**Propagating plants from cuttings**

Propagating plants from cuttings is one of the easiest and most used methods of propagation. Many plants will root from just a section of a plant. Some plants will root in water, but cuttings will develop a better root system when rooted in a soil-less potting mix. Sand or perlite can also be used, especially for cuttings that need good drainage and may rot if kept too wet. Many easy-to-root plants will not require the use of a rooting hormone but doing so will assure faster rooting. Some plants, such as, citrus, may root very slowly or not at all without the use of a rooting hormone.

**Take cuttings from the plant**
Take cuttings from a plant, such as, a begonia. For most plants, cuttings should be between 4 and 6 inches long. Don’t make your cuttings too large; they will not root well or, if rooted, will become a tall, lanky plant instead of a compact one.

**Assemble the materials**
1. Pot(s) of pre-moistened soil-less rooting medium (potting soil, perlite, vermiculite, sand, sphagnum moss, etc.)
2. Pruners or a sharp knife
3. Rooting hormone
4. Plastic cup
5. Pencil or other object slightly wider than the stem of the cutting
6. Clear plastic bag or a bell jar

**Cut stems just below a bud**
Using a sharp knife (or pruners) cut just below where a leaf attaches to the stem (the node). Roots grow easiest from this location. If you leave a section of stem below the node, it often rots.

**Remove lower leaves**
Remove the lower leaves but leave the top two or three. Any part of the cutting that will be buried below the surface of the rooting medium should be free of leaves.

**Ready for "sticking"**

Cut back to a node and stripped of lower leaves and flowers, the cutting is now ready for “sticking” into the moist rooting medium.

**Make holes in potting mix**
Use an object such as a pencil or dowel to make a hole in the potting mix. Make the hole larger than the cutting so the rooting powder is not rubbed off when the cutting is placed in the rooting medium.

**Dip the cutting**

Dip the cutting in the rooting hormone and swish it around to lightly cover the bottom 1-1 ½ inches of the cutting. Tap the cutting on the side of the container lightly to remove any excess. If very little hormone powder sticks to the cutting you may want to dip the cuttings in water first, tap them to remove any excess water, and then dip them in the rooting hormone. Dispose of any excess rooting hormone in your small container. Do not put it back in the original container.

**Stick cuttings into prepared holes in the rooting medium**“Stick” the cutting in the rooting medium being careful not to rub off the rooting hormone powder.
Hint: More than one cutting can be placed into a single pot. After the cuttings have rooted they can be divided and potted in separate pots. Do not crowd the cuttings, however. Crowding can result in mold and rotting.

**Firm soil around the cuttings**Gently press the medium around the cuttings to provide good contact between the cuttings and rooting medium.

**Water**Water sparingly to also help provide good contact of the medium with the cutting and provide moisture.

**Place the entire pot inside a plastic bag**

To maintain humidity and moisture, place the entire pot inside a plastic bag.

**Fill the plastic bag with air**Inflate the bag to keep the sides of the bag away from the cuttings as much as possible. Leaves touching the bag are more prone to develop mold between the leaf and the bag.

**Seal the plastic bag**

Use a twist tie to seal the bag

**Or, use a bell jar**
A clear glass bell jar also makes a very nice rooting chamber. It provides needed moisture but still displays the cuttings in an attractive setting. Examine the cuttings weekly to make sure the rooting medium is not drying out. When rooting has taken place (about 3 weeks for these begonia cuttings) separate the cutting and pot them in individual pots.

Types of cuttings

**Herbaceous cuttings** are made from non-woody, herbaceous plants such as coleus, chrysanthemums, and dahlia. A 3- to 5-inch piece of stem is cut from the parent plant. The leaves on the lower one-third to one-half of the stem are removed. A high percentage of the cuttings root, and they do so quickly.

**Softwood cuttings** are prepared from soft, succulent, new growth of woody plants, just as it begins to harden (mature). Shoots are suitable for making softwood cuttings when they can be snapped easily when bent and when they still have a gradation of leaf size (oldest leaves are mature while newest leaves are still small). For most woody plants, this stage occurs in May, June, or July. The soft shoots are quite tender, and extra care must be taken to keep them from drying out. The extra effort pays off, because they root quickly.

**Semi-hardwood cuttings** are usually prepared from partially mature wood of the current season’s growth, just after a flush of growth. This type of cutting normally is made from mid-July to early fall. The wood is reasonably firm and the leaves of mature size. Many broadleaf evergreen shrubs and some conifers are propagated by this method.

**Hardwood cuttings** are taken from dormant, mature stems in late fall, winter, or early spring. Plants generally are fully dormant with no obvious signs of active growth. The wood is firm and does not bend easily. Hardwood cuttings are used most often for deciduous shrubs but can be used for many evergreens. Examples of plants propagated at the hardwood stage include forsythia, privet, fig, grape, and spirea.

The three types of hardwood cuttings are straight, mallet, and heel ([Figure 3](https://content.ces.ncsu.edu/plant-propagation-by-stem-cuttings-instructions-for-the-home-gardener#img_dialog_2104)). A straight cutting is the most commonly used stem cutting. Mallet and heel cuttings are used for plants that might otherwise be more difficult to root. For the heel cutting, a small section of older wood is included at the base of the cutting. For the mallet cutting, an entire section of older stem wood is included.