

Kingdom of Saudi Arabia

Minstry of Eduction

General Admistration Al-baha

Scientfc Actvity

Al Mandaq Education Office

Al-afous Secondary School

Recent Modifications to Vegetative Propagation And Their Impact on The Environment

Made by: Anas Ali Ahirani

Supervisor :-

Abdullah Mohammed Al - zahrani

Commander :-

 Jamaan Yahya Al-Lahhi

General Supervisor :-

Ahmed Saeed Al-Baidani

First grade secondary

Definition of vegetative propagation- What is vegetative  propagation?

Vegetative propagation is an asexual method of plant reproduction  that occurs in its leaves, roots, and legs. This can happen through  fragmentation and regeneration of specific plant parts.

New plants can be produced from plant parts such as roots, stems, and leaves. This type of reproduction is known as vegetative  propagation.

Vegetative propagation is the use of plant structures, such as leg,  root, and leaves.

Trunk, roots, and leaves - can contain buds or grow buds. Roots and  stems can be used for the development of new individuals.

Benefits in the breeding of many commercial crops.

Vegetative propagation Features:

Many crops that are reproduced from seeds taken from springs do  not resemble the mother plants that produced them.

Some valuable plants, which do not produce seeds, can successfully  reproduce using plant methods.

Some plants can produce seeds that are difficult to sow.

Plants that are vegetal reproduced are sometimes more resistant to  disease and can be used in reproduction.

The method of reproduction is very economical.

It is easy to deploy valuable varieties.

This helps to reduce or eliminate long juvenile periods in bushes and  trees.

Types of vegetative propagation:

Plant reproduction depends on human participation. Humans have  the ability to control plant growth. Before we can distinguish  between vegetative propagation and its species, it is important to  understand the two main ways in which the plant can multiply  sexually: natural and artificial.

Natural Vegetative propagation:

Epiphyllous Bud

Scaly lamps

Corms

Tuberculosis

Layer Party

Root buds

Artificial Vegetative propagation:

Cutting

Vaccination

Layers

Tissue transplant

Natural Vegetative propagation Methods/Techniques:  1- Lamps

Monocot plants use these lamps for reproduction and storage.

A specialized member consisting of a fat short base trunk with a  growth point at its top and surrounded by thick skin.

External standards are fat and contain preserved foodstuffs. The  interior parts resemble leaves, protect the growth point.

Scales axes are the best places to grow small follicles called bulbs. Bulbs forming above the ground are known as bulbs.

The beginning of the growth period - form the occasional roots - below the base plate. For example: Lilise, onion, Garlic, etc.

2- Corm

The corm is an underground stalk in the form of a bulb larger than  the rest.

These plant structures are surrounded by leafy foliage and store  nutrients in fat and solid stem tissue.

Worms are often confused with lamps because of their physical  appearance. Crimea contains solid tissue, while the follicles contain  only layers of leaves.

Crimea is able to produce occasional roots and has shoots that can  develop into new plant shoots.

Saffron, taro, and taro are only a few plants that grow from worms.  3- Tuberculosis

Tubers can be plant organs made of roots or stems.

Stem tubers are formed by runners or roots that have become  bloated due to the storage of nutrients.

The upper surface of the tubers is responsible for a new release  system (stems and leaves) while its lower surface forms a radical  system.

Stem tubers include potatoes and potatoes.

Root tubers consist of modified roots to store nutrients. These roots  may become larger and lead to the emergence of new plants.

Root tubers include sweet potatoes and dahlias.

Roots:

The development of roots may allow the spread of vegetation.

Roots are modified stems that grow horizontally on or under the  ground.

Roots are places that resemble protein growth materials and can  store starches.

Roots can expand and produce roots and shoots. These may evolve  into new plants.

This is how some herbs, lilies, and iris multiply.

Edible plant roots are ginger and turmeric.

Tuberculosis roots 5

Some perennials produce thick tuberculosis roots.

Highlight the internal and external characteristics of atypical roots. , internodes and leg tuberculosis are different from each other.

The crown is where the shoots are made, and the corresponding end  is where the new roots are. For example: sweet potatoes, dahlia, etc. Plants .6

Plants are plant structures made of plant leaves.

These small plants consist of Mar stem fabric located on the margins  of leaves.

Plants become roots when they reach maturity and then drop their  leaves.

Roots take root in the soil and form new plants.

Kalanchoe is an example of such a plant.

Some plants, such as spider plants, may produce runners that can be  used in plant cultivation.

**Artificial Vegetative Propagation**

This is a type of vegetative reproduction conducted by humans in the  fields and laboratories. The most common types of vegetative  reproduction occurring artificially include:

Vegetable Breeding Pieces

Part of the leg, root or leaf is removed from the mother plant and  placed in favorable conditions to encourage the growth of roots and  shoots. This creates a new independent plant identical to the mother  plant.

Sometimes, clippers are treated with hormones to stimulate root  growth.

The most important way to abound ornamental and evergreen  bushes and fruits or vegetable crops.

Widely used commercially in greenhouse spread.

You can start many new factories in a small space with very few stock  plants.

It's simple, inexpensive and fast.

There is no problem with compatibility with root stock or poor union. No difference leads to greater uniformity.

Mother plant reproduces perfectly without any genetic changes. Selection of appropriate material

Choose disease-free plants capable of moderately strong growth.

Stock plants should not be damaged by frost, dehydration or falling  leaves due to insects. They should also be protected against growth  Stocks must be .stops caused by excessive fruit or mineral shortages homogeneous, like species, free of pathogens, and grow in the right  nutritional conditions (do not starve).

