UNIT 2 TOPIC 2

Propagating and Growing Plants Pupil Notes

Propagation is a method of producing plants which are **genetically identical to the parent plant.** This can be **natural (vegetative)** or **artificial**.

Propagation is an example of **asexual** reproduction. Asexual reproduction is the production of new plants **without forming seeds** and involves **only one** parent.

Asexual vs Sexual Reproduction

Asexual reproduction	Sexual reproduction
One parent	Two parents
No sex cells needed	Sex cells produced
No pollination or fertilisation	Pollination and fertilisation needed

Some advantages and disadvantages of sexual and asexual reproduction are shown below:

ADVANTAGES

Asexual	Sexual
Early quick growth in Spring due to food stores.	Variation may give characteristics which help survival in changing environments
More plants survive Due to offspring growing close to parent plant	Seed dispersal prevents overcrowding

DISADVANTAGES

Asexual	Sexual
Identical offspring therefore any weakness passed on.	Quick growth not possible
Overcrowding.	Stages of germination and pollination make growth into new plant less certain.

Clones

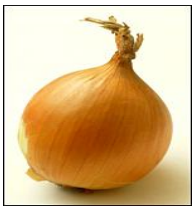
A clone is an organism, reproduced asexually, which is **genetically identical** to its parent.

Natural (Vegetative) Propagation

Natural Asexual Reproduction

1. BULBS (e.g. daffodil, crocus, onion)





- Leaf bases are swollen with stored food
- Side buds are found between leaf bases
- Side buds can develop into daughter bulbs

2. TUBERS (e.g. potato)

- Swollen stem or root with stored food.
- Tuber can grow into new plant.
- Advantage of stored food is early growth in spring.

3. PLANTLETS (e.g. Mexican hat plant)

- A plantlet is a tiny version of a plant attached to somewhere on the parent plant (e.g. on leaves)

4. RUNNERS (e.g. spider plant, strawberry)

- A runner is a horizontal stem that grows from the parent plant then forms a plantlet at the end.
- The plantlet can form roots and grow into new plant

5. OFFSETS (e.g. Mother in law's tongue)

- An offset is a tiny plantlet that develops as a side shoot at the base of the parent plant.

Artificial Propagation

Artificial propagation is when **humans make use of a plant's ability to reproduce asexually**. There are three main methods of artificial propagation:

1. **Taking a cutting**

A small section of ROOT, STEM or LEAF is cut from the plant and encouraged to form roots and grow.

2. **Grafting**

A part of the plant you want to grow is joined to a plant with an established root system.

3. **Layering**

Part of the stem of the parent plant is bent and wounded so that it touches the ground and will produce roots while still attached to the parent

a. The stem is pulled down to the ground and a small cut is made above the node.
b. The stem is now pushed into the soil and pegged down.
c. New roots and stem will begin to form.

ADVANTAGES OF ARTIFICIAL PROPAGATION

Gardeners and plant growers can:

1. Get a quick method of reproduction
2. Produce the exact variety required by the customer
3. Get large numbers of plants from a single stock.