COMMERCIAL BEEKEEPING IN MODERN AGRICULTURE
April 28, 2014 – May 22, 2014

MASHAV is the Hebrew acronym for the Agency for International Development Cooperation, a department established 50 years ago in Israel’s Ministry of Foreign Affairs. MASHAV is responsible for designing and implementing Israel’s international development programs, carried out in Israel and in partner countries.

In cooperation with the Hebrew University of Jerusalem’s Faculty of Agriculture – MASHAV’s only academic affiliate – we are pleased to announce the opening of a training and capacity building program on Commercial Beekeeping in Modern Agriculture April 28, 2014 – May 22, 2014. The course will be held in Israel at the Robert H. Smith Faculty of Agriculture, Food and Environment, Division of International Studies, in Rehovot.

BACKGROUND
Beekeeping has ancient roots in the Middle East. In Israel’s Beth Shean Valley, researchers from the Hebrew University of Jerusalem Institute of Archaeology recently excavated an apiary dating from the 10th to early 9th centuries B.C.E. The cylindrical clay bee hives, similar to those found, are still used in some traditional cultures throughout the Mediterranean. The find demonstrates Israel's experience with beekeeping as far back as the Biblical period. The practice has developed over time - today Israel has 100,000 Langstroth bee hives. Israel's beekeeping industry had to address modern challenges such as:
  –the exposure of bees to new disease
  –the increased resistance of both diseases to antibiotics and parasites to pesticides
  –the threat of infiltration of invasive species competing for food sources
  –the uprooting of orange orchards due to lack of profit and urbanization
  –a water shortage that reduces the availability of nectar-rich crops, restricting nectar sources for honey production

In response to these challenges, Israeli beekeepers turned to more efficient methods, such as mechanization and breeding.
Unlike most developed countries, where large-scale beekeeping is a small fraction of the bee industry, in Israel, the more significant role of commercial apiaries contributes to advancing apiary management. There are about 450 beekeepers in Israel, and 75% of the hives are in large commercial apiaries. Israel produces about 3,000 tons of honey annually. One of the most important aspects of beekeeping in Israel is the pollination of crops. Over 60,000 hives are used for pollination, with some crops depending on the honeybee for pollination and other crops obtaining a 30% increased yield.

Due to the reliance on beekeeping for the pollination of a segment of Israel's agricultural production, and for the purpose of increasing honey production, Israeli researchers have sought to maximize the practice. They developed strategies to counter various difficulties — many of which are shared by apiary managers in nearby countries. The knowledge and techniques of the researchers at The Hebrew University of Jerusalem's Robert H. Smith Faculty of Agriculture, Food & Environment can be adapted to benefit all beekeepers -- potentially increasing their honey production and efficiency.

Agricultural extension agents, apiary industry leaders, researchers, representatives of government programs supporting beekeeping, and university professors instructing on this subject have a meaningful potential to advance these efforts with the benefit of exposure to the latest technology, enhanced awareness of proven strategies that can be adapted to their locale, opportunities to interact with experts in the field, and introductions to a network of professionals serving as resources and collaborators.

**COURSE OBJECTIVES**

The aim of this course is to work with participants in various aspects of apiary management, and to share experience and know-how. The goal is to provide tools to people engaged in beekeeping so that they can, increase honey production, improve beekeeping practices and honey quality, implement changes for greater efficiency, and adapt strategies to address the problematic issues related to beekeeping in their region, to yield a better product.

This course offers an opportunity for participants from different countries to garner connections with colleagues from other countries while being exposed to new developments in apiary management.

Course participants will acquire crucial information which they can adapt to the unique challenges of their countries. The course promotes networking and research cooperation between the participants, their respective countries and the researchers at the Faculty. We also encourage follow-up programs in participants' home countries.
TOPICS OF STUDY
- Overview of apiary management: Israeli examples
- Pests, diseases and treatment
- Pollination
- Supervision of quality control in various aspects of beekeeping and honey production; standardization of types of honey
- Supplemental nutrition
- Queen-breeding: management and queen selection

STUDY CONDITIONS
- Classes will be held at the Faculty’s Rehovot campus, where there are laboratories, advanced research equipment and the central library of Agricultural Science.
- Around-the-clock computer access will be provided, and computers will be used extensively.
- We recommend that participants who own a personal computer bring it with them for their own convenience.
- Scientific material and homework will be assigned and graded.
- Professional field trips will be held.
- Full attendance is required.
- We reserve the right to make changes in the academic program.

COURSE COMPLETION
Each participant will prepare a final project, which will be reviewed and graded. It should apply knowledge acquired during the course to a topic in beekeeping. Participants are advised to bring with them digitalized data relevant to their countries, especially on food legislation. On completion of the course and fulfillment of its requirements, participants will receive certificates.

