



COLLEGE
OF THE
VIRGIN ISLANDS

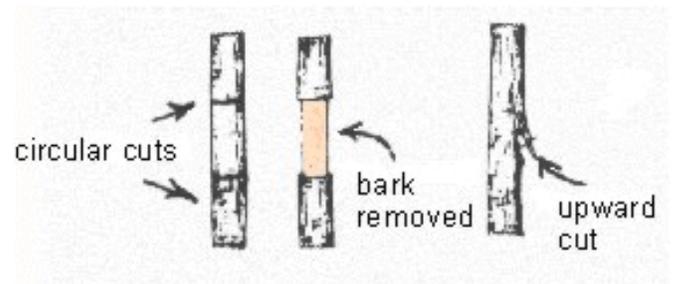
Cooperative Extension Service

GARDENERS FACTSHEET NO. 13
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PROPAGATION OF FRUIT AND ORNAMENTAL PLANTS BY LAYERING

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Layering is a method of vegetative propagation by which a good stem is induced to produce roots while it is still attached to the parent plant. In this manner a new plant usually can be developed in a relatively short time and with less trouble than other methods of propagation. It can be used successfully on many fruit trees and woody ornamental shrubs grown in the Virgin Islands.



AIR LAYERING

Best results are obtained when young, vigorously growing healthy branches are selected for layering. The leaves on selected branches should be exposed to light since these produce more food and will root faster. Branches from 1/4 to 3/4 inch in diameter are best for air layering. Materials needed are a sharp knife, two handfuls of damp sphagnum moss, a 6 x 8 inch sheet of polyethylene film, rubber bands or pieces of twine, and a 6 x 8 inch sheet of either craft paper, cloth or aluminum foil.

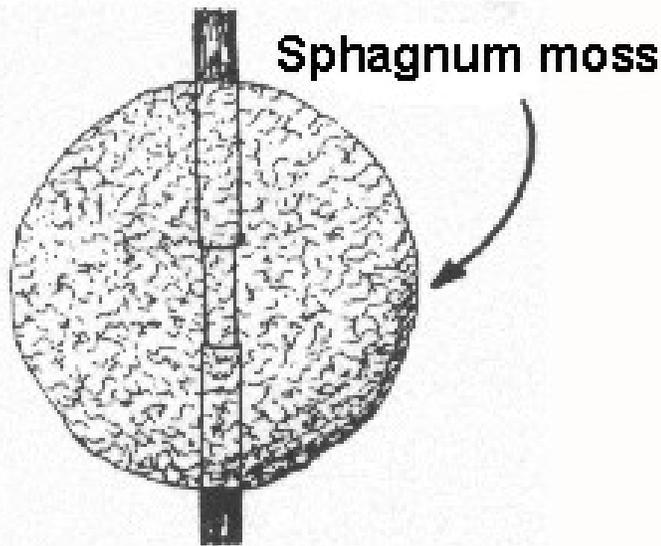
The first step is to remove leaves and twigs on the selected branch 3-4 inches above and below the point where the cut is to be made. Next, injure the branch with a knife and wrap it in a warm moist medium. This stimulates the formation of new roots from the injured area..

Two methods of injuring the branch can be employed and both produce satisfactory results. One method consists of removing a 1/2-1 inch ring of bark from

Step 1. Remove 1/2-1 inch bark or make a slanting upward cut.

the branch by making two circular cuts. After removing the bark, expose the wood to be sure that the cambium layer, (a light green area immediately beneath the bark) is completely removed. This will prevent the bark formation and allow roots to be initiated. For the second method, a long slanting upward cut is made about 1/4-1/2 inch through the stem and the incision is kept open by inserting a small chip of wood. The upward cut method is used on plants where the bark does not peel off easily. Dusting the wound with a rooting hormone may hasten rooting on some hard-to-root materials but does not produce more or healthier roots than an untreated cut.

