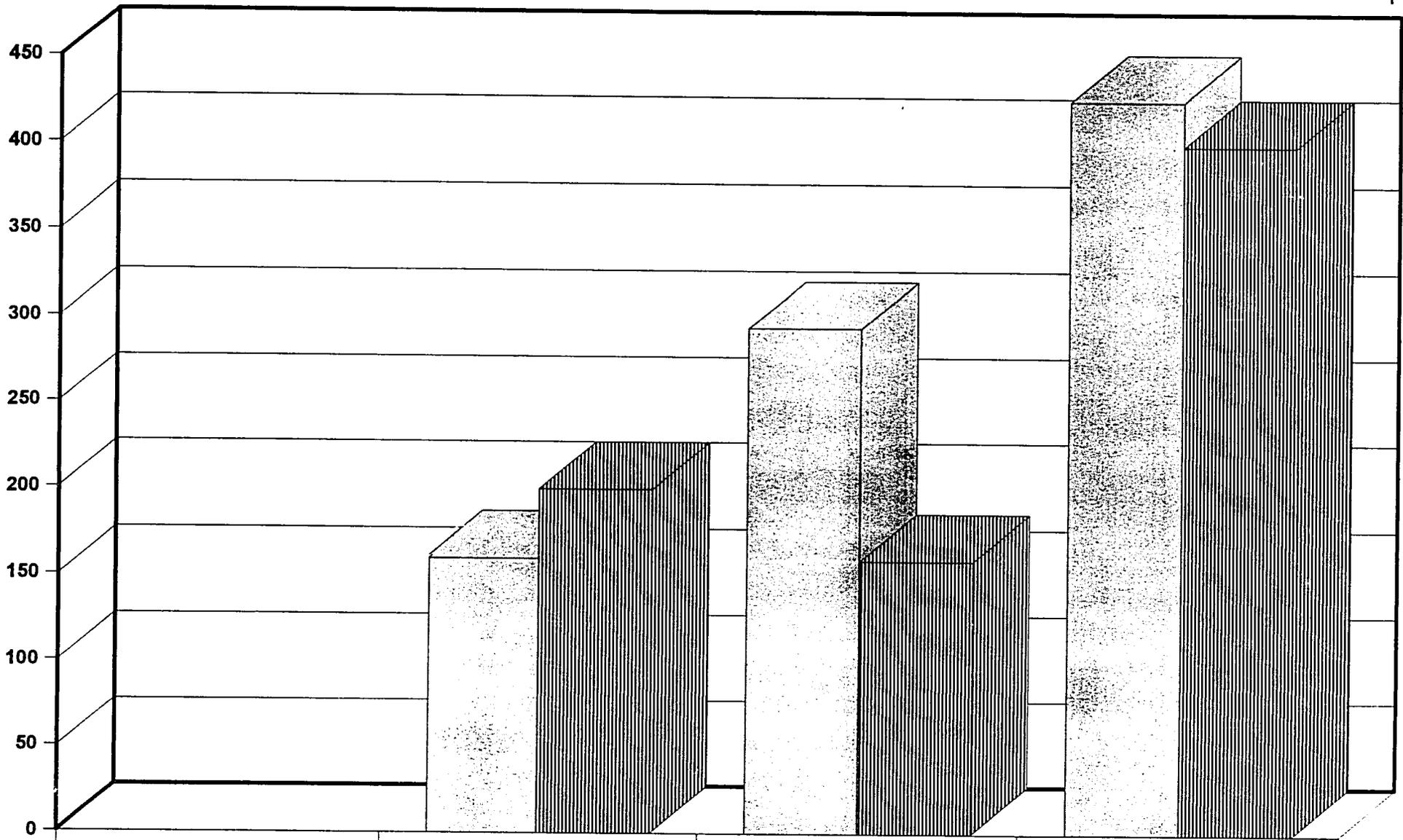


CHART1.TAR

Core Group Farmers

Technology Transmitted

Training Sessions

Year II  
Achievements Versus Targets

82

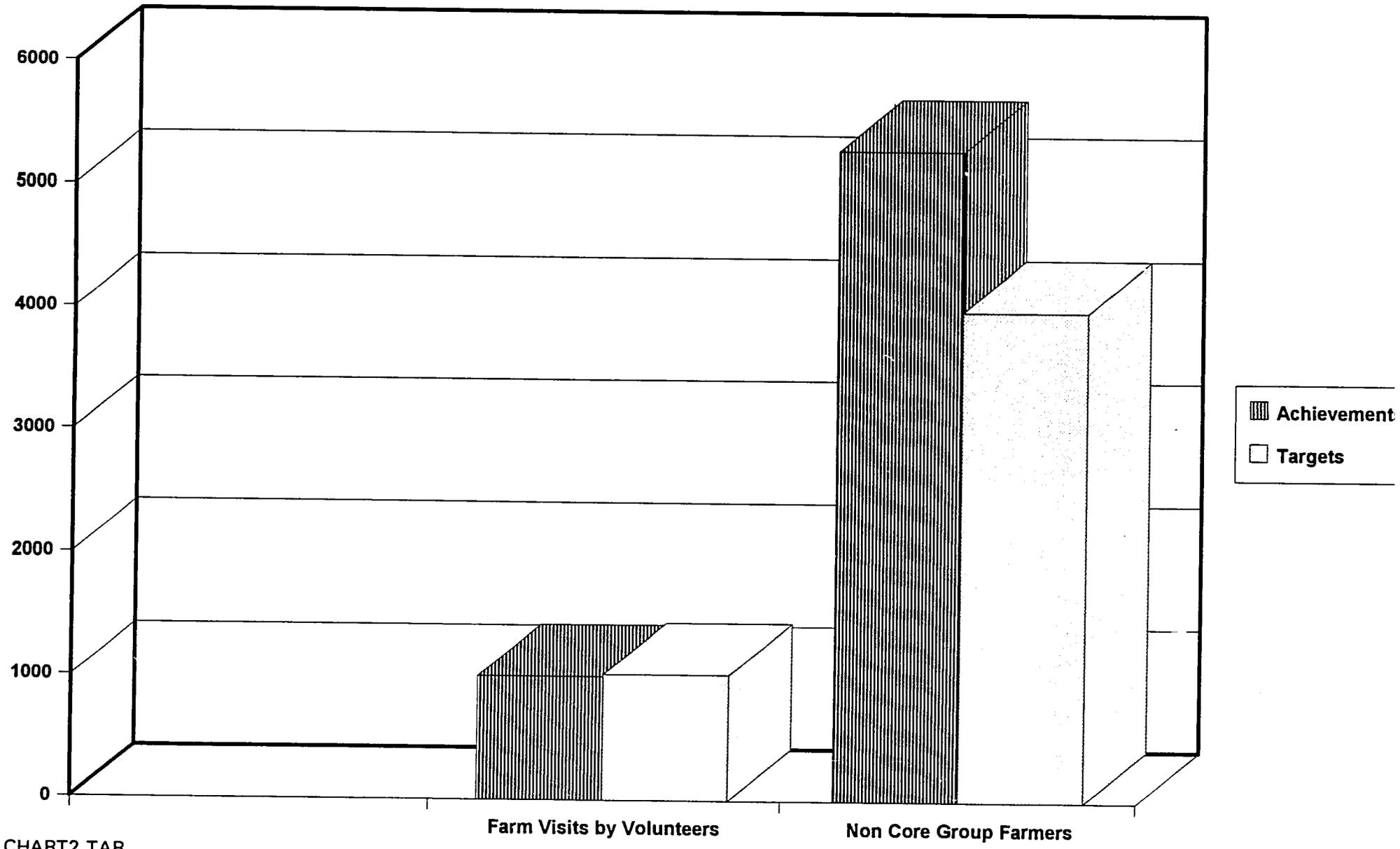


CHART2.TAR

Year II

### Achievements Versus Targets

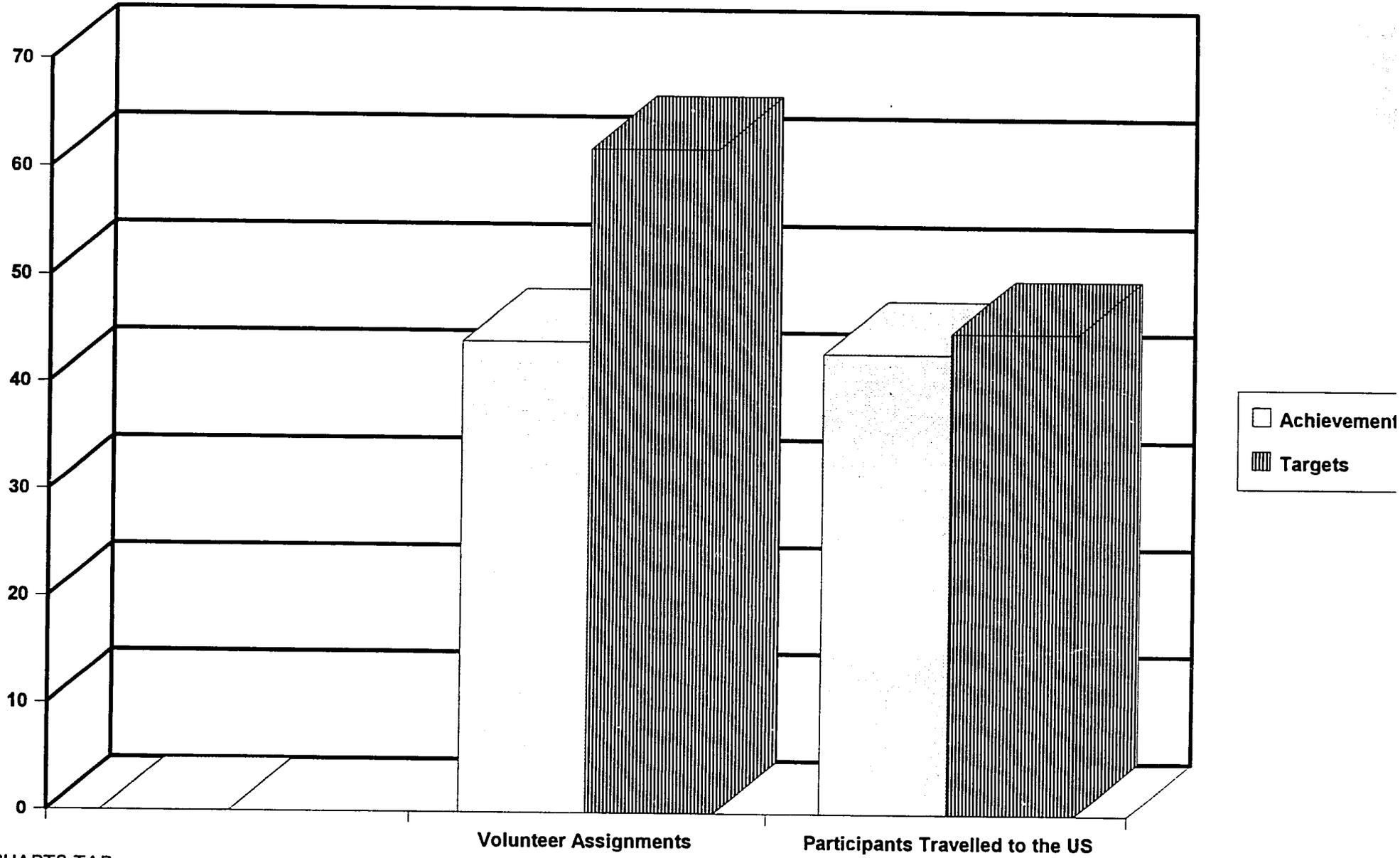


CHART3.TAR

**APPENDIX C**

**VOLUNTEER ASSIGNMENTS TO DATE**

## Volunteer Assignments September 1993 - August 1995

Arden Kashishian	Tomato Post Harvest Specialist	12/11/93 - 01/04/94
Thomas Wellborn	Fish Disease Specialist	01/04/94 - 01/21/94
Fred Zeitoun	Tomato Nurseries Specialist	01/05/94 - 02/01/94
Michael Sayers	Beekeeper	01/25/94 - 02/25/94
Daniel Pesante	Bee Disease Specialist	01/25/94 - 02/25/94
Eugene Ingalsbe	Cooperative Development Specialist	02/03/94 - 03/04/94
Conrad Krass	Tomato Pathology Specialist	03/15/94 - 03/31/94
Sadek Ayoub	Citrus Pathology & Nematology Sp.	03/15/94 - 04/04/94
Anne Gannam	Fish Nutrition Specialist	03/31/94 - 04/20/94
Chris Hyde	Fish Production Specialist	03/31/94 - 04/20/94
Paul Jennings	Cucurbits Extension Agent	06/24/94 - 07/21/94
George Hughes	Cucurbits Extension Agent	06/24/94 - 07/21/94
Martin Krieg	Grape Production Specialist	07/08/94 - 08/04/94
Raymond Lockard	Peach Extension Agent	07/22/94 - 08/19/94
Stephen Baran	Grape Post Harvest Specialist	07/29/94 - 08/25/94
Raymond Nabors	Beekeeper	07/29/94 - 08/25/94
James Paswater	Bee Disease Specialist	07/29/94 - 08/25/94
Jean New	Sheep and Goat Nutritionist	07/29/94 - 08/26/94
Charles Lindborg	Sheep and Goat Veterinarian	07/29/94 - 08/26/94
Milton Schilde	Apple and Pear Post Harvest Specialist	07/29/94 - 08/26/94
Carol Schilde	Apple and Pear Processing Specialist	07/29/94 - 08/26/94
Mahmoud El Begearmi	Poultry Nutritionist	07/29/94 - 08/26/94
David Mitchell	Poultry Veterinarian	07/29/94 - 08/26/94
Roy Nelson	Mango Production Specialist	08/12/94 - 09/08/94
Robert Knight	Mango Extensionist	08/12/94 - 09/08/94
Robert Bullock	Citrus Production Specialist	09/09/94 - 10/07/94
Robert Pelosi	Citrus Extensionist	09/09/94 - 10/07/94
Eugene Hess	Potato Production Specialist	11/04/94 - 12/02/94
Doug Hess	Potato Extensionist	11/04/94 - 12/02/94
Daniel Pesante	Bee Disease Specialist	11/11/94 - 12/09/94
Michael Sayers	Beekeeper	11/11/94 - 12/09/94
Fred Zeitoun	Tomato Pathologist	11/18/94 - 12/15/94
Jesus Valencia	Tomato Extensionist	11/25/94 - 12/15/94
Gregory Hartsell	Tomato Extensionist	11/25/94 - 12/23/94
Darrell Blackwelder	Tomato Specialist	11/25/94 - 12/23/94
Abdullah Muhammad	Citrus Extensionist	12/30/94 - 01/26/95
Irving Eaks	Citrus Post Harvest Specialist	12/30/94 - 01/26/95
Alvin Hamson	Deciduous Extensionist	01/06/95 - 02/02/95
George Nielson	Deciduous Production Specialist	01/06/95 - 02/02/95
Richard Kastner	Water Quality Specialist	01/13/95 - 02/09/95
Michael Frinsko	Fish Nutritionist	01/13/95 - 02/09/95
James Reynolds	Fish Production Specialist	01/13/95 - 02/09/95
Henry Bowden	Grape Production Specialist	01/13/95 - 02/09/95
John Henry	Grape Production Specialist	01/13/95 - 02/09/95
Conrad Weiser	Cucurbits Physiologist	01/27/95 - 02/23/95
Robert Lambe	Cucurbits Pathologist	01/27/95 - 02/23/95
Thomas Obourn	Potato Extensionist	02/01/95 - 02/28/95
Nori Aoki	Tomato Extension Agent	03/03/95 - 03/30/95
Mike Murray	Tomato Production Specialist	03/03/95 - 03/30/95
James Bach	Beekeeper	03/10/95 - 04/07/95
Robert Zahler	Bee Disease Specialist	03/10/95 - 04/07/95
Michael Howden	Mango Extension Agent	03/17/95 - 04/13/95
Robert Faust	Mango Pathologist	03/17/95 - 04/13/95
Chris Hyde	Aquaculture Water Quality Sp.	04/07/95 - 05/05/95
David Swann	Aquaculture Production Sp.	04/07/95 - 05/05/95
Amos Bourgo	Deciduous IPM Specialist	05/11/95 - 06/08/95

<p> <b>Bobby Hatchcock</b>  <b>Alfred Skala</b>  <b>Craig Bovee</b>  <b>Harlan Bentzinger</b>  <b>George Arscott</b>  <b>Daniel Andrews</b>  <b>Agnes Spicer</b>  <b>Bruce Kahn</b>  <b>Mary Gessert</b>  <b>Fremont Bell</b> </p>	<p> <b>Tomato Pathologist</b>  <b>Tomato Extension Agent</b>  <b>Citrus Extension Agent</b>  <b>Citrus Production Specialist</b>  <b>Poultry Nutritionist</b>  <b>Poultry Extension Agent</b>  <b>Fish Extension Agent</b>  <b>Water Quality Specialist</b>  <b>Sheep &amp; Goat Veterianian</b>  <b>Sheep &amp; Goat Extension Agent</b> </p>	<p> <b>07/21/95 - 08/18/95</b>  <b>07/21/95 - 08/18/95</b>  <b>07/07/95 - 08/03/95</b>  <b>07/07/95 - 08/03/95</b>  <b>07/14/95 - 08/11/95</b>  <b>07/14/95 - 08/11/95</b>  <b>07/21/95 - 08/18/95</b>  <b>07/21/95 - 08/18/95</b>  <b>08/11/95 - 09/08/95</b>  <b>08/11/95 - 09/08/95</b> </p>
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**Total = 69**

**VOL.LOP**

**APPENDIX D**

**SAMPLE OF VOLUNTEERS'**

**FINAL REPORTS**

# **Egypt Sheep and Goat Project Final Report**

## **Executive Summary**

Project number: AE100038

Mary E. Gessert DVM

Host Organization: Agricultural Cooperative Development International (ACDI), Egypt

Dates of Assignment: August 11 - September 8, 1995

### **Scope of work**

Two to three farm visits per day were conducted by myself, Mr. Monte Bell who is a nutrition specialist, and a field assistant. Village meetings and seminars, attended by farmers, extension personnel and researchers, were conducted in each region. Observations and discussions addressed the following topics:  
Preparing nutrition programs - addressed in detail by Mr. Monte Bell  
Farm management - housing, sanitation, handling  
Identifying and controlling diseases  
Basic herd health programs  
Breeding problems and genetic improvement

In addition, visits were made to supporting agencies and research facilities to become familiar with services available to the farmers. These included:

Ministry of Agriculture - Matrouh, Ali Saber, under-secretary

Ministry of Agriculture Extension Service, Mohamed Abu Foutah, director of extension, Bangor El Sokar, personnel from regional extension offices accompanied us on field visits

### **Farmer Cooperatives**

Agriculture Research Center, Sheep and Goat Research Station, Alexandria, Ibrahim Ahmed El Sayed, senior researcher, animal production

Graduate Affairs Office, Bangor El-Sokar, Hamid Khalil, director

International Foundation for Agriculture Development (IFAD)

Artificial Insemination Center, Ahmed Tarek, director

New Lands Agriculture Services Project, New Nou' ~~City~~ Fawzy Abd-Elkader Mohamed, director  
