

Unit E: Plant Propagation

Lesson 4: Propagating Plants by Division,
Separation, and Layering

Terms

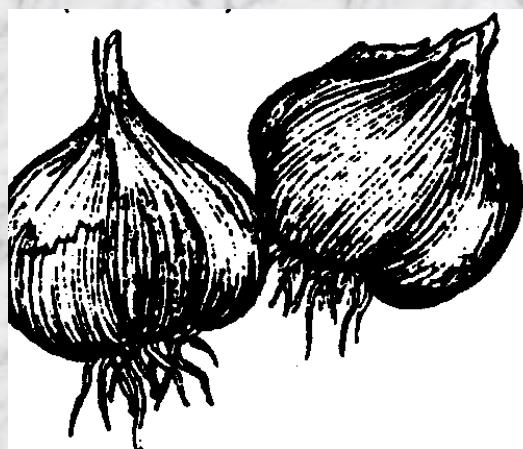
- Air layering
- Bulbs
- Bulblets
- Corms
- Division
- Mound layering
- Plant crown
- Rhizomes
- Separation
- Simple layering
- Trench layering
- Tubers

What Is the Difference Between Separation and Division?

- Some plants produce vegetative plant structures that can be removed intact from the parent plants
 - This is a natural way for the plant to reproduce
 - These vegetative plant parts include bulbs, corms, rhizomes and tubers
 - They all serve as food storage areas for the plant and are the structure for vegetative reproduction

- **Separation** is the propagation method in which these natural structures are simply removed from the parent plant and planted to grow on their own
- **Division** is when one of these structures is cut into sections that will each grow into a new plant

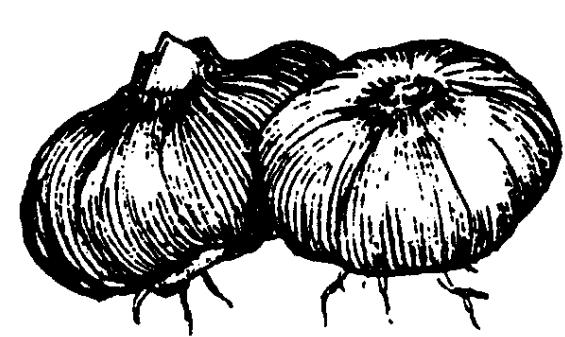
Types of Underground Structures



- **Bulbs** are shortened underground stems that are enclosed with fleshy leaves
 - Ex: Tulips, Daffodils,Lilies
- They often produced offset bulbs known as **bulblets**
 - They grow around the large bulb and can be separated and planted to grow on their own

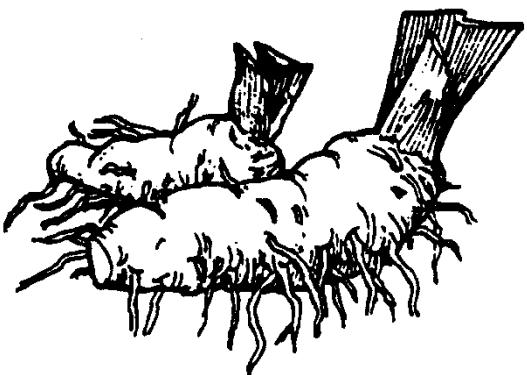
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- **Corms** are globe-shaped, fleshy underground stems
 - They are shorter & broader than a bulb
- Corms increase in size during the growing season
 - They can be cut into smaller pieces and grown separately
- Small corms (cormels) often form around the corm
 - They may be separated and planted to grow new plants



Examples:

