

LAURINE POIRIER

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Nepalese honey
Development of Apiculture in Nepal

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Introduction

Nepal is an Asian country located between India and China. With an area of 147 square kilometers and a population of about 27 million, Nepal is divided into three different regions according to the altitude: Teraī (lowland plains), Pahad (hill region) and Parbat (mountain region).

Nepal is known for its ancestral technology of beekeeping: the honey collectors risk their lives to pick wild honey up from rock walls with rudimentary equipment. Apiculture in Nepal began 20 years ago but is still not very developed.

Several different species of honey-producing bees are known in Nepal. Only two of them are raised for apiculture: *Apis cerana* and *Apis mellifera*. These species have several qualities that are desired by humans and are vital for the pollination of flowers and forests. Bees are also useful for agriculture which is an important activity in Nepal but they have become threatened by deforestation and parasites (e.g varroa).

Health and nutritional information about honey

Honey is composed of 75% carbohydrates, 20% water and 5% minerals (phosphorus, calcium, iron, magnesium and sodium). Honey provides 310 kcal/100 g. Its color depends on the gathering of pollen from flowers. The darker it is, the more mineral concentration in honey exists.

In many countries, honey is used for its sweet taste and its great nutritional qualities, but also as a drug (i.e apitherapy) and in cosmetics. Apitherapy consists of the use of

honey to relieve/treat people. Honey has antiseptic, anti-inflammatory and anti-oxidant properties. People with cardiac or digestive disabilities can also ingest honey to decrease their pain. Honey can be used in cosmetics for shampoo and soap production as well.

Apis cerana

Apis mellifera and *Apis cerana* are the only honey-producing bees known in Nepal.

Apis cerana live in Nepal at an altitude of 60 to 3500 m (Thapa, 2001) and produces honey two times a year. The first time is during the summer (March to May) and the second time during the winter (November to December).

Apis cerana is much more resistant than *Apis mellifera* to cold and predators. During the winter, most *Apis cerana* colonies are reduced because of the harsh weather and the low amount of flowers. Nevertheless, compared to *Apis mellifera*, *Apis cerana* can survive in low temperatures (i.e. -0,1°C) (Thapa, 2001) because their beehives (i.e. log hive) can protect themselves from the cold. Furthermore, *Apis cerana* is resistant to the parasite, *Varroa destructor*. The acarid breed feeds on bees' larva. *Apis mellifera* is very sensitive to this parasite and causes an incapacity to fly, an abdominal malformation and appearance of cannibalism (Experimental and Applied Acarology, 2000).

Apis cerana is very famous in Nepal because of the low cost of its beehive, the log hive. Farmers can build their own beehives. The principle is to dig a hole in a trunk (the size is about 50 cm in diameter and 65 cm in height), and then a cap is necessary to protect the top of the beehive from cold and predators (e.g. *Marte flavigula*).

For the above reasons, *Apis cerana* seems easier to raise than *Apis mellifera*.

Honey development

The best place to develop apiculture in Nepal appears to be the Terai. This region is located at an altitude of 60 to 300 m (FAO) and there are counts of about 120 000 colonies of *Api cerana* (Thapa, 2001). The flora is also favourable to honey-production thanks to tropical plants. The weather is moderate all year long. The log hives permit honey production from *Api cerana*.

To promote honey production in Nepal, it will be necessary to find interested villagers and then to teach farmers (men and women) about apiculture. It will be important to explain the benefits of honey production for the family but also for bee conservation.

Regarding hive installation, according to John Gibeau, President of the Bees World Project (beeworldproject.org), it is better to start with two hives to become familiar with beekeeping before increasing the production.

During the first year, the objective for the new beekeepers will be to realize the benefit and advantages of apiculture. One hive produces about 20 kg of honey each year.

Impact on preserving local culture

Bees and honey production are important for the biodiversity and economy of Nepal.

Bees are critical players in an ecosystem. However, climate change and human activities put wild bee species at high risk of collapse (Pechhacker et al, 2001). Their presence is essential for honey production and other products from apiculture, but protection is important for the Nepal economy as well.

In total, 36.8% of Nepal's economy is based on agriculture (CIA, 2013). The bees are also indispensable for pollination and hence for crop agriculture (agriculture.gouv.fr, 2012). As well, the idea to develop apiculture in Nepal would help Nepalese farmers to have jobs: they would produce honey for their family but also have enough to sell it.

Import and export

Also, to increase honey production, farmers will have to raise more bee colonies to be able to sell and export it in Canada.

The goal of this project is at least to promote Nepalese honey exports to Canada. Importation of Nepalese honey would enable Canadians to discover Nepalese know-how. Moreover, this product would be innovative. The honey taste would be new, and different than Canadian honey, due to Terai's tropical flora. To promote this bi-lateral trade between Canada and Nepal, some policies must be respected. According to Nepal export policies: "the production and quality of exportable products will be raised to make competition in the international market. Exports will be promoted by raising the production and quality of traditional as well as new products. Similarly, more emphasis will be placed on the export of profitable but processed and finished products. For the export promotion of these products, new markets will be identified" (Export Consult Of Nepal, 1996). Furthermore, only a registered firm or company is eligible to export honey. Many documents are required for export by

airfreight (letter of authority, certificate for agricultural product, visa authorization, company/firm registration certificate...)(Export Consult Of Nepal, 1996).

On the other hand, Canadian government commands some regulations. Some of them are about the labelling and the hygiene of the products. In regards to honey, the packaging should contain the weight, the term “honey” should be noted, the color of the product, where it comes from, the exporters name and address, the consistency (liquid, creamed...) and ingredients. Furthermore, the product should be in accordance with hygiene tests (CFAO, 2014).

Companies in Canada

The following organizations have been contacted about importing Nepalese honey:. Among them:

- *Camino*, a Canadian brand of fair trade, answered if there was anything on the horizon regarding honey (contact : Lynda@lasiembra.com, access: <http://www.lasiembra.com/camino/>).

- *Canadian HoneyCouncil*, a national organization of the beekeeping industry, answered they have no experience with importing honey outside of North America (contact: info@ontariobee.com, access: <http://www.honeycouncil.ca/>).

- *Bee World Project*. John Gibeau (contact: john.gibeau@honeybeecenter.com, access: <http://www.beeworldproject.org/>) is a Bee World Project member. Their project is “to empower people to change their lives through the practice of beekeeping and the development of products associated with the hive”. Contacted by mail, John Gibeau is really interest to buy

honey from Nepal. Also, he has recommended me to consult his website to develop my project.

In the past he already has imported honey from different countries (Dominican Republic, New Zealand, Australia, Chile, USA). He is very hands-on in beekeeping development in developing nations thanks to the following organizations: HOPE International Development Agency (www.hope-international.com) and Honey Bee Center (www.honeybeecentre.com).

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