Mohamed Khalifa, manager of economic analysis

Animal Production Research Institute, Dokki, Dr. Essam I. Shehata, Head Sheep and Goat Research Division

## Recommendation Summary

The following recommendations address the above listed topics with the exception of the preparation of nutritional programs. This topic will be dealt with in detail in a report by Mr. Monte Bell.

Farm management - If the goal of the livestock enterprise is to realize a profit then it is important for the farmer to consider the economic impact of management decisions. Inclusion of an agricultural economist on the extension team in each region would encourage this kind of analysis. Record-keeping is virtually non-existent on most farms. Without records of input costs and production levels there is no way to measure the effect of management decisions. One or two farms in each region could be selected as models and extension personnel utilized to set up record-keeping and financial analysis for these farms. They could then be used as examples to encourage other farmers to do likewise.

Identifying and controlling diseases - The utilization of veterinary services by the farmers varies widely. Some reported weekly or monthly visits by local veterinarians while others did not use veterinary services at all. Frustration at the inability of the veterinarians to diagnose disease outbreaks was widespread. Effective veterinary service requires high quality diagnostic facilities. Modernization of current facilities should be a priority. Provision of reliable cold storage in remote areas like the Barani area is needed for the effective use of vaccines and transportation of laboratory samples. In addition, private veterinary practices should be encouraged so that individuals interested in serving the livestock industry can be fairly compensated. Continuing education conferences for local veterinarians will ensure that they are familiar with the best disease control measures.

Basic herd health - Most of the disease problems encountered during our visits are associated with basic livestock care. These include the provision of adequate ventilation, wholesome feed and clean water. Poor ventilation of livestock housing is widespread. Encourage the use of open enclosures with filtered shade. Ideally, all parts of the housing area should have direct sunlight during part of the day. Feed and water should be offered in clean containers without manure contamination. Control programs for internal parasites and enterotoxemia are needed in all regions. Every flock should have an individualized program developed with assistance from the local veterinarian. Examples of these programs and their economic impact are given in the body of this report. Vaccination for enterotoxemia is sporadic even though the disease itself is widespread. Improper use of the vaccine is common with the major problems being inattention to the recommended schedule and poor handling. Educational programs and flock demonstrations of parasite control and proper vaccination use are necessary.

Breeding problems - This involves two different issues, the fertility level in the flock and the selection of genetic material. In flocks with good nutritional programs the level of fertility is quite high. Goals of 160-180% lamb crop with three lambing seasons in two years are possible in the Delta and New Lands regions. Fertility problems in the rams were not apparent. Culling of unproductive ewes should be encouraged to allow more efficient use of feed resources. Inbreeding is a major problem in the Delta region. Increased productivity due to improved lamb survival and higher growth rates will result from the use of rams that are unrelated to the ewes. As the purchase of rams can be a large expense for small flock owners, trade arrangements or the purchase of rams by farmer associations should be considered. Cross-breeding programs using established Egyptian breeds should be encouraged to take advantage of hybrid vigor. The introduction of new unadapted breeds should not be encouraged unless research and field trials have shown clear benefits.

## **Body of the Report**

### Host Organization Description

ACDI provides technical assistance and services to farmers in developing countries and emerging democracies. Since 1988 they have supported the Farmer to Farmer Program which aims to increase food production and improve the economic well-being of farmers in Egypt. American farmers, extension personnel and researchers visit Egyptian farms and selected leading farmers from Egypt visit farms in the U.S. to allow exchange of technical information and practices. The program in Egypt is targeted at fruit, vegetable, livestock, beekeeping and aquaculture commodities.

### Issues Addressed

#### Farm Management

Issue #1 Lack of economic evaluation - Very few farmers were aware of the production level of their flock or its profitability. Without this information it is impossible to evaluate the economic impact of a management decision. For example, the effectiveness of a parasite control program must be evaluated on the basis of its cost/benefit ratio. To determine this, production levels both before and after institution of a program must be known.

Issue #2 Lack of records - Without records farmers cannot make economically based decisions.

#### Recommendations:

1. Utilize agricultural economists on the extension team to teach farmers how to determine economic impact of their management decisions.
2. Teach farmers to use simple flock records (not necessarily individual animal records). These should include:

# breeding animals  
# lambs born (record daily on a calendar)  
death losses, animal type and cause  
purchases, sales and slaughter  
lamb weights and age when sold or slaughtered

Use this data to calculate kg. lamb produced/ewe/year (use total number of ewes not only those that lambed). This number can be compared from year to year to measure the effect of management changes including ration formulation, disease control programs, and genetic selection. Examples of animal record forms can be found in the booklet "Management Guidelines for Efficient Sheep Production". A copy of this booklet was left in each of the ACDI offices.

