METHODS OF WEED CONTROL

These plants which have grown on their own often cause problems in the farms and for the farmers. Such plants which grow in this way are unwanted and are commonly called weeds or sometimes also called volunteer plant.

Definition of weeds

Weed is define as any plant which is not cultivated and is growing where it is not wanted, it can also be define as an unwanted plant.

CHARACTERISTICS OF WEEDS

1. Weeds grow very fast and cover the land area very quickly.
2. Many weeds are persistent.
3. Many weeds produce fruits and seeds which are easily carried and spread all over the place by humans, animals, wind and water.

Uses of weeds

1. Weeds like waterleaf can be useful as vegetable in our food.
2. Weeds are used as medicinal plants to prepare medicines to cure diseases of humans and livestock
3. Weed help to protect the soil from erosion by wind and water.
4. Weed helps to improve soil fertility, when their leaves decay in the soil to form humus.

5. Weeds can be used as mulching materials after planting.

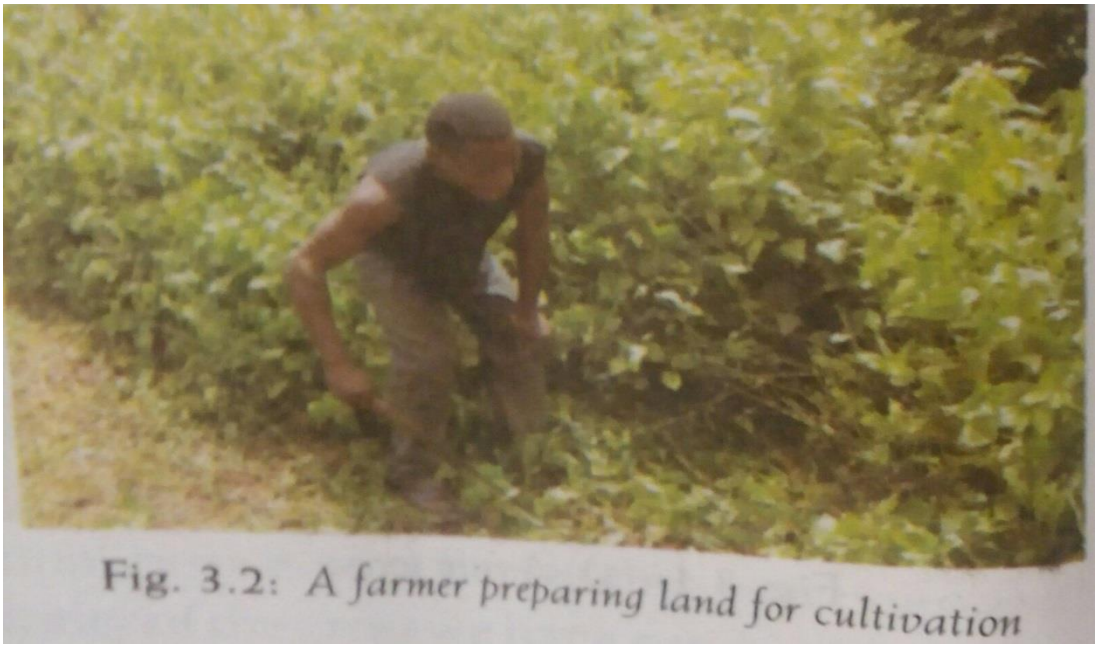

Fig. 3.2: A farmer preparing land for cultivation

Methods of weed control

There is many method s of controlling weeds but here we shall learn about some very common methods of weed control.

1. Hand weeding and hoeing

The most common method of controlling weeds is to pull them up by hand. The weeds are removed with all the roots i.e. they are uprooted. In addition, weeds can be removed with a short handle hoe or cutlass. This method is very useful for controlling weeds in small farms.

2. Use of machines

In large farms, it is difficult to control weeds by hand or with a hoe. Farmers who cultivate large farms therefore use machines called cultivators or weeders to remove the weeds quickly and efficiently.

3. Use of cropping systems (cultural control)

One methods of controlling weeds is to plant crops in such a way that weeds have very little chance of spreading. For example, the crop rotation system is very useful in preventing weeds from growing and spreading, so also the use of cover cropping.

4. Use of natural Enemies (biological control)

One common method of controlling weeds is to use insects which can eat up all the weeds in a farm. For example the water weed and water hyacinth, can be successfully controlled by spreading a beetle which feeds on the stems and leaves of the weeds**.**

5. Use of chemicals(chemical control)

Special chemicals have been produced which are poisonous to weeds and are used to kill them; these chemicals are called herbicides. Herbicides which prevent weeds from growing are called **pre-emergence herbicides,** while those which are applied after the weed plants have grown are called **post emergence herbicides.** Herbicides are usually applied to the soil or to weed plants with machines known as **sprayers**.

