

Rayat Shikshan Sanstha's

Annasaheb Awate Arts, Commerce and H.B.G. Science College, Manchar

Department of Zoology

SHORT TERM COURSE IN APICULTURE

Aims:

- To familiarizes the techniques as an agro-industries among the students and local farmers.
- Provides opportunities for self-employment among the students.

Objectives:

1. To provided knowledge and information about the honey bees and their rearing.
2. To rear the honey bees in the garden as pollinating agent.
3. To collect bee product on commercial basis.

SYLLABUS 2020 - 21

THEORY

(1 Credit : 15 lectures)

- 1.1 An introduction to Apiculture, Study of habit, habitat and nesting behaviour of *Apis dorsata*, *Apis indica*, *Apis florae* and *Apis mellifera*. 3
- 1.2 Life cycle, Colony organization and division of labour, Polymorphism. 3
- 1.3 Bee behaviour and bee communication. 2
- 1.4 Bee keeping equipments : a) Bee box (Langstroth type) b) Honey extractor
c) Smoker d) Bee-veil e) Gloves f) Hive tool g) Bee Brush h) Queen excluder
- 1.5 Bee products (collection methods, composition and uses: a) Honey,
b) Wax, c) Bee Venom, d) Propolis, e) Royal jelly, f) Pollen grains. 2
- 1.6 Diseases and enemies of Bees: 3
- a) Bee diseases – Protozoan, Bacterial, Viral, Fungal – with two examples.
- b) Bee pests – Wax moth (Greater and Lesser), Wax beetle.
- c) Bee Enemies – Bee eater, King crow, Wasp, Lizard, Bear, Man.
- 1.7 Bee pollination 2
- 1.8 Economic Importance of apiculture.

PRACTICALS

(1 Credit: 15 lectures)

Section: I

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| 1. Study of life cycle of Honey bee. | 2 |
| 2. Study of mouth parts, thoracic appendages (legs and wings) and sting apparatus of Honey bee. | 2 |
| 3. Study of various bee keeping equipment's. | 2 |
| 4. Study of methods of rearing honey bees. | 2 |
| 5. Study of bee products and their methods of harvesting. | 2 |
| 6. Study of bee pests, bee enemies. | 2 |

Section: II

Field visit: compulsory visit to apiculture plant/center. 3

Reference books:

1. Bee and Bee Keeping, 1978, Roger A. Morse, Cornell University Press, London.
2. The Behaviour & Social Life of Honey Bees, C.R. Ribbandas, Dover Publication inc. New York.
3. Destructive and useful Insects, their habit and Control, 1973. C.L. Metcalf and W. p. Flint, Tata McGraw Hill Publications, New Dehli.
4. A Text Book Of Entomology, 1974. V.K. Mathur and K.D. Upadhayay, Goel Printing Press, Barani.
5. Imm's Text Book of Entomology, Vol I & II, Richard and Owen.

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