



**Research Department of Zoology**  
**MARY MATHA ARTS & SCIENCE COLLEGE**  
**MANANTHAVADY**

(Affiliated to Kannur University)

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**CERTIFICATE COURSE**

**CCZLG02: CERTIFICATE COURSE IN BEE KEEPING TECHNIQUES**

Course Code	Theory	Practical	Time
CCZLG02	20 Hours	10 Hours	3.30 to 4.30

**COURSE OUTCOME**

CO 1: Develop self-employment capabilities.

CO 2: Acquires scientific knowledge of profitable farming.

**UNIT I (6 Hrs)**

Definition, Scope, Classification of bees, Rock bee, Indian bee, little bee and Dammer bee- their identification and habits, choice of species in Apiculture. Bee colony-Distinctive features (social organization), Identification and Functions of queen, drones and workers. Food of the bee- honey and pollen-royal jelly. Behavior of bees-dances.

**UNIT II (4 Hrs)**

Principles of apiculture, arranging an apiary, position-space-direction, acquiring bees-care of newly captured colonies-handling the bees. The bee comb and its architecture-Different kinds of cells. Different types of Modern hives (Newton, Langstroth) – Architecture. Appliances used in Apiaries.

**UNIT III (4 Hrs)**

Honey bee products. Honey- Collection and Extraction, Preservation and storage –Physical properties, Chemical composition, nutritive value, medicinal values-honey as daily food. Bee wax Production, method of extraction-characteristics and uses. Bee venom-method of collection - composition of venom- its uses.

**UNIT IV (6 Hrs)**

Enemies of bees- Mites, Greater wax moth, lesser wax moth, ants, wasps, beetles, birds. Diseases of bees-adult and brood diseases- Bacterial, Fungal, Viral & Protozoan; Prevention and Control measures.

**PRACTICAL (10 Hrs)**

1. Study about the honey bee products.
2. Identification of bees
3. Honeybee collection methods.

**Books and Reference:**

1. Bee Keeping in India – Sardar Singh- KAR,Delhi. 129
2. Bee keeping in South India – Cherian M.C. & Ramachandran, Govt.Press,Chennai.
3. Handbook of bee keeping – Sharma P.L. & Singh S.,Chandigarh.
4. Apiculture – J. Johnson and Jeyachandra, Marthandam, TamilNadu.