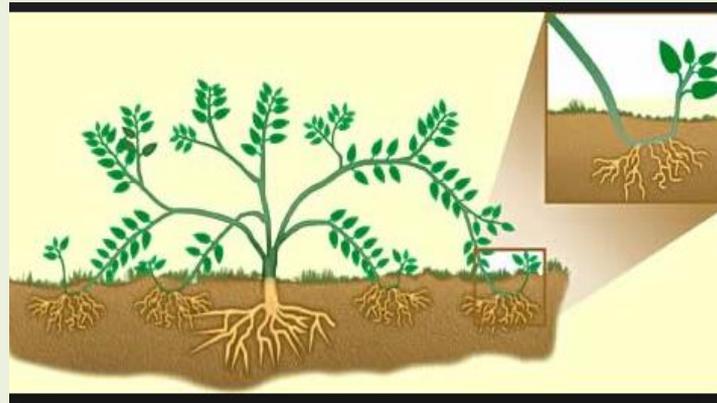
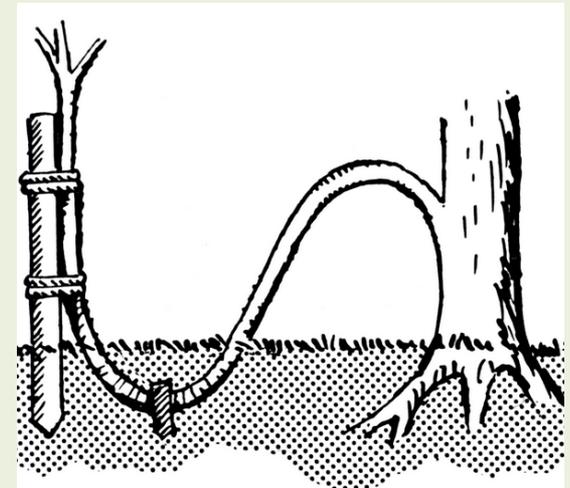




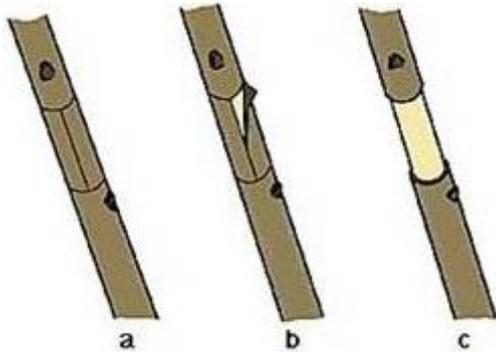
Mt. San Antonio College
Agricultural Sciences Department
AGOR 2 - Plant Propagation



17.- Layering (Marcotting in Philippines and foreign countries)

- I. Layering is the development of roots on a stem while it is still attached to the parent plant.
- II. Factor Affecting:
 1. Root formation is stimulated by numerous stem treatments which cause an interruption in the cell formation.
 2. These materials accumulate near the point of treatment and rooting occurs in this general even though still attached to the parent plant.
 3. Water and minerals are still supplied to the layered shoots and the xylem remains intact.
- III. Uses:
 1. Many clones which will not root easily by cuttings can be propagated by layering.
 2. A larger plant can be produced in a short time.
 3. Expensive, does not lend itself to commercial technique, take a lot of stock and space.
 4. Malling Apple, Lychee Nut, Chinese Magnolia, *Mahonia Compacta*, *Mahonia Golden abundance*.

PROCEDURES:



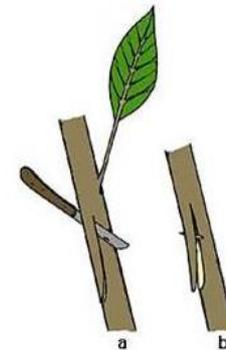
1. For wounding woody plants such as magnolia, gardenia, rose, fig and similar plants make two parallel cuts about 1 1/2 inches apart around the stem and through the bark and cambium layer. Connect the two parallel cuts with one long cut (a) and remove the ring of bark (b), leaving the inner woody tissue exposed (c).

AIR LAYERING

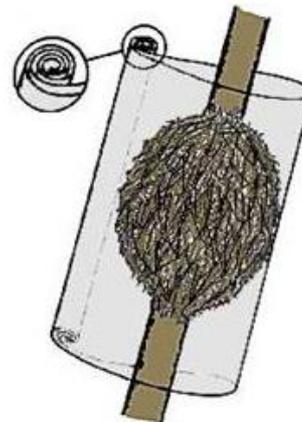


For wounding plants having less woody stems:

- (a) make a long upward cut from 1 1/2 to 2 inches long, almost to the center of the stem.
- (b) Insert a wood sliver, toothpick into the wound to hold it open and prevent cut tissue from reuniting. Rooting compounds are unnecessary.

