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# Constraints of Apiculture in India

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***Abstract:*** **Beekeeping plays an important role in the sustainable agriculture as it contributes significantly for diversification of agriculture. Beekeeping is an interesting hobby, an ideal agro-based subsidiary enterprise, providing supplementary and sometimes major source of income to the farmers, especially to the small farmers. It is an ideal, eco-friendly and non-land based rural enterprise, which does not tax the farm resources and provide sustainable livelihood to the rural people, including landless and women. Beekeeping production is affected by indiscriminate use of pesticides, bee diseases and enemies, adverse effects of weather, low price of products, etc. The susceptibility of honey bees to different diseases, pesticide hazards and marketing of bee products were found to be major limiting factors in the prospects of beekeeping. Majority of the beekeepers wanted to increase their level of business. Therefore, the specialized training courses should be organized to overcome these problems and promote their business.**

***Keyword:*** **Apiculture, Allied business, Constraints, Honey**

## I. INTRODUCTION

The India economy largely depends upon agriculture and allied industries. Experience has shown that cereal based agriculture is no more self sustaining and remunerative, as it is leading to several problems of ecological nature. Enterprises like poultry, piggery, dairy, mushroom growing etc., require higher initial costs than beekeeping. Due to its low cost farmers prefer beekeeping as an important subsidiary occupation, which provide high returns as honey, Royal-jelly, Bee wax, Bee venom, propolis, etc. However, there are many constraints which affect the promotion of beekeeping in India. However, there are many constraints which affect the promotion of beekeeping [1].

## II. CONSTRAINTS OF BEE KEEPING

### *A. Indiscriminate use of pesticides*

Beekeeping is an important input in the agricultural system, and indiscriminate use of pesticides on the crops causes heavy losses to colonies ultimately discouraging beekeeping. Some researchers reported that problem of pesticide sprays was faced by majority of the respondents, resulted in killing of honey bees, which caused great loss [2, 3 and 4].

### *B. Marketing*

Marketing of honey is a major constraint which discourages the producers. Without proper marketing, the beekeeping industry cannot flourish to its maximum. Bulk honey collected from different producers is often of poor quality and fails to meet the national and international standards. In the export markets, there is great competition and importing countries have strict quality requirements regarding aroma, colour, consistency and floral source. Most of the producers are not aware of these standards and ultimately they fail to meet the national and international standards. An evaluative study conducted by [3] found that marketing was one of the major problems in beekeeping as stated by 65 percent of the beekeepers. Non fixation of minimum support prices for beekeeping products, variant prices and unorganized market were other troublesome factors in marketing of bee products. Another study conducted by researcher also reported that regarding sale of honey, there was no specific market and beekeepers were selling their produce without any brand name [5, 6] also reported marketing problem of the bee products and found that there was no specific market for sale of honey. It was reported that 65-70% beekeepers have highlighted the problem of honey marketing and low price for bee products [7].

***C. Bee diseases and enemies***

The problem of bee diseases and natural enemies is a major constraint in beekeeping industry. Sometimes, the diseases remain undetected for long and when they appear, cause catastrophic destruction. Treatment of bees for disease is a challenge even to the pathologist. The spread, intensity and control of disease are affected by climatic factors, forage availability and quality [5]. It was reported problem of bee pests and diseases, while [3] found that 55 percent of the respondents were bothered by the attack of bee enemies. Bee enemies including all the major pests like bee-eater, wax moth, wasps, mites and diseases were reported to be detrimental to beekeeping by the respondents.

***D. Poor management of honey bee colonies***

This is a major constraint, beekeepers lack proper management know-how, especially during the dearth periods when besides the scarcity of bee flora, they are confronted with various pests and predators of apiaries, which results in dwindling of the bee colonies [8, 9], Same problem was indicated by [3], who reported that majority of the respondents lack knowledge about proper management of honey bee colonies.

