Propagation by Cuttings

**Introduction**

Many kinds of trees, shrubs, and house plants can be propagated by cuttings of slips. A cutting is any vegetative plant part, such as stems, leaves, or roots, which when detached from the parent plant is capable of regenerating the missing part or parts. One parent plant may yield enough propagating material to start a large number of new plants. The new plants from evergreens and flowering shrubs are small, however, and must be tended carefully for several years. Cuttings or slips from newly-formed wood are easiest to root. Take cuttings from roses and spring-flowering shrubs in mid-summer when the new stems are no longer succulent, but have not yet become hard. Cuttings of some evergreens, holly, boxwood, yew, arborvitae, and juniper root best if taken from the plant in late fall or early winter, after they have been subjected to several heavy frosts. Cuttings may be taken any time from house plants or herbaceous plants.

For propagation by cutting, these materials will be needed:

- Container—pot or flat
- Cuttings
- Sand
- Peat moss (remains of aquatic marsh, bog, or swamp vegetation which has been preserved under water in a partially-decomposed state)
- Vermiculite (a mica-like ore which is composed of separate layers)
- Perlite (gray-white material of volcanic origin, mined from lava flows)
- Water
- Rooting hormones (plant growth regulators that hasten root initiation, and increase the number of roots produced per cutting)
- Labels

**Preparing and Potting Cuttings**

Use garden clippers, a sharp knife, or razor blade to take cuttings. Select only vigorous, healthy stems.

Cuttings should be 4” to 5” long with leaves retained at the upper end but removed from the lower end. If the leaves are very large, their size should be reduced to lower the water loss and to
allow closer spacing in the propagation structure. Cuttings are most commonly made at the terminal ends, but the most basal parts of the stem can be used and will usually root also unless the stem is too hard. Place cuttings in the rooting mix to a depth of 2", spacing them evenly about 1" apart.

The planting mix (often called the propagation media, medium, or root mixture) can be sand, peat moss, vermiculite, perlite, or a mixture of sand and peat moss; vermiculite or perlite could be used instead of sand in the mixture. Vermiculite is a light, spongy material made from the mica-like ore. It comes in fine or coarse grade and either size is satisfactory to use. Perlite may also be used alone but it may tend to dry out rapidly.

A propagation media used by most homeowners is a mixture of one part clean sand and one part peat moss. Moisten the mixture. When the mixture has the proper amount of moisture, only a drop or 2 of water will come from a handful squeezed tightly. If the mixture is too wet, add dry sand and peat to it. Fill the flower pot or flat with this rooting medium making sure the container has proper drainage.

Now, make a slanting cut about 5" from the tip of cutting. Remove the leaves from the base and dip the base of the cutting in a "rooting hormone." The "hormone", or growth regulator is used to increase the percentage of cuttings which form roots, to hasten root initiation, to increase the number and quality of roots produced per cutting, and to increase uniformity of rooting. Inquire at a local garden center, nursery or hardware store for types available.

Insert the cutting about 2" into the propagation medium. After all cuttings have been inserted, spray lightly with water. The container should be checked daily to see if it needs water. Flats will dry out quickly in warm weather and if water can drain out, there is no danger of overwatering.

After the cuttings have been thoroughly watered, a polyethylene freezer bag may be placed over the top of a flower part, or a sheet of plastic, supported by wire, placed over the flat. This forms a miniature plastic greenhouse that is vapor proof and helps prevent the cuttings from drying out.

Place the cuttings in a window or outdoors where they are exposed to daylight; never expose to direct sunlight. Sunlight would create extreme heat under the plastic covering, and this heat might kill them.

After the cuttings have formed roots, the humidity should be lowered and ventilation of the propagation structure provided. Cuttings are ready for potting when most of the roots are 1" to 2" long. They should be lifted gently from the rooting medium, taking care not to break off the roots. A mass of rooting media adhering to the roots is desirable.

The rooted cuttings should be watered thoroughly after potting. Before placing the potted cuttings in full sun, they should be hardened-off for 1 or 2 weeks in a cold frame or under some partial protection from the sun.

Summary
To summarize, remember these important steps:

- Prepare the rooting medium.
- Secure healthy cuttings.
- Prepare the cuttings by removing the basal leaves.
- Treat cuttings with rooting hormone.
- Water thoroughly.
- Place cuttings in daylight, but never in direct sunlight.