After removing the bark or making the cut, enclose the injured area in a ball of moist sphagnum moss as soon as possible, making sure to squeeze out excess moisture before applying it to the cut surface. The ball should be

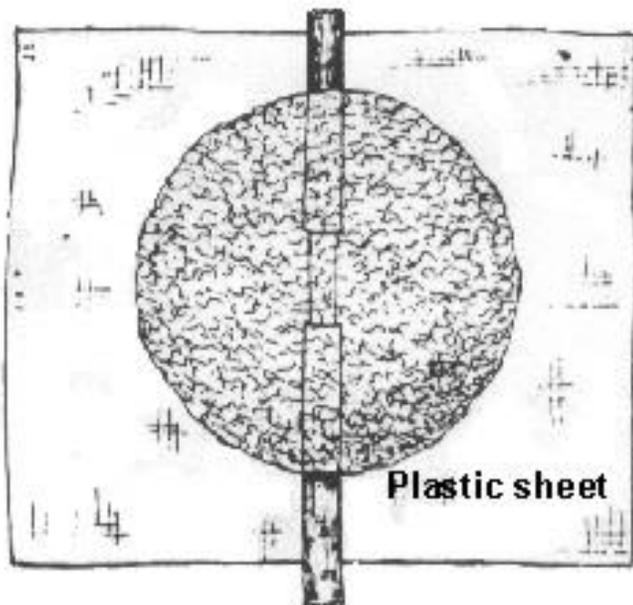


Step 2. Enclose wound with moist sphagnum moss.

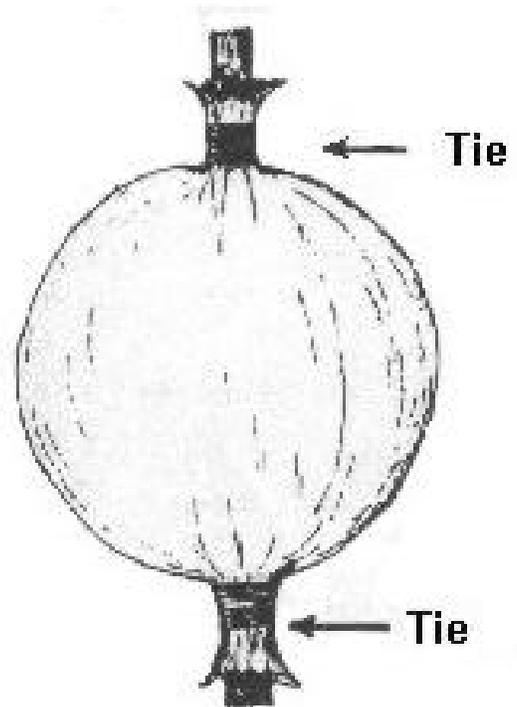
wrapped snugly around the twig to insure good contact and tied securely at both ends with rubber bands. If the air layer is exposed to direct sunlight, wrap it again with craft paper, cloth or aluminum foil to prevent drying.

After the roots have formed (this may take from 2 weeks to several months depending on the plant type and vigor) the layer can be cut from the parent plant just below the ball of moss.

The plastic covering should be removed before planting, but the ball of moss should not be disturbed. It is important that the roots be kept moist during the planting operation. It is best for the new plant to develop a larger root system before planting out in open areas. Potting is

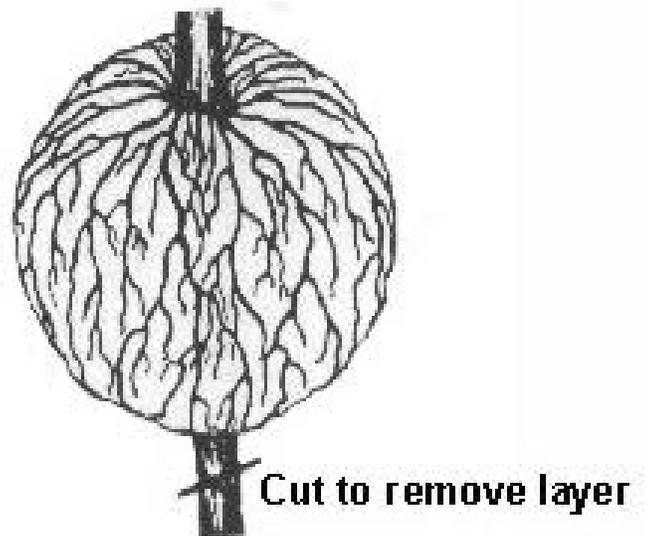


Step 3. Enclose ball of moss with 6 x 8" clear plastic.