3. Use one or two farms in each area as demonstrations for the use of records in the determination of economic impact. Extension personnel could assist in taking and recording data and in its interpretation.

### Disease Detection and Control

Issue #1 Lack of diagnostic capabilities - Some of the Bedouins reported serious problems with abortion outbreaks affecting up to 30% of the flock. While samples had been sent to the diagnostic lab, no diagnosis had been made. Previous volunteers have reported inadequate and outdated laboratory facilities. In some regions farmers also reported that the veterinarians were unable to perform fecal examinations for internal parasite diagnosis. Diagnosis of diseases is necessary before treatment and prevention strategies can be designed.

Recommendations:

1. Modernization of veterinary diagnostic laboratories should be given high priority.
2. Train local veterinarians in the proper collection and handling of blood and tissue samples.
3. Recruit a veterinary pathologist familiar with the needs of a diagnostic lab to serve as an advisor in carrying out the above plans. (Contact Dr. David Getzy, Colorado State Veterinary Diagnostic Lab)

Issue #2 Low level of veterinary involvement in some regions - Some farmers do not use veterinary services at all and many use only free government vaccination programs. The prevention of disease can improve profits but may require cash inputs for services and medication.

Recommendations:

1. Educate farmers about what services are available and costs involved.
2. Use demonstration flocks to determine cost/benefit ratios for disease control programs.
3. Encourage the development of private veterinary practices to allow interested individuals to be fairly compensated.
4. Include local veterinarians on ACDI farm visits.
5. Provide continuing education opportunities for local veterinarians. (AVMA conference in U.S. has sheep and goat

program.)

### Basic Health Programs

Issue #1 Facilities - Good health depends on fresh air, wholesome food and clean water. In many cases attention to these basics is lacking. Livestock that are closed in barns with no ventilation and poor sanitation. Feed is placed on the ground and water is contaminated with manure. Pneumonia and parasites are common diseases that result from such conditions.

Recommendations:

1. Teach farmers about the importance of proper ventilation and sanitation.
2. Extension personnel should use demonstration farms to show farmers proper housing and feeder construction.

Issue #2 Internal Parasites - This is the most serious health problem in sheep and goats that we observed in Egypt. It is especially severe in the Delta and New Lands regions where year-round irrigation allows year-round parasite propagation. In the desert the problems are less severe but infestation does occur during the rainy season. Internal parasites cause death losses of both young sheep and goats as well as adults. In addition, they result in decreased feed efficiency, poor growth and infertility. The economic impact depends on the number and types of parasites present and the control program being used. Descriptions of the parasites affecting sheep and goats in Egypt and control measures can be found in the addendum.

Recommendations:

1. Educate producers about the parasites present in their area and how to control them.
2. Encourage research centers to do field trials to test various medications and treatment schedules to determine those most effective under Egyptian conditions. (Contact Ibrahim Ahmed El Sayed PhD, senior researcher, Borg El Arab Station Research, ARC, MOA and Dr. Essam I. Shehata, Head of Sheep and Goat Research, Animal Production Research, Dokki)
3. Extension personnel could do flock demonstrations and determine cost/benefit ratios for parasite control.

Issue #3 Enterotoxemia - This is a sporadic bacterial disease caused by *Clostridium perfringens* C&D. It causes sudden death in otherwise healthy fast growing sheep and goats, and occurs in flocks with good management, killing the most valuable animals. Therefore, its economic effect is significant. In all regions visited we received questions about and reports of the occurrence of this disease. Enterotoxemia can be controlled through vaccination and an effective vaccine, Covexin 8, is available in some regions. However, many farmers do not use it and many of those who do use it improperly.

Recommendations:

1. Make sure the vaccine is available in all regions. Sheep producers in the Barani area report difficulty in getting this vaccine.

2. Educate farmers about proper vaccination schedules. All animals should initially receive two injections 2-4 weeks apart. Adult ewes should then receive an annual vaccination, preferably one month before lambing. Lambs should be vaccinated at 8 and 12 weeks of age. Lambs purchased for fattening should receive two vaccinations 2-4 weeks apart before being put on a high energy ration.
3. Educate farmers on proper handling of vaccine. These products are very sensitive to heat and sunlight. Provide a "cold chain" during shipping, storage and use of the vaccine to prevent deterioration.
4. Investigate the use of other less expensive brands of vaccine. A Compendium of Veterinary Products has been left with ACIDI and lists those products available in the U.S. (Example BarVac CD&T)
5. Extension personnel should utilize demonstration flocks (farmer owned) to determine cost/benefit ratios. Example - vaccination of 100 ewes and their lambs with Covexin 8 costs about 250 LE, about the value of one market lamb.

Issue #4 Other diseases - Diseases and problems of concern to the farmers included:

- conjunctivitis
- mastitis
- traumatic injuries
- pneumonia
- bloat
- coenurosis
- congenitally deformed lambs
- tetanus
- pesticide residues on crops
- foot and mouth disease (fever aphthous)
- sheep pox
- caseous lymphadenitis

Disease surveys by the Graduates Affairs Dept., El Markazia Village, Bangar El-Sokar, also indicated problems with internal parasitism, mastitis and infertility.

Recommendations:

1. Educate farmers by offering seminars addressing these diseases. Involve veterinarians, ARC researchers and extension personnel.
2. Support disease surveys to determine which problems deserve the greatest attention.
3. Educate local veterinarians by offering continuing education conferences at near by research centers and universities.

### Breeding Problems

Issue #1 Infertility - Livestock must be in a good body condition in order to reproduce. This requires a good nutritional program and control of internal parasites. Infectious causes of infertility are of minor importance compared to these.

Recommendations:

1. Educate farmers about the changing nutritional needs of the breeding animals during breeding, pregnancy and lactation. See the report written by Mr. Monte Bell for details.
2. Encourage preventive deworming programs for the control of internal parasites.

Issue #2 Inbreeding - Many farmers raise their own rams and mate them to closely related ewes. This results in the concentration of genetic material and loss of vigor in the animals.

**Recommendations:**

1. Encourage the use of rams that are not related to the ewes.
2. Consider cross-breeding (example Rahmani X Osseimi ewes mated to Barki rams) to maximize hybrid vigor.
3. Organize sire exchange programs or farmer group purchasing of rams to reduce costs.
4. Consider the use of non-adapted breeds (example Finn X) only after research and field trials have indicated a definite advantage.

**Key Contacts:** see scope of work section

## **Observations of Sheep and Goat Production Practices in Egypt**

Sheep and goat production practices vary depending on the resources available in the region. General practices and their associated challenges will be discussed by region. The reader should keep in mind that in depth study of practices in these areas was not possible due to time constraints.

### **Central Delta Region Production Practices**

This area includes small holder farms surrounding the city of Tanta as well as larger farms near Ismailia to the east. The farms vary in size from two to two thousand faddans (1 faddan = approximately 1 acre) and flock sizes vary from 30 - 150 head, mixed sheep and goats. All of the farms are irrigated and crops include corn, peanuts, berseem clover and various vegetables (beans, watermelon, okra etc.). A typical rotation would include corn followed by vegetables and then berseem over the winter. During the time of our visit (Aug., Sept.) the sheep and goats were grazing native forages, corn stover, sorghum and vegetable residue. Feed was plentiful and the farmers were very adept at using available feed resources. Flocks were moved from field to field as crop residues became available and fields were grazed off prior to tilling and planting of the next crop. In some cases the livestock were taken out to graze during the day and returned home at night while in some areas, if they grazed far from home, they would be bedded down outside in a fenced area at night. Shepherds remained with the flocks at all times to control the animals and prevent theft. In most cases the flocks were provided with shade during the hottest part of the day either resting under trees or in shaded, well - ventilated barns.

### **New Lands Territory**

This region includes reclaimed desert land and involves farmers in the government subsidized graduate farmer program. These farmers are university graduates who are supplied with approximately 5 faddan (5 acres) , a house, electricity and water. The farmer pays for the land over 30 years and is not allowed to sell the land during this period. These farmers grow mixtures of fruits and vegetables for cash markets in the major cities and also have livestock including cattle, buffalo, sheep, goats, poultry and rabbits. They face livestock disease problems similar to those in the central delta region due to the use of irrigation, crop residues and purchased feeds.

### **Desert Lands**

The Bedouins produce 25% of Egypt's sheep and are an important source of lamb for export markets. The sheep are extensively managed during the grazing season and fed harvested feeds during

the summer when grazing is not available. Management levels are quite high due to the long traditions of sheep production. The primary problem is the unavailability of grazing during the dry season, and especially during drought conditions.

### **Internal Parasitism**

The most pervasive health problem in this region during this time of year appears to be internal parasitism. We were routinely presented with extremely thin anemic animals (sheep and goats) showing classical signs of internal parasitism. Weaned lambs, yearling ewes and aged animals were the most severely affected. Those farmers who reported using deworming programs had less severely affected animals but all flocks showed evidence of heavy parasite infestation. Year-round grazing of irrigated fields results in constant exposure to parasite larvae and rapid reinfestation following treatment. Control of internal parasites will require the strategic use of anthelmintics followed by movement of the flock onto uncontaminated pastures.

#### Stomach Worms

Sheep and goats are infested when they consume parasite larvae on the forage. The adult worms live in the abomasum (4th stomach) and consume blood and protein from the animal. Worm eggs are passed in the manure and contaminate the grazing area. The eggs hatch on the ground and the larvae crawl onto the forage, completing the cycle. Animals that have been dewormed will become infested again within three weeks if put back on a contaminated pasture. Larvae may be present for up to a year on a contaminated pasture, especially under warm moist conditions. Hot dry conditions will kill the larvae. Lambs are most severely affected by parasites. Older animals develop resistance but serve to contaminate the ground for the lambs. Stomach worms can cause weakness, poor growth the even death. In addition, parasitized lambs have a reduced efficiency of growth, thus wasting valuable feed resources.

#### Lungworms

Lungworms have a similar life cycle to that described for the stomach worms. The sheep and goats consumed the larvae while grazing and adult parasites develop in the airways of the lungs. They produce larvae that are coughed up, swallowed, and passed in the manure. These larvae then contaminate the grazing area where they are again consumed. As is true for the stomach worms, animals that are treated for parasites and then grazed on a contaminated area rapidly become reinfested. The worms obstruct the airways resulting in difficult breathing, coughing, sneezing and weight loss. Severely affected sheep and goats die from suffocation or secondary bacterial pneumonia. Control involves the use of dewormers that are effective against lungworms (levamisole, fenbendazole, albendazole, ivermectin) and movement of treated animals to uncontaminated pasture.

#### Liver Flukes

Liver flukes have an indirect life cycle which requires the presence of a snail as the intermediate host. Thus the flukes affect sheep and goats that graze wet areas. Since the animals in this region graze the banks of irrigation ditches they are exposed to conditions ideal for liver flukes. The flukes

migrate through the liver causing bleeding and tissue damage. Infested animals become anemic, develop edema and may have liver failure. Death may occur suddenly due to blood loss or after prolonged loss of weight and weakness. Most deworming medications are ineffective against liver flukes. Treatment requires use of specific fluke medications every six months.

### Coccidiosis

This parasite, unlike those previously described, does not require forage or soil moisture to complete its life cycle. It is a one-celled protozoal parasite that multiplies in the lining of the intestine, causing diarrhea and preventing proper nutrient absorption. Parasite cysts are passed in the manure and ingested when the animal consumes manure - contaminated feed or water. Lambs and kids show poor growth rates, thin body condition and diarrhea. Adult animals develop immunity to the coccidia but may shed cysts, thus contaminating the environment for the young animals. This parasite becomes a problem where animals are kept in covered confined areas and fed on the ground. Prevention involves the construction of feeders and waterers that prevent manure contamination. Direct sunlight kills the cysts, but in shaded areas they can remain infective for more than one year. Lambs and kids that become ill from coccidiosis can be treated with sulfa antibiotics or specific anti-coccidial agents like amprolium. In severely contaminated areas it may be necessary to include an anti-coccidial agent in the feed (decoquinate, lasalocid).

