Chapter 7

Status of Beekeeping in Himachal Pradesh

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India has enormous potential for beekeeping due to abundance of bee flora and bee-friendly climatic conditions. For the development of beekeeping, floral calendars have already been prepared for different states and regions (Kohli, 1958; Rahman and Singh, 1941; Roy and Hamid, 1987; Sharma and Gupta, 1993; Sharma and Raj, 1985). Himachal Pradesh is unique in having different agro-climatic zones with varying bee flora that help to sustain beekeeping in the state. Broadly, the state can be divided into four agro-climatic zones sub-tropical and low hills (up to 914 m); sub-temperate, subhumid mid-hills (915-1523 m); wet-temperate high hills (1524-2472 m); and, dry-temperate high hills and cold deserts (above 2472 m). Surveys made on different aspects of beekeeping in these agro-climatic zones are presented in this paper.

Sub-tropical and Low-hill Zone Beekeeping

Potential sites

Some parts of this zone, especially adjoining the plain areas of the neighbouring states of Punjab, Haryana and Uttar Pradesh, are suitable for keeping bees based on the density and type of bee flora available throughout the year. Potential areas for beekeeping (Figure 1) are Nurpur block of Kangra, Santoshgarh, Una-Jhalera to Luharbi areas of Una and Paonta valley of Sirmour where smaller units of colonies can be kept around the year. Other beekeeping pockets in this zone that could be exploited to a limited extent are Barotiwala-Nalagarh area of Solan, Dosarka-Kala Umb area of Sirmour, Ichhi, Shahapur, Indora areas of Kangra and Umb-Mubarkpur area of Una. Surplus honey is collected during spring-summer from mixed flora that include *Brassica, Eucalyptus, Citrus, Litchi, Toona, Syzygium, Dalbergia, Trifolium, Ehretia, Sapindus, Acacia,* etc. In addition, large numbers of supporting flora are also available throughout the year. August to October is the dearth period. Rest of the zone has sparsely distributed bee forage and thus is not suitable for practical beekeeping.

Number of bee colonies and beekeepers.

The University maintains 125 *Apis mellifera* colonies and University HPKV, Palampur also keeps 150 bee colonies at different research stations in this zone. The State Horticulture Department has 1300 colonies of *A. mellifera* and 25 *A. cerana* at various locations. In addition, there are about 300 professional beekeepers, having abut 9800 *A. mellifera* and 100 *A. cerana* colonies. There are about 600 *A. cerana* colonies also existing in log and wall hives (traditional). Despite the existence of major beekeeping pockets and huge numbers of bee colonies, only

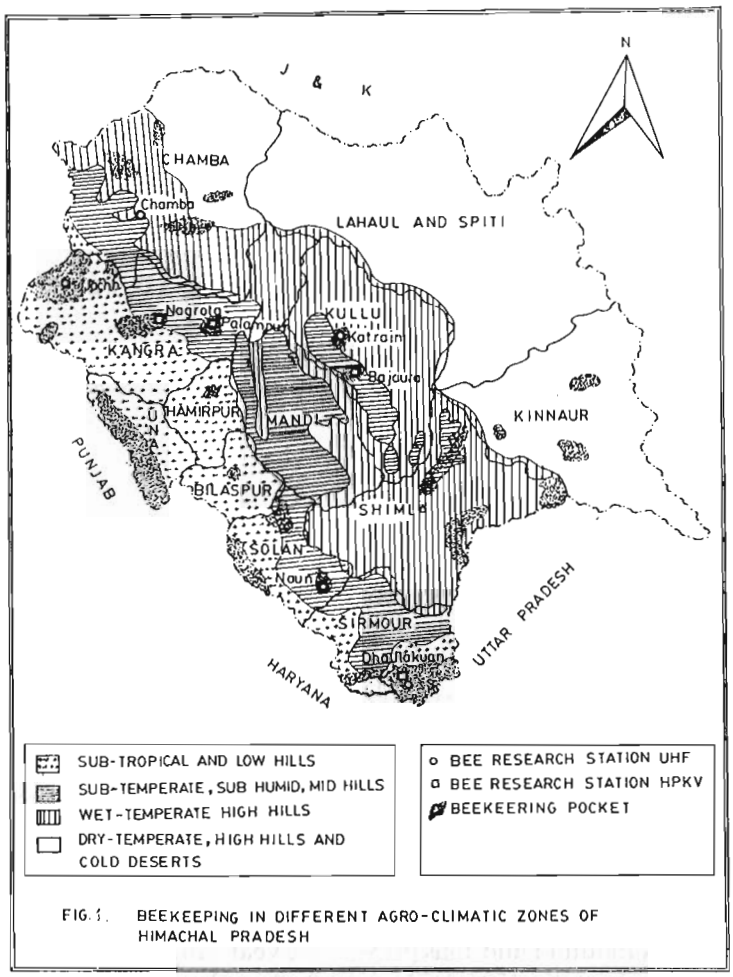

Fig. 1. Beekeeping in different agro-climatic zones of Himachal Pradesh

about 200 *A. mellifera* colonies are maintained under stationary beekeeping and 5–10 kg honey is extracted from each colony annually. Migration of colonies is practiced from hills to plain areas of neighbouring states in a routine manner during October-November to exploit winter bee flora.