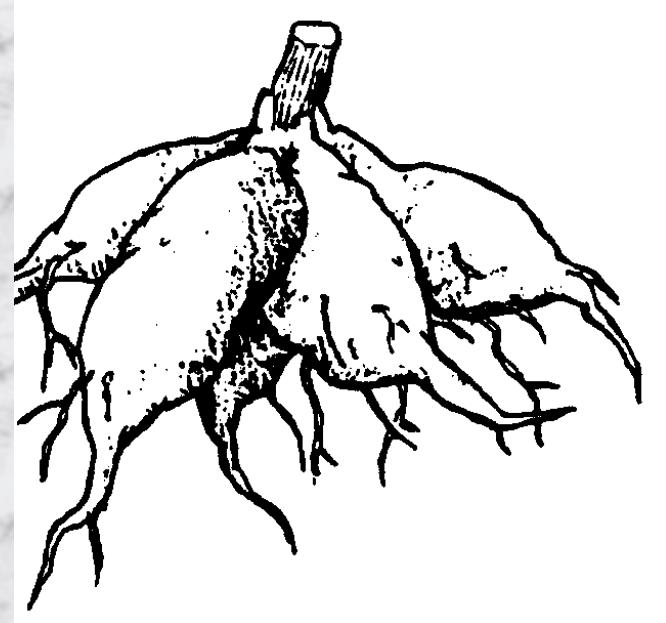
Gladiolus, Crocus



- Rhizomes & tubers are underground structures that can be lifted from the soil, then cut/divided into pieces that will produce a new plant
- **Rhizomes** are underground stems that grow horizontally just below the soil surface
 - Each section must have an 'eye' or node in order to produce a plant
 - Ex. Iris and Lily-of-the-valley

■ ***Tubers*** are underground stems similar to rhizomes, except that the ‘eye’ or node produces new shoots instead of roots

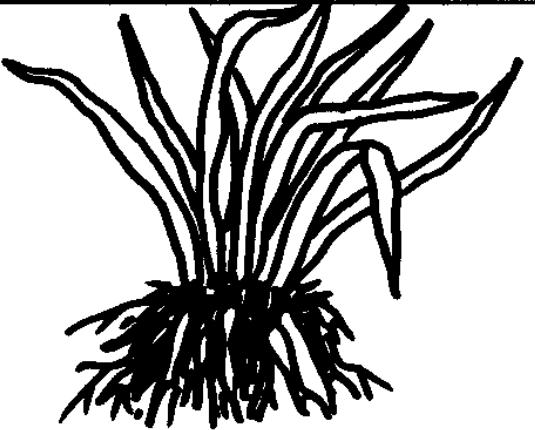
- Ex. Irish potato, Dahlia, & Gloxinia



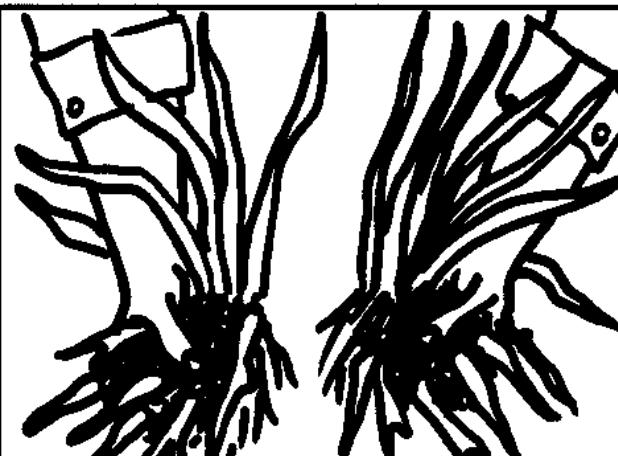
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- The ***plant crown*** is the part of the plant at the soil surface from which new shoots or leaves are produced
 - Many herbaceous perennials & houseplants are lifted and divided into sections which become new plants
 - Ex. African violet

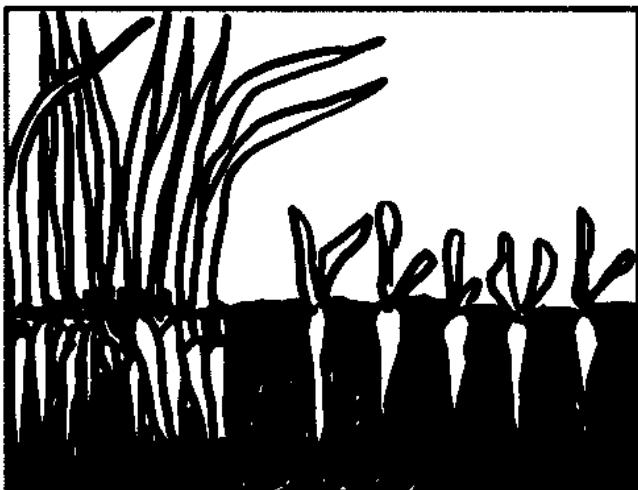
Plant Crown Division



Some plants can be propagated by simple division of the plant crown.