### Prevention of Internal Parasitism

It is expensive and impractical to completely eliminate parasites from a flock. Instead, control procedures should be instituted that keep parasite levels at a low level. Some general guidelines apply to the control of all internal parasites. They include:

1. When feeding harvested feeds, use feeders and waterers that prevent manure contamination.
2. Construct feeding areas to allow direct sunlight penetration.
3. Deworm the entire flock using the proper dose of a medication effective against the parasites that are present.
4. Keep animals off pasture for 2 days following treatment for parasites.
5. Following treatment, move the flock to a pasture that is uncontaminated with parasites.  
Safe pastures include: annual forages planted on tilled ground, regrowth of forages following harvesting for hay, pastures that have not been grazed by sheep or goats for one year
6. Treat purchased animals for internal parasites before mixing them with the rest of the flock.
7. Avoid grazing areas with other flocks that do not follow the above recommendations.

Flocks that use controlled breeding and have a specific lambing season should deworm ewes one month before lambing to decrease the transmission of parasites from the adult animals to the young. Additional treatments may be necessary during the middle of the summer grazing season and again before the flock is confined for winter feeding. If an initial treatment is given when animals enter confinement facilities, as occurs during winter feeding, further treatment should not be necessary.

The following is an example of a parasite control program that has been effective under the conditions found in this region. Each flock owner should evaluate his or her situation and tailor the program accordingly.

Spring: one month before the major lambing, treat with a product effective against stomach worms (thiabendazole\*, levamisole or tetramizole\*, fenbendazole, albendazole, ivermectin), treat for liver flukes

\*In some parts of the world this drug is no longer effective against parasites due to the development of drug resistance.

Summer: treat with product effective against stomach worms and lungworms (fenbendazole, albendazole, levamisole or tetramizole, ivermectin) at three month intervals

Autumn: give last treatment for stomach worms and lungworms when the flock is brought in for winter feeding in confinement, treat for liver flukes

Winter: use feeders and waterers that prevent manure contamination for the prevention of coccidiosis

**APPENDIX E**

**PARTICIPANT TRAINING GROUPS**

**TO DATE**

**LIST OF PARTICIPANT GROUPS  
SEPTEMBER 93 - AUGUST 95**

Technical Focus	Participants		Escort	U.S. State
	Name	Governorate		
Pruning 1/19-2/12/94	Khaled El Gawahery Ahmed Zeitoun Mohamed Idris Mohamed Shehata Ahmed Moustafa	Giza Alexandria Behera Alexandria Alexandria (MOA)	S. El Sawa	California
Aquaculture 3/21-4/15/94	Mohamed Abdel Gawad Abdel Bary Shaawat Mahmoud Abdel Kareem Ibrahim Sharaf El Din Nageeb Mohamed	Fayoum Matrouh Alexandria Dameyeta Fayoum (MOA)	M. Khafaguy	Texas, Maryland Mississippi
Poultry 4/26-5/20/94	Amgad Zayed Ashraf Sayyoub Mohamed Hegazy Joseph Saad	Sharkia Damyeta Gharbia Ismailia (MOA)	A. El Shirbiny	Alabama Missouri
Citrus 5/2-5/28/94	Abdeen Negem Mohamed Abdel Kader Hassan Abaza Maged Youseff Mohamed El Sharawy	Gharbia Qalubia Behera Qalubia Alexandria (MOA)	B. Awad	Arizona Florida
Beekeeping 6/21-7/19/94	Moustafa Mchamed Mohamed Zedan Mahmoud Sakr Hamada Okda Ismail El Gendy Nabil Basouni Fouad El Assal	Menia Ismailia Ismailia Gharbia Behera Alexandria Alexandria (MOA)	H. Abou Ali	N. Carolina Gorgia
Vegetable 8/3-8/24/94	Nadia Hussien Nagwa Ahmed Amal Darwish Samira Amer Mona Hamdy	Alexandria Alexandria Alexandria Ismailia Alexandria (MOA)	S. El Sawa	New Jersey Virginia Missouri
Tomato 8/15-9/13/94	Mohamed Soliman Khasem Ghati Abdalla El Ahmedi Mohamed El Sayed Mohamed Saïam Abdel Basset Moussa Gouda Ghanem	Sharkia Sharkia Sharkia Ismailia Sharkia Ismailia (MOA) Sharkia (MOA)	S. Zaki	California
Deciduous 10/5-11/1/94	Moustafa El Koury Mohseen El Beltagy Mohamed Salama Moustafa A. Kareem Moustafa Sekeen	Gharbia Gharbia N. Sinaa N. Sinaa (MOA) Kafr El Sheih (MOA)	M. El Melegy	California Colorado

Citrus 11/16-12/13/94	Khalid Khalil Mohamed Zeen Eddin Hassan A. El Maatty Ali Abou Rabh Abdel Nasser Messad Mohamed Karim Mohamed El Zaafarany	Gharbia Giza Gharbia Alexandria Giza Ismailia Behera (MOA)	B. Awad	California
Sheep and Goat 1/5-2/2/95	Medhat M. Kotab Mohamed Gebreel Kowela Omar Kowela Taher Kaseh	Ismailia Matrouh Matrouh Matrouh (MOA)	A. El Sherbeni	Utah Oklahoma Arizona
Tomatoes 3/16/95	Fatma Saleh Azza Diab Hala Farag Nemat Harby Nabila Abdou Lubna Ziedan Faiza Youssef Wafaa Zaki	Tanta Alexandria Alexandria Gharbia Alexandria Gharbia Alexandria (MOA) Alexandria (MOA)	M. Khafaguy Nasr Abdallah	Florida
Grapes 4/1/95 - 4/29/95	Khalaf Ibrahim Refaat Hanna Mohamed A. Salam Mohamed Kamal Fouad Amer Amin Tawfiq Gamal Abou Khriba	Menia Menia Menia Giza Alexandria Gharbia Gharbia (MOA)	Hani A. Ali Ayman Refaie	California
Beekeeping 6/29/95 - 7/29/95	Ahmed Meligy Nazeh Selem Salah Malek Hamdy A. Gawad Marwan El Badry Abdel Atty El Hady Reda Hassan	Qalubia Menia Menia Sharkia Menia Qalubia Gharbia (MOA)	Hani A. Ali	N. Carolina Gorgia
Sub-tropical 8/20/95 - 9/13/95	Hassan Abdel Gawwad Mahmoud El Ghabosh Ibrahim Ghounim Zakaria Shehata Seoudi Hamed	Ismailia Ismailia Giza Sharkia Ismailia (MOA)	B. Awad	Florida California

Governorate	Farmers	Extension Agents
Giza	5	0
Alexandria	12	6
Behera	3	1
Fayoum	1	1
Matrouh	3	1
Dameyeta	2	0
Sharkia	7	1
Gharbia	10	2
Qalubia	4	0
Menia	7	0
Kafr El Sheikh	0	1
North Sinaa	1	1
Ismailia	8	3
Tanta	1	0
<b>Total</b>	<b>64</b>	<b>17</b>

Total = 81

PART.USA

**APPENDIX F**

**INFORMATION ON PARTICIPANT  
TRAINEES**

**YEAR II**

**First Quarter**

**September November 1994**

<b>Name</b>	Mostafa Ibrahim Abdel Kariem El Sayed
<b>Citizenship</b>	Egyptian
<b>Gender</b>	Male
<b>Training site</b>	Deciduous fruit farms, packing and storage facilities, and research stations in Colorado and California.
<b>Training dates</b>	October 5 - October 29, 1994
<b>Purpose of training</b>	Training in Deciduous fruit production
<b>Type of training</b>	Technical
<hr/>	
<b>Name</b>	Mohamed Soliman Hassan Salamah
<b>Citizenship</b>	Egyptian
<b>Gender</b>	Male
<b>Training site</b>	Deciduous fruit farms, packing and storage facilities, and research stations in Colorado and California.
<b>Training dates</b>	October 5 - October 29, 1994
<b>Purpose of training</b>	Training in Deciduous fruit production
<b>Type of training</b>	Technical
<hr/>	
<b>Name</b>	Mostafa Hassan Mostafa Sabry El Kordy
<b>Citizenship</b>	Egyptian
<b>Gender</b>	Male
<b>Training site</b>	Deciduous fruit farms, packing and storage facilities, and research stations in Colorado and California.
<b>Training dates</b>	October 5 - October 29, 1994
<b>Purpose of training</b>	Training in Deciduous fruit production
<b>Type of training</b>	Technical

**Name** Mohsen El Sayed Tawfik El Beltagi  
**Citizenship** Egyptian  
**Gender** Male  
**Training site** Deciduous fruit farms, packing and storage facilities, and research stations in Colorado and California.  
**Training dates** October 5 - October 29, 1994  
**Purpose of training** Training in Deciduous fruit production  
**Type of training** Technical

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**Name** Mostafa Ali Taha Sekin  
**Citizenship** Egyptian  
**Gender** Male  
**Training site** Deciduous fruit farms, packing and storage facilities, and research stations in Colorado and California.  
**Training dates** October 5 - October 29, 1994  
**Purpose of training** Training in Deciduous fruit production  
**Type of training** Technical

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**Name** Mohamed Mahmoud Mohamed Karim  
**Citizenship** Egyptian  
**Gender** Male  
**Training site** University research centers, nurseries, packing houses and citrus orchards throughout California.  
**Training dates** November 16 - December 16, 1994  
**Purpose of training** Training in Deciduous fruit production  
**Type of training** Technical

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**Name** Mohamed Khalil Said Zin El Din  
**Citizenship** Egyptian  
**Gender** Male  
**Training site** University research centers, nurseries, packing houses and citrus orchards throughout California.  
**Training dates** November 16 - December 16, 1994  
**Purpose of training** Training in Deciduous fruit production  
**Type of training** Technical

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**Name** Khalid Mahmoud Mohamed Khalil  
**Citizenship** Egyptian  
**Gender** Male  
**Training site** University research centers, nurseries, packing houses and citrus orchards throughout California.  
**Training dates** November 16 - December 16, 1994  
**Purpose of training** Training in Deciduous fruit production  
**Type of training** Technical

**Name** Ali Abdu Abou Rabb  
**Citizenship** Egyptian  
**Gender** Male  
**Training site** University research centers, nurseries, packing houses and citrus orchards throughout California.  
**Training dates** November 16 - December 16, 1994  
**Purpose of training** Training in Deciduous fruit production  
**Type of training** Technical

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**Name** Abdel Nasser Ismail Mosaid  
**Citizenship** Egyptian  
**Gender** Male  
**Training site** University research centers, nurseries, packing houses and citrus orchards throughout California.  
**Training dates** November 16 - December 16, 1994  
**Purpose of training** Training in Deciduous fruit production  
**Type of training** Technical

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**Name** Hassan Abu El Moatti Hassanien Harbia  
**Citizenship** Egyptian  
**Gender** Male  
**Training site** University research centers, nurseries, packing houses and citrus orchards throughout California.  
**Training dates** November 16 - December 16, 1994  
**Purpose of training** Training in Deciduous fruit production  
**Type of training** Technical

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**Name** Mohamed El Zaafarany Mahmoud  
**Citizenship** Egyptian  
**Gender** Male  
**Training site** University research centers, nurseries, packing houses and citrus orchards throughout California.  
**Training dates** November 16 - December 16, 1994  
**Purpose of training** Training in Deciduous fruit production  
**Type of training** Technical