Sub-temperate, Sub-humid Mid-hill Zone Beekeeping

Potential sites

In this zone, spring-summer is the honey-flow season. However, in some areas there is a second honey-flow during autumn. The bee flora available for spring-summer honey-flow is almost the same as that found in subtropical and low-hill areas, but the density is lower. However, stone fruits constitute an important build-up source for bees in the zone. Important beekeeping areas include Ranital, Dehra, Tanda-Nagrota areas (Kangra), Kunihar-Arki, Solan areas (Solan) and Panarsa area (Kullu).

Autumn honey-flow is during September-October when there is general dearth of bee flora in other parts of the state. Sources include the wild bush 'chichri', *Plectranthus rugosus* and 'wild cherry' *Prunus puddum*. Honey-flow from

Plectranthus is, however, erratic depending on good rains for growth in monsoon and intermittent rains during flowering for nectar flow. Major pockets enriched with this bush (generally along rivers) are Chamera-Kharamukh, Salooni-Bhanda and Tisa-Baragarh areas of Chambas Chirgaon-Annu, Kumarsen-Nogli, Jakhari-Jeori and Dodra-Kwar areas of Shimla and a few lower areas along the Sutlej river in Kinnaur where large number of bee colonies are migrated to avail the flow. Honey is extracted during October from autumn honey-flow sources. The famous white honey for which Himachal is known all over the country comes from this bushy flora. This honey is sold at a premium price.

Number of bee colonies and beekeepers

In this zone, the State's Horticulture Department keeps about 730 colonies of *A. mellifera* and 45 *A. cerana*. The University has 75 *A. mellifera* and 45 *A. cerana* colonies in this zone. HPKV (Agriculture University) has only 25 *A. mellifera* colonies. There are about 110 commercial beekeepers having 6250 colonies of *A. mellifera* and 120 of *A. cerana*. In addition, there are about 1700 *A. cerana* colonies in traditional hives (log and wall hives). Commercial beekeeping in this zone is exclusively dependent on migratory beekeeping.

Wet-temperate High-hill Zone Beekeeping

Potential sites

This zone has limited potential for stationary beekeeping that is possible only using *A. cerana*. However, migratory beekeeping using *A. mellifera* is possible in some areas that have an abundance of the autumn honey-flow source of buckwheat, *Fagopyrum esculantum*, that is grown as a food crop. In some areas *Plectranthus* is also available. These areas are Holi and Lahal of Bharmour (Chamba), Nichar and Sanagla Tehsils of Kinnaur and Dodra-Kwar of Shimla. Private beekeepers migrate their colonies to avail the autumn honey-flow in these pockets.

Number of bee colonies and beekeepers

There are about 15 private beekeepers having about 1600 *A. mellifera* and 75 *A. cerana* colonies in this zone. In addition, the State Horticulture Department also maintains 325 *A. mellifera* colonies. This zone has about 1950 A. cerana colonies in traditional hives. After availing buckwheat flow during August-September, beekeepers migrate their colonies to accessible Plectranthus-rich pockets, and thereafter to the plains. Migration with A. cerana (in modern hives) is practised by beekeepers of Chamba area.

Dry-temperate High-hills and Cold Deserts Zone Beekeeping

In this zone because of unfavourable conditions and lack of bee forage, beekeeping is not commercially practised. However during autumn some beekeepers do migrate their colonies to some areas, e.g., Gebong and Pooh in Kinnaur, for buckwheat flow.

Migration

In Himachal Pradsh migration between hills and plains is a routine procedure adopted by commercial beekeepers. During October-November, colonies are migrated from the hills to the plains of Punjab, Haryana, Uttar Pradesh and also to Rajasthan until the first week of June to avail Brassica, Eucalyptus, Trifolium and Helianthus flow. A few beekeepers utilise the Litchi flow in Dehradun area of Uttar Pradesh from the end of March until the third week of April and then bring the colonies back to the plains until the first week of June. After migration of colonies back to their parent state, a few beekeepers utilise Acacia catechu (khair) nectar in areas such as Nalagarh, Kunihar-Arki Kala Umb, Bilaspur, Hamirpur, Dehra, lower Chamba, etc. Thereafter, colonies are migrated to areas rich in Fagopyrum and Plectranthus during August and migrated back to plains in October-November. However, some beekeepers of Chamba area prefer to bring their colonies back

from the plains during April so as to avoid the harsh summer and avail hill flora of Berberis, Robinia, Eucalyptus, Dalbergia, Sapindus, etc. Through migration, 30–50 kg of honey/colony/year is harvested by commercial beekeepers. Beekeepers produce more than 50 per cent profit from their investment in beekeeping through the sale of honey and bee colonies. Beekeepers of Himachal Pradesh and Government agencies within the state collect 500 t of honey annually from more than 20,000 A. mellifera and 4300 A. cerana (traditional and modern hives) colonies.

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