

AGRICULTURAL SCIENCE

WEEDS AND CHARACTERISTICS OF WEEDS

A weed is a plant that grows where it is not wanted. A maize plant on a rice field is a weed.

So, weeds can be seen everywhere.

Common garden weeds

- i. Siam weed – *Eupatorium odoratum*
- ii. Goat weed – *Ageratum conyzoides*
- iii. Wild hemp/brown weed – *Sida acuta*
- iv. Stubborn grass – *Eleusine indica*
- v. Spear grass – *Imperata cylindrica*
- vi. Carpet grass – *Axonopus compressus*

Characteristics of weeds

1. Weeds are aggressive.
2. They produce many seeds and fruits.
3. Many weeds are persistent (continue to grow for years).
4. They have modified parts like leaves, roots which make them survive adverse/bad weather.
5. Most weeds have long period of viability.
6. Weeds seeds have structures that help their dispersal.

Effects of weeds on crop plants

1. Some weeds grow so tall that they prevent the sun from the main crop plants.
2. They compete with plants for space, moisture and nutrients.
3. Certain weeds produce chemical substances which are dangerous to crops.
4. Weeds harbour insects and other diseases organisms harmful to crop plants.
5. Weeds reduce the market values of crops by making the crop yields to have low quality. During harvesting of crops especially cereals, seeds of weeds may mix with grains and this will reduce the market values of crop yields.
6. Weeds reduce the value of pasture, for example bitter weeds add unwanted flavor to milk of grazing animals.

	IGBO NAME	ENGLISH NAME	BOTANICAL NAME
1.	Obachiri	Siam weed	Eupatorium adoratum
2.	Eghu eri okuku atu	Goat weed	Agoratum conyzoides
3	Oramejuna	African marigold	Aspiria africana

4.	ogbampara	Carpet grass	Axonopus compresus
5.	Obogwu	Sedge	Comelina nudiflora
6.	Achara ikpoko	Elephant grass	Pennisetum purpureum
7.	-----	Touch and die	Mimosa pudica
8.	Nwata aka ike	Wild hemp / broom weed	Sida acuta
9.	-----	Stubborn grass	Eleusine indica
10	Obute	Bahama	Cynodon dactylon

Uses of weeds

1. Some weeds are medicinal and used for treating certain diseases e.g., Aspiria Africana misteleteo for BP and Hepatitis, Siam weed for malaria.
2. Weeds provide food for livestock and man e.g., elephant grass, sedge, stylo, centro, calapo, goat weed, pig weed etc.
3. Some weeds are used to control erosion e.g., carpet grass, Bahama etc.
4. Weeds are used to prepare organic manure, for instance, preparation of compost manure by mixing weeds with ash, animal dungs, etc.
5. Weeds are used in mulching to conserve soil water and also control weeds.
6. Some weeds are legumes which help to improve soil fertility by adding nutrients through nitrogen fixation.

Methods of weed control

The common methods of controlling weeds are mechanical method, biological method, cultural method and chemical method.

1. **Mechanical method of weed control:** this involves the use of machines in removing or controlling weeds.
 - a. **Use of machines and tillage operations:** cultivators and weeders, mowers are used to weed on large farm areas likewise plough and harrow which help to bury and expose weeds.
 - b. **Mowing:** Weeds are not removed from their roots. This is done using mowers to prevent seed germination.
2. **Cultural method: of weed control**

Mulching, burning, hoeing, flooding, tillage operators are involved.

Mulching: it involves covering the surface of the soil using mulching materials to prevent weed seed germination and emergence.

Hoeing: this is using small hoe to remove weeds from their roots and expose them to sunlight.

Burning: a farm land can be burnt before clearing bush or after clearing. Weeds can be burnt after hoeing or mowing.

3. Biological method of weed control.

This involves using plants and animals to remove weeds. Natural enemies like insects, parasites and fungi are used to control weeds and it is the cheapest method. Grazing animals like cattle, goats, etc, are allowed to graze on areas or farm that contain tree crops or on fallow land, thereby removing weeds.

Cover crops like melon, sweet potatoes, etc, help to suppress weed emergence and growth when covering the soil surface very well.

4. Chemical method of weed control

This applies chemicals called herbicides to destroy weeds. There are two types of herbicides such as contact/non-selective herbicide and selective herbicides.

a. **Contact/non-selective herbicide:** these herbicides destroy both the weed and crop plants so they should be applied before planting or before seed germination. Examples are lead arsenates (2,4,5,T).

b. **Selective herbicides:** These kills only weeds e.g., atrazine, potassium cyanate and hormone weed killer. They are applied after seed germination.

Legislative or Administrative Method

This is using quarantine service to avoid introduction of unknown or foreign weeds. Quarantine involves keeping newly brought crop items separate and examine them for some weeks to see if they are free from weeds.

Effects of weed control methods on the environment.

1. Pollution of soil and ground water. Some herbicides pollute both soil and water causing poor growth of crops and make water from wells or boreholes to be harmful to both man and livestock.
2. Contamination of livestock pasture which can cause ill health and death of animals.
3. Destruction of vegetation through burning, this destroys trees, weeds and even soil organisms.
4. Soil becomes liable to erosion which destroys some farmlands.
5. Soil organisms like earthworms, insects, nematodes are destroyed.
6. Burning destroys organic matter that add nutrients to the soil and improves soil structure.

CROP PESTS

A pest is any animal or organism which can cause damage to crops or animals. Many group of animals like insects, birds, mammals, rodents, attack farm crops or animals either in the field or in the store, but insects cause the greatest damage to crops.

Classification of insect pests based on mouth parts

1. Piercing and sucking insects
2. Biting and chewing insects
3. Boring insects

Piercing and sucking insects: these insects have their mouth parts adapted to piercing and sucking. Their mandibles and muscular form piercing stylets used by the insects to pierce and suck juice from plants. Examples are cotton strainer, white flies, butterflies, mealybug, capsid.

Biting and chewing insects: their mouth part is made for biting and chewing plants and have a set of hard biting jaw called **maxillia**, and second pair of jaw called **maxillia**, and upper and lower lip used for chewing leaves flowers etc. Examples of biting and chewing insects are beetles, moths, grasshoppers, crickets, termites, locusts, etc.

Boring insects: Their mouth parts look like stylets but with a tip showing mandibles used to bore into plants or grains and stored seeds. Examples of boring insects are palm weevil, rhinoceros beetle or coconut palm, stem borers of kola and coffee.

Non Insect Pest

They are:

- i. **rodents** e.g., rat, squirrels, glasscutters, rabbits etc.
- ii. **Birds:** fowls, ducks, etc.
- iii. **Mammals:** goat, sheep, rat, cattle, pig.
- iv. **Nematodes** and snails: nematodes are specie of worms in the soil which enter the roots of crops like tomatoes, okra, etc. They cause swellings on plant roots called knots.