

Beekeeping in Jericho and Gaza

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The signing of the peace accords between Israel and the Palestinian Liberation Organization in September 1993 holds forth the promise that Jericho and the Gaza Strip will be opened up to limited self rule and economic development. The land on the west bank of the Jordan River where Jericho and Gaza are situated has a long history of beekeeping. Indeed, these are the lands described in the biblical Book of Exodus (3:8) as "a land flowing with milk and honey." After the death of Moses, Joshua lead the Israelites across the River Jordan to the city of Jericho, into the promised land.

Since the founding of the modern state of Israel in 1948, the lands surrounding Jericho and Gaza have known little but strife and turmoil. As a part of the recently signed peace accords, over \$2 billion in economic development aid have been promised to Jericho and Gaza by the world community. When aid begins to flow into the region, agricultural development will probably be a major focus for investment. Because of its long history and continued feasibility, beekeeping should figure prominently in any plans for agricultural development in Jericho and Gaza. Jericho is located on what is called the West Bank (of the Jordan River). The Gaza Strip is a narrow piece of land located between Israel and the Sinai Peninsula and is a separate entity from the West Bank. Both Gaza and the West Bank are referred to as the Occupied Territories (territory occupied by Israel since 1967).

JERICHO

Jericho is considered to be the oldest continuously inhabited city in the world, with archeological evidence dating the earliest inhabitants to 8000 BC. Jericho is located 6 miles north of the Dead Sea, and is 825 feet below sea level. The climate is hot and the vegetation is almost tropical. While some Palestinians living in the West Bank and Gaza continue to live on their ancestral lands, many have been displaced and live in refugee camps in Gaza, the West Bank, or in Jordan.

The Akubet Jaber refugee camp located just outside Jericho is the home of the Neumeh Beekeepers Cooperative. The



Members of the Neumeh Beekeepers Co-op in Jericho showing some of the woodenware they manufacture.

cooperative was started in 1958, some 10 years before the Israeli occupation, and consists of 44 members and 10 associates operating in excess of 12,000 hives.

The Neumeh Co-op built a warehouse building in 1982 which houses modern, pneumatically driven hive production equipment and a basic honey packing line. The co-op produces first class hive bodies, frames, telescoping covers and bottom boards when lumber is available. The honey packing line consists of a large double jacketed storage tank and automatic bottling machine that is used to pack 500

gram and one kilogram jars.

At the root of the "Palestinian Problem" in the West Bank, Gaza, and Israel is the economic and political conflict which affects the every-day life of Palestinians and Israelis alike. The Neumeh co-op was driven to build its wood-working and honey-packing facility because of the difficulty of purchasing hives from Israel and restrictions governing sales of honey. Palestinians were prohibited from selling honey in Israel, and while it is possible to export honey to Jordan for possible trans-shipment to oil-



A Palestinian beekeeper inspecting his hive near Hebron on the West Bank

rich Gulf states, there are restrictions on the amount of honey Jordan will accept and there are difficulties in routing payment back to the Occupied Territories. Added to this is the difficulty of traveling to Jordan, and worse, returning to Israel. The U.S. State Department's Consular Information Sheet for Israel advises American citizens to expect "prolonged questioning and detailed searches," and that "during searches and questioning, access may be denied to U.S. consular officers, lawyers, or family members." This is the advice for U.S. citizens. Palestinians do not fare as well.

Faced with these obstacles, the Neumeh co-op sought to develop consumer markets within the West Bank by offering honey direct to the consumer in small jars. The honey packing venture has been fairly successful, though the co-op continues to work on packing and marketing skills.

The Varroa mite entered the Jericho area in 1985 from Syria and the Golan Heights and killed approximately 80 percent of the hives in the region. Beekeepers have learned control techniques, but many were unable to rebuild colony numbers because of a lack of working capital. Most treat for Varroa by using plywood strips dipped into fluvalinate. American foulbrood is a continuing problem around Jericho, but beekeepers have access to oxytetracycline and use it prophylactically. Beekeepers consider the bee wasp, also known as the Oriental hornet, *Vespula orientalis*, to be a serious pest, and place poisonous bait in the bee yards to control the bee eating wasp.

