

# 21ENTO331 PESTS OF FIELD CROPS AND STORED GRAIN AND THEIR MANAGEMENT

Hours Per Week :

L	T	P	C
2	-	2	3

Total Hours :

L	T	P
30	-	30



Source:

<https://images.app.goo.gl/d5mjAtebtYV1Cupm7>

## Course Description and Objectives:

The course makes the students to learn and understand various pests of field crops and stored grain pests, symptoms and their management practices to control the pests

## Course Outcomes:

Upon completion of the course, the student will be able to achieve the following outcomes:

COs	Course Outcomes
1	To identify the insect pests on different field crops and in storage
2	To assess the economic damage done by the insect pests in field crops and in storage
3	To formulate eco-friendly and economically sustainable integrated pest management strategies of insect pests in various crops and in storage
4	To advocate on the integrated management of non-insect pests in field crops and in storage

## SKILLS:

- ✓ Identify insect pests of field crops and storage produce
- ✓ Understand biology, nature of damage and symptoms of damage of insect pests
- ✓ Suggest better management practices for field crops and storage insect pests
- ✓ Prepare IPM modules for different insect pests

**ACTIVITIES:**

- Rearing of different insect pests to understand their biology
- Visit agricultural fields and observe nature of damage and symptoms of damage caused by different insect pests
- Visit FCI/CWC and farmers godowns observe nature of damage and symptoms of damage caused by different storage insect pests
- Identify different insect pests based on their morphology

**UNIT - 1**

**Introduction:** General account on nature and type of damage by different arthropod pests. Scientific name, order, family, host range, distribution, biology and bionomics

**UNIT - 2**

**Damage and Management:** Nature of damage, and management of major pests and scientific name, order, family, host range, distribution, nature of damage and control practices for other important arthropod pests of various field crops

**UNIT - 3**

**Other Predators and Their Management:** Mites, birds, nematodes and rodent pests of field crops and their management. Insect pests, mites, rodents, birds and microorganisms associated with stored grain and their management

**UNIT - 4**

**Factors:** Factors affecting losses of stored grain and role of physical, biological, mechanical and chemical factors in deterioration of grain. Storage structures and methods of grain storage and fundamental principles of grain store management

**UNIT - 5**

**Invasive / Migratory Pests:** Examples of insect invasions, economic impact, Global collaborations / efforts and their management

**LABORATORY EXPERIMENTS****LIST OF EXPERIMENTS**

1. Typical symptoms of damage by various phytophagous insects
2. Calculations on the doses of insecticides and their application techniques
3. Identification of major insect pests of rice and their damage symptoms
4. Identification of major insect and mite pests of sorghum, maize and other millets and their damage symptoms
5. Identification of insect pests of sugarcane and their damage symptoms
6. Identification of insect pests of cotton, sun hemp and mesta and their damage symptoms
7. Identification of insect pests of pulse crop and their damage symptoms. Identification of insect pests of oil seed crops and their damage symptoms
8. Mite pests of crops and their damage symptoms
9. Nematode pests of crops and their damage symptoms
10. Key Bird and Rodent pests of crops and their nature of damage
11. Household pests and their management
12. Identification of insect and non-insect pests (mites, birds and rodents) of stored grain, their nature of damage and their management tactics

13. Methods of grain sampling under storage condition. Determination of moisture content of grain
14. Methods of detection of infestation by stored grains insect pests in stored grain. Assessment of losses in stored grain due to insect pests
15. Fumigation of grain store / godown. Visit to nearest FCI/CWC/SWC godown

#### REFERENCES:

1. Vasantharaj David, B. and Rama Murthy, V.V. 2016. Elements of Economic Entomology, Popular Book Depot, Coimbatore
2. Vasantharaj David, B and Aanathakrishnan, T.N. 2006. General and Applied Entomology Tata McGraw-Hill Publishing House, New Delhi
3. Nair MRGK. 1986. Insects and Mites of crops in India. Indian Council of Agricultural Research, New Delhi
4. Ramakrishna Ayyar, T.V. 1963. Handbook of Economic Entomology for South India Government Press, Madras
5. Dennis S Hill 1987 Agricultural Insect Pests of tropics and their control, Cambridge Universtiy Press, New York
6. Upadhyaya K.P. and Kusum Dwivedi. 1996. A Text Book of Plant Nematology. Aman Publishing House, Meerut
7. Khare, S.P. 1993. Stored Grain Pests and their Management. Kalyani Publishers,Ludhiana.
8. Atwal, A.S. 1976. Agricultural Pests of India and South East Asia. Kalyani Publishers, Ludhiana

