Appendix 3

ORGANIC BEE KEEPING/APICULTURE

1. Choice of breed/strains

For the choice of bees for rearing, preference shall be given to indigenous species of bee, such as *Apis cerena indica, Apis mellifera, A.lorae, A.dorsata, Mellipona spp. & Trigona spp.*-Dammar (Indian stingless honey bees) and their local ecosystem.

1.1 Sources/origin

i. A planned programme of establishing bee nurseries shall be encouraged.
ii. The hives shall be made of the natural material to avoid contamination to the environment and the apiculture products.
iii. The bee wax for the new foundations shall be sourced from organic production units.
iv. Only natural products such as propolis, wax and plant oils shall be used in the hives.
v. A colony infested with any one of the notifiable diseases (**Annex 1**) shall not be certified and allowed to be sold, purchased or transferred from the hives, walls, pots, logs etc.

2. Conversion Period

i. The conversion period shall not apply when bees are grown in wild and in natural conditions.
ii. One-year conversion period shall apply to those bee colonies/apiaries which are reared.
iii. During conversion the bee colonies shall be placed in isolation and the foundation comb shall be made from organic wax.

3. Hiving the Honey Bees

i. Where wall hives are in use, these shall accommodate movable standard frames depending upon the requirement of honey bee species.

ii. The foundation comb shall be made from organic wax.

iii. For renovation of apiaries, 10% per year of the queen bees & the swarms may be replaced by the non-organic queen bees & swarms in the organic production unit, provided that the queen bees & swarms are placed in hives with combs or comb foundations coming from organic production unit.

iv. Each bee hive shall primarily consist of natural materials. Use of construction materials with potentially toxic effects is prohibited.

v. Persistent materials may not be used in bee hives where there is a possibility of permeation of the honey and where residues may be distributed in the area through dead bees.

vi. The apiaries shall be placed within a radius of 3 kms from the organic farms. These conditions shall not apply when the farms are not in flowering stage or when the hives are in the dormant condition.

vii. Natural products such as propolis, wax & plant oils can be used in the hives. The use of the chemical repellants is prohibited during the honey extraction operations.

4. Apiary Management

i. A location where one or more honey bee colonies are assembled together and collectively managed may be considered as an apiary.

ii. An apiary site shall be as close to a natural source of clean hygienic water and bee flora as possible, protected from wind, direct sunlight, severe heat, severe cold, rain, wild animals, ants, termites and exposure to insecticides or toxic fumes or poisonous chemicals. An apiary shall not be located in unclean areas or at a site where the presence of bees is likely to cause public nuisance. It shall be 5 m away from public path or highway.

iii. In case of wild collection, the collection area shall be organic or wild, and shall be varied as possible to fulfill the nutritional needs of the colony and contribute to good health.

iv. The number of honey bee colonies kept in such an apiary shall be limited to optimum in relation to forage resources within the same flight, range, so as to avoid over stocking.

v. All brood or full-depth frames shall be wired to withstand breakage of combs during inspection, migration and extraction, etc.

5. Feed

i. During the short intervals of local dearth periods, if there are no adequate honey and or pollen stores within the colony, the producer shall provide organic sugar feeding or organic pollen supplements or both so as to maintain colony strength or both so as to maintain colony strength without letting the honey bee starve. Feeding shall only take place after the last harvest before the season when no foraging feed is available.

ii. At the end of the production season, hives shall be left with sufficient reserves of honey & pollen to survive the winter. The feeding of colonies shall be seen as an exception to overcome temporary feed shortages due to climatic conditions.

iii. The feeding of the colonies shall only be permitted where the survival of the hives is endangered due to climatic conditions & only between the last honey harvest & 15 days before the start of the next nectar or honey dew flow period. The feed supplied shall be fully organic. Feeding shall be with organic honey, organic sugar syrup or organic sugar.

