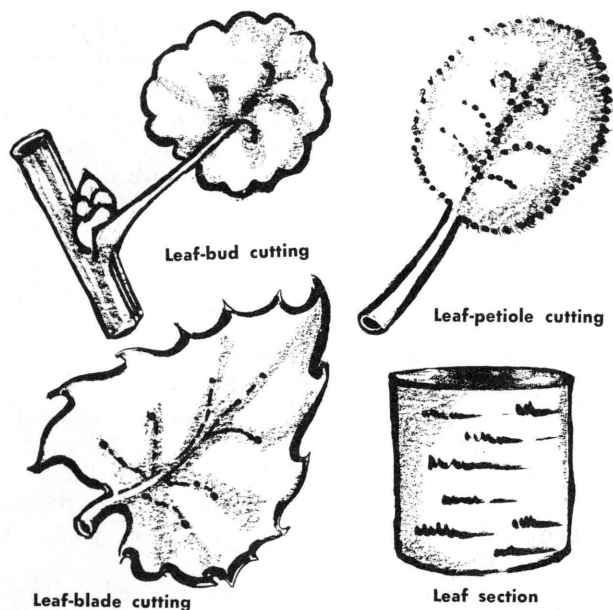


Plant Propagation by Leaf and Leaf-Bud Cuttings

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Plant propagation by vegetative means (not by seeds) involves a portion of plant stem, root, or leaf, placing this plant part under special environmental conditions, and inducing it to generate roots, buds, and shoots which are identical to the parent plant. This is not a particularly difficult operation, but environmental conditions such as humidity, water supply, ventilation, light, and temperature must be carefully controlled for propagation to be successful.

Types of Cuttings



There are relatively few plants which can be reproduced by using a leaf or the portions of a leaf to produce a new plant. The reason for this is that leaf cuttings must regenerate both new root and bud tissues. Not many plants have this capacity. Most of the plants propagated by leaf cuttings are house plants with thick, fleshy leaves. Depending on the plant to be propagated, the leaf cutting may involve the leaf blade only, or a leaf with petiole, or merely portions of a leaf.

Leaf-bud cuttings are unlike leaf cuttings in that they contain a portion of stem tissue and most importantly, a bud. The bud, located at the junction of the leaf petiole and the stem, is a pre-formed growing point. This type of cutting has only to initiate root tissue, and therefore may be used with plants that are unable to regenerate both new roots and buds. In effect, leaf-bud cuttings are merely short-stem cuttings and can be used to propagate a wide variety of plants.

Leaf bud	Leaf petiole	Leaf blade section
Rubber plant	African violet	Kalanchoe
Geranium	Peperomia	Bryophyllum
Philodendron	Gloxinia	Begonia (Rex)
Peperomia	Jade plant	Jade plant
		Sansevieria

Plant material selected for leaf cuttings should be healthy, actively growing and free of insect or disease problems. Large, mature leaves provide the best source of propagation material.

The environmental requirements for the development of roots are listed below.

- Sterile media should be used. Sterile coarse sand makes an excellent media for leaf propagation. The media should have good moisture holding capacity as well as being well drained and aerated.

- Temperatures between 60° F and 70° F are best. Warmer temperatures directed to the bottom of the cutting will hasten root formation. This is termed "bottom heat" and is normally supplied through the use of heating cables.

- Humidity should be kept high. This is usually done by covering the rooting bed or container with a polyethylene film or pane of glass.

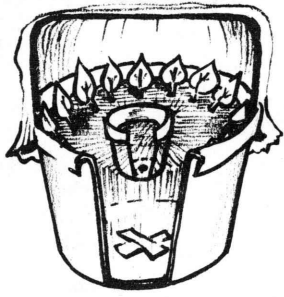
- All but shade-loving plants should be rooted in full sunlight, or be supplied artificial light. During summer the cuttings should be shaded from direct sunlight to prevent overheating and wilting.