The crown of the plant is divided into sections.



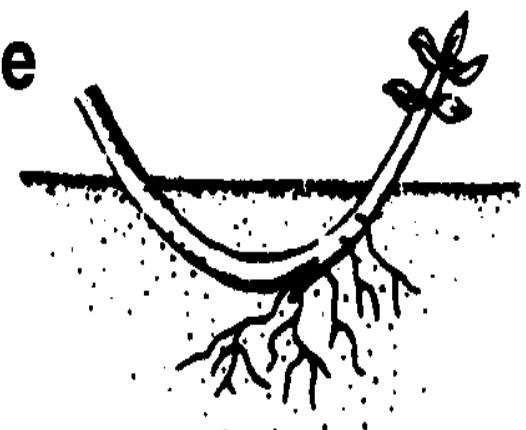
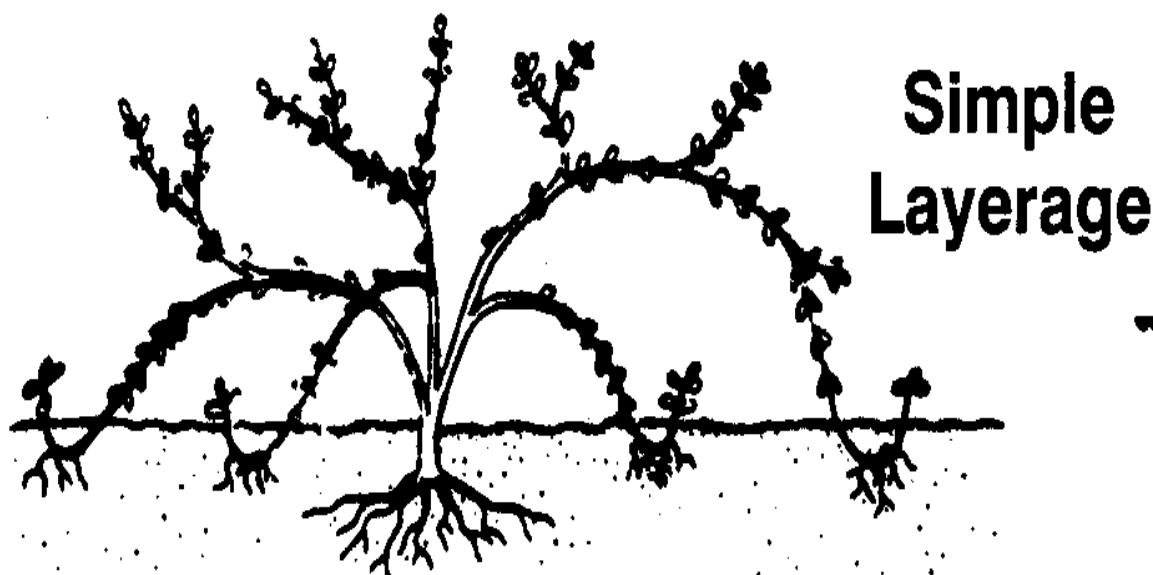
Each section is complete with new shoots and roots. These sections are planted to grow into new plants

What Is Layering and How Is It Used in Propagation?

