

Name: Olarewaju Wasiu

Matric Number: 170521068

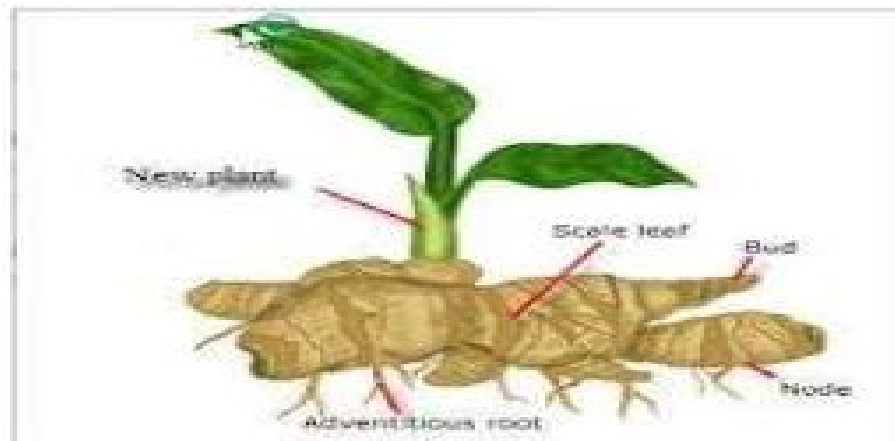
Department: Botany

Course Title: Botanical techniques (BOT 204)

LECTURER: Dr. Arowosegbe

VEGETATIVE PROPAGATION

- Vegetative propagation also called as asexual propagation.
- Vegetative propagation uses several of the plant parts for reproducing the plant asexually.



Uses of Vegetative Propagation

- Vegetative propagation is used to get the similar genetic background of mother plants.
- Good skill, knowledge and experience aids in vegetative propagation of plants in large scale.
- Vegetative Propagation is widely used in horticultural crops nurseries.

ADVANTAGES

- Mass production of plants using plant parts of mother parent.
- No seed is required to multiply varieties having desired quantitative and qualitative traits.
- Useful technique in production of plants which are difficult to propagate using seed.

Types of Vegetative Propagation

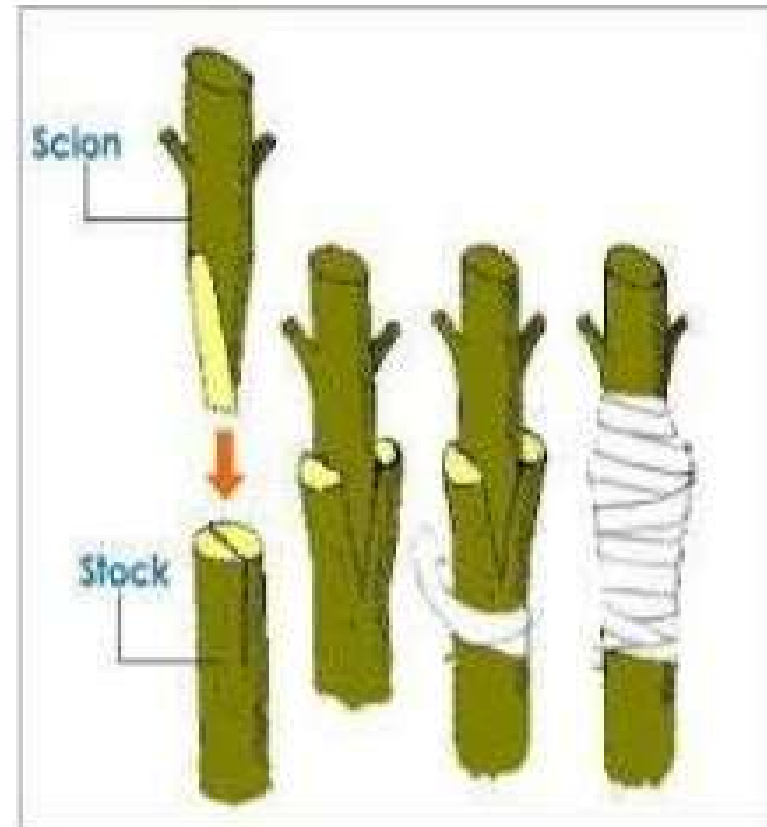
- **Cuttings**
- **Layering**
- **Grafting**

CUTTINGS

- One of the easiest way of plant propagation is by using cutting from various parts of plants such as:
- Stem cuttings
- Root cuttings
- Leaf cuttings

STEM CUTTINGS

- Stem cutting from healthy, disease-free plants, preferably from the upper part of the plants.
- Cutting should generally consist of the current or past season's growth.
- Remove any flowers and flower buds when preparing cutting.



