



ANDHRA PRADESH STATE COUNCIL OF HIGHER EDUCATION

Syllabus for **B.VOC HORTICULTURE (MAJOR)** in consonance with Curriculum framework

(W.E.F. AY-2026-27)

COURSE STRUCTURE (for Semester III)

Year	Semester	Course	Title	No of Hrs/week	No of Credits
II	III	5	Fundamental of Horticulture - (T)	3	3
			Fundamental of Horticulture - (P)	2	1
		6	Introduction to Soil Science - (T)	3	3
			Introduction to Soil Science - (P)	2	1
		7	Management of Pests in Horticultural Crops - (T)	3	3
			Management of Pests in Horticultural Crops - (P)	2	1


P. RAVINDRANATH REDDY
LECTURER IN HORTICULTURE
S.V.C.R Govt. Degree College
Patamamer-517408, Chittoor (Dt)

SEMESTER - III
COURSE - 7: MANAGEMENT OF PESTS IN HORTICULTURAL CROPS
Theory Credits – 3 3 hrs/week

I. Learning outcomes

1. **Identify major insect pests of horticultural crops**
 - Recognize key insect species, their life cycles, and nature of damage on fruits, vegetables, ornamentals, and plantation crops.
2. **Understand pest ecology and behavior**
 - Explain the interaction between pests, hosts, and environment, and factors influencing pest outbreaks.
3. **Diagnose pest damage symptoms accurately**
 - Develop skills to observe and differentiate pest damage on leaves, stems, fruits, and roots in field conditions.
4. **Apply principles of Integrated Pest Management (IPM)**
 - Learn to combine cultural, mechanical, biological, and chemical control methods for sustainable pest management.
5. **Use biological control agents effectively**
 - Understand the role of natural enemies (parasitoids, predators, pathogens) in controlling pest populations.

Unit – 1: Introduction, economic classification of insects

9 Hrs

Study of insect pests (Distribution, host range, biology, Nature of damage and management) in Horticultural crops - Tropical fruits –

1. Mango: Hoppers, stem borer, leaf gall midges.
2. Guava: Tea mosquito bug, fruit borer.
3. Banana: Rhizome weevil, pseudo stem borer.
4. Papaya: fruit fly, white fly.

Unit – 2 Pests of sub-tropical and temperate fruits

9 Hrs

1. Grape: Thrips stem girdler, mealy bug.
2. Citrus: Citrus butterfly, fruit sucking moths, citrus leaf miner.
3. Apple: Sanjose scale, woolly aphid, cottony cushions scale.

Unit - 3 Pests of plantation crops

9 Hrs

1. Cashew: Cashew shoot and root borer, tea mosquito bug.
2. Coconut & Oil Palm: Black header caterpillar, red palm weevil.
3. Tea: Tea mosquito bug, red spider mite.
4. Coffee: white stem borer, berry borer.

Unit- 4- Pests of medicinal & aromatic plants

9 Hrs

1. Neem: Root grub, tea mosquito bug.
2. Cinnamon: cinnamon butterfly, leaf miner.
3. Belladonna: Cut worm, leaf feeder.
4. Dioscorea: aphids, red spider mites.

Unit- 5- Pests of stored products

9 Hrs

1. Tamarind beetle, cigarette beetle.
2. Capra beetle - Drug store beetle.
3. Red flour beetle, rice moth.
4. Tobacco moth, Indian meal moth


P. RAVINDRANATH REDDY
LECTURER IN HORTICULTURE
S.V.C.B. Govt. Degree College
Palamaner-517408, Chittoor (Dt)

References:

1. Biointensive Integrated Pest Management for Horticultural Crops
Anil Kumar, Swati Saha, Jaipal Singh Choudhary
2. Textbook on Integrated Pest Management of Horticultural Crops
Emmanuel, A. Sujatha, T.S.K.K. Kiran Patro, M. Lakshminarayana Reddy, B. Srinivasulu, T.S.S.K. Patro
3. Management of Insect Pests in Vegetable Crops: Concepts and Approaches
Ramanuj Vishwakarma, Ranjeet Kumar

SEMESTER - III

COURSE - 7: MANAGEMENT OF PESTS IN HORTICULTURAL CROPS

Practical

Credits – 1

2 hrs/week

I. Laboratory/field exercises:

1. Identification of insects and damage symptoms of pests of mango
2. Identification of insects and damage symptoms of pests of guava
3. Identification of insects and damage symptoms of pests of papaya
4. Identification of insects and damage symptoms of pests of grapes
5. Identification of insects and damage symptoms of pests of apple
6. Identification of insects and damage symptoms of pests of cashew
7. Identification of insects and damage symptoms of pests of coconut
8. Identification of insects and damage symptoms of pests of tea, coffee
9. Identification of insects and damage symptoms of pests of neem, cinnamon
10. Identification of insects and damage symptoms of pests of stored products