Step 4. The ends of the plastic tied firmly by rubber bands.

suggested immediately after cutting the new plant from the parent plant. The young potted plant should then be hardened off for several weeks before setting out in full sunshine. Hardening consists of a gradual reduction in



Step 5. Remove rooted layer from parent by cutting just below ball.

frequency of watering and an increase in exposure to light over a period of time.

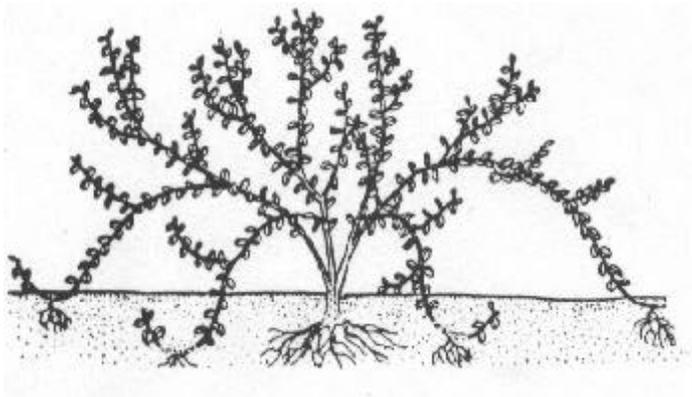


Step 6. Remove plastic film and plant in good potting medium.

Plants commonly propagated by air layering include the Rubber plant, Hibiscus, Calliandra, Oleander, Screw Pine (Pandanus), Gardenia, Croton and Bougainvillea.

TIP LAYERING

Many plants with drooping or viny growth habits can be propagated by tip layering. A low branch or one that can be bent easily to the ground is selected. It is injured (or scored) either by ringing, or slicing a cut 6 to 18 inches from the tip of the branch. The injured area is anchored in the soil deep enough to remain moist but the leafy tip is left

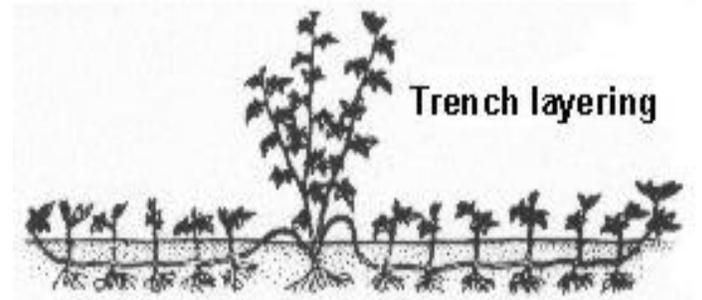


above ground. To help keep the area moist, peat moss may be added to the soil and used as a mulch. Climbing roses, primrose, jasmine, oleander and bougainvillea can be propagated by tip layering.

TRENCH LAYERING

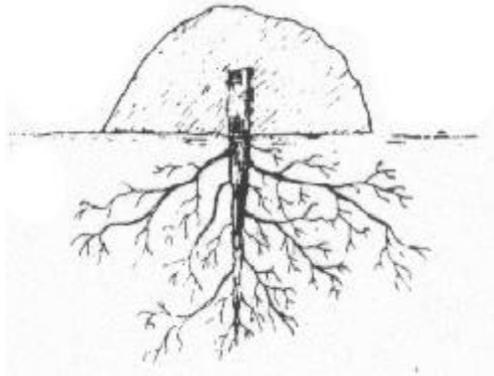
This method is an adaptation of tip layering and produces several plants instead of one. A branch of current season's growth which can be easily bent to the ground is chosen and all the leaves except those at the tip

and on the lateral branches are removed. The laterals are pruned back to two or three buds. The limb is then placed in a small trench and when the buds begin to grow, all but the tip of the main limb and laterals are covered with about 4-6 inches of soil. Roots will form at each node and a new plant will develop. Rooting can be hastened by making a shallow cut below each bud. The length of time required for rooting varies with the type of plant and moisture conditions. As soon as the roots develop and the buds begin to elongate, the layers can be separated from the parent plant and potted. Passion fruit, barbadine (granadilla), and jasmine can be layered by this method.



