

## Factsheet #101

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### BEEKEEPING IN BRITISH COLUMBIA A Brief Review

Beekeeping has been practiced in British Columbia for nearly 150 years. The first 2 hives of honey bees arrived by ship at Victoria in May, 1858.

During the intervening years, honeybees have spread to all parts of the province and more than 2,300 beekeepers now operate approximately 47,000 colonies as a hobby or as a full or part-time business venture. B.C.'s topography and climatic diversity has caused agriculture to develop in pockets scattered over a large area. Climatic conditions and the availability of forage sources have equally affected beekeeping and its development in the province.

The Peace River District in north-eastern B.C. is unique in offering ideal climate and nectar forage availability during the summer season. This area extends into Alberta and is among the most productive honey producing regions in the world. Average honey yield per colony often exceeds 200 lbs and individual colonies may sometimes produce in excess of 400 lbs in one season.

Other parts of the province do not offer the same conditions as the Peace District. In most areas the natural vegetation offers limited nectar floral sources although the introduction of crops and weeds has often improved local beekeeping conditions. For example in Coastal British Columbia, very few nectar sources are available in the natural vegetation but agriculture and forest clear cutting made the area attractive to honey production.

#### **Establishing a Beekeeping Operation**

Unlike most other agricultural enterprises, beekeeping is highly dependent on the seasonal availability of nectar and pollen. This resource availability is not only dictated by the plants but also influenced by the weather conditions during the time of bloom. Other important factors include quality of management, presence of diseases and pests, and the genetic quality of the beestock. The combination of all these factors ultimately determines the outcome of the beekeeping enterprise. The successful beekeeper must take these factors into account, not in their isolation but in combination with one another.

#### *Climate*

Notwithstanding B.C.'s huge size, climate and vegetation limit suitable beekeeping areas. The interior of the province is affected by the continental climate but also tempered by oceanic air currents. This allows for successful beekeeping in most years. Northern B.C., on the other hand, is gripped by severe winter conditions 7 months of the year, which place enormous stresses on the bees. Long-term averages of winter mortality in the Peace are about 30% while colonies in southern B.C. experience average winter mortality of 12-15%. The Peace District is a region of extremes where huge honey crops can be produced in good years, while in some years the summer never materializes and the large adult bee populations need supplemental feeding to avert the risk of starvation.

The southern interior of the province offers bees good spring conditions when fruit trees and other floral sources bloom. Yet, later in the summer, the extremely hot conditions cause all forage sources to disappear and colonies must be moved into the mountains for the remainder of the season.

Coastal British Columbia offers its own unique climatic challenges. Winters may be mild, but it is moisture that threatens the survival of the wintering colony. Beekeepers must make sure to enable colonies to shed excess moisture and prevent dysentery and other ailments. Improved air circulation, keeping the colonies well off the ground during winter and placement of the apiary in a sheltered location will also be helpful.

#### *Nectar and Pollen Availability*

When weather conditions are favourable, floral sources do well and, generally, an abundance of nectar and pollen will be available for the bees. But, forage availability may be limited when conditions change or when weather conditions remain poor. For example, in the southern interior, favorable spring conditions may offer sufficient resources to established beekeeping operations but since these sources are only found in valley bottoms, total forage availability may be limited. As such, there is a limit to the number of colonies that can be placed at any site.

In the Fraser Valley, berry crops have increasingly become dependent on the availability of honeybee colonies for pollination. Since cranberries are an unattractive crop to bees because of low nectar and pollen yields, growers have increased the number of colonies per acre. Higher bee density in cranberry bogs creates stress, often resulting in increased disease incidence later in the season. Weakened colonies may not regain sufficient strength for the following winter. For this reason, cranberry pollination fees have traditionally been much higher than for other crops offering better bee forage.

#### *Diversification of the Beekeeping Enterprise*

Climate may place constraints on beekeeping; it also offers opportunities that may not be available in other parts of Canada. Honey yields in the Fraser Valley may not be the highest in the province, but its proximity to large consuming centers offers better marketing opportunities. The large acreage of fruit bearing crops, most of which are very dependent on insect pollination, have enabled Fraser Valley and Okanagan beekeepers to derive a significant income from pollination contracts. While per capita honey consumption may not be easily increased, other hive products such as pollen, propolis and bee venom may offer new marketing opportunities. Mild climatic conditions in southern B.C., and especially on southern Vancouver Island, have allowed some beekeepers to become breeders and suppliers of beestock to beekeepers across the country.

#### *Urbanization and Land Use Pressures*

Honeybees and humans have coexisted successfully for thousands of years. In many parts of Europe and North America, honeybee colonies are kept in urban areas without any problems. Yet, it is important to recognize that in urban areas, beekeeping poses unique challenges and responsibilities. It must be recognized that honeybees in close proximity to human habitation may have an effect and may involve medical and legal issues. For example, in early spring bees first emerge for their cleansing flights. Their fecal matter is yellow brown droplets that can often be found on the smooth surfaces of cars, decks and patio furniture. In mid to late summer, colonies need a great deal of water and will visit bird baths and swimming pools. Also, when they reach their population peaks, bees tend to become more defensive of their nest and food reserves. Although a bee sting may not pose a health risk to most people, those that are truly allergic (less than 3% of the general population) may experience a medical emergency. Many municipalities administer bylaws that either limit or ban the keeping of bees within their jurisdiction. It is important to check for any local restrictions and limitations that may apply at a site before bees are being placed.

#### *Bears and Vandalism*

Virtually all parts of British Columbia must be regarded as "bear country". Bears are attracted to honeybee colonies because of the high food value of bee brood. In summer, bears roam over great distances to fatten themselves for winter and a honeybee colony would be irresistible. In many areas, the threat of bears is so high that precautions must be taken. Electric fences are most effective as long as bears have not previously raided the apiary.

Vandalism can be a costly threat to beekeepers. In populated areas, colonies may be stolen while in rural areas, colonies are sometimes driven over or used for target practice. Selecting an apiary site must take all these factors into consideration. Hidden from highway view, locked and fenced gates or a site near a farm house all help to reduce the risk of theft and vandalism. Some beekeepers paint their colonies green to blend with the environment or place the colonies behind dense vegetation.

*Purchase and Establishment of a Beekeeping Enterprise*

Diversification of beekeeping has proven to greatly increase the income potential and enjoyment of the business. To rely solely on honey production for income, only the Peace District in northeastern BC, where good apiary sites and expansion are still possible, should be considered.

For starting a commercial beekeeping enterprise anywhere in the province, the purchase of an established operation with apiary sites is recommended. Contact the Apiculture office for more information on the economics of commercial beekeeping.

**Honeybees and Modern Agriculture**

Forage diversity and limited space of suitable beekeeping areas in British Columbia require beekeepers to be familiar with local floral sources and sound management practices. In addition, many beekeepers have pollination contracts for crops such as tree fruits, high bush blueberries, raspberries, cranberries, and field cucumbers. Pollination is the most important agricultural function of honeybees. Studies have shown that honeybee pollination in B.C. is responsible for more than \$160 million per year in agricultural production, while the total market value of hive products accounts for only \$8 million per year. In Canada, the value of honeybee pollination is estimated at over \$750 million per year, while in the U.S. this value is estimated at between \$14 billion per year. For this reason, it is essential to ensure the future health and viability of bee populations. The beekeeping industry plays an important role in realizing this goal. Most provincial governments across Canada still support apiculture programs but in recent years, significant changes have been applied in the type of services offered to the beekeeping industry. In general, there has been a trend towards greater industry self-regulation and self-reliance.