6. Health care

i. Veterinary medicine shall not be used in bee keeping.

ii. For pest and disease control and for hive disinfection the products mentioned in **Annex 2** are allowed.

iii. For the purpose of protecting frames, hives & combs, in particular from pests, products listed in **Annex 2** are permitted.

iv. Physical treatments for disinfections of apiaries such as steam or direct flame are permitted.

v. The practice of destroying the male brood is permitted only if the colony is infested by Varroa destructor.

vi. If despite all the preventive measures, the colonies become sick or infested, they shall be treated immediately and, if necessary, the colonies can be placed in isolation apiaries.

7. Breeding and Management

i. Clipping of wings of queen bees are prohibited.

ii. For the renovation of apiaries, 10% per year of the queen bees and swarms may be replaced by non-organic queen bees and swarms in the organic production unit provided that the queen bees and swarms are placed in hived with combs or comb foundations coming from organic sources.

8. Periodic cleaning

Beehives shall be cleaned periodically. Each colony shall be periodically inspected once or twice in a month and in a manner causing least disturbance and provocation to honey bees. Debris accumulated on the bottom board shall be collected in a container and incinerated. Pieces of wax combs shall be pooled together and be melted for wax recovery. Old combs shall be melted and comb renewal induced.

Where colonies are over- wintered and packed, periodic cleaning shall be dispensed with, during the packed period.

9. Record keeping

Records shall be maintained for each of the colonies during periodic inspections. If case of suspicion of incidence of any disease immediate remedial measures shall be taken.

10. Transport/Migration

i. If the local dearth period or periods are prolonged beyond 6 to 8 weeks continuously, the producer shall, if possible, migrate the colonies to the nearest sources of organic forage from farm(s) or forest(s) through individual

or collective migration. The producers may also migrate in other organic localities having different flora and different flowering periods.

ii. Prior to migration all the colonies shall be thoroughly examined for any deficiencies like absence of queen bee, food shortage, etc, and such deficiency shall be rectified.

iii. Colonies shall be packed so as to :

- secure in position various hive components, frames in particular;
- avoid shaking during transit;
- provide adequate ventilation to the bees;
- prevent congestion inside;
- provide feeding or water in transit, if necessary; and
- prevent honey bees escaping through gaps in entrance gates, and other components.

iv. The migration shall be done preferably at night or in cool weather avoiding adverse temperature. The colonies shall be loaded with their frames parallel to the direction of movement in case of trucks and at right angles in case of train transport. Migration by air, rail or truck shall be planned well in advance so as to avoid damage due to avoidable delay in transit.

v. Proper arrangement like cleaning the apiary site, arranging hive stands, providing clean water shall be done prior to the arrival of the colonies at the migratory site(s).

vi. On arrival at the migratory site, the colonies shall be promptly arranged on the hive stands and the entrance gates opened at the earliest appropriate hour.

vii. The first post–migration inspection shall be done within 7 days after the colonies settle down to work. During this inspection, it may be observed whether there are any combs broken, queens lost, bees dead, etc. The old combs which need immediate replacement shall be taken to one side of the hive where the queen does not generally lay eggs. These old combs shall be subsequently removed and wax recovered and the empty frames shall be sterilized by dipping in hot water and shall be dried in direct sun before giving foundation strips for comb renewal.

viii. In addition to honey flow and pollination, this migration period can also be looked upon as an occasion for increase in the number of colonies by simple divisions or planned queen rearing programme. The superannuated queens shall be replaced by young mated queens.

ix. A colony infested with any of the notified as epidemic region, inter-state or inter-regional migration from such area to other regions shall be prohibited.

11. Product extraction

i. Colonies shall be developed to their full strength by the beginning of the flow season by uniting weak colonies.

ii. Augmenting medium colonies with sealed brood combs and honey bees or both;

iii. Giving simulative organic feeding; and

iv. Giving comb foundation strips for drawing combs and expanding brood nest.

v. Dummy or division boards shall be used for colonies which still fall short of full strength by a couple of combs so as to induce them to the supers. The colonies which are still weak shall be transferred to nuclei, to obtain some surplus honey yield.

vi. The moment nectar starts coming in, supers shall be added to the colonies. When the first supers are more or less filled with honey but not sealed, a fresh super shall be given in order to provide additional storing space. It may be desirable to have three supers for each colony in the apiary as the normal life of super combs is three years.