ROOT CUTTINGS

- Root cutting is one of the most reliable and economical ways.
- Large fleshy root, the thicker the better.
- The best way to keep track of “up” and “down” is to make a flat cut on top “up” side, and a slanted cut on “down” or bottom side.
- Water the plants to settle the roots back into soil properly.



LEAF CUTTINGS

- Leaf cuttings are prepared from leaves with or without their stalk (petioles).
- Leaf section cutting can be used for propagating plants.
- Leaf cutting consist of a single leaf attached to a piece of 1 to ½ inch stem.
- The dominant bud, located where the leaf stalk joins the stem will give rise to a new shoot and braches.



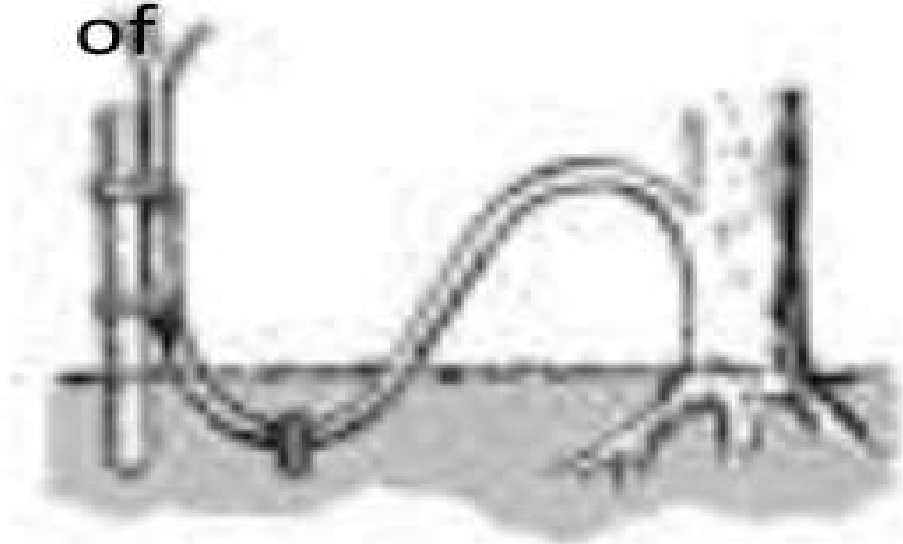
LAYERING

- **Layering** is a means of plant propagation in which a portion of an aerial stem grows roots while still attached to the parent plant and then detaches as an independent plant.
- Layering has evolved as a common means of vegetative propagation of numerous species in natural environments.
- Layering is also utilized by horticulturists to propagate desirable plants.
- Natural layering typically occurs when a branch touches the ground, whereupon it produces adventitious root.