**2nd Quarter**

**December - February, 1995**

**Name** Kewilla Omar Kewilla Hammad  
**Citizenship** Egyptian  
**Gender** Male  
**Training Site** University Research centers and sheep and goat operations in Oklahoma, Arizona and Utah.  
**Training dates** January 5 - February 2, 1995  
**Purpose of Training** Training in sheep and goat production  
**Type of Training** Technical

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**Name** Medhat Abdel Saleh Abbas Kotb  
**Citizenship** Egyptian  
**Gender** Male  
**Training Site** University Research centers and sheep and goat operations in Oklahoma, Arizona and Utah.  
**Training dates** January 5 - February 2, 1995  
**Purpose of Training** Training in sheep and goat production  
**Type of Training** Technical

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**Name** Mohamed Issa Hemeda Gebriel  
**Citizenship** Egyptian  
**Gender** Male  
**Training Site** University Research centers and sheep and goat operations in Oklahoma, Arizona and Florida.  
**Training dates** January 5 - February 2, 1995.  
**Purpose of Training** Training in sheep and goat production.  
**Type of Training** Technical

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**Name** Taher Hemida Kaseh Motarf  
**Citizenship** Egyptian  
**Gender** Male  
**Training Site** University Research centers and sheep and goat operations in Oklahoma, Arizona and Utah.  
**Training dates** January 5 - February 2, 1995  
**Purpose of Training** Training in sheep and goat production  
**Type of Training** Technical

**3rd Quarter**

**March - May, 1995**

<b>Name</b>	Faiza Mohamed Ali Youssef
<b>Citizenship</b>	Egyptian
<b>Gender</b>	Female
<b>Training Site</b>	University Research centers, nurseries, greenhouses and tomato farms in Florida and California.
<b>Training dates</b>	March 15 - April 8, 1995
<b>Purpose of Training</b>	Training in sheep and goat production
<b>Type of Training</b>	Technical
<hr/>	
<b>Name</b>	Fatma Abdel Wahab Abdel Magied Saleh
<b>Citizenship</b>	Egyptian
<b>Gender</b>	Female
<b>Training Site</b>	University Research centers, nurseries, greenhouses and tomato farms in Florida and California.
<b>Training dates</b>	March 15 - April 8, 1995
<b>Purpose of Training</b>	Training in sheep and goat production
<b>Type of Training</b>	Technical
<hr/>	
<b>Name</b>	Wafaa Ali Ahmed Zaki
<b>Citizenship</b>	Egyptian
<b>Gender</b>	Female
<b>Training Site</b>	University Research centers, nurseries, greenhouses and tomato farms in Florida and California.
<b>Training dates</b>	March 15 - April 8, 1995
<b>Purpose of Training</b>	Training in tomato production
<b>Type of Training</b>	Technical
<hr/>	
<b>Name</b>	Azza Abdel Wahab Mostafa Diab
<b>Citizenship</b>	Egyptian
<b>Gender</b>	Female
<b>Training Site</b>	University Research centers, nurseries, greenhouses and tomato farms in Florida and California.
<b>Training dates</b>	March 15 - April 8, 1995
<b>Purpose of Training</b>	Training in Tomato production
<b>Type of Training</b>	Technical

**Name** Hala Radwan Youssef Farag  
**Citizenship** Egyptian  
**Gender** Female  
**Training Site** University Research centers, nurseries, greenhouses and tomato farms in Florida and California.  
**Training dates** March 15 - April 8, 1995  
**Purpose of Training** Training in Tomato production  
**Type of Training** Technical

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**Name** Nemat Ahmed Mahrous Harby  
**Citizenship** Egyptian  
**Gender** Female  
**Training Site** University Research centers and sheep and goat operations Florida and California.  
**Training dates** March 15 - April 8, 1995  
**Purpose of Training** Training in tomato production  
**Type of Training** Technical

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**Name** Nabila Mohamed Ali Abdou  
**Citizenship** Egyptian  
**Gender** Female  
**Training Site** University Research centers and sheep and goat operations Florida and California.  
**Training dates** March 15 - April 8, 1995  
**Purpose of Training** Training in tomato production  
**Type of Training** Technical

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**Name** Lubna Taha Mohamed Zeidan  
**Citizenship** Egyptian  
**Gender** Female  
**Training Site** University Research centers and sheep and goat operations Florida and California.  
**Training dates** March 15 - April 8, 1995  
**Purpose of Training** Training in tomato production

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**Name** Mohamed Mamdouh Abdallah Abdel Salam  
**Citizenship** Egyptian  
**Gender** Male  
**Training Site** Grape farms, nurseries and research stations in California and Arkansas.  
**Training Dates** March 31 - April 28, 1995  
**Purpose of Training** Training in grape production

**Name** Khalaf Mohamed Ibrahim  
**Citizenship** Egyptian  
**Gender** Male  
**Training Site** Grape farms, nurseries and research stations in California and Arkansas.  
**Training Dates** March 31 - April 28, 1995  
**Purpose of Training** Training in grape production

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**Name** Gamal Eldin Gomaa Mohamed Abou Khriba  
**Citizenship** Egyptian  
**Gender** Male  
**Training Site** Grape farms, nurseries and research stations in California and Arkansas.  
**Training Dates** March 31 - April 28, 1995  
**Purpose of Training** Training in grape production

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**Name** Refaat Hanna Said Hanna  
**Citizenship** Egyptian  
**Gender** Male  
**Training Site** Grape farms, nurseries and research stations in California and Arkansas.  
**Training Dates** March 31 - April 28, 1995  
**Purpose of Training** Training in grape production

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**Name** Amin Ahmed Ibrahim Tawfiq  
**Citizenship** Egyptian  
**Gender** Male  
**Training Site** Grape farms, nurseries and research stations in California and Arkansas.  
**Training Dates** March 31 - April 28, 1995  
**Purpose of Training** Training in grape production

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**Name** Fouad Bakry Mohamed Amer  
**Citizenship** Egyptian  
**Gender** Male  
**Training Site** Grape farms, nurseries and research stations in California and Arkansas.  
**Training Dates** March 31 - April 28, 1995  
**Purpose of Training** Training in grape production

**Name** Mohamed Kamal Mohamed Hassanien  
**Citizenship** Egyptian  
**Gender** Male  
**Training Site** Grape farms, nurseries and research stations in California and Arkansas.  
**Training Dates** March 31 - April 28, 1995  
**Purpose of Training** Training in grape production

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**Name** Ahmed Meligy  
**Citizenship** Egyptian  
**Gender** Male  
**Training Site** New Carolina and Gorgia  
**Training dates** June 29 - July 29, 1995  
**Purpose of Training** Training in beekeeping production  
**Type of Training** Technical

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**Name** Nazeh Selem  
**Citizenship** Egyptian  
**Gender** Male  
**Training Site** New Carolina and Gorgia  
**Training dates** June 29 - July 29, 1995  
**Purpose of Training** Training in beekeeping production  
**Type of Training** Technical

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**Name** Hamdy Gawad  
**Citizenship** Egyptian  
**Gender** Male  
**Training Site** New Carolina and Gorgia  
**Training dates** June 29 - July 29, 1995  
**Purpose of Training** Training in beekeeping production  
**Type of Training** Technical

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**Name** Marwan El Badry  
**Citizenship** Egyptian  
**Gender** Male  
**Training Site** New Carolina and Gorgia  
**Training dates** June 29 - July 29, 1995  
**Purpose of Training** Training in beekeeping production  
**Type of Training** Technical

**Name** Abdel Atty El Hady  
**Citizenship** Egyptian  
**Gender** Male  
**Training Site** New Carolina and Gorgia  
**Training dates** June 29 - July 29, 1995  
**Purpose of Training** Training in beekeeping production  
**Type of Training** Technical

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**Name** Reda Hassan  
**Citizenship** Egyptian  
**Gender** Male  
**Training Site** New Carolina and Gorgia  
**Training dates** June 29 - July 29, 1995  
**Purpose of Training** Training in beekeeping production  
**Type of Training** Technical

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**Name** Hassan Abdel Gawwad  
**Citizenship** Egyptian  
**Gender** Male  
**Training Site** Florida and California  
**Training dates** August 20 - September 13, 1995  
**Purpose of Training** Training in sub-tropical production  
**Type of Training** Technical

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**Name** Mohamed El Ghabosh  
**Citizenship** Egyptian  
**Gender** Male  
**Training Site** Florida and California  
**Training dates** August 20 - September 13, 1995  
**Purpose of Training** Training in sub-tropical production  
**Type of Training** Technical

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**Name** Ibrahim Ghounim  
**Citizenship** Egyptian  
**Gender** Male  
**Training Site** Florida and California  
**Training dates** August 20 - September 13, 1995  
**Purpose of Training** Training in sub-tropical production  
**Type of Training** Technical

**Name** Zakaria Shehata  
**Citizenship** Egyptian  
**Gender** Male  
**Training Site** Florida and California  
**Training dates** August 20 - September 13, 1995  
**Purpose of Training** Training in sub-tropical production  
**Type of Training** Technical

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**Name** Seoudi Hamed  
**Citizenship** Egyptian  
**Gender** Male  
**Training Site** Florida and California  
**Training dates** August 20 - September 13, 1995  
**Purpose of Training** Training in sub-tropical production  
**Type of Training** Technical

**APPENDIX G**

**SAMPLE OF PARTICIPANTS TRAINEES'  
REPORTS**

**REPORT ON TRAINING IN THE UNITED  
STATES**

**JUNE 29 - JULY 7, 1995**

**BEEKEEPING GROUP**

**BY**

**MARAWAN MOHAMED MARAWAN**

## SUMMARY

We arrived in Washington on June 29, 1995 and met with ACIDI Headquarters staff, Eta Nahapetain, FtF Training Coordinator, who conducted a briefing session for the Beekeeping Group. We also met with Lobna Ismail, who gave the group a cultural briefing session.

The group visited the Beekeeping Research Center in Maryland, where Dr. Shimanuki was the Local Coordinator of the group. We attended sessions on the following topics:

### American Beekeepers:

- The best beekeepers in the United States are in Florida and they own 60,000 beehives.
- Professional beekeepers, who are full time beekeepers, own at least 1000 beehives. .
- 50% of American Beekeepers' income depends mainly on the pollination season, where renting of beehives (2- 3 months) is \$ 35 and the main pollination are apple trees.
- The average production of beehives per year is around 20 - 25 kilograms.
- There are around four and a half million beehives in the United States.
- 2,000 professional full time beekeepers in the United States.
- The best states for producing honey are California and Florida.

### Better Quality of Beehives.

- Get the beehives ready before the beginning of the season, consisting of 60,000 bees which is 20 honey frames, by feeding them sugar solution. The pollination season is six weeks, with the existence of enough honey to feed the bees, by the help of the pollen seeds.
- Discover any disease as early as possible.

### **How to Treat Parasites:**

- **Chemical Treatment:** by using 2 apistan strips for every beehive, or one strip for every five frames.
- **Natural Treatment:** (still under experiment)

### **Information on Varroa Jacobsoni:**

- It is an insect (mite) that needs water inside its body all the time. It loses large quantities of water, therefore, it feeds on bees, especially the larva, to regain water in its body again.
- The varroa prefers cold and humid weather
- It prefers to live on young bees, since they have new blood
- The female varroa starts to lay its eggs 30 hours after it enters the hexagon

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

**acdi**

المنظمة الدولية

لتنمية التعاون الزراعي

تقرير زيارة الولايات المتحدة الأمريكية

من خلال تبادل خبرات المزارعين

عن الفترة

من ٢٩ / ٦ إلى ٢٩ / ٧ / ١٩٩٥

مقدم الى

**المنظمة الدولية لتنمية التعاون الزراعي**

**acdi**

إعداد

**مروان محمد مروان**

٦٥

## مقدمه

\* أبدأ كتابة تقريرى هذا بالحمد والثناء على الله باسط الأرض ورافع السماء وكذلك صلاة وسلاماً على المبعوث رحمة للعالمين محمد وعلى آله وصحبه أجمعين .

