PEST, CAUSE FOR OUTBREAK AND CATEGORIES

Course teacher
Dr. A. Prabhruraj
Professor
Department of Agri. Entomology
UAS, Raichur
Insect classification (based on economic importance)

- Economically important
  - Injurious
    - 1. Pests of crops and Plants
      a. Agricultural Entomology
      b. Forest Entomology
      c. Storage Entomology
  - Beneficial
    - 1. Productive insects
      (Honey bee, Silkworm etc.)
    - 2. Insects as food
    - 3. Insects as medicines
    - 4. Insects for scientific research
    - 5. Insects for aesthetic value
  - Helpful
    - 1. Predators
    - 2. Parasitoids
    - 3. Pollinators
    - 4. Weed killers
    - 5. Scavengers

- Economically not important
What is a pest?

“Pest is an any organism whose population increases to such an extent as to cause economic loss to crops or a nuisance and health hazards to man and his live stock”

The word pest is derived from French ‘Peste’ and latin terms ‘pestis’ means plague or contagious disease.

The pest status of an insect spices may be determined by numbers of ways such as

- Increase in the number of insects,
- change is the type of damage inflicted on the crop,
- change in method of cultivation or harvesting,
- fluctuation in the market value of the crop etc.
Pests are organisms which impose burdens on human population by causing

(i) Injury to crop plants, forests and ornamentals
(ii) Annoyance, injury and death to humans and domesticated animals
(iii) Destruction or value depreciation of stored products.

Pests include insects, nematodes, mites, snails, slugs, etc. and vertebrates like rats, birds, etc.
Crop losses due to pests

Average 18% of the crop yield is lost due to pests.

Annual monetary loss in India is: Rs.60,000 Crores.
## Estimation of losses caused by insect pests to major agricultural crops in India

<table>
<thead>
<tr>
<th>Crop</th>
<th>Approx. estimated loss in yield</th>
<th>Hypothetical production (MT)</th>
<th>Value of loss in million Rs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
<td>Total (MT)</td>
<td></td>
</tr>
<tr>
<td>Cotton</td>
<td>30</td>
<td>18.9</td>
<td>62.9</td>
</tr>
<tr>
<td>Rice</td>
<td>25</td>
<td>32.2</td>
<td>128.9</td>
</tr>
<tr>
<td>Maize</td>
<td>20</td>
<td>4.8</td>
<td>23.8</td>
</tr>
<tr>
<td>Sugarcane</td>
<td>20</td>
<td>87.1</td>
<td>435.3</td>
</tr>
<tr>
<td>Rapeseed-mustard</td>
<td>20</td>
<td>1.5</td>
<td>7.3</td>
</tr>
<tr>
<td>Groundnut</td>
<td>15</td>
<td>1.6</td>
<td>10.8</td>
</tr>
<tr>
<td>Other oilseeds</td>
<td>15</td>
<td>2.6</td>
<td>17.3</td>
</tr>
<tr>
<td>Pulses</td>
<td>15</td>
<td>2.6</td>
<td>17.4</td>
</tr>
<tr>
<td>Course cereals</td>
<td>10</td>
<td>2.0</td>
<td>19.9</td>
</tr>
<tr>
<td>wheat</td>
<td>5</td>
<td>4.1</td>
<td>82.7</td>
</tr>
<tr>
<td>Total/average</td>
<td>17.5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Production and MSP fixed by GOI for 2007-08, are adopted from anonymous (2010)
HOW INSECTS BECOME PESTS? (Reasons for out break of Pest)

A. Destruction of forest or bringing forest area under cultivation

B. Destruction of natural enemies

C. Intensive and extensive cultivation of crops: Eg. Stem borers in rice and sugarcane.
D. Introduction of new crops and improved variations

Introduction of new crop may some as new host for the pest Eg: Sunflower and head borer

E. Improved agronomic practices

F. Introduction of new pest in new areas

G. Accidental introduction of foreign pest