TYPES OF LAYERING

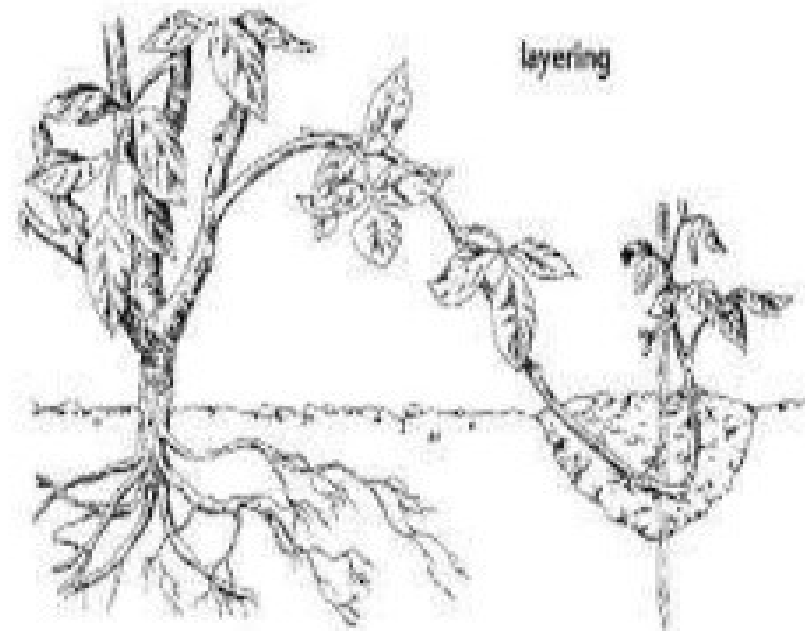
Some of the most common method of layering are:-

- Ground layering
- Air layering



GROUND LAYERING

- Ground layering or mound layering is the typical propagation technique.
- The original plants are set in the ground with the stem nearly horizontal, which forces side buds to grow upward.
- After these are started, the original stem is buried up to some distance from the tip.
- At the end of the growing season, the side branches will have rooted, and can be separated while the plant is dormant.
- Some of these will be used for grafting rootsstock.



AIR LAYERING

- In **air layering** (or marcotting), the target region is wounded, or a strip of bark is removed.
- Rooting hormone is often applied to encourage the wounded region to grow roots.
- When sufficient roots have grown from the wound, the stem from the parent plant is removed and planted.
- It can take the layer from a few weeks to one or more growing seasons to produce sufficient roots.

E.g.: Air layering of *Limonium dendroides*



GRAFTING

- Grafting or Graf tage is a horticultural technique where by tissue from one plant are inserted into those another.
- The technique is most commonly used asexually propagation of commercially grown plants.

Eg:- mango tree(Malgoa)

TYPES OF GRAFTING

- Some of the most common method of grafting are the following:-
- Splice or whip grafting
- Whip and tongue grafting
- Approach grafting

SPLICE OR WHIP GRAFTING

- It is a very simple popular and easy to perform method of grafting for small materials .
- It is usually done when the sap has started to rise before the bud break.

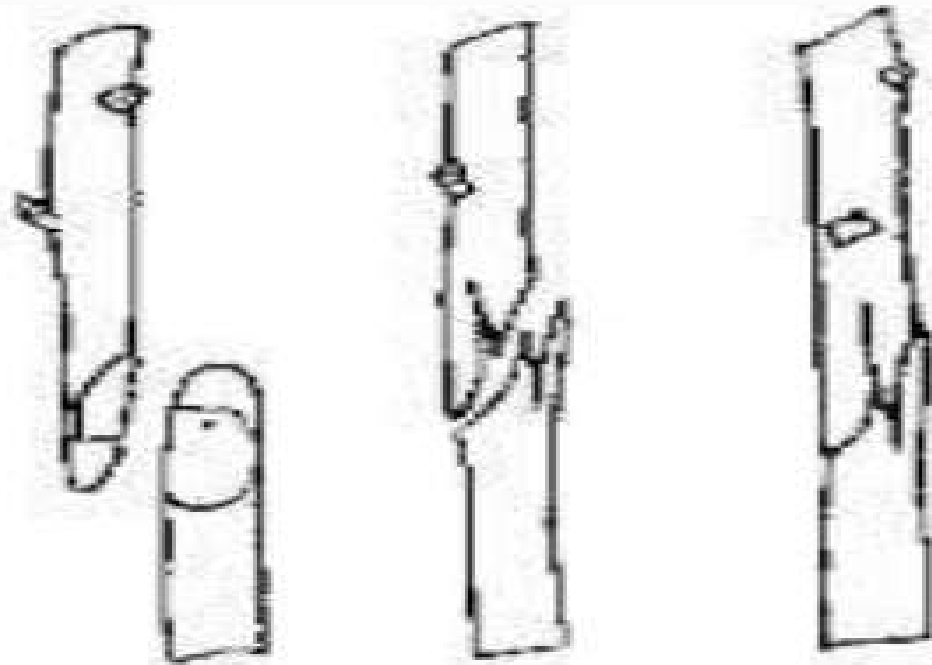


FIGURE 2

WHIP AND TONGUE GRAFTING

- It is similar to splice grafting except that a tongue is added to the cut surface to provide better fitting and rigidity.
- It has the highest rate of success as it offers the most cambium contact between the two species
- E.g.: Common in fruit trees like- Bramley Apple



