

LESSON FOR WEEK THREE (3) ENDING 26TH SEPT, 2025.

SUBJECT: AGRICULTURAL SCIENCE.

TOPIC: CROP PROPAGATION

CLASS JSS2

DATE: 22nd SEPTEMBER, 2025

Meaning of crop propagation

Crop propagation is the process of producing new crop plant from the parent ones. The two methods of crop propagation are: (a) sexual propagation. (b) asexual propagation.

- a. **SEXUAL PROPAGATION:** This is the production of new crops or plant through the seeds. The new plant produced through sexual propagation is unique and its genetic traits will not be exactly the same as those of either parent. Maize, cowpea, rice, millet, rubber, coffee, tobacco etc. are example of some of the crops. In order that seeds germinate into healthy crops the seeds planted should:(i) mature and well filled. (ii) free from insect and diseases; (iii) healthy; and iv highly viable. Seeds also germinate properly when they have adequate moisture, oxygen (from the air), and the right temperature.

ADVANTAGES OF SEXUAL PROPAGATION.

1. Seeds are light and can easily be packed and transported.
2. Seeds are relatively cheap.
3. Seeds are easy to procure.
4. Seeds are easy to store.
5. Seeds remain more viable for a long time.

DISADVANTAGES OF SEXUAL PROPAGATION.

1. Growth is slow.
2. Seedless crops cannot be propagated.
3. Crops are poorly adapted
4. Crops are not uniformly established as fast as possible
5. Seeds do not germinate easily due to dormancy.

- b. **ASEXUAL OR VEGETATIVE PROPAGATION:** This is a method in which a plant or crop can be propagated through its vegetative parts but not through the seeds. The vegetative parts include the stem, leaves, and roots. Asexual or vegetative propagation can be divided into four groups namely:
 - a) Division (b) cuttings (c) layering (d) grafting and budding.

DIVISION: Division is the propagation of plants from special vegetative organs that separate naturally from the parent plant. Such organs include;

- i. Rhizomes - example is ginger;
- ii. Suckers - examples are banana and plantain;
- iii. Stem tuber – an example is yam;
- iv. Bulb – an example is onion;
- v. Corms – an example is cocoyam.

CUTTINGS: Cuttings are plant parts that have been cut into portions in order to produce new plants from them. Cuttings can be obtained from stems, leaves and roots of plants and are used to propagate plants. For example, **stem cuttings** are used to propagate cassava, sweet potatoes and sugar cane while **root cuttings** are used to propagate bread fruit. **Leaf cuttings** are used to propagate bryophyllum. Generally, cuttings are used to propagate plants that do not produce seeds.

Precautions to be taken during cutting.

1. Cut from a mature stem.
2. Make sure that cutting has axillary buds.
3. Use a sharp cutlass for cutting.

LAYERING: Layering is a method of vegetative propagation in which the stem or branches of plants are made to develop roots while they are still attached to the parent plant. To do this, a small cut is made on the bark of a selected stem. The stem is then buried and pegged. When the stem develops strong roots, it is cut from the parent plant and grows to become a new plant.

Grafting and budding.

Grafting is a method of vegetative propagation in which cut surfaces of two different plants are joined together so that they unite and grow as a single plant. The lower part of the union is called the root stock and the upper part is called the scion. To unite the two plants, their cut surfaces are tied together using tape, raffia or rubber band. The plant is then watered regularly. When the union is fully established, branches below the scion are removed to ensure that the scion grows properly.

PRECAUTIONS TAKEN DURING GRAFTING.

1. Be careful not to damage the cambium of the scion and stock.
2. Choose scion and stock of almost the same size and relation.
3. All side shoots below the scion and stock must be cut off.
4. The tape should be tied from below upwards to prevent damage to the grafted site by rain.

BUDDING: Budding is similar to grafting. However, in budding, the scion usually has only one bud. Budding is done at the beginning of the rainy season. Budding involves removing a bud from a plant with a desirable characteristic. The bud removed should have a piece of bark attached to it. The removed bud is then inserted into a cut already made in another plant called the stock. The inserted bud is then firmly held in position by tying with rope, raffia or rubber band and sealed with wax to prevent pathogen from attacking it. After 21 days, when the union has established and new shoot has developed, the area of the stock above the bud is cut and covered with tar or paint. Examples of crops propagated by budding include oranges, rubber and cocoa.

ADVANTAGES OF ASEXUAL PROPAGATION.

1. Plants are true to type and uniform in quality, growth and yield.
2. Plants mature and start bearing fruits early.
3. Plants bear fruits at the same time.
4. Seedless crops can be propagated.
5. They are more resistant to diseases and pest.

DISADVANTAGES OF ASEXUAL OR VEGETATIVE PROPAGATION.

1. Budding and grafting require special skills.
2. It is not possible to produce new varieties of crops.
3. Vegetative materials are bulky; hence they are difficult to transport.
4. Vegetative parts cannot be stored for a long time. Etc.

EVALUATION

1. What is sexual propagation.
2. What is asexual propagation
3. What is the difference between grafting and budding?
4. List the types of types of asexual propagation

ASSIGNMENT

1. The propagation that is done by the use of seed is called ____ propagation. A. asexual. B. sexual. C. seed. D. layering.
2. Division is the use of _____. A. yam. B. stem. C. leaf. D. root.
3. The use of vegetative part to plant is called _____ propagation. A. asexual. B. sexual. C. yam. D. stem.
4. Cocoyam is planted with _____. A. bulb. b. corm. C. stem. D. leaf.
5. In grafting, the upper part of the union is known as? A. stock. B. graft. C. scion. D. sucker.
6. State three conditions necessary for seed germination.
7. Give three advantage sexual propagation.
8. What are the steps that s involved in layering?