vii. Honey shall be extracted only when the combs are sealed by the honey bees. Extract or unripe honey will lead to fermentation and spoilage.

viii. Towards the end of the flow the brood rearing is reduced, and honey is often instinctively stored in the brood combs to provide for the ensuring local dearth. Therefore, honey shall never be extracted from brood combs.

ix. At the end of the flow, and after the honey has been extracted, the empty combs shall be got cleared of honey bees and preserved carefully in supers in a cool, dry, rat-proof enclosures with suitable preservatives against wax moth and other inspect pests. Such drawn out combs shall be reused during the next honey

flow. A producer shall equip himself with at least two supers of such drawn out combs for each colony in his apiary to derive maximum harvest from each honey flow.

12. Extraction of honey

i. Honey shall be extracted only from sealed combs.

ii. The used of brood combs is prohibited for honey extraction.

iii. At time of harvest, repellent consisting of prohibited substances (chemical synthetic repellents) shall not be used, except smoke.

iv. Excessive smoke shall not be used as it may taint the flavour of honey or otherwise spoil it.

v. Extraction shall be done only in a clean, fly-proof enclosure.

vi. All the equipments used for extraction shall be thoroughly cleaned in boiling water, before use. The use of brood combs is prohibited for honey extraction.

vii. During extraction, the honey shall run through a strainer of 1.40mm.

viii. The containers used for collecting the extracted honey shall be of stainless steel, aluminum or if of other metal, shall be thickly tinned or galvanized.

ix. The container shall have covers and each shall carry a label specifying the name of the producer, date and place of extraction.

x. Persons engaged in extraction of honey shall be free from any contagious disease, shall wear clean clothes and shall clean their hands with a disinfectant soap.

xi. Honey extracted from the colonies with infectious bee diseases shall be kept separate and not mixed with general lot. This honey shall be pasteurized before marketing. It shall never be fed either in processed or unprocessed form to the bees.

xii. The extracted honey in air-tight containers shall be taken to the pooling and processing centres as early as possible. Even during the short interval the honey remains with the roducer, it shall be stored in cool, dry and hygienic place and shall be protected from smoke, heat and insects.

13 .Extraction of beeswax

i. Every producer shall scrupulously collect every bit of beeswax. This is usually obtained from the old combs during renewal, bits of bur and brace-honey cells. Wax from different honey bee species shall be kept separately.

ii. Beeswax from cappings is the purest form of wax and, shall be stored separately without mixing it with general recovery of beeswax in apiary.

iii. The old and discarded combs shall be stored in containers with tight-lids and shall be melted at the earliest to avoid further deterioration and infestation with wax moth. These melting can be cast in slabs of desired size, shape & mass.

14. Crop pollination

A producer shall realize that besides harvesting honey and wax, he shall also mobilize his honeybees for pollination of agricultural/horticultural crops to increase the agricultural productivity.

15. Conservation of bee flora

Viability of the beekeeping industry depends on the density and composition of local flora. Forest vegetation shall not, therefore, be destroyed. Trees, shrubs and herbs providing bee forage shall be particularly conserved.

Annex 1

List of Notifiable Honey Bee Diseases
(IS 6695:1998)

1. American Foul Brood (AFB)
2. European Foul Brood (EFB)
3. Acarine Disease
4. Nosema Disease

Annex 2

Approved Products in Beekeeping for Disinfestations/Cleaning/ Disease-Pest Control

- Caustic soda
- Lactic acid, Oxalic acid, Acetic acid
- Formic acid
- Sulphur
- Etheric oils
- B*acillus thuringiensis*
- Menthol
- Thymol
- Eucalyptol
- Camphor
- Azadirachtin
- Gelatine
- Hydrolysed Proteins
- Lecithin
- Plant Oils
- Pyrethrins
- Quassia
- Rotenone extracted from *Derris* spp., *Lonchocarpus* spp. & *Terphrosia* spp.
- Micro-organisms
- Diammonium phosphate in traps
- Pheromones *(in traps & dispensers)*
- Soft Soap
- Lime Sulphur
- Paraffin Oils
- Mineral Oils
- Quartz sand
- Sulphur
- Potassium bi-carbonate