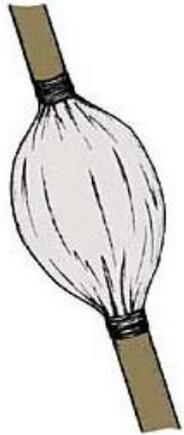


2. Apply a handful of damp sphagnum moss or well broken down compost so that it envelops the wounded portion of the stem. Tying the organic material in place with string helps keep it in position. The organic material should be soaked thoroughly to insure that it is completely moist. Squeeze out surplus water, since excessive moisture which can result in decay and deterioration of the plant tissue.

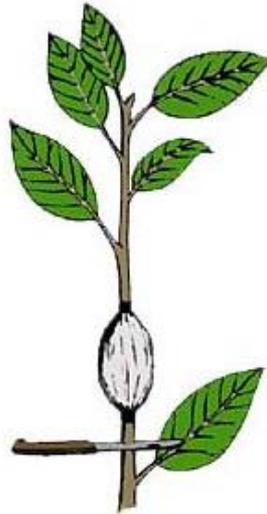


3. Use a sheet of polyethylene (plastic) film large enough to cover and wrap the ball of organic material using the butchers fold (see insert) to secure a tight seal where the two ends of the sheet are joined.

PROCEDURES:



4. Draw the upper end of the film snugly around stem making sure that none of the organic material is exposed. Fasten it securely with electrician's tape. Repeat the procedure on the lower end, again making sure there is a snug fit. Moisture must not escape and excess moisture must not enter from watering or rain. Some gardeners cover everything with aluminum foil.



5. After the new roots have penetrated the organic material and are visible on all sides, the rooted branch may be removed from the parent plant. The rooting time will vary with plant variety as well as the season in which it is performed.

AIR LAYERING

6. Remove the newly rooted plant from the parent plant with a knife or pruning shears, making the cut just below the ball of organic material and roots. Carefully remove the polyethylene film. Without disturbing the roots or removing the organic material, plant in a container using a good potting mixture or plant in a well-prepared soil bed.



7. Placing a plastic tent over the newly potted plant for 4 to 8 days until the root system is well established is helpful as it will aid in preventing excessive loss of moisture. Keep the plant under a light shade and avoid direct sunlight until the new root system is well developed.

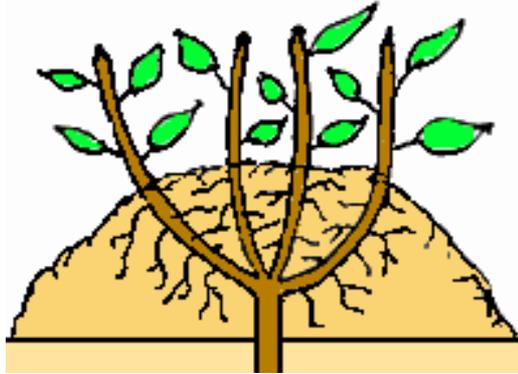


PROCEDURES:

MOUND LAYERING

Mound layering is useful with heavy-stemmed, closely branched shrubs, like Spirea, Flowering Quince, or Magnolia. It is also useful for fruit root stock production.

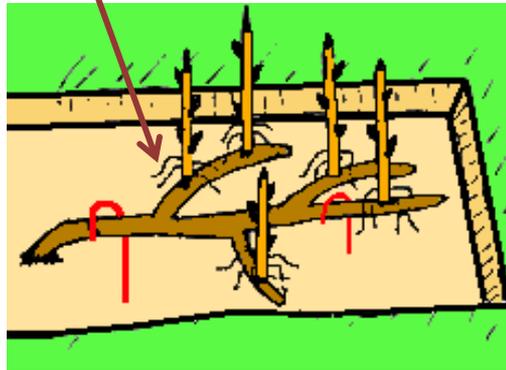
The original plant may be cut back to encourage many new shoots to grow from the base.



TRENCH LAYERING

In trench layering, a branch is laid horizontally in a small trench to encourage the development of several new shoots from it. As these shoots develop, soil is filled around them and roots eventually develop. The little plants can then be removed from the original branch after roots have formed. This method is used primarily for fruit trees which are difficult to propagate by other methods.

We wound at each bud, creating many off shoots. Covered with shaving or light soil.



GROUND LAYERING

Ground layering is called simple layering and is an easy method of plant propagation. It happens all the time in nature when a branch touches the ground and grabs on, starting its own root system. Strawberries ground layer themselves.

