



# ***Pest Control Practices -***

Prof. D. R. Borhade



## **Introduction :-**

Food is of prime important & basic need.

Population pressure the task of increased food production.

“Green Revolution” made for increasing the per acre yield of land.  
One limitation is reduction in crop yield due to pest.

So, it is necessary to practice the Pest control.

There are so many methods :

# 1) Cultural Method :-

The regular farm operations performed by to reduce the population of insect to minimize the level of economic injury are called cultural method.

The cheapest Method of all measures.

A) Clean Cultivation:-

✓Regular removal of all weeds

B) Crop rotation & trap crops:-

C) Use of resistant varieties:-

D) Pruning & thinning:-

E) Fertilizing & Stimulating vigorous growth:-

F) Use of Clean seed:-

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G) Mixed cropping:-

## **2) Physical Control-**

It include manipulation of physical factors like temperature, moisture, light, electricity.

### **A) Heat:-**

exposure of infested stored grains to sun light

### **B)Cold:-**

artificial cooling of stored products

### **C) Moisture:-**

rise and fall in moisture content of food and other products affects the survival of insects

### **D) Light:-**

Light plays important role water destroying

### **3) Mechanical Control-**

It involved killing of pests by mechanical actions with or without equipment called as mechanical control.

It include hand picking, use of hand nets, bag nets, jarring, beating.

#### **A) Hand picking:-**

Older method, involves destruction of eggs or developmental stages



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**B) Hand nets & bag nets:-**



**C) Jarring:-**

**➤ Mechanical traps :**



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## 4) Chemical Control-

Destruction of pests based on chemicals called as chemical control.

The chemicals which kills insects due to their properties called as insecticides. Insecticides are powerful tool for pest management.

### Classification of Insecticides-

#### I) Based on the origin & source of supply:-

- **Organic insecticide:** animal & plant origin
- **Inorganic insecticide:** mineral origin & elemental sulphur

#### II) Based on the mode of entry:-

##### • **Stomach poison:**

applied with food material which on ingestion cause death of insects

##### • **Contact poison:**

toxic chemical which kills the insects by simple contact or touch

**Continued.....**

**•Systematic poison:**

Applied to root, stem, leaves, seeds or plants and affect on gut of insects

Control insects having piercing and sucking mouthparts

It may acts as contact and stomach poison

**•Fumigation:**

Applied as vapour and affect the respiratory system

Affect mainly on trachea and spiracles



### III) Classification based on the mode of action:

- **Physical poison-**

affect by creating physical disorder like exclusion of air or loss of moisture

- **Protoplasmic poison-**

Precipitation of protein inside the cell

- **Respiratory poison-**

Blocking the cellular respiration and inactivation of respiratory enzymes

- **Nerve poison-**

Inhibition of acetyl cholinesterase enzyme

## 5) Biological control

- 1) Importation
- 2) Augmentation
- 3) Conservation



### Biological Control Agents

Predators

Parasites

Parasitoids



## 6) Pheromonal Control

### PHEROMONES

- ❖ *They are chemicals produced as messengers that affect the behavior of other individuals of insects or other animals.*
- ❖ *They are also called ‘ectoharmones’.*
- ❖ *The term pheromones was introduced by Karlson and Butunadt in 1959.*
- ❖ *It is derived from Greek words pherein=to transfer+hormaein=to excite.*
- ❖ *Pheromones are usually wind borne but may be placed on soil,vegetation or various items.*



# GENERAL ROLE OF PHEROMONES

- ❖ *They serve as means of communication between animals like light and sound by transferring information from one animal to another by smell or taste.*
- ❖ *They evoke specific behavioural, developmental reproductive responses in the recipients which helps in survival of species.*
- ❖ *A class of pheromones, **sex pheromones**, are mainly use in the behavioural control of insect pests. And also called attractants or sex lures.*



# **BEHAVIORAL OR PHEROMONAL** **CONTROL OF PESTS**

*Pheromones are used to control the insect pests in the following ways:*

- i. Killing*
- ii. Sterilization*
- iii. Mating disruption*
- iv. Monitoring*



# KILLING

- ❖ *A trap containing sex pheromone is placed in a pest infested region. The males aggregate at the trap and are destroyed.*
- ❖ *The pheromone source could be living virgin females, extracts of such females ,or synthetic substituents.*
- ❖ *Pheromones emanating from the traps are to complete with the pheromones released by the wild females.*
- ❖ *The males gathered at the trap may be killed with insecticides or sticky material that immobilise them on contact.*