\* أتوجه بالشكر إلى كل من ساهم فى إعداد برنامج الزيارة وتذليل الصعاب للوصول الى الفائدة المرجوة من برنامج تبادل خبرات المزارعين

\* سوف أقوم فى هذا التقرير بالعرض لما شاهدت خلال أيام الزيارات المختلفة وكذلك الاستفادة من البرنامج ككل وكذلك تقييم برنامج الرحلة . .

أولاً : المشاهدات اليومية :

الخميس ٢٩ / ٦ / ١٩٩٥

الوصول الى Washington D. C مساءً وذهبنا الى فندق Carlyle Suites حيث كان حجز الغرف مرتب مسبقاً .

الجمعة ٣٠ / ٦ / ١٩٩٥

\* فى صباح ذلك اليوم قمنا بالتوجه الى مكتب المنظمة وقابلنا كل من Ms. Eta & Ms. Tame حيث وجدنا كل ترحاب وحفاوة . وقامت Ms. Tame بعرض مخطط الرحلة وتوضيح أهداف الزيارة وكذلك إعطائنا فكرة بسيطة جداً عن كيفية التعامل مع المواطن الأمريكى لحين مقابلة Ms. Lobna التى قامت بتغطية تلك النقطة .

\* وقامت كذلك Ms. Tame بإعطائنا المستحقات المالية كالاتى :

\$ ٢٧٥٠ شيكات سياحية ، \$ ١٦٠ نقدية .

وتناولنا طعام الغداء فى مبنى المنظمة وفى نهاية المقابلة تمنوا لنا الاستفادة من برنامج الزيارة .

السبت ١ / ٧

(١) حضرت الى الفندق الساعة التاسعة صباحاً Ms. Lobna Ismail التى قامت بإعطائنا محاضرة فى الثقافة الأمريكية ومقارنتها بالثقافات الأخرى .

قامت بشرح أسلوب التعامل مع المواطن الأمريكى وكيفية حرصه على الوقت وكذلك قدسيته للعمل وعدم الخلط بين وقت العمل ووقت الترفيه والراحة وكذلك بعض الأسئلة التى يجب ألا توجه للمواطن الأمريكى مثل ( السن - مقدار الدخل بالتحديد - الديانة )

(٢) بعد المحاضرة إصطحبنا Mr. Hany Abou Ali وقمنا بزيارة لمعالم المدينة وكذلك عمل جولة حرة .

جولة حرة وزيارة معالم المدينة .

زيارة الى مركز أبحاث النحل فى ميرلاند ومقابلة Dr. Shimanuki.. الذى رحب بنا فى أمريكا وفى مركز الأبحاث وتحدث معنا فى أول محاضرة له فى الآتى :

### المحاضرة الأولى Dr. Shimanuki

١ ( النحالة فى أمريكا : عرض فى هذه الجزئية الآتى :

- أكبر نحل على مستوى الولايات فى فلوريدا ويملك ٦٠,٠٠٠ خلية
- محترف النحالة لا يقل عن ١٠٠٠ خلية .
- النحال فى أمريكا يعتمد بنسبة ٥٠ ٪ من دخل الخلية على موسم التلقيح حيث أن إيجار الخلية الواحدة فى موسم التلقيح ( عبارة عن شهرين أو ثلاثة ) \$ ٣٥ ومحصول التلقيح الأساسى هو التفاح .
- متوسط إنتاج للخلية فى السنة ( ٢٠ - ٢٥ ) كيلو على مستوى الولايات المتحدة الأمريكية .
- يوجد ٤,٥ مليون خلية على مستوى الولايات المتحدة .
- يوجد ٢,٠٠٠ نحال محترف ليس لديه أى عمل آخر .
- يوجد ١٠٠,٠٠٠ نحال يعمل بجانب وظيفته .
- أفضل مناطق إنتاج العسل كاليفورنيا - فلوريدا .

٢ ( رفع كفاءة الخلية .

- ( أ ) يجب ان نعد الخلية قبل بداية الموسم لتصل الى ٦٠,٠٠٠ نحلة عبارة عن ٢٠ برواز نحل من الوجهين وذلك من خلال التغذية بمحلول سكرى وذلك قبل موسم الفيض بستة أسابيع وذلك مع وجود العسل الكافى لتغذية النحل مع إستعمال بدائل حبوب اللقاح .
- (ب) الإكتشاف المبكر للأمراض

### المحاضرة الثانية

### معالجة الطفيليات

Dr. Calderone

### \* كيفية معالجة الفاروا

- ١ - المعالجة الكيماوية إستخدام ٢ شريط ابستان لكل خلية أى شريك لكل ٥ برواز
- ٢ - المعالجة الطبيعية ( تحب التجارب )

\* وكذلك بين لنا ان شهور نوفمبر وديسمبر ويناير فترة راحة للملكة لانه لا يوجد كمية نحل كافية فى الخلية .

\* وكذلك بين لنا طريقة عمل خلطة بديل حبوب اللقاح عبارة عن عجينة وزن نصف كيلو تحتوى على :

مقدارين سكر + مقدار (١) زيت فول سودانى

أو (٢) زيت عباد الشمس

أو (٣) زيت فول الصويا

### المحاضرة الثالثة

**Dr. Bruce**

\* تحدث عن الفاروا وعرف الفاروا بأنه حيوان ويحتاج الى الماء داخل جسمه ويفقد كمية كبيرة من الماء لذلك يتطفل هذا الحيوان على النحل وخاصة على اليرقة لعمل التوازن المائى داخل جسمه .

\* حيوان استوائى وانسب فترة للعلاج هى فترة اختفاء الحضنه .

\* وزن للطفيل الأثنى ٣٠٠ ميكرو جرام

\* كلما كان الجو بارد والرطوبة عالية يكون الطفيل حى .

\* عندما يفقد حيوان الفاروا نسبة ٥٠ ٪ من المحتوى المائى يعتبر فى عداد الموتى .

### المحاضرة الرابعة

**Dr.Kuenen**

تحدث Dr.Kuenen عن سلوك الفاروا وبين هذا السلوك فى النقاط التالية :

\* الفاروا يفضل للنحل الصغير الحاضن لأنه دم جديد .

\* عندما توجه تيار هواء فى اتجاه حيوان ( طفيل ) الفاروا نجد انها عندها قدرة التحرك ضد الهواء .

\* الفاروا لها رجلين أماميتين وهذا يعتبر بمثابة قرون إستشعار للتمييز بين النحل الصغير والكبير ويوجد نوع من الكيماويات داخل دم النحل الصغير يفضلها الفاروا .

\* تبدأ أنثى الفاروا فى وضع البيض بعد ٣٠ ساعة من دخولها العين السداسية .

\* ٥٠ ٪ من الطفيل يفضل البقاء على جسم النحلة ، ٥٠ ٪ يفضل الإنتقال من نحلة الى أخرى .

\* فى حالة وجود عيون سداسية مفتوحة بعدد كبير نتوقع وجود الفاروا .

## المحاضرة الخامسة

Dr. Hung

قسم أمراض النحل الى :

- \* فيروسى - بكتريا - عناكب - نيماتودا - فطريات .
- \* هناك ١٤ فيروس مختلف يصيب النحل منها ١٠ فى أمريكا مثل أركنساس - الجناح الغير واضح - الحضنة المتحجرة - الشلل الذكى - فيروس حرف Y - إسوداد الخلية الملكية - كشمير .
- \* طريقة التعرف على الفيروسات باستخدام الميكروسكوب الإلكتروني .
- \* قمنا بدخول المعمل وشاهدنا أمراض الأكارين والنيوزيما أسفل الميكروسكوب وكذلك تعرفنا على برواز حضنه مصاب بمرض تعفن الحضنة الأمريكى وكذلك الحضنة الطباشيرية .

الثلاثاء ٧ / ٤

أجازة بمناسبة عيد الإستقلال

الأربعاء ٧ / ٥

عودة مرة أخرى الى مركز ابحاث النحل .

## المحاضرة الأولى

Dr.Suzane Batra

هذه المحاضرة تناولت انواع نحل التلقيح وليس نحل العسل ومن الممكن ان نلخص المحاضرة فى النقاط التالية :

- \* نحل يتعامل مع حبوب اللقاح وليس مع العسل .
- \* ليس به ملكة وشغالة بمفهوم نحل العسل بمعنى انه فى الغالب حوالى ٩٠ ٪ من نحل التلقيح يحتوى على أنثى ( الحشرة الواحدة عبارة عن ملكة وشغالة )
- \* هناك نحل متخصص فى تلقيح البرسيم الحجازى لان زهرته اكبر ويحتاج الى نحل ذو خرطوم اكبر ويعيش فى بلوك خشب ( صناعى ) وينشط فى الصيف وباقى السنة فى بيات .
- \* فى اوربا روضوا النحل الطنان واستخدموه فى التلقيح فى الصوبات .
- \* نحل التلقيح المصرى يعيش فى الأخشاب وكذلك فى البيوت الطينية ويوجد كذلك النحل القارض الذى يعيش فى ورق الأشجار بعد ان يقوم بقرض الورقة وعمل جحور بها .

## المحاضرة الثانية

Dr. Schijy

عرض Dr. Schijy فى هذه المحاضرة الصفات الوراثية للنحل فى الولايات المتحدة الأمريكية ولعمل تحليل للصفات الوراثية للنحل بأنواعه المختلفة بحيث نمرر أنواع النحل محل الدراسة على المعايير الآتية ( طول الجناح - الأرجل - زاوية ميل التعاريج فى الجناح )

ووضع تاريخ دخول النحل الى الولايات المتحدة الأمريكية .

الإيطالى	١٦٢٠
المصرى	١٨٦٦
قبرص - الشرق الأوسط	١٨٨٠
الأفريقى	١٩٩٠

### المحاضرة الثالثة

Dr. Shimanuki

تحدث فى هذه المحاضرة عن أمراض النحل ومن الممكن ان نلخص المحاضرة فى الآتى :

\* أن الأمراض تؤثر على منحنى الخلية ويحدث دمار وبالتالي ان النحال عليه المعول الأساسى فى الإكتشاف المبكر للأمراض وكذلك سرعة العلاج للحفاظ على قوة الخلية وهناك علامات لمعرفة المرض بمجرد النظر مثل :

- ١) الزحف على فتحة السراحة .
  - ٢) وجود نحل ميت أسفل الخلية .
  - ٣) وجود يرقة متحجرة أسفل الخلية .
- \* للحركة السريعة من والى للخلية ليس دليل على قوة الخلية ومن الممكن ان يكون هناك سرقة .

### \* تعفن الحضنة الأمريكى

علامات المرض :

- ١) حضنه مقفوله لها شكل محدب ومخرمه .
- ٢) وجود عيون سداسية مفتوحة .
- ٣) قد تصل درجة لزوجة اليرقة الى ٢ سم .
- ٤) وجود شيء مثل اللسان فى داخل العين السداسية وذلك بعد موت الحضنة .
- ٥) وجود رائحة فى البرواز مميزة وقد قاموا فى بعض الولايات بتدريب الكلاب على هذه الرائحة .

العلاج :

لايوجد علاج لهذا المرض وكل مايمكن عمله هو حرق الخلية بالكامل وفى بعض الولايات يكتفوا بتعقيم الخشب مع حرق النحل .

### \* التعفن الأوروبى

علامات المرض :

الحضنة مفتوحة واليرقة تموت أسرع من التعفن الأمريكى  
اليرقة فى حالة الموت تأخذ جنب فى العين السداسية .

## \* الحضنة الطباشيرية

علامات المرض :

رائحة مشابهة مع رائحة الخضار

اللون الأبيض : حامل لجنس واحد

اللون الرمادي : حامل للجنسين ذكر واثى على اليرقة الواحدة لذلك يعطى اللون الرمادي .  
الخلية المصابة بالحضنة الطباشيرية تفرز رائحة ( حامض اللوريك ) يمنع الإصابة بالتعفن الأوربي - الأمريكى .