- Moisture must be supplied frequently to increase the relative humidity and to prevent the cutting from wilting.

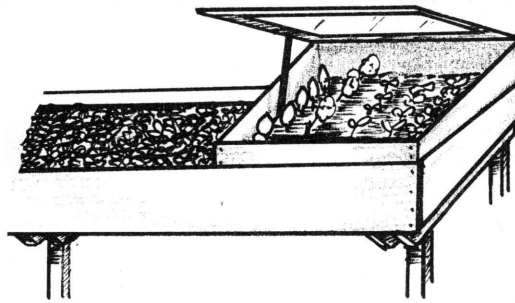
Rooting hormones are commonly used with leaf-bud cuttings to speed and insure the rooting process. Treat only the stem portion. Take care to avoid treating the bud as its growth may be inhibited by treatment. Rooting hormones are used sparingly or not at all with leaf cuttings. While rooting may be aided, the same hormone, especially in high concentration, may inhibit bud initiation. These rooting hormones are available from seed and plant stores and have label directions for their use.

For rooting a large number of cuttings, a propagating bed or bench, hotbed, or heated enclosed area can be used. For the home gardener who has only a few cuttings to root, a covered double flower pot or covered unused aquarium will suffice. By using polyethylene plastic, a small propagating structure can be made by placing a wire or stick frame over a wooden flat and

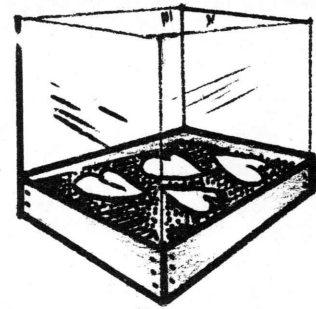




Covered double-pot propagation



Propagating bench



Covered aquarium propagator

covering this with a sheet of polyethylene. The same can be done with a small clay pot to handle only a few cuttings.

Procedure

Leaf-bud cutting—Carefully remove a leaf with its petiole and a section of the stem containing the bud at the base of the petiole from the parent plant. Treat the base of the stem section lightly with rooting hormone, place in moist media and cover with plastic or glass to prevent excessive transpiration.

Leaf-petiole cutting—Remove a mature, healthy leaf with its attached petiole from the parent plant. Place the entire petiole in moist media. Rooting hormone may be used sparingly, if desired. However, most leaf-petiole cuttings will root quite rapidly without hormone treatment.

Leaf-blade cutting—This type of cutting may be propagated in several ways depending upon the type of leaf used: (1.) With Rex Begonia and similar types, lay entire leaf flat on moist media. Peg down for intimate contact between the leaf surface and media. Rooting will only occur where the main veins are in contact with moisture. Make cuts across several of the main veins and the new plantlets will arise at these cuts. (2.) In the case of smaller-leaved plants such as the Jade plant or

Kalanchoe, the leaves should just be placed on the surface of the media without cutting across the veins. Rooting and budding will occur from the base of the leaf vein, if kept moist. (3.) With Sansevieria, cut the leaf into two inch sections and place in moist media at a depth of one inch.

Once the cuttings are made, they must not be allowed to wilt. Without moisture there can be no plant life. This is a basic principle in plant culture and should be strictly adhered to in propagating new plants, since the cuttings lack a root system to take in moisture. The propagating media should retain moisture, yet be well drained and well aerated. Cuttings may wilt from lack of moisture, excessive heat, rapid air movement, lack of shade during sunny periods, or from rot because the rooting medium was too wet.

During the rooting period, maintain a moist media by frequent light sprinkling with a fine sprinkler head. Maintain a high relative humidity by keeping the rooting area covered. When the cuttings become rooted, the humidity can be lowered to allow the plants to harden-off before being potted.

After adequate roots have been developed, the new plants can be carefully transferred to small pots for further growth. From this point, these plants can be cared for in the same fashion as are the parent plants.