

Crop pest

A pest be described as an organism, whether for or animals which cause economic damage to crop plants, livestock, man & his possessions. They attack crops & yield as well as in the store. They may harm crops directly or introduce disease to them.

Classification of crop pests

Pests are classified in different ways as follows:

1. Insect pest

2. Non-insect pests

Insect pests

These are the most serious pests of agriculture importance, & the group includes all insects which cause damage to crops & crop products. Some of insect pests are grass hoppers, locusts, beetles, white flies etc.

Non-insect pests

These are organisms other than insects which attack & feed on crops. They cause a lot of damage to crops though they are not as many as insect pests. Eg of non-insect pests include rodents like giant rats, grass cutter, monkeys, nematodes & birds.

Classification of insect pests Based on mouth part & mode of feeding

Insect pests are classified into different groups based

on their mouth parts & the mode of feeding - the group include:

- a) Biting & chewing insects
- b) Piercing & sucking insects
- c) Boring insects

a) Biting & chewing insects

This group of insects has mouth parts adapted for biting & chewing plant parts. Other parts of their mouth are labium & labrum. They consist of insect larvae or caterpillars as well as adult ones. Examples of insects with biting & chewing mouth parts are grasshoppers, crickets, locusts, etc.

b) Piercing & sucking insects

These insects have mouth parts that have been modified to pierce the tissues of plants & suck the contents of the part of the plants they attack. They have strong mouth part called proboscis which enables them to pierce through plants & suck liquid material (sap) from the plant tissues. Examples of piercing & sucking insects are cotton stainers, capsids, mirids, aphids, ~~scale~~ insects.

c) Boring insects

The insects in this group have mouth parts that are modified for boring into stems, fruits & seeds. Examples of boring insects include stem borers, maize weevils, rice weevils, bean weevils, palm weevils.

a) Pests of cereal crops

- i) Stem borers: These are pest that attack all cereal crops causing damages to their stems. Stem borer is a larvae of moth. It eats out the juices center of stem thereby damage the growing crops.
- ii) Army worm: These are caterpillars (larvae of insect of the Lepidoptera order) which eat the leaves & succulent shoots of crops causing mechanical damage to the plant.
- iii) Ear worms: These are larvae of insects which bore into the ears of maize thereby eating the fresh grains.

B) Pests of legumes

- i) Pod borers: They attack cowpea & other legumes with pods. The adult female which is nocturnal moth lays eggs on leaf buds, flower buds & flowers. These hatch into larvae which feed on the tender parts of the stem, flowers & the pods. The pupal stages takes place in the soil during which time molt into adults.
- ii) Aphids: These are small green or black flies which feed on crops by piercing & sucking plant thereby causing distortion & stunted growth. This is called parthenogenesis. The nymphs develop into wingless adult in about 15 days & later into winged male & female & migrate to other plants.
- iii) Leaf beetle: These are small beetles that eat the fresh leaves of cow pea & soyabeans.

C) Pests of Beverage crops

- i) Cocoa myrids / Capsids: These are piercing & sucking which attack young cocoa shoot & introduce toxic saliva into the sap.

D) Pest of Root & tuber crops

i) Yam beetle: These beetles feed on yam tubers, creating holes on them. The beetles are black in color & have their breeding areas around tuber holes.

ii) Cassava mealy bugs: These are tropical pests of cassava which was first observed in Nigeria 1979. The pest is a piercing & sucking insect which attacks young shoots.

iii) Cassava green spider mite: The mite is green in color at a young age, turning yellow later.

f) Pests of fibre crops

i) Cotton stainer: These are small reddish insects which attack the opening cotton bolls. They do it by sucking & feeding on unripe cotton seeds. The excreta passed out during the feeding stains the cotton lint, giving it yellow coloration. They also transmit viral diseases. They have some crops as alternative host & these include okra, maize & tomato.

ii) Boll worms: These are larvae of certain moths. They eat into succulent bolls & damage them.

f) Pest of fruits & vegetable

i) Thrips: These are very small slender insects with black to dark brown color. Both the nymphs & the adults feed by piercing into & sucking out the juice from the soft tissues of crops like tomato & onion.

ii) Variegated grasshoppers: These are biting & chewing insects whose adults & larvae eat up the leaves & stems of plant. The female lays eggs on the underside of leaves.

iii) Scale insects: They belong to the family of insects called hemiptera. They are piercing & sucking insects & attack crops such as cashew & citrus.

iv) Leaf rollers: They attack vegetables, causing rolling & withering of leaves.

1) Leaf beetles: They eat up the leaves & stems of vegetable crops such as pepper, okra & tomato.

G) Pest of stored produce

1) Weevils: They attack grains in the store. The adult of these weevils lay eggs in the grains, which are still growing in the field. After harvesting & the grains kept in the store, their larvae emerge & start to feed on the grain & by larvae.

2) Beetles: They attack legumes & tubers in the store. They eat up the leaves of plants, it is characterized by a pair of hard shell like front wing which covers & protect a pair of finer wings.

PREVENTIVE & CONTROL MEASURES OF CROP

PESTS

- They reduce the quality & yield of crops either in the field or in the store.
- They increase cost of production during the course of controlling them.
- Vegetables & fruits are rendered unattractive & unmarketable.
- Spots of injuries may predispose crops to disease attack.
- Crop pest can cause total death of crops.
- Insect pests destroy crops in the field through their biting, chewing, boring, sucking & deposition activities.

A) Physical method

This method involves physical removal of pests by means of,

1) Fencing around the farm with wire nets

2) setting traps to catch rodents & other animal pests

3) shooting rodents & other animal pests with gun

d) Hand-picking of insects & larvae

e) Use of scare crows to chase birds

B) Quarantine methods

When new crop varieties are introduced into the country, they are quarantined at the point of entry & screened for pest & disease.

C) Cultural method

i) Crop rotation

ii) Use of pest resistant varieties of crops

iii) Use of insect trap

iv) Burning of crop residues

v) Appropriate tillage operations such as ploughing, harrowing

vi) Timely planting of crops

vii) Hand picking & destruction of insects

viii) Timely harvesting

ix) Regular weeding

x) Farm sanitation practices

xi) Close season practices especially in cotton production

D) Biological method

This is the introduction of natural enemies of pests to control / keep the pest population under control. Such enemies may feed on the pest; hinder their feeding or their reproduction activities.

E) Chemical method

This is the use of chemical agents called pesticides to control pests of crop plants. Chemicals that are used to control pests are classified according to the pest they control.

i) Insecticides: Used for general control of insects like grasshoppers & termites

ii) Rodenticides: Used for general control of rodents like rats & giant rats

iii) Avicides: For general control of birds such as weaver birds

etc.

- Nematicides: For general control of nematodes
 - Ovicides - Used for general control of eggs of insects
 - Miticides - For general control of mites
- classification / forms of insecticides

Group	Mode of action
Powder	Contact with pest
Liquid	systematic poisoning i.e. inhalation
Granules / tablets	stomach poisoning
Gaseous	Respiratory poisoning by fumigation

side effect of various preventive & control measures

A. Physical control measures

- it is time consuming
- Not all pests can be picked by hand

B. Biological control measures

- they may feed on other beneficial organism
- they cause imbalance in the ecosystem.

C. Cultural control measures

- Bush burning may cause loss of organic matter from the soil
- Fire may spread to other farms
- Resistance varieties of crops may become adapted to the environment

D. chemical control measures

- some chemicals may be toxic to man & domestic animal
- some beneficial insects & soil organism may be destroyed in the process of chemical application
- continuous use of chemicals on pest leads to the development of resistance to the chemical