



National Bee Board
Department of Agriculture, Cooperation and Farmers Welfare (DAC & FW)
Ministry of Agriculture and Farmers Welfare
Government of India

MODULE OF TRAINING IN BEEKEEPING

"Trainings on scientific beekeeping"

1. Title of the course : Trainings on scientific beekeeping.
2. Duration : 7 days including journey period / as per NHM / TMNE norms
3. To whom : Existing/ practicing beekeepers, professionals, educated unemployed youths/ women, Officers of Depts. of Agriculture, Horticulture, Forestry, Irrigation, State KVICs, beekeeping and honey Societies Federations, etc.
4. Aspects : Scientific management of beekeeping industry for its sustainability, as per details given below.
5. No. of participants : 25 (Twenty-five) per batch.
6. Mode of Training : Theory, audio-visual demonstration and field demonstration.
7. Language of training : English/ Hindi/ Regional Languages.
8. Training manual/ Notes : May be provided as per modules/ topics

Contents of the trainings on beekeeping to be conducted for the farmers/ beekeepers etc in the field:

The following are the subjects which should be addressed while imparting the trainings at field level. However, there may be modifications in these subjects as per the situation/ status of beekeeping in the area and knowledge of the batch of beneficiaries to whom training is scheduled to be conducted.

✓ 1. **PRESENT STATUS OF BEEKEEPING IN:**

World statistics, Indian statistics, Status in State/ District, European honey bees in India, etc.

✓ 2. **NATURE OF BEEKEEPING INDUSTRY.**

Relationship between honeybees and flowering plants, Effect of climatic conditions, Disciplines involved in beekeeping industry, Bee-botany, Bee-genetics, Entomology, Bee-pathology, Chemistry of Bee-products.

✓ 3. **SELECTION OF SITE FOR APIARY ESTABLISHMENT.**

Distance from roads, Availability of flowing water, Distance from sewerage/ dirty stagnant water, etc., Availability of bee friendly flora, etc.

4 **QUALITY OF BEEHIVE AND OTHER BEEKEEPING EQUIPMENTS / TOOLS / APPLIANCES**

Quality of Bee-hives, Honey-extractor, Indian Standards, Other equipment: Smoker, Veil knives, etc.



5. **BEEKEEPING, BIO-DIVERSITY AND SUSTAINABLE DEVELOPMENT.**

An asset for the nation, Beekeeping and sustainable development of agriculture. Role of beekeeping in Bio-diversity, Diversity in flora and fauna leads high potential scope for beekeeping and other relevant issues.

6. **ROLE OF BEEKEEPING / APICULTURE IN POLLINATION OF VARIOUS CROPS.**

Pollination, Self pollination, Cross pollination, Insect pollination, Honeybees: efficient pollinators, Value of bees for crop pollination (gives better quality and quantity of harvest), Estimates of increased crop yields due to bee pollination, Interdependence of honeybees and flowering plants, Ecological balance without pollution, etc.

7. **SCIENTIFIC MANAGEMENT OF BEE COLONIES.**

Quality of comb foundation sheets, Feeding colonies, Pollen supplements, water management, Uniting colonies, Division of colonies, introduction of queen, emergency queen cells, Laying workers, Management of robbing, absconding, swarms and swarming in colonies, Environmental protection of bee colonies and food stores, Preparation and using comb foundation sheets, use of supers, quality of beehive tools, etc.

8. **MANAGEMENT OF HONEYBEE COLONIES DURING DIFFERENT SEASONS.**

Monsoon, Post Monsoon, Winter, Post Winter and Summer.

9. **FLOW MANAGEMENT.**

Uniting of colonies, Use of Super chambers, Ventilation, Time of Honey Extraction, Prevention of robbing, etc.

10. **BEE FLORA AND ITS UTILIZATION BY THE BEES.**

11. **DISEASES, MITES, PESTS AND ENEMIES OF HONEYBEES AND THEIR MANAGEMENT.**

Management of various foul broods (American and European Foul Brood (AFB & EFB), Thai Sac Brood Disease, etc.); Bee mites, their life cycle, nature of damage, symptoms & management, Varroa mite management, Acquaintance with field symptoms of bee mites & their management, Bacterial & viral bee diseases, their symptoms, causes of spread & Management, Wax Moth & ants as bee enemies, their life cycle, nature of damage & management, Predatory wasps & birds, their behavior, nature of damage & management, Identification of different life stages of wax moth, symptoms of their attack & their management, Selection of colonies for resistance against diseases & mites, etc.

12. **PESTICIDES POISONING TO HONEYBEES AND THEIR MANAGEMENT.**

13. **METHODS OF PESTICIDES APPLICATION IN CROPS SAFE TO BEES.**

14. **PREPARATION AND USE OF HONEYBEE COLONIES FOR POLLINATION IN AGRICULTURAL AND HORTICULTURAL CROPS.**