MOUND LAYERING

This method is used to propagate many of the thick-stemmed or closely-branched plants especially when it is desirable to root all the branches. In cases where shrubs



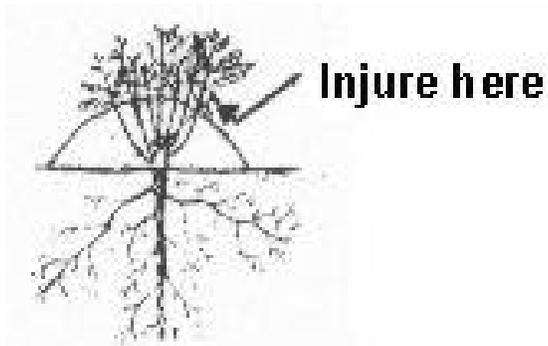
Step 1. Cut back plant and mound loose soil as shown.

have been severely cut back to the ground, mound layering can also be used to propagate new plants. In general it is best to cut the plant back severely during the previous season to force new shoots close to the ground and in the center of the plant. The shoots should first be injured, as in tip layering.

The soil is then mounded up around the base of the plant again and some peat sphagnum moss mixed in with the soil.

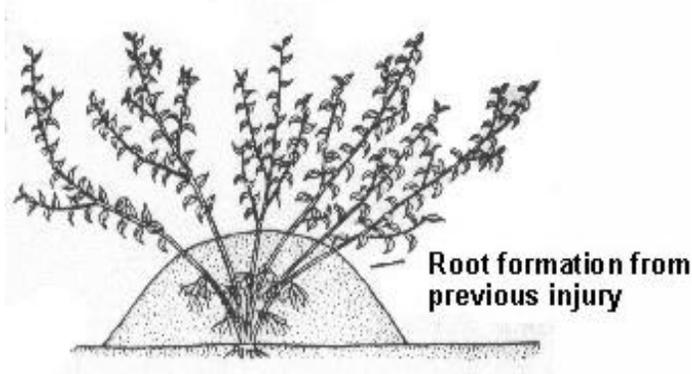
SERPENTINE (COMPOUND) LAYERING

This method is best adapted to ornamental vines and plants with pliable stems. It is a variation of trench layering in which alternate buds or nodes are buried and left above ground. Any long stem close to the ground can be used. Rooting is also aided by making shallow cuts below each node that is buried. The covered portions can be held in place bent wire or stones. Individual plants will then be removed by cutting below the rooted area. Serpentine layering is used in the propagation of plants such as Grapes, Virginia Creeper and many other vines.

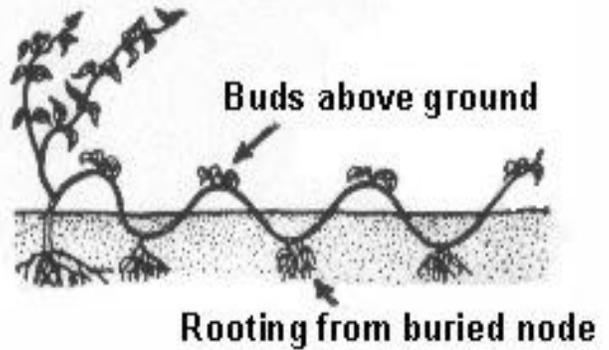


Step 2. New shoots which appear are injured as in tip layering

After rooting, branches can be separated as with individual plants in tip layering, cut below root line and either potted or transplanted. Plants commonly propagated by this method include Aralia, Croton, Calliandra and Glorybush (Tibouchina).



Step 3. Soil is mounded up at the base of the plant to encourage development of roots.



Plants that can be propagated by Layering:

<i>Trench</i>	<i>Air</i>	<i>Mound</i>	<i>Serpentine</i>	<i>Tip</i>
Passion Fruit	Bougainvillea	Aralia	Grape	Bougainvillea
Barbadine (granadilla)	Citrus spp.	Croton	Virginia Creeper	Jasmine
Jasmine	Croton	Calliandra		Oleander
(Tibouchina)	Hibiscus	Glorybush		Climbing roses
	Pomegranate	(Tibouchina)		
	Rubber Plant			
	Rose			
	Dumbcane			
	(Dieffenbachia)			
	Sea grape			