II. Suggested activities and evaluation methods:

Measurable Activities

1. Student Seminars (Presentation Topics)

- Integrated Pest Management (IPM) in Horticultural Crops – concept, principles, and importance.
- Role of Biological Control Agents in Pest Management – predators, parasitoids, and pathogens.
- Use of Botanical Pesticides and Natural Extracts in Horticulture.
- Pest Forecasting and Monitoring Techniques in Fruit and Vegetable Crops.
- Impact of Climate Change on Insect Pest Dynamics in Horticultural Systems.
- Role of ICT and Artificial Intelligence in Modern Pest Management.

2. STUDENT STUDY PROJECTS

- Survey and Identification of Major Pests in Local Fruit or Vegetable Crops.
- Evaluation of Neem-Based Pesticides against Aphids or Mites.
- Effectiveness of Yellow Sticky Traps in Managing Whiteflies in Tomato or Brinjal.
- Study on the Seasonal Incidence of Mango Hoppers and Their Control Measures.
- Comparative Study of Organic vs. Chemical Pest Management in Chilli or Okra.
- Field Study on Integrated Pest Management Practices in a Local Orchard or Vegetable Farm.

3. ASSIGNMENTS

- Classification of Insect Pests in Horticultural Crops and Their Nature of Damage.
- Mechanical and Cultural Methods of Pest Control in Fruits and Vegetables.
- Major Pests of Mango, Citrus, and Banana – Symptoms and Management.
- Common Pests in Vegetable Crops and Integrated Management Practices.
- Pesticide Formulations, Application Methods, and Safety Measures.
- Government Schemes and Farmer Training Programs on Pest Management (e.g., NIPHM, ICAR).

MODEL QUESTION PAPER
COURSE - 7: MANAGEMENT OF PESTS IN HORTICULTURAL CROPS

Times: 3 Hours

Maximum Marks: 75

SECTION - A

(Answer ANY FIVE questions. Each question carries 3 Marks)

(5 × 3 = 15 Marks)

1. Write short notes on the economic classification of insects with examples.
2. Mention the host range, nature of damage, and management practices for mango hoppers.
3. Describe the nature of damage caused by citrus leaf miner and its control measures.
4. Write short notes on San Jose scale of apple—host range, damage symptoms, and management.
5. Write briefly about the red palm weevil of coconut—symptoms and management practices.
6. Explain the nature of damage caused by the tea mosquito bug in cashew and tea crops.
7. Describe the damage symptoms and control measures of the root grub in neem.
8. Write short notes on the cinnamon butterfly—its life cycle and management.
9. List out two major stored product pests and describe their nature of damage.
10. Write short notes on the red flour beetle and its management in stored grains.

SECTION - B

(Answer any ONE question from each Unit. Each question carries 12 Marks) (5 × 12 = 60 Marks)

UNIT - I

11. A. Explain the economic classification of insects and describe the importance of studying insect pests in horticultural crops.

OR

B. Write in detail about the major insect pests of tropical fruit crops such as mango, guava, banana, and papaya

UNIT - II

12. A. Discuss in detail the important insect pests of grapes and citrus -- their biology, symptoms of damage.

OR

B. Describe the major insect pests of apple such as San Jose scale, woolly aphid, and cottony cushion scale

UNIT - III

13. A. Explain the important insect pests of cashew— their nature of damage and effective management strategies.

OR

B. Describe the major insect pests of tea and coffee — discuss their distribution, host range, biology, and control measures.

UNIT - IV

14. A. Describe their life cycle and management practices.

OR

B. Explain in detail the nature of damage caused by root grubs

UNIT - V

15. A. Describe the major insect pests of stored products such as tamarind beetle

OR

B. Write notes on red flour beetle, rice moth, tobacco moth, and Indian meal moth — their life cycle

4- Year UG Honours, Major
Syllabus
(2026-27)
Semester-III

Model Question Paper

Time : 3hrs

Marks:75

Part-A

Answer any Five Questions. Each Question carries 3 Marks.

5x3=15

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.
- 9.
- 10.

Answer the following questions. Each question carries 12 Marks

5x12=60

11. a) Unit-I
(Or)
b) Unit-I

12. a) Unit-II
(Or)
b) Unit-II

13. a) Unit-III
(Or)
b) Unit-III

14. a) Unit-IV
(Or)
b) Unit-IV

15. a) Unit-V
(Or)
b) Unit-V