Jericho beekeepers like to move their bees to Gaza during April to capitalize on the citrus flow there. However, the military authorities have made moving bees very difficult. Frequent curfews limit nighttime activities, numerous military roadblocks make traveling difficult, and

military authorities require that each hive be opened for inspection. The Jericho beekeepers have responded to the inspection requirement by designing a screen cover that allows hives to be inspected without disturbing the bees. Military roadblocks occur at random and the soldiers manning the roadblocks have the authority to detain motorists for as long as they like. During my stay in the West Bank, I was detained at several roadblocks in the Jordan Valley for as long as 30 minutes at temperatures in excess of 90 degrees F. for no apparent reason. Readers can well imagine the effect such delays would have on a truckload of bees. Roadblocks, periodic house searches, and other security measures make life tedious and tense for Israelis and Palestinians alike.

Requeening is not practiced regularly

by many West Bank beekeepers because queens are expensive and difficult to obtain. Queens have been imported sporadically from Israel and other countries over the years. The bees I looked at were fairly docile and could be examined without smoke. However, a good requeening program could help the beekeepers reduce the incidence of AFB by selection for resistance and young queens would improve colony vigor, survival, and honey production. Several feasibility studies have been published recommending establishment of queen production facilities near Jericho, but Israeli restrictions on importation of mating stock, limited availability of sugar and equipment, and severe limitations on beekeeper movement would make it difficult to carry out.

Two grades of honey are produced on the West Bank. A light citrus honey is considered the inferior grade, and the preferred honey is a darker wildflower mix, much of which is produced from wild herbs such as thyme and rosemary. There are three distinct honey flows if the beekeepers are allowed to move their bees to take advantage of them. Wildflowers and vegetables bloom from mid March to mid April in the Jordan Valley, followed by citrus from mid April to mid May, and finally the herbs and wildflowers bloom in the hill country from July 10th until mid September. Many consumers are suspicious of adulteration of honey and prefer to buy direct from the beekeeper as soon after harvest as possible.

GAZA

The Gaza Strip is an artificial entity about 28 miles long and five miles wide. The sandy land is bounded by the Mediterranean Sea, Israel, and the Sinai Peninsula. Over 500,000 people live in



Neumeh Beekeeping Co-op's honey packing equipment - Khalil Abu al Asal is standing by the holding tank.

Gaza, making it one of the most densely populated areas in the world. Population density in the Gaza Strip is approximately 900 people per square mile, compared to 87 per square mile on the West Bank. The majority of the population are refugees, living in one of eight refugee camps located inside the territory. Since its occupation of the area, Israel has taken over one third of the land for establishment of Israeli settlements. Many Gazans work menial jobs in Israel or attempt to find work or farm in Gaza. Military orders exist which make it illegal and therefore punishable for Palestinian farmers to plant new citrus trees or to replace old, non-productive ones. Palestinians are prohibited from digging new irrigation wells and water use is limited by military order. Israeli settlements are allowed to plant trees at will and to dig new wells with no pumping restrictions. Similar restrictions govern the sale of farm produce by the Palestinians living in Gaza.

Citrus is the primary crop in Gaza and provides the main honey flow. One of the major problems facing Gazan beekeepers is the nine month dearth following the citrus bloom. The military government restricts imports and exports to and from Gaza and sugar is difficult to obtain. Hives are frequently made from salvaged lumber, due to restrictions on imports and the lack of capital to purchase limber or finished hives. One beekeeper I visited in Nassierat refugee camp told me he had been reduced to the point where he could not afford to feed both his bees and his children. His bees were suffering. The 10 colonies he owned were housed in hives fashioned from wooden fruit crates and were weakened from low food supplies, AFB, and low level wax worm infestations. Gazan beekeepers I met with pointed out the need for basic beekeeping training and the need to make available wood-ware, sugar, queens, and medications for diseases and mites.



This is the author and a Palestinian beekeeper Khalil Abu al Asal in one of his beeyards just outside of Jericho near the Jordan River. The cardboard box on the ground contains vicom poison bait for hornet control.

CONCLUSIONS

Beekeeping could be a viable commercial enterprise in Jericho, Gaza, and the West Bank if it were allowed to function freely. The challenge to the new peace accords will be not only to infuse hard currency and investment into these areas, but to lift political and economic restrictions that have prohibited the free flow of goods and services throughout the region. Even when official sanctions are lifted from Jericho and Gaza, a private network is in place that has benefited from the economic convolutions imposed by Israel. Honey merchants may have to share their markets with Palestinians. Israeli beekeepers may lose locations in Gaza and Jericho to Palestinian beekeepers. The Israeli military authorities will have to

allow beekeepers to import wood, drugs, sugar, and queens as well as allow transport and sales of honey outside of Jericho and Gaza. The lifting of political and economic burdens from the Palestinians will require and cooperation from all of their neighbors, Israeli and Arab alike.

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