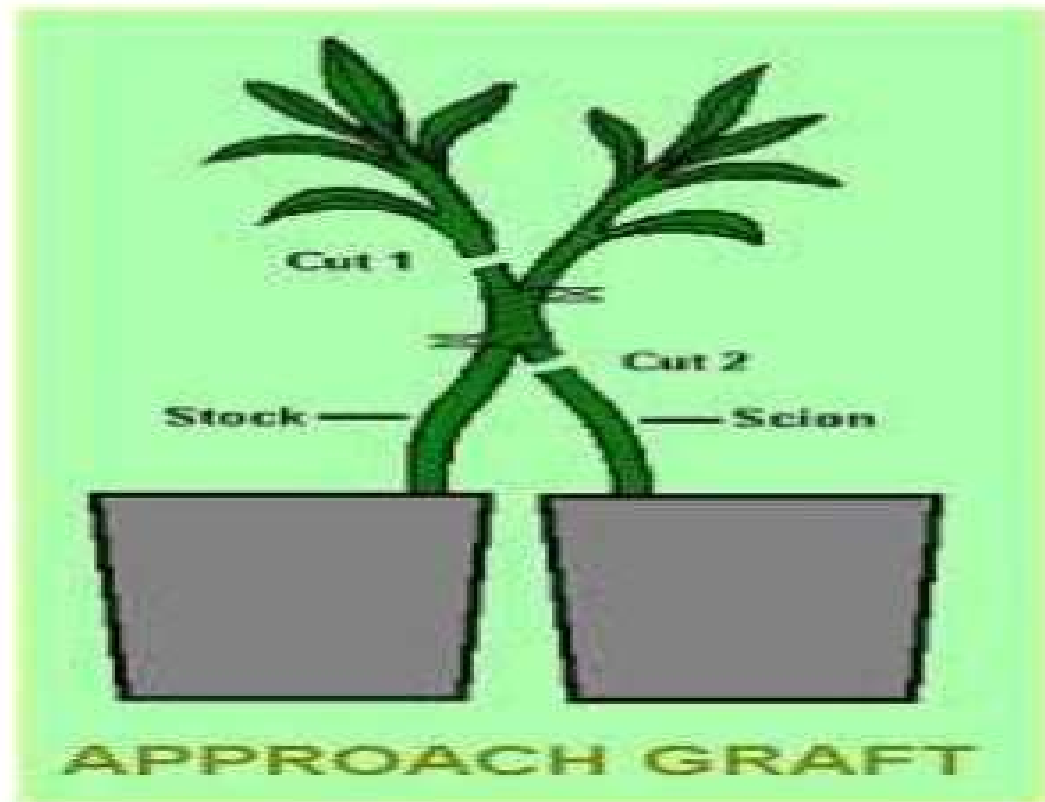
APPROACH GRAFTING

➤ Approach grafting or inarching is used to join together plants that are otherwise difficult to join.

➤ It is used in pleaching.

➤ The graft can be successfully accomplished any time of year.

➤ Eg:- Mango- Malgoa, Guava.



CONCLUSION

Asexual reproduction is the vegetative reproduction in which new organism develop from the parent organisms by simple division. Budding, fragmentation, mitosis, regeneration, vegetative propagation are all the types of asexual reproduction. In this type of reproduction the produced organism and the parent organisms are exactly alike. Thus asexual reproduction doesn't contribute into evolution as it does not cause variation. But still it's important for the growth of the organisms. The section examine the benefits of modern day agriculture a task made necessary by the fact that an increasing share of the population has little connection to farms or rural areas. It is important to recognize all the techniques in our life experiences.