***E. Difficulties in the migration of honey bee colonies***

Migration of bee colonies is generally a practice with commercial beekeepers. Hobbyists or marginal beekeepers generally have tough times during dearth periods. A beekeeper may need to move his honey bee colonies to long distance for various reasons such as abridge the floral dearth periods, to exploit different bee floral sources/ honey flows, to send out his colonies for pollination of the crops/orchard plants or to establish a new apiary at some new location [10]. Transportation or migration of bee colonies to potential bee flora areas throughout the year was also one of the major problems faced by the beekeepers. High transport charges/cost, mortality of bees during transportation, interference of police and octroi people etc. during migration of bee colonies concerned them a lot. [3] Reported that this problem was faced by 37.5 percent of the respondents.

***F. Adverse effect of weather***

Unfavorable weather conditions were also a major setback for beekeeping. Extreme hot and cold weather reduced bee population. In parallel, cloudy atmosphere and rainy season also affect bee population adversely. [11] Inferred that the natural factors put great limitation in expansion of beekeeping whereas [12] found bad weather conditions as a major constraint in honey production.

***G. Depleting floral resources***

The plantation of bee flora is not being taken up either by the forest department or individually. The problem of depleting floral resources has reduced the beekeeping potentials in the country. Beekeepers cannot afford to grow bee flora exclusively for honeybees. But social forestry programme, which advocate growing of multipurpose trees, can be augmented so as to incorporate growing of such trees which are also good bee forage. [3] reported about 20 percent beekeepers face colony migration constraints due to lack of bee flora and financial facility, harassment of the migratory beekeepers by the state administrators and non-cooperative attitude of the forest department officials and the problem of increasing the death of bee flora due to decrease in area under bee plant species.

***H. Theft of bee colonies***

A different type of problem came forward in the study that was theft of bee boxes/colonies. Bee boxes are placed in field where 24 hours care was not possible. As a result, theft of boxes occurred and more or less it was faced by remarkable number of respondents.

***I. Cost of equipment / tools***

Many beekeepers expressed high cost of equipment/tools as main problem in beekeeping expansion. Equipment/ tools particularly bee hives (boxes) and bee frames getting costlier day by day which put negative impression on entrepreneurial spirit of new comers as well as of those who want to expand their business.

### *J. Miscellaneous problems*

There was non-availability of good qualities of bees, public dispute due to bees, lack of skilled labour, lack of space, high octroi charges on honey, non availability of quality equipment/tools, difficulty in getting training and subsidy. [9].

### *K. Administrative and financial constraints*

Farmers faced problems in getting loans and non-availability of insurance policy. During migration of honey bee colonies, harassment at the barriers including impositions of taxes, octroi etc. and non-cooperation of Govt. agencies especially for forest department for siting the migratory apiaries in vacant Govt. land/forest areas/ along the canal in bankments, roads / railway tracks etc. [3,5,6,7] found that the majority of respondents faced difficulty in getting loan for beekeeping enterprise.

### *L. Fewer price of products*

Fewer prices of bee products (honey, bees wax, etc.) were second major problem faced by 77 percent beekeepers. Actually there was a big gap between producer's price and retail price. This factor irritates the beekeepers a lot. [13] Extracted that low prices have affected 90 percent of producers and 70 percent of intermediaries. Only 2 percent increase in this problem from 1998 to 2000 has occurred [3].

### *M. Lack of involvement of Extension personnel*

There is lack of Social Welfare Organizations, Women Clubs, Tribal Development Institutions and missions to take modern beekeeping to remote and interior areas. Also, there is less interaction between local beekeepers and extension staff to evolve new techniques and management [9].

## III. CONCLUSION

Beekeeping plays an important role in the sustainable agriculture as it contributes significantly as an allied industry. Bee farming provides supplementary and sometimes major source of income to the farmers, especially to the small farmers. Enterprises like poultry, piggery, dairy, mushroom growing etc., require higher initial costs than beekeeping. Due to its low cost farmers prefer beekeeping as an important subsidiary occupation, which provide high returns as various honey products. Beekeeping production is affected by indiscriminate use of pesticides, bee diseases and enemies, adverse effects of weather, low price of products, etc. The susceptibility of honey bees to different diseases, pesticide hazards and marketing of bee products were found to be major limiting factors in the prospects of beekeeping. Majority of the beekeepers wanted to increase their level of business. Government authorities should possess serious concern to the problems faced by bee keepers and promote small land holder farmers for honey bee farming, so that they can fetch maximum return from apiculture.

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