Effects of weed control methods on the Environment and vegetation.

Although herbicides are useful in controlling troublesome weeds, the various methods of weed control may affect the environment and vegetation in the following ways:

1. Herbicides are chemicals which are generally injurious to health and their use can be poisonous to human beings.
2. The non-selective herbicides can destroy all vegetation i.e both useful and unwanted plants.
3. Chemicals can be washed down into the water table and contaminate ground water. This will affect the organisms living in the groundwater as well as causes ground water and soil pollution
4. Herbicides can also contaminate pasture, thereby affecting the health of grazing animals by poisoning them to death.

TYPES OF WEEDS

We can however, classify weeds into two main types.

Annual weeds: These weeds which grow and complete their life cycle in one year. They produce large quantities of seeds which germinate and grow rapidly during the one year.

Perennial weeds: These are weeds which grow for more than one year. They have underground organs which enable them to continue growing from year to year.

SOME COMMON WEEDS FOUND IN NIGERIA

Common name	Scientific name
Guinea grass	Panicum maximum
Water leaf	Talinum triangulare
Bahama grass	Cynodon dactylon
Pigweed	Amarathus spinosus
Striga (witch weed)	Striga hermonthica
Goat weed	Ageratum conyzoides

PEST

A pest is an organism that lives on another without conferring any gain or advantage on its host. E.g mites, ticks, lices, fleas etc

CLASSIFICATION OF INSECT BASED ON THEIR MOUTH PART.

Insect pest can be classified based on mouth parts as thus;

i. **Piercing and Sucking Insects**: these insects have mouth parts with which they pierce and suck juice from the leaves, stems and fruits of plants. This type of mouth-part is called a 'proboscis'. Insects in this group include butterflies, moths, capsids, aphids, mealy bugs, scale insects, white flies etc.

ii. **Biting and Chewing Insects**: Insect larvae or caterpillars and some adult insects bite and feed on plant leaves

especially vegetables. Some of these are locusts, grasshoppers, crickets and biting beetles.

iii. **Boring Insects**: another type of insect that causes damage is the 'Boring beetle' whose larvae enters the crop stems and eat up their juicy centres. The stems become so weak that strong wind can break them. Examples of boring beetles are the palm weevil, the rhinoceros beetle of coconut palm and the stem borers of kola and coffee.

DESCRIPTION OF NATURE OF DAMAGE DONE BY CROP PESTS

The extent of damage done to crops by insects depends on the number of insect feeding on them. However, different types of insects causes different types of damage to crop plants

- **Damage by Piercing and Sucking Insects**: Piercing and sucking insects cause two types of damage to crops. First, by removing juice from plants, they reduce the food inside the attacked plants, thus making them weak. Some of the sap-sucking insects (bugs) inject poisons (toxins) into the plants after piercing through them. Such poisons kill the parts of the plant where they are dropped. The most common sap-sucking insects are 'capsids' e.g. *Sahlbergella singularis* (cocoa bark sucker), the cotton stainer (*Dysdercus spp*), aphids, mealy bugs, scale insects and white flies. The second damage done by the insects is that they allow the entry of disease organism such as viruses into the attacked plants when they pierce them.
- **Biting insects:** biting insects such as grasshoppers, feed on vegetables like Amaranthus caudalus (tete) and Corchorus

olitorius (ewedu). Attacked vegetables are sometimes totally defoliated (all leaves are eaten up). Since the leaves of vegetables are the valuable part of the plant to be sold, this may mean a total loss of income to the affected farmer.

- **Birds**: birds cause serious damage to fruits and high seed losses to rice, maize, sorghum and millet. Birds damage to rice crops leads to heavy grain losses in West Africa especially in the Gambia, Sierra Leone, Senegal, Guinea, Ghana, Liberia and Nigeria, especially in Northern Nigeria where more grain crops are grown.

EFFECTS OF CROP PESTS ON CROP YIELD

i. Insect attack accounts for about ten per cent of crop losses every year. Some crops suffer higher losses
ii. Crops such as Amaranthus spp which are grown for their leaves as vegetables, insect attack may lead to complete loss of leaves thus total loss of money to the farmer.
iii. Reduces the market values of crop plants e.g. tiny holes in beans caused by bean weevil, yam tubers damaged by rodents
iv. Rodents bite off the young seedlings of maize, rice and oil palms and thus kill them. Some dig up root crops and eat them.
v. Monkeys eat fruits and reduce the yield of fruit trees.

CONTROL OF CROP PESTS

i. By the use of appropriate insecticides
ii. Setting of traps to control rodents and monkey
iii. Use of scarecrow to control birds
iv. By handpicking the insects pest
v. Good farm sanitation

vi. By prompt early harvesting