- Layering is a simple method of asexual propagation in which roots are formed on a stem while it is still attached to the parent plant
- The parent plant supports the new plant during root development until the new plant can function on its own
- There are four types of layering

Types of Layering

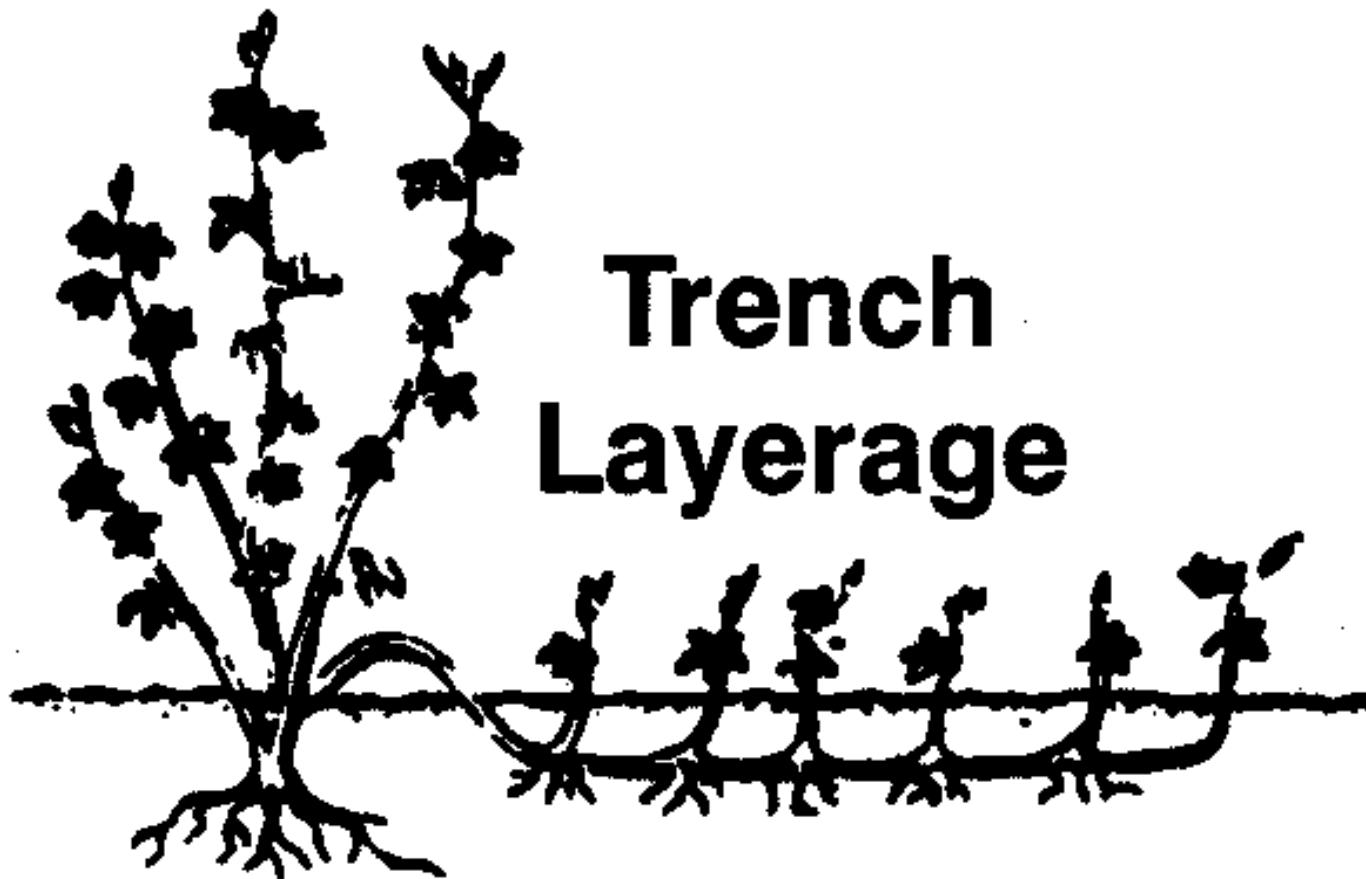
- ***Simple layering*** is accomplished by bending a branch to the ground, slightly cutting or wounding the stem, and covering the wound with 5-7cm of soil
- The wounded area will callus over and produce new roots
- After roots are formed, the plants are removed from the parent and planted
- Examples: Honeysuckle and Spiraea