## \* الأكارين

العلاج :

(١) كيماموى : عن طريق المنتول يوضع فى صرة من القماش ويوضع فى الجزء الخاص بالحضنة من اعلى عبارة عن ٥٠ جرام للخلية . ويلاحظ ان المنتول حساس جداً لدرجة الحرارة بمعنى إذا زادت درجة الحرارة عن ٢٦ ° يبدأ النحل فى الهيجان .

(٢) الطبيعى : عجينة نصف كيلو للخلية تحتوي على

سكر بودره + زيت نباتى غير مهدرج

١ + ٢

## \* النيوزيما

معناه الغير مرئى No see them

يعمل هذا المرض على قصر عمر النحل البالغ ومسئول عن تخفيض ناتج العسل بنسبة ٤٠ % .

ينتشر فى الخريف والشتاء وبداية الربيع ويصل الى القمة فى ابريل .

العلاج :

يتم السيطرة عليه باحد المضادات الحيوية ( فيومى جيل )

١٠٠ مجم فيومى جيل + المحلول السكرى بنسبة ١ : ١

يضاف ٨ لتر للخلية

## \* الشلل

علامات المرض : وراثى

\* سقوط شعر النحل وهذا ناتج عن شعور النحل بأن النحلة المصابة غريبة عن الخلية فيبدأ

فى خلع شعرها .

\* يلاحظ النحل فى حالة زحف امام فتحة السراحة .

العلاج :

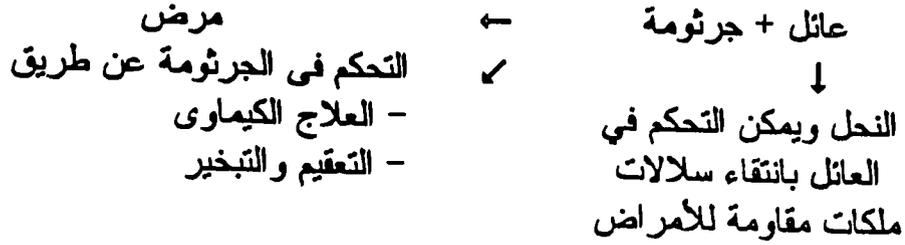
تغير الملكة على ان يكون مصدر الملكات من مكان بعيد لأن السبب فى هذا المرض هو

التزاوج الداخلى .

## المحاضرة الرابعة

Dr.Shimanuki

في هذه المحاضرة بين Dr.Shimauki كيفية استخدام التراميسين في علاج امراض الحضنة ووضع في البداية ان المرض يعتمد على العائل بالإضافة الى الجرثومة



\* استخدام التراميسين في علاج امراض الحضنة

- طريقة العلاج مرة واحدة في السنة وذلك في فترة الربيع .

طريقة (١) :

للخلية ⇒ زيت نباتي متجمد غير مهرج + سكر بودره + تراميسين  
١٥٠ جرام + ٣٠٠ جرام + ١٢,٥ جرام

وتشكل على هيئة فطيرة توضع على برونز الحضنة

طريقة (٢) : التعفير

خلط التراميسين مع سكر البودرة والتعفير الدائري على حزام الحضنة

سكر بودرة + تراميسين  
٢,٨ جرام + ٣,٨ جرام

طريقة المعالجة : ٣ معالجات بين كل مرة واخرى من ٣ الى ٤ أيام وذلك في فترة الربيع

الخميس ٦ / ٧ OHIO STATE

السفر الى ولاية أوهايو OHIO STATE حيث كان في استقبالنا في المطار المنسق المحلى في الولاية Mr. Michael Sayers

\* ذهبنا بعد ذلك الى فندق Red Roof Inn وتم تسكيننا في الغرف وذهبنا بعد ذلك الى مكتب منظمة VOCA وقابلنا Ms. Diana التى قامت بالترحيب بنا وشرحت لنا اسلوب عمل المنظمة في ترتيب زيارات المتطوعين .

\* توجهنا بعد ذلك الى منزل والد مايكل الذى رحب بنا بدوره وتعرفنا من خلال الزيارة على طبيعة المنزل الأمريكى وطبيعة السلوك داخل المنزل .

الجمعة ٧ / ٧

- \* توجهنا فى الصباح الى مركز بحوث النحل فى كولمبس وقابلنا Dr Suzan Colby التى قامت بشرح عملية التلقيح الصناعى وعرضت الأجهزة المستخدمة لذلك . وقمنا بمشاهدة خلايا النحل الخاصة بالتجارب كما شاهدنا تجربة وجود ملكتين فى خلية واحدة .
- \* وتوجهنا بعد ذلك الى المركز الإسلامى فى كولمبس وأدينا صلاة الجمعة .

السبت ٧ / ٨

جولة حرة

الأحد ٧ / ٩

جولة حرة

الاثنين ٧ / ١٠

- \* فى صباح ذلك اليوم توجهنا الى زيارة مركز بحوث النحل وشاهدنا هناك تاريخ حياة النحل وتطور النحالة من خلال متحف المركز . وكذلك شاهدنا بعض الخلايا القديمة والتي اعيد تشغيلها ويرجع عمر الخلية الى عام ١٨٦٣ .
- \* وكذلك شاهدنا فكرة التغذية المكشوفة وهى عبارة عن بزطمان زجاجى يوضع على احد اجناب فتحة السراحة مقلوب ومتقب الفوهه حيث يبدأ النحل فى سحب المحلول السكرى عن طريق الثقوب الموجودة فى فوهه الغذائية .
- \* كذلك توجهنا الى منحل الأبحاث الخاص بالمركز .
- \* وكان المركز فى حالة تأهب واستعداد لإستقبال المؤتمر السنوى للنحالين وكذلك شاهدنا وحدة الفرز الآلى الخاصة بالمركز .

الثلاثاء ٧ / ١١

- زيارة الى مصنع تعبئة عسل Bruce Bdlinger وعملية التعبئة تتم كالاتى :
- \* دخول العسل فى براميل أو حاويات بلاستيك زنة ١٢٧٠ ك تقريباً من ( الأرجنتين - الصين - كندا - محلى )
- \* يمر العسل ( براميل ) على غرفة التسخين المبنى فى درجة حرارة ٣٥°
- \* وبعد ذلك تمر براميل العسل بسعة ١٠٤٣ ك على غرفة التسخين النهائى فى درجة حرارة ٥١,٦° وهى عبارة عن مواسير بخار ساخن يوضع فوقها البراميل .
- \* بعد عملية التسخين يترك العسل ١٢ ساعة لإزالة المخلفات والشوائب ويسخن مرة أخرى فى درجة حرارة ٦٠ م
- \* يتم اضافة بودرة عبارة عن محار بحر مطحون قدم مكعب لكل ٦٠٠٠ رطل عسل فى درجة حرارة ٦٠ م وذلك لحفظ العسل من التجميد .
- \* بعد ذلك يدخل العسل فى درجة حرارة ٧٣,٨° م استعداداً للفلتره .
- \* يمر العسل فى عملية الفلتره على ورق ترشيح سمك ١ مم بأبعاد ٤٠ X ٤٠ سم

\* بعد عملية الفلترة يرفع العسل من خلال خط انابيب الى تنك سعة ٧,٥ طن ويترك لمدة يومين وذلك لاتمام عملية الإتضاع وبعد ذلك تبدأ عملية التعبئة ويوجد خطين تعبئة :

(١) التعبئة فى براميل سعة ٣١٢ ك فى درجة حرارة نهائية ٤٦,١ ° م

(٢) التعبئة فى عبوات زجاجية فى درجة حرارة ٤٦,١ ° م

الأربعاء ١٢ / ٧

زيارة الى معرض بيع أدوات نحالة

\* فى تلك الزيارة شاهدنا ادوات النحالة من ( برواز - عتله - قناع - مدخن - صارف نحل )

\* وتم عمل مقارنة بين طرق تصنيع أدوات النحالة فى امريكا مقارنة بمصر .

\* وجدنا ان صناعة شمع الإنارة بأشكاله المختلفة هى صناعة رائجة حيث تستخدم تلك الشموع فى المناسبات وطريقة تصنيعها بسيطة وغير مكلفة حيث تعتمد على مخلفات شمع النحل .

الخميس ١٣ / ٧

فى ذلك اليوم توجهنا الى زيارة مركز ارشاد جامعة لوهايو وتعرفنا على الآتى :

\* انواع الحشرات الاقتصادية ومن ضمنها النحل الذى يقوم بعملية جمع الرحيق وحبوب اللقاح .

\* تعرفنا على كيفية انشاء المناحل والضوابط المنظمة لذلك .

\* طريقة رش المبيدات وان هناك فريق مختص فى ذلك وهذا الفريق مسئول عن اختيار المبيد المناسب لمقاومة نوع الإصابة.

\* وعلمنا الدور الذى يلعبه الإرشاد فى رفع التوعية الزراعية بوجه عام للوصول الى أعلى انتاجية .

الجمعة ١٤ / ٧

\* فى صباح ذلك اليوم توجهنا من الفندق الى مقاطعة ليما وبحثنا عن المركز الإسلامى فى المقاطعة وادينا صلاة الجمعة وقد قام المنسق المحلى بجهد مشكور فى هذا المجال وحرصه على العثور على هذا المركز لتؤدى المجموعة صلاة الجمعة .

\* بعد صلاة الجمعة توجهنا الى مصنع تعبئة عسل Stoller Honey

\* شاهدنا عملية التسخين المبني للعسل فى غرفة تحتوى على مواسير بخار يوضع فوقها براميل للعسل . وكذلك شاهدنا عملية الفلترة والتعبئة فى براميل .

\* يقوم المصنع بعمل كريمة العسل من خلال مزج العسل والفاكهة الطبيعية فى وعاء كبير مع التسخين والدوران السريع ( الى ) وبعد ذلك تعبأ الكريمة وتحفظ فى ثلاجات .

السبت ١٥ / ٧

زيارة الى حديقة الحيوان

الأحد ١٦ / ٧ Washington State

السفر الى Washington State

\* وصلنا الى المطار وكان في استقبالنا المنسق المحلي في الولاية Mr. James Bach وبعد ذلك ذهبنا الى الفندق .

الاثنين ١٧ / ٧

\* تنفيذًا للبرنامج الموضوع إجتمع بنا Mr. Bach في حديقة الفندق وعرض لنا خطة العمل وكيفية تنظيم برنامج الرحلة في الولاية ، وفي خلال اللقاء نفسه تم طرح بعض الأسئلة ومائتمنى مشاهدته من خلال الزيارات ، وبعد ذلك تحركنا لعمل جولة حرة .

\* في مساء ذلك اليوم ذهبنا لحضور تجمع النحالين السنوي بدعوة من رئيسة الجمعية وبترتيب من المنسق المحلي وتقابلنا مع النحالين وتم طرح الأسئلة من كلا الطرفين للوقوف على مستوى النحالة في كل من مصر وأمريكا .

الثلاثاء ١٨ / ٧

\* في صباح ذلك اليوم حضر الى الفندق Mr. Robert Zahler وتوجهنا بالسيارة لزيارة مصنع مستلزمات نحالة ( Beez Need ) وشاهدنا عملية تصنيع البرواز وكيفية تسميع البرواز وتثبيت الشمع من خلال آلة لحام شمع تعمل على ( ١٢ فولت - ٢ امبير ) وطريقة وضع الشمع من خلال سلك البرواز وهذه الطريقة - المتبعة في أمريكا - من شأنها المحافظة على الشمع ولا يوجد نسبة تالف وكذلك توفر الوقت والجهد .

\* بعد ذلك توجهنا لزيارة نحال Mr. Ron Babcock

- هذا النحال يقوم بجمع حبوب اللقاح وكذلك شاهدنا ماكينة تنقية حبوب اللقاح من الشوائب وهي من ابتكاره . وكذلك شاهدنا خلايا نحل خاصة به أعلى قمة جبل وهو يعتمد في هذه المنطقة على للحشائش الجبلية مثل زهرة حشائش النار .

