

Experiential learning on Beekeeping

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OBJECTIVES

- **To provide on campus trainings to the students**
- **To promote the professional skill, entrepreneurship, knowledge and marketing skills.**
- **To build confidence through end to end approach in product development.**
- **To acquire enterprise management capabilities including skills for project development and execution, accountancy, marketing, etc.**

BEEKEEPING-GLIMPSE OF ACTIVITIES



Introduction

In the recent revised curriculum for the BSc. Agriculture, Council of Agricultural Research has recommended a new initiative called “EXPERIENTIAL LEARNING PROGRAMME”. The primary aim of this initiative is to remove the weaknesses in the earlier higher apiculture/beekeeping education system and to develop technically skilled professionals who can create their own enterprise in beekeeping sector. Therefore, the course designed as Experiential Learning i.e “Hands on Training” is aimed at competence development through knowledge in all aspects of enterprise management so that the agricultural graduates have complete understanding of project planning, development and execution with an end to end approach. Emphasis has been laid on developing skills for career in the field of beekeeping. It is expected that the experiential learning/hands on training programme will bring professionalism and practical work experience in real life situations to agricultural students. In order to bring in high quality entrepreneurial skills and commercialization of technologies, enterprises have to be established and run by the students with the assistance of teachers.



India is a land of enterprises, where almost 70% of the population is still self-employed, and some place this estimate as high as 80%. Entrepreneurship, a form of human behaviour, is indispensable for the growth and development of any society.

Generally, the entrepreneur is considered as a person who initiates, organizes the activities, manages and controls the affairs of business unit combining the actors of production to supply goods and services. Farmers deciding to take particular crop or use scientific methods to grow crops also exhibit entrepreneurial behaviour. The economic development of a country is correlated with the population, employment, literacy and effective utilization process, which accelerates the growth including social change. To accelerate economic development, it is necessary to increase the supply of entrepreneurs. The economic development of a country is correlated with the population, employment, literacy and effective utilization process, which accelerates the growth including social change. To accelerate economic development, it is necessary to increase the supply of entrepreneurs. Entrepreneurs have to do conscious decision making with great deal of thought concerning starting of an enterprise, finalizing different products, expansion of enterprise, borrowing money, hiring workers and considering new ways of marketing. So, entrepreneurs have to make decisions under certain uncertainties. In order to know, whether entrepreneurs under such uncertain conditions take decisions at their own or they do in consultation with somebody else.

Beekeeping or apiculture is the maintenance of honey bee colonies, commonly in hives by beekeepers. A hive is a simple rectangular box. A beekeeper or apiarist keeps bees in order to collect honey and other products of the hive (including beeswax, pollen and royal jelly), to pollinate crops, or to produce bees for sale to other beekeepers. Honey bees convert nectar of flower into honey and store them in combs of hive. A location where the bees are kept is called an apiary or bee yard. Bee colonies consist of three types of bee: A Queen bee which is normally the only breeding female in the colony. A large number of female worker bees typically 30,000-50,000 in number. There are four well known species of true honey bees in the world viz. Rock bee, *Apis dorsata*, Little bee, *Apis florea*, Asian bee, *Apis cerana*, European bee, *Apis mellifera*. Out of these four bees species, *Apis dorsata* and *Apis florea* are wild and are open nesting and cannot be domesticated in modern hives. Each colony of *A.dorsata* yields 30-40 kg of honey per year whereas *A.florea* yields only about 500g per colony. *A.cerana* and *A.mellifera* are domesticated in modern hives and are cavity nesting i.e. live in enclosures. The wild bees construct single comb whereas hive bees construct multiple parallel combs. The body size as well as the comb cell size of these bee species varies to a great extent. Among the two domestic bee species, each has many subspecies in different parts of the world e.g. *A. cerana* has three subspecies in India like *A.cerana* in 25 Himachal Pradesh and Jammu Kashmir (North India), *A.cerana indica* in Kerala, Tamilnadu and Karnataka (South India) and *A.cerana Himalaya* in Nagaland, Manipur, Mizoram, Assam and Meghalaya (Eastern Parts of India). In addition to above three subspecies, *A.cerana japonica* has been identified from Japan. Honey yield of *A.cerana* per colony per year is 3-5kg.

