

UNIVERSITY OF MADRAS
B.Sc. DEGREE PROGRAMME IN ADVANCED ZOOLOGY
AND BIOTECHNOLOGY
SYLLABUS WITH EFFECT FROM 2023-2024

121B1A

FOUNDATION COURSE: APPLIED ZOOLOGY

LEARNING OBJECTIVES

1. To Know the different types of pests affecting crops and pest control methods
2. To know the insects of commercial importance and their economically important products
3. To gain knowledge of the various types of poultry breeds and their management
4. To attain knowledge on the livestock development in India and its future prospects

UNIT I – INSECT PESTS AND THEIR CONTROL

Definition of Pest- Causes for insects attaining pest status- Damage and loss due to pests.

Brief account on pests affecting agricultural crops

Rice (Rice stem borer, Rice gall midge, Rice hopper) , Sugarcane (Sugar cane leaf hopper, root borer, shoot borer), Cotton (Pink and spotted boll worm), Coconut (Rhinoceros beetle), Vegetables (Red pumpkin beetle, Cabbage butterfly, Hadda beetle (tomatoes and potatoes), Brinjal shoot borer), . Insect pests of stored grains (Rice weevil, Khapra beetle (wheat), Pulse beetle)

Insect pest control methods (Physical, mechanical, chemical and biological), IPM

UNIT II-BENEFICIAL INSECTS

Sericulture- Mulberry and non-mulberry silkworms- common cultivable species- Biology of Bombyx mori- Types of silk. economic importance of silk

Apiculture-Types of Honey bees for rearing- Bee hive products-Chemical composition, nutritional and medicinal value of honey

Economic importance of lac insect

UNIT III - VERMICULTURE

Vermiculture- Selection of species for vermiculture –Vermicomposting- Organic resources for vermiculture - Vermicomposting methods (Pit Method and Heap Method)- Harvesting of vermicompost - Factors affecting vermicomposting. Advantages of vermicompost.

UNIT IV – POULTRY MANAGEMENT

Breeds of chicken- Indigenous breeds and exotic breeds (American, Asiatic, English and Mediterranean breeds) - Construction of poultry house- Intensive method of poultry rearing (Deep litter system and Cage system)- Feeding equipments . Incubation of eggs (Natural and artificial). Diseases affecting poultry and their prevention methods.

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UNIT V-DAIRY, SHEEP AND PIGGERY FARMING

Livestock development in India and its future prospects. Cattle breeds- (Dairy, Draught and Dual purpose breeds). Exotic breeds of cows. Buffalo breeds in India. Indigenous and exotic breeds of sheep for wool and meat production. Piggery - economically important breeds and economic importance

TEXT BOOKS

1. B. Vasantharaj David and T. Kumaraswami 1982. Elements of Economic Entomology, Popular Book Depot, Chennai.
2. Nayar, K.K., Ananthakrishnan, T.N. and B.V. David, V 1992 General And Applied Entomology Tata Mcgraw, New Delhi,
3. P.G. Fenimore Manual. Silkworm Rearing. FAO Agricultural Service Bulletin, Rome
4. Sukla, G.S. and Upadhyay, V.B., 2000 Economic Zoology – Rastogi Publications, Meerut, India.
5. Jawaid Ahsan and Subhas Prasad Sinha, 2000 A Handbook On Economic Zoology- S. Chand & Co., Ltd., New Delhi.
6. Ashok Kumar and Prem Mohan Nigam, 1991 Economic and Applied Entomology Emkay Publications, New Delhi.

SUGGESTED READINGS

1. Shammi, Q.J. And Bhatnagar, S., 2002 Applied Fisheries: Agrobios (India), Jodhpur – India.
2. Major Hall, C.B. 2005 Ponds and Fish Culture - Agrobios (India), Jodhpur – India.
3. Keith Wilson, N.D.P., 2005 A Handbook of Poultry Practice –Agrobios (India), Jodhpur – India.
4. Banerjee, G.C. 1992 Poultry – Iii- Edition –Oxford &Ibh Publishing Co. Pvt. Ltd., New Delhi.

WEB RESOURCES

1. <https://semo.libguides.com/zooology>
2. <https://libguides.mssu.edu/c.php>
3. <https://www.classcentral.com>.
4. <https://www.thebestwefind.com>.

Course outcomes

The student will get

- 1.To Know the different types of pests affecting crops and pest control methods
- 2.To know the insects of commercial importance and their economically important products
- 3.To gain knowledge of the various types of poultry breeds and their management
4. To attain knowledge on the livestock development in India and its future prospects