REQUIREMENTS
Candidates interested in attending this program require:
- An academic degree (B.Sc. or above) in entomology, agriculture, animal sciences, business management, or in a related field from a recognized university.
- An authorized certificate of English proficiency at a level of at least 89 on the TOEFL new Internet based scale or an internationally recognized equivalent.
- A detailed record of studies and copies of degrees must be included with application forms.
- An official certificate of good health.
- Professional experience in the field of aquaculture is preferable.
- Letters of recommendation from the candidate's place of work or study.
COST AND APPLICATION
Scholarships are available from MASHAV (see below) to cover the fee for study. The scholarship covers tuition, board, lodging and travel in Israel required for the purposes of the program of studies. This fee does not include travel costs to and from the home countries or incidental expenses.
Application forms may be obtained from the nearest Israeli diplomatic or consular representative or can be downloaded from the website of the Israel Foreign Ministry, MASHAV Study Programs at:
http://www.mashav.mfa.gov.il/MFA/mashav/Courses/Pages/default.aspx
Completed applications MUST be sent directly to the Israeli representative in your country by March 28, 2014. In addition, please send a copy of the forms in PDF format and not JPEG to the Faculty by email to: randyl@savion.huji.ac.il.

ADDITIONAL DETAILS FOR PARTICIPANTS

ACCOMMODATIONS: Single bedroom accommodation in a shared apartment will be provided in our fully equipped guest house on campus. Meals will be provided. Both laundry (on campus) and dry cleaning (in town) are at the participant’s expense.

WEATHER: The weather in Israel during the spring is usually warm and summery, approximately 18-25°C, but there may be some sporadic showers. Participants are requested to bring light clothes suitable for warm weather, including short-sleeved shirts, a bathing suit, a hat and comfortable walking shoes. We also recommend that you bring some light sweaters, long-sleeved shirts, a rain coat and an umbrella.

INSURANCE: Participants are insured for medical care during their stay in Israel. This does not include pre-existing conditions and/or major dental care. Personal belongings are not insured, and are the responsibility of each individual.

Participants who take regular medication must bring enough medicine for the duration of the course. Participants who wear glasses are advised to bring a spare pair. We recommend that hand luggage include basic toiletries and a change of clothes for the first day or so. These should be carried separately in case of delay in baggage delivery. Participants will not receive any allowance or pocket money. Please bring money for out-of-pocket expenses.
AIRPORT TRANSPORTATION: Those accepted to the course will supply flight details to their local Israeli representative and to us. Upon arrival in Israel, the participant will pick up his/her luggage. After passing through customs, the participant will enter the arrivals terminal and walk towards the left. Go up the escalator to the first floor. On the left, behind the car rental counters, you will see a counter of a company called MONI-SITON. This is a special taxi service, which has a list of expected arrivals. Go to the counter and tell them your name, country and that you’re attending a course at the Faculty. You will be taken to the Faculty of Agriculture, Rehovot, free of charge. This service is pre-paid.
PLEASE DO NOT TAKE ANY OTHER FORM OF TRANSPORTATION!

PARTICIPATING INSTITUTIONS
This 25-day course is truly a joint venture. Involved in its implementation are:
Academics: Under the auspices of the Hebrew University of Jerusalem's Robert H. Smith Faculty of Agriculture, Food & Environment. Academic Coordinator: Mr. Haim Kalev
Administration: The Faculty's Division for International Studies in cooperation with the Division for International Cooperation of the Ministry of Foreign Affairs (MASHAV).

MASHAV
MASHAV – Israel’s Agency for International Development Cooperation - at Israel’s Ministry of Foreign Affairs was founded in late 1957, and is responsible for the design, coordination and implementation of the Sate of Israel’s development cooperation programs.
MASHAV concentrates on human and institutional capacity building by sharing Israel’s own development experience and expertise, imparting know-how and transferring innovative technologies and tested methodologies adaptable to developing country needs.
MASHAV’s approach is to ensure social, economic and environmental sustainable development, joining the international community’s efforts to implement the Millennium Development Goals by 2015. In events of natural disasters, MASHAV also provides humanitarian assistance and participates in reconstruction and rehabilitation efforts.

THE HEBREW UNIVERSITY OF JERUSALEM
The Hebrew University of Jerusalem was opened in 1925, preceding the establishment of the State of Israel by more than two decades. The University was designed to be a world class institution of higher learning and research. Today, the Hebrew University comprises seven faculties, 15 schools, some 60 research centers, a student body of about 23,000 and a tenured-track faculty of some 1,500. One third of its enrollment is at the M.Sc. and Ph.D. level.
THE ROBERT H. SMITH FACULTY OF AGRICULTURE, FOOD & ENVIRONMENT

The Hebrew University’s Robert H. Smith Faculty of Agriculture, Food & Environment was established in 1942 in Rehovot, a city at a distance of some 55 km from the main campus of the University in Jerusalem. The site was chosen with considerations of its climate and soil conditions. It is the only agricultural institution of higher education in Israel offering university degrees.

The Faculty’s Division for International Studies was established in 1986. One of its aims is to expose academic graduates from abroad to post-graduate programs, giving them insight into the achievements and research of Israel in general and of the Faculty in particular, expanding their knowledge in specific fields and creating opportunities for international cooperation.

COMMUNICATION

Further information relating to the subject matter of the course may be obtained from:
Division for International Studies
Robert H. Smith Faculty of Agriculture, Food & Environment
P.O. Box 12
Rehovot, Israel 76100
Tel. 972-8-9489509, or 972-8-9489511
Fax. 972-8-9470171
Website: http://departments.agri.huji.ac.il/externalstudies/index.php
Director: Ms. Miri Ben-Haim

Program Administrator: Ms. Randy Lang
E-mail address: randyl@savion.huji.ac.il