Cutting Vegetative propagation Methods:

Solid Wood Clippers

There are two types of solid wood clippers: those taken from fallen  trees (such as grapes, apples, and plums), and those taken from

evergreen trees (such as olives and granadillas). After the leaves fall,  solid wood clippers can be taken from fallen trees in winter.

Simple scraps.

This is a simple way to remove 4-6 shots from the leg. The upper part of the torso is removed at an angle.

If the pieces are made of evergreen plants, you must remove the  bottom two sheets and plant them immediately.

Buds will then grow from shoots above soil, roots from soil knots. This method is commonly used in fox grapes, quince, figs, and olives. Ripped scraps.

This is done at the bottom of the leg where it meets the mother  plant.

This technique is very old and rarely used today.

Cutting Hammer

This is where a piece of twig and leg is tied.

Fox grape clippers are a hard plant to root, so the extra piece of twig  is useful in developing root systems.

Half-wooden clippers

These clippers are usually made from evergreen wooden plants  taken during the growing season.

They are removed before the wood turns brown and hardens. Paper shoot head is where the mind can be taken.

Closed reproduction systems are best for rooting the mind.

Once the clippers prove their root systems, each one can be planted  in a larger container.

This breeding method is used to produce coffee, kiwi, pomegranate,  macadamia, mango, granadilla, and lychee plants.

Batons

Batons can be described as branches with the same arm thickness. They can be used to grow new plants.

It is about 170-180 cm long.

The stick can be saved by cutting the top of each branch at an angle.

To create a solid layer on the severed end of the stick before planting  it, you should keep it under shade for a few more days.

The stick may not be rooted if the cutting end is not covered by the  solid layer. The stick should be planted in a hole 60 cm deep.

This method works best at the end of the period of stillness when the  plant is still growing slowly.

This can be used for most trees that drip the white sap after being  cut down.

Root clippers

You

should take the root mind at a distance of one meter from the tree  trunk.

These

clippers should be 20-25 cm long and 1-1 cm thick.

These

clippers should be placed horizontally in the soil, about 10 cm below  the surface. Then they shoot

This

method is used to proliferate guava, blackberries, berries, and bread  fruit.

Vegetable multiplication by grafting buds or sprouts. .

Bud is the most common way to breed plants in commercial  nurseries. First, you must attach one bud to the root leg. The trunk or

branch diameter shall not exceed 2cm. This method does not apply  to small root plants or small branches of large plants. Use sprout  wood, sprout sticks or sprout sticks found in the current strong  growing season for the best results. The upper and lower parts of the  branch must be removed. If the peripheral buds have not yet  matured, the bottom shoots may have a set of shoots. These buds  can also be too weak to be donated. The stick is about 30 cm long.  Leave the marketplaces of leaves about 1-1.5 cm long on the leg  after removing the leaves.

The bud is when the bark starts peeling off the broth. Bark can slip by  watering a few days before sprouting. Sprouts should be grafted into  the root neck or in a higher area of the plant. Sprouts should be  made at least 15-20 cm above the root neck to avoid the descendant  from rooting in the soil. The method of grafting sprouts can be used  in two different times. This can be done at the beginning of the  growing season. This is a risky time for grafting shoots. The new  imaging may not be strong enough to withstand freezing  temperatures during winter. Lethargy is another option. The bud will  be asleep from then on. When growth begins, the upper growth  must be removed by cutting the slope 5-7mm above the shoots.  Every growth, except the buds introduced, must be removed every  week.

**Cutting**

In this, a part of a plant, specifically a stem or leaf is cut and planted  in the soil. These cuttings are sometimes treated with hormones to  induce root development. The new plant is formed from the  adventitious roots developing from the cutting.

**Grafting**

In this, the cutting from some other plant is attached to the stem of a  plant rooted in the ground. The tissues of the graft become

integrated with the tissues of the rooted plant and develop as a  single plant over time.

**Layering**

In this, the stem of the plant is bent to the ground and covered with  soil. Adventitious roots emerge from the plant parts covered with  the soil. This attached stem with developing roots is known as a  layer.

**Tissue Culture**

In this, the plant cells from different parts of a plant are cultured in  the laboratory to develop a new plant. This technique is helpful in  increasing the number of rare and endangered plant species that are  unable to grow under natural conditions.

**Advantages of Vegetative propagation**

The advantages of vegetative propagation include:

• Vegetative propagation helps to produce many plants with  desirable traits of economic value.

• It also helps to maintain consistency in the taste and quality  of plants or crops for sale.

• As the plant matures within a short duration of time, this  method helps to save time and money.

**Disadvantages of vegetative propagation**

Although vegetative propagation is very useful, it has many  disadvantages as well, which include:

• Vegetative propagation does not allow any degree of  biodiversity.

• Plants produced from vegetative propagation are more  short-lived than plants produced via seed propagation.

• As propagation is a skilled technique, more expertise is  required to perform it, which leads to an increase in  expenses.

• If a particular plant is susceptible to disease, then there is a  chance of losing entire crops.

**Reference**

• Basic techniques for propagating plants. The Connecticut  Agricultural Experiment Station. Retrieved on 10th August  2022, from https://portal.ct.gov/CAES/Fact-Sheets/Plant Pathology/Basic-Techniques-for-Propagating-Plants

• Vegetative plant propagation. Science Learning Hub.  Retrieved on 9th August 2022,

from https://www.sciencelearn.org.nz/resources/1662- vegetative-plant-propagation

• Bijus classes Vegetative Propagation - Definition, Types and  Examples (byjus.com)

• Biology https://biologea.com