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Contact Information

Research Analyst: Lana Saadeh
lana.saadeh@blominvestbank.com

Head of Research: Marwan Mikhael
marwan.mikhael@blominvestbank.com

Research Department
Tel: +961 1 991 784

Honey is one of the natural delicacies, whose associations go beyond its use as a food. Long believed to be an amulet with therapeutic, aphrodisiac and spiritual qualities, honey has been sighted in most of the religious books. In Greek mythology, honey was considered one of the foods of the Gods that is consumed to achieve immortality. A cave painting in Valencia, Spain proves that the art of beekeeping or apiculture began at least 8,000 years ago.

Due to its different altitudes extending from 0 to 3,000 meters, its location on the Mediterranean, its 4 distinct seasons, and the variety of its plants, flowering season occurs almost all year long in Lebanon. This has made Lebanon one of the few countries where bees forage natural sources of nectar through out the year, enabling the production of a wide variety of honey, each with its unique aromas and virtues.

Hence, a beekeeper in Lebanon could harvest honey three times per year: honey made from nectar of citrus plants, honey made by bees fed on wild flower and thistle plants, and honey made from honeydew, a sugary deposit secreted by insects on the leaves of trees such as cedar, fir, oak and juniper trees. However, this requires the repositioning of beehives all year long to follow flower blossoms.

Therefore, most beekeepers transport their beehives to the coast especially to Sidon and Tyre, where citrus trees are copious, and harvest citrus blossom honey in April. The quantity produced is highly dependable on the climate condition. In citrus orchards, beehives suffer from pesticides spraying, which might lead the honey to contain pesticide residue. Citrus blossom honey crystalizes early, at an average of 5 months.

Beehives are then transported to higher regions, at altitudes ranging from 400-850 meters, leading to the harvest of two kinds of honey: Honeydew honey in June and Multiple-flowers honey between July and August. Honeydew honey, forest honey, or miella in French, has a dark color, is more viscous and has a much richer taste than floral honey. It is rich in mineral content, amino acids and may have stronger antibacterial properties than floral honey. As for multiple-flowers honey, it comes from nectar of different kinds of plants and trees, leading its quality and characteristics to differ from one region to another.

Finally, beehives are transported to high mountains at elevations above 850m, to harvest mountain honey, or Jerdi honey, in September. The demand for this honey is high for its quality, and sold at a higher price.

The production of honey starts with the bees extracting nectar from flowers or honeydew from trees. Nectar or honeydew, both of which are made of sucrose, are then transported to the beehives where bees process them by adding enzymes and removing water to produce honey. By this process, sucrose is broken down to fructose and glucose. According to the beekeeper, Maurice Tanios, sucrose should constitute a share of less than 1% in honey.

During the low winter season, when there are a few plants for the bees to get their food, beekeepers add sugar and corn syrup to the beehives.

According to the Ministry of Agriculture, Lebanon has around 6,340 beekeepers, owning 274,390 beehives. The production of honey fluctuates throughout the years, depending on the weather and the ecosystem. In high-harvest years, a beehive containing 60,000-70,000 bees produces around 50 kg of honey. This volume decreases to only 10kg/hive in bad years.

Number of Beehives Owned by Some Beekeepers

Beekeepers	Number of Beehives
George Wehbe	50
Fady Daw	80
Raed Zeidan	80
Maurice Tanios	200
Nayef El Rassi	300
Habib Honey Shop	450
Jabal El Cheikh	800
Johnny Abou Rjeily	1,000
Kaddoum	1,400
L'atelier du Miel	2,000

Source: BLOMINVEST Research Department

Due to the climate change, honey production was following a declining trend with 1,920 tons of honey produced in 2015, valued at \$11M. However, honey production in 2016 was better than previous years, probably due to abundant honeydew.

Most of the Lebanese honey producers are beekeepers selling unbranded honey. The major Lebanese branded honey companies are L'atelier Du Miel, Jibal Loubnan, and Kaddoum. Competition is usually low in the Lebanese honey market, as local supply generally does not cover demand and as most of the honey producers have their own share of clientele. Worth mentioning that local demand for honey stands at an average of 3,000 tons per year, according to Elie El Boustany, commercial director at L'atelier du Miel.

While branded honey is mostly found in supermarkets or exported, unbranded honey is sold directly to customers, restaurants and minimarkets.

Most Lebanese buyers prefer purchasing honey directly from a beekeeper they know rather than honey found in supermarkets, and are willing to pay a significant premium for unbranded honey. This has made unbranded honey more expensive than branded honey. According to beekeeper George Wehbe, people have more confidence in a beekeeper they know, since some tend to feed their bees syrup during good seasons, which is considered cheating. Moreover, Lebanese honey purchasers false-believe that commercial honey is impure. Tony Kaddoum opposes this, stating that branded honey undergoes testing and control, with all the ingredients being written on the labels of honey jars, making branded honey more regulated than the unbranded counterpart.

In the case when a honey producer fails to meet his demand, he buys the produce of another beekeeper and sells it. Despite the fact that the major Lebanese branded honey producers are beekeepers themselves, they rely heavily on purchasing honey from smaller beekeepers, to acquire significant quantities for export. For instance, 40% of Kaddoum Honey is produced by the company, while 60% is bought from other trusted beekeepers.

As for L'atelier du Miel, the company does not buy honey from other beekeepers. According to El Boustany, L'atelier du Miel has an adoption program, by which it adopts beehives through the year with predetermined specifications and buys the whole produce of those beehives. These beehives undergo continuous monitoring, and the honey is tested to make sure it does not contain any pesticides or antibiotics.