Beekeeping is suitable for a wider arena of people including well-to-do farmers, landless labourers, small and marginal farmers, employed persons, ex-servicemen and retired persons, house wives/farm women, students and unemployed youth. Thus, beekeeping enterprise is suitable for people from all walks of life as a hobby, subsidiary occupation for supplementing income or as a whole time job for self employment. It is particularly suitable for underemployed/unemployed youth residing in or around rural areas. After investing once on honey bees, hives and other equipment (non recurring expenditure), regular/annual (recurring) expenditure is very low which can even be further reduced with better management practices. Govt. of India is giving a lot of emphasis on

agro-based industries due to advantage of rural employment generation and gainful utilization of natural and farm resources. The country has immense potential for development of beekeeping. It has been estimated that the Indian forests could provide shelter and food to over 120 million bee colonies. Even if we consider reduction in the forest area in recent years, due to deforestation, etc., the country can still hold over 100 million bee colonies, providing self-employment to over 10 million rural and tribal families. In terms of production, these bee colonies can produce over 700,000 tons of honey and about 30,000 tons of beeswax. If the potential that exists in the country is taken into account, then bee-keeping has never taken off. We do not have even half a million of the colonies at present. Ninety per cent of the potential remains untapped

Beekeeping in Jammu Kashmir

The state of Jammu and Kashmir (32°-17' to 37°-05' N latitude and 72°- 40' to 80°-30' E longitude) represents one of the most important beekeeping areas in India. At least four agroclimatic zones ranging from low altitude subtropical, intermediate, temperate and cold alpine occur. Temperatures range from -45°C to 45°C and above. Such diversity of geographical features plays a dominant role in determining the topography, climate and plant species present in the region. It offers great potential for both migratory and non-migratory beekeeping.

There is a great scope for growth and development of beekeeping in Jammu and Kashmir state. The state has more than 11,14,000 ha. of area under cultivation of different crops (Anon.1999). Out of which 2, 15,000 ha. is under such crops which fully or partially depend upon beekeeping for pollination. The area under pulses, fruits and vegetables, oilseeds and fodder crops is 32,000; 66,000; 71,000; and 46,000 ha., respectively. Almost all these crops require or benefit from insect pollination. On a modest rate of 3 colonies per hectare for pollination purposes, the state requires a minimum of 6, 45,000 colonies to produce field/fruit crops.

All the above crops, provide rich sources of nectar and pollen which have unexploited so far. Besides, the state has more than 6, 58,000 ha. area under forests. The pollination needs of wild forest plants have not been estimated but are likely to be significant which also provide ample scope for development of beekeeping by providing basic support to the beekeeping industry in the form of shelter, wood for bee hives, favourable climate and nectar pollen sources. In addition to this the state has 2, 19,000 ha. area which is still barren and uncultivated. This area could be profitably used for mass plantation of bee flora to overcome the problem of depleting floral resources and boost beekeeping potential. This activity will not only provide bee flora help reclamation of waste lands and degraded soils to green the environment. According to current estimates, the state of Jammu and Kashmir has the potential to sustain more than 6, 00,000 bee colonies to produce 9,000 tonnes of honey and provide job opportunities for 12,000 families. But despite this great potential, the desired level has not been achieved.

The state presents opportunities for making apiculture more profitable – a business enterprise which will provide remunerative prices to the farmers besides creating employment opportunities especially in a hill State like J&K. It offers great potential for both migratory and non-migratory beekeeping. Besides providing direct economic benefits in the form of honey, beeswax, propolis and royal jelly etc., the indirect benefits in the form of cross pollination by bees leading to improve the qualitative and quantitative parameters of the fruit crops

Evidently, beekeeping can play a vital role in generating gainful employment for the masses

of the farm community including women in the rural areas with small land holdings to landless farmers.

For any query feel free to contact at:

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