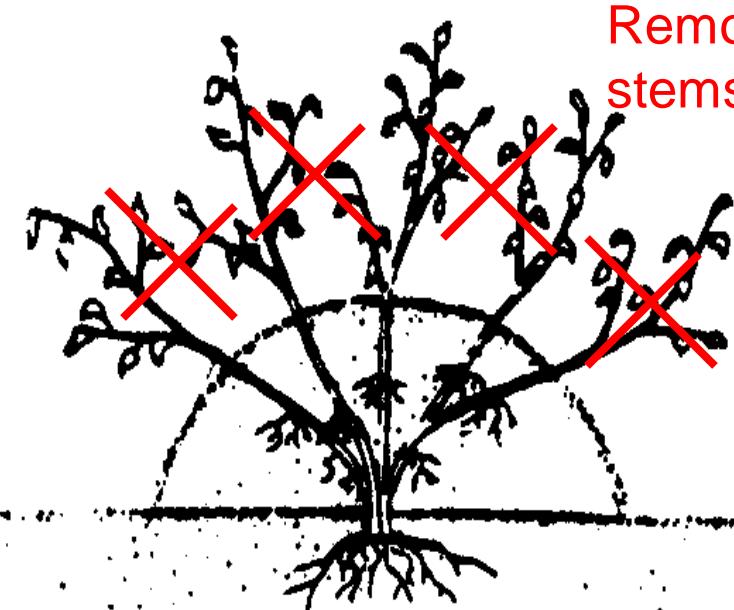
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- ***Trench layering*** involves a shallow trench that is dug near the parent plant
- An entire branch is bent over, placed in the trench, and then covered with 5-12 cm of soil
- After a few weeks, roots will develop along the stem and new shoots will form at each node
- When new plants are at a desirable size, they are separated and planted
- Examples: Fruit (apple/pear) & Nut trees

Trench Layerage

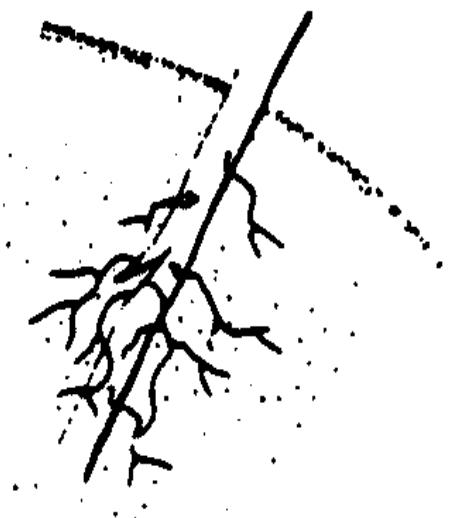


- ***Mound layering*** involves severely pruning the parent plant to a 5-10 cm stump
- The stump is then covered with soil
- Leave the mound undisturbed until the following spring when roots will have developed at the base of each stem
- The newly rooted plants can then be separated from the parent plant
- Examples: Roses, Gooseberries, Ornamental Shrubs



Remove
stems here

Mound Layerage



- ***Air layering*** involves removing a portion of the bark on a stem and making a slight incision in the exposed area
- Root inducing hormone is applied to the cut area and moist sphagnum moss placed over the exposed area
- Plastic is wrapped and tied around the moss
- After roots develop, the top part of the plant is cut just below the new rooted area and potted
- Examples: Schefflera, Rubber plant



**Air
Layerage**



Summary

- How is separation different from division?
- What is a bulb? And give an example of a plant with one.
- How is a corm different from a bulb?
- What is the difference between a rhizome and a tuber?
- Give an example of plant having a corm, rhizome and tuber.

Summary Continued

- What is a plant crown and how is it divided?
- How is simple layering different from trench layering?
- What types of plants require trench layering?
- Describe the process of mound layering.
- Describe the process of air layering.