The main costs of honey production are labor costs, cost of sugar and corn syrup added to beehives in the winter season to compensate for the honey taken from the hives, and costs associated with

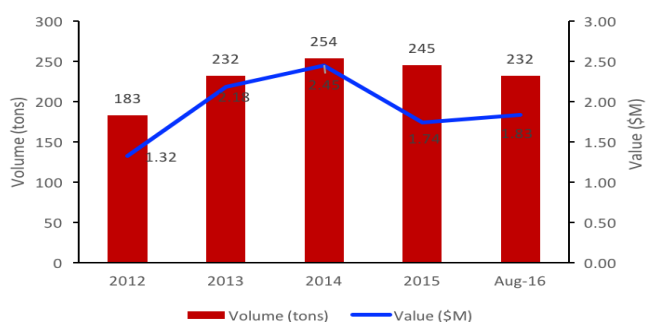
transporting beehives throughout the year, according to George Wehbe. Branded honey producers have the additional costs of testing their honey, packaging and marketing it.

The price of 1 kg of honey varies between \$20 to \$30/kg on average, depending on customers' preference and availability of honey, says the beekeeper Johnny Abou Rjeileh. Oak honey is the most expensive, selling at an average price of \$30/kg, while citrus blossom honey sells at the lowest price of around \$20/kg. This might be due to the fact that the lighter the color of the honey is, the more it crystalizes. The difference in price is not related to the quality of honey, but is due to the prevalent misconception that honey crystallization is an indication of impure honey.

Concerning imported honey, Lebanese producers do not face high competition from foreign honey for many reasons. As mentioned earlier, most Lebanese consumers prefer buying their honey directly from beekeepers because of the established trust. Moreover, Lebanese honey is of high quality with many vitamins and nutrients, as bees extract the nectar and honeydew from a highly diversified flora. On another note, imported honey faces a custom duty of L.L 8,000/kg.

Due to the declining production of Lebanese honey, which covers only 25% of local demand, Lebanon's honey imports are following an upward trend. 232 tons of honey, valued at \$1.83M, were imported in the first 8 months of 2016. The major countries which Lebanon imports from are Saudi Arabia (42.61%), Oman (29.02%), Germany (10.91%), Spain (5.84%), and Greece (4.53%).

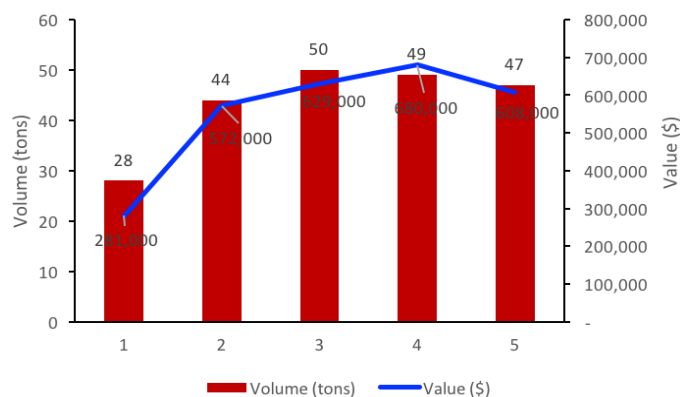
Volume and Value of Honey Imported to Lebanon



Source: Lebanese Customs

Because of the shortage in supply, Lebanon exports a small amount of its honey. By August 2016, Lebanon exported 47 tons of honey, valued at \$608,000. United Arab Emirates takes a 41.94% share of Lebanese honey exported, followed by Saudi Arabia (31.47%), and Qatar (12.34%), while Jordan and the United States take an equal stake of 3.45%.

Volume and Value of Lebanese Honey Exported



Source: Lebanese Customs

The Lebanese honey sector has been facing many challenges, resulting in lower production from year to year. First climate change, rising temperatures, and the polluted environment have killed many bee species. A larger number of bees tend to die during winter when being kept by an amateur. In addition to the impact of toxic pesticides sprayed on plants and trees, the widespread diseases are killing honeybees.

Moreover, apiculture needs a lot of time and dedication, as it involves transporting beehives to different altitudes all year long, following flower-blooming. Not forgetting that extra care is needed, as beehive theft is becoming pervasive.

Another hurdle is the reduced planted acreage, which limits the availability of nectar and honeydew for the bees to feed on.

The Lebanese government has put some effort to protect this important sector, however it is not enough. Other than imposing an L.L 8,000/kg on imported honey, the government distributes some chemicals and medication that kill pathogens and parasites, to beekeepers, free of charge. Moreover, the government placed a new regulation whereby a beekeeper has to eliminate a colony infected with diseases by burning the hive after killing bees with gasoline, preventing the disease from being transmitted to other colonies. However, some beekeepers continue to disregard this new regulation.

Hence, the government has to force its decisions, obliging beekeepers to implement them. Moreover, regulation concerning the random cutting of trees and pesticide spraying control should be enforced. In addition, the government should train beekeepers and spread the know-hows to limit the death of bees.

Lebanon has around 512 flower species, used to produce honey, compared to 762 across all of Europe. Such rich flora allows the production of honey made from a mix of hundreds of flowers found in a small geographical terrain, unlike Europe's mono-floral honey. Due to its high quality, purity and flavor, Lebanese honey imported to the Gulf sells for a price which is double that of European honey, according to Tony Kaddoum. The Lebanese government should offer a helping hand to beekeepers to keep Lebanese honey the country's golden elixir.

For your Queries:

BLOMINVEST BANK s.a.l.

Research Department
Bab Idriss, Weygand Str.
POBOX 11-1540 Riad El Soloh
Beirut 1107 2080 Lebanon

Lana Saadeh, Research Analyst
Tel: +961 1 991 784

ana.saadeh@blominvestbank.com

Marwan Mikhael, Head of Research

marwan.mikhael@blominvestbank.com

+961 1 991 782

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