

SUBJECT: AGRICULTURAL SCIENCE

CLASS: J SS 2

WEEK: 3

TOPIC: CROP PROPAGATION

CROP PROPAGATION

Propagation simply means reproduction. Propagation is the process which plants start to grow from the parent plant, to produce new plants.

METHODS OF PROPAGATION

There are two types of propagations; these are sexual and asexual /vegetative propagation.

SEXUAL PROPAGATION: Sexual propagation involves planting crops using seeds. Seeds can be planted directly in the field or first in the nursery are oil palm, cocoa; coconut etc. common crops that propagate sexually are cowpea, maize, rice, groundnut etc.

A seed when planted undergoes the following processes.

- (1) Germination: the process whereby the embryo of a seed resume growth under favorable conditions.
- (2) Emergence: this refers to the appearance of a seedling above soil level.

CONDITIONS NECESSARY FOR GERMINATION OF SEEDS ARE;

- (1) Adequate moisture
- (2) Viable seeds(living embryo)
- (3) Optimum temperature
- (4) Adequate air

ADVANTAGES OF SEXUAL PROPAGATION

- (1) Seeds are cheap to obtain
- (2) They are convenient to handle
- (3) The seeds are portable
- (4) They are easy to store
- (5) They are easy and cheap to transport
- (6) Seeds can be stored for longer periods
- (7) Crops population can easily be obtained through the use of seeds.

DISADVANTAGES OF SEXUAL PROPAGATION

- (1) Some seeds produce plants that do not resemble plant

- (2) Some seeds produce parent plants
- (3) Some seeds produce low yield during the first year
- (4) Plants grow from ,maturity and yield
- (5) Plants grown from seeds take a long time to mature and produce fruits.

ASEXUAL PROPAGATION

Asexual propagation is the production of new plants from the parent using vegetative parts .the vegetative parts include the stem, leaves, and roots .asexual propagation is also called vegetative propagation. Plants that need to be propagated asexually possess the following characteristic;

- (1)They do not produce seeds e.g pin apple
- (2) They produce seeds but are not viable for planting e.g banana
- (3) They take many years to mature and are easier to propagate via vegetative means e.g cocoa

Asexual propagation can be divided into five, namely

- (1) Division
- (2) Cutting
- (3) Layering
- (4) Grafting
- (5) Budding.

DIVISION

It is the propagation of plants from special vegetative organs that separates naturally from the parent plant. Such as;

- (1) Rhizomes e.g ginger
- (2) Suckers e.g banana and plantain
- (3) Bulb e.g onions
- (4) Corm e.g cocoyam

CUTTINGS

Plants parts cut into portions 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;

*stems cutting is used to propagate cassava, sweet potato, and sugarcane.

*Roots cutting is used to propagate breadfruit

*Leaf cuttings are used to propagate Bryophyllum.

LAYERING

It is a method of vegetative propagation in which the stem or branches of plants are made to develop roots and give rise to another plant while they are still attached to the parent plants.

GRAFTING

It is a method of vegetative propagation in which cut surfaces of two different (but closely related) plants are joined together so that they unite and grow as a single plant. The lower part of this union is called the stock while the top is called the scion.

BUDDING

It is similar to grafting. Budding involves 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 stock. The inserted bud is called the scion.

ADVANTAGES OF ASEXUAL PROPAGATION

- (1) Plants are true to type, uniform in quality, growth habit and yield.
- (2) There is uniformity at maturity
- (3) Is the only way to propagate plants that do not produce seeds
- (4) Plants mature and start bearing fruits early

DISADVANTAGES OF ASEXUAL PROPAGATION

- (1) Plants are usually very vigorous and therefore do not live long enough
- (2) It is not possible to produce new varieties of plants
- (3) Budding and grafting requires special skills
- (4) Virus disease can be transmitted to new plants.

ASSIGNMENT

- (1) What is propagation?
- (2) List four types of vegetative propagation.
- (3) Explain budding, layering, and grafting.