- تعرفنا من هذا النحال اتنا في حالة التعامل في انتاج عسل القطاعات نضع في الدور الأول للخلية جميع براويز الحضنه مع وضع حاجز ملكات ثم بعد ذلك نقوم بوضع الدور الثاني ونضع ١٠ برواز قطاعات مرة واحدة وذلك دون التدخل منا في نفض النحل في الدور الثاني ونترك النحل يعمل دون الحاجة الى التدخل في شئون عمله .

- عدد الخلايا ١٥٠ خلية

- الإنتاج ٣٠٠ x ١٦ برميل = ٥٤٠٠ ك

- متوسط انتاج الخلية ٥٤٠٠ ك ÷ ١٥٠ = ٣٦ ك / خلية

- متوسط انتاج الخلية في الأسبوع من حبوب اللقاح

١,٥ ك x ٨ \$ = ١٢ \$ / اسبوع / خلية

- توضع مصيدة حبوب اللقاح من شهر مايو الى شهر اكتوبر

- يستخدم هذا النحال برواز القطاعات البلاستيك .

الأربعاء ١٩ / ٧

\* زيارة الى نحال Mr. Jim Pefely

١٥

- عدد الخلايا ٦٠٠ خلية
- الإنتاج ٢٠٠ كيلو x ٦٠ برميل = ١٨٠٠٠ ك
- متوسط إنتاج الخلية =  $١٨٠٠٠ \div ٦٠٠ = ٣٠$  ك / خلية
- لديه تنك مرفوع على شاسيه عربيه سعة ٣٠٠ جالون ١٢ م ٣ لتغذية الخلايا لحفظ المحلول يضيف مادة Tar tar حيث يمكث المحلول السكرى فى التنك لمدة شهر .
- يقوم هذا النحال بتأجير خلاياه فى موسم الخيار حيث ذهبنا الى مكان الخلايا فى ارض الخيار وذلك لرفع القيمة الإنتاجية للخلية حيث يتقاضى مبلغ ٣٥ دولار لكل خلية فى موسم التلقيح .

الخميس ٧ / ٢٠

- \* زيارة مصنع تعبئة يملكه Mr. Ron Knopp ويعمل هذا المصنع لتعبئة إنتاج العسل خاصة Mr. Knopp ولايعمل لحساب الغير .
- قام Mr. Knopp بشراء هذا المصنع من حوالى عام بعد ان كاد يوشك على الإفلاس لسوء ادارة من المالك السابق . وبدأ Mr. Knopp فى اعادة بناء وتجديد المصنع وبدأ فى بناء جسور الثقة بينه وبين المستهلك .
- لم نشاهد عملية الفرز والتعبئة لأن عملية الفرز سوف تبدأ بعد حوالى اسبوعين من هذا التاريخ .

- وكذلك شاهدنا المنحل الخاص Mr. Knopp

عدد الخلايا ١٥٠٠

الإنتاج ٣٠٠ ك x ١٥٠ برميل = ٤٥٠٠٠

متوسط الإنتاج  $٤٥٠٠٠ \div ١٥٠٠ = ٣٠$  ك

- \* فى ذلك اليوم ايضا توجهنا الى زيارة مصنع تعبئة عسل Silverbow Honey Co. وشاهدنا الآتى :

- عملية التسخين المبدئى لبراميل العسل وذلك فى غرفة التسخين عبارة عن مواسير بخار يوضع فوقها براميل العسل
- وكذلك شاهدنا عملية الفلترة وتعبئة المنتج النهائى فى جراكن بلاستيك سعة ٢ ك حيث وجد من للدراسة ان هذه العبوة اكثر قبولا فى السوق .
- وكذلك شاهدنا جهاز قياس كثافة العسل ويميز بين درجة لون العسل المطلوب من خلال عينة ثابتة فى الجهاز كمعيار .
- وشاهدنا اسلوب عمل كريمة العسل واسلوب حفظها بالتبريد .

الجمعة ٧ / ٢١

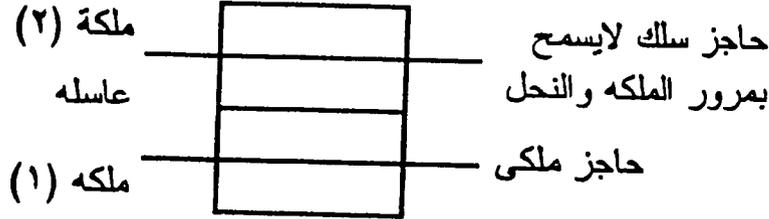
\* زيارة لنحال Mr. Glen McCabbins

- يعتبر اكبر نحال فى الولاية وكذلك يملك ١٣٠٠ فدان منزرعة برسيم حجازى
- عدد الخلايا ٥٠٠٠ خلية
- الإنتاج ١٢٥ ك / خلية x ٥٠٠٠ = ٦٢٥,٠٠٠ ك
- قمنا بمشاهدة المنحل الخاص به وطريقة إدارته للمنحل حيث لايدخل فى الشئون الخاصة بالملكة ( السير خلف الملكة ) وليس العكس . وشاهدنا اسلوب التغذية بمحلول سكرى عبارة عن ١٢ لتر / خلية تركيز ٧٠ ٪ فى السنة
- يقوم بتغيير الملكات بنسبة ١٠٠ ٪
- يستخدم البرواز البلاستيك بكامل قوة المنحل لأن اسلوب الفرز لديه كله آلى .

- لديه نحل تلقيح فى بلوك خشب يوجد فى ارض برسيم حجازى ١٣٠٠ فدان .
- شاهنا اسلوب التعبئة النهائية فى براميل وكذلك اسلوب الفرز الآلى ولديه فى المصنع سعة ٩٥٠٠ ك / يوم - ٢ عمال فقط ولايقوم بتعبئة عسل للغير بل قاصر على العسل الخاص به فقط .

\* بعد ذلك توجهنا الى زيارة نحل Mr. Lee Massey

- عدد الخلايا ١٥٠٠ خلية
- الإنتاج ٤٥ ك / خلية x ١٥٠٠ = ٦٧٥٠٠ ك
- شاهندا فكرة الخلية ذات الملكتين حيث ان رائحة العطر الملكى للملكتين تشجع النحل على العمل وبالتالي زيادة المحصول حيث يصل انتاج الخلية الواحدة بهذه الفكرة الى ٧٥ ك .



بعد موسم الفيض نقوم بضم الخليتين دون التخلص من اى من الملكتين بل نترك الصراع بين الملكتين والبقاء للأفضل .

\* ملحوظة :

فى حالة تغير ملكة قديمة نضع العنراء مع الملكة فى الخلية فى وقت واحد البقاء للأفضل.

\* الفكرة :

إن القتال يبدأ بين العنراء والملكة وغالباً ما يكون الإنتصار للعنراء لأن جسمها لين ومرن .

\* مفهوم خاطيء :

هناك مفهوم خاطيء يعتقد فى أن القتال يكون بين الملكة + النحل من جهة والعنراء من جهة أخرى .

السبت ٧/٢٢

أجازة - جولة سياحية

شاهدنا The Grand Coulee Dam وعلمنا معلومات عن عملية إنشاء السد من خلال مركز البيانات الموجود فى منطقة السد .

الأحد ٧/٢٣

زيارة لمصنع تعبئة يملكه Mr. . Eric Olson .  
- شاهندا طريقة الفرز الآلى والتعبئة فى عبوات وتحدث معنا Mr.Olson عن طريق تسويق المنتج من خلال البيع إلى سلسلة محلات ( Fred Mayer ) حيث أنه متعاقد مع هذه المحلات لتسويق العسل الخاص به .

الاثنين ٧/٢٤

قمنا بزيارة إلى شاطئ المحيط الهادى .

الثلاثاء ٧/٢٥ Washington D.C

السفر إلى Washington D.C

توجهنا إلى فندق Carlyle Suites

الأربعاء ٧/٢٦

جولة حرة في الولاية .

الخميس ٧/٢٧

- ذهبنا في الصباح إلى مكتب المنظمة وتم من خلال المقابلة مع MS. Mona Mrd ,

MS. Tame

تقييم برنامج الرحلة والوقوف على نقاط القوة والضعف في البرنامج .

- تسلم كل منا شهادة إتمام برنامج تبادل خبرات المزارعين وكذلك تسلمنا مبلغ \$ ٥٠ .

## التقييم

برنامج ولاية واشنطن

\* الاستفادة كانت رائعة وبرغم أن التنقل كان بصفة يومية للانتقال من زيارة إلى أخرى وبرغم الإرهاق البدني والذهني إلا أن البرنامج كان موفق للغاية حيث كانت الزيارات مشتملة على ( زيارة المناحل - معاهد البحث - مصانع التعبئة - أدوات النحالة ) وبالرغم من تكثيف البرنامج إلا أنه لم يخل من الترفية .

\* أشكر للمنسق المحلي Mr. James غزارة معلوماته وأدبه الجم في التعامل وحرصه على الاستفادة المجموعة الكاملة .

برنامج ولاية أوهايو

\* لم يكن على المستوى الجيد حيث ركز البرنامج على زيارة معاهد البحث ومصانع تعبئة العسل و لم نقم بزيارة المناحل في الولاية .  
\* أشكر المنسق المحلي في الولاية لما أبداه في الحرص على راحة المجموعة من حيث البحث عن المراكز الإسلامية لأداء صلاة الجمعة .

برنامج Washington D.C

تعتبر أكبر استفادة في برنامج الرحلة زيارة مركز أبحاث النحل حيث تعرفنا على أمراض النحل وكيفية العلاج .

- لم نشاهد عملية تربية الملكات طبيعياً .

- بالنسبة للفنادق كانت على مستوى جيد و الأسعار كانت مناسبة .

- بالنسبة لمنسقى البرنامج في مكتب واشنطن قاموا بمجهود مشكور في توفير المستحقات المالية وكذلك تنسيق حجز الفنادق و تنسيق برنامج الرحلة وكذلك أشكر لهم حسن الضيافة .

- بالنسبة للمترجم أ . هانى أبو على قام بدوره على أكمل وجه ولم يبخل على المجموعة بالمجهود سواء في عمله الرسمي أو في الجولات الحرة شاكرين له حسن تعاونه معنا .

- بالنسبة للمستحقات المالية كانت كافية جداً ولم أتخيل هذا المبلغ ( ٢٩١٠,٠٠ \$ ) شيكات

سياحية + نقدية . بل كنت أتوقع أقل من هذا .

بالإضافة إلى \$٥٠ في واشنطن D . C بإجمالى ٣٠١٠ \$

## الإستفادة من البرنامج

- كيفية الإدارة الصحيحة للمنحل مع مراقبة وكيفية التكيف مع النحل وليس العكس مع عدم المساس بعسل تغذية النحل .
- كيفية تغطية ربحية المنحل من خلال تنوع مصادر الدخل مثل إنتاج حبوب اللقاح .
- رؤية تجربة الخلية نو الملكتين .
- الإهتمام بالكيف وليس بكم الخلايا .
- رؤية مصانع تعبئة العسل وإسلوب التغليف - كيفية معالجة الأمراض .

## إمكانية التطبيق في مصر

- رفع كفاءة الخلية عن طريق الاكتشاف المبكر للأمراض و المحافظة على غذاء النحل إن امكن ذلك و كذلك المحافظة على وضع بدائل حبوب القحاح و استخدام الوسائل الطبيعية لمقاومة الأمراض .
- الأهتمام بتنوع مصادر دخل المنحل ( انتاج عسل - انتاج حبوب القحاح ) .

المنيا في ١٢ من ربيع الأول ١٤١٦ الموافق ٩ من أغسطس ١٩٩٥ .

مروان محمد مروان

  
٩٥١٢١٩