

## Propagating Houseplants

Propagating houseplants is an easy and affordable way to increase the number of plants in your home. Propagating plants means to create new plants by both sexual (seeds) and asexual (vegetative) means. Although collecting seeds for many plants is easy, this is not always the most practical or quickest way to propagate plants. Sometimes plants propagated from seeds will look different from the parent plant.

The more common method is vegetative propagation, in which the stem, root, node (area where the leaf or bud attaches to the plant's stem), or leaf is used to produce a plant identical to the parent. In most cases, vegetative propagation produces a new plant quickly; some plants, however, may not respond well to this method. For examples, consult a reference such as *American Horticultural Society Plant Propagation* (see Suggested Further Reading below). To ensure that your propagation efforts are successful, begin with plants that are free of disease, insects, and stress, and that are not suffering from a lack of water, high heat, light that's too bright, etc. Use sharp, clean tools and sterilized media. Above all, know the plant and the best methods and timing for optimum results.

Environmental requirements for successful propagation include:

- § Light: bright and indirect
- § Water: media should be moist but not saturated
- § Humidity: high humidity prevents plant material from drying out. Make sure the humidity isn't so high that diseases will develop (see the fact sheet, *Preventing, Diagnosing, and Correcting Houseplant Problems* for more information on this topic).

- § Temperature: rooting media temperature should be between 75° and 80°F for optimum results.

There are several types of propagation media you can use:

- § Water: use to propagate with leaves, stem tips, tips of branches, and stem sections
- § Sand: provides good water drainage and aeration, acidic pH. A pH no higher than 6.5 is preferred for cuttings for ensure good root development.
- § Vermiculite: holds water well, neutral pH
- § Perlite: provides good water drainage and aeration, neutral pH
- § Bark: provides very good water drainage and aeration, acidic pH

These materials can be used alone or in combination. Their advantage is that they allow roots to develop in a light, moist environment free of pathogens. Compost and garden soil are not the best choices for propagating houseplants because they are likely to contain pathogens and weed seeds, and they have a tendency to be heavy and not well aerated, which can yield poor propagation results.

### Vegetative Propagation Methods

**Cuttings** can be made using a leaf or stem. This method is the most common and considered the easiest way to propagate plant material.

- § *Leaf and tip cuttings*: Begin by taking cuttings of actively growing stem or branch tips, or whole leaves. For tips, cut a piece that is 3 to 6 inches long and has at least two nodes. Remove leaves on the lower half

of the tip and place in a glass of water, or in a light media mix such as vermiculite, peat, or perlite. For leaves, leave no more than a half-inch of the petiole (the slender stem or stalk that supports the leaf) and treat in the same manner as the tip. Dipping the end of the tip or leaf in a rooting hormone before placing it in the water or media will speed the development of new roots. Be careful not to use too much hormone: only a little is needed and using an excessive amount will slow root development.

To use the hormone, dip the cut piece in it and gently tap off any excess. Place the cutting in a warm location, with high humidity and bright, indirect light. Plants that propagate well using this method include African violet (*Saintpaulia spp.*); snake plant (*Sansevieria spp.*); Rex begonias (*Begonia rex-cultorum*) and Grape ivy (*Cissus rhombifolia*).

§ *Stem cuttings*: Cut a 2- to 3-inch portion of the stem with at least two nodes on it. The stem cutting can be treated two separate ways: (1) stick the stem vertically into the rooting media with at least one node buried in the media or (2) lay the stem horizontally on the media with half the stem inserted into it. Roots will form at the sites of the buried nodes, while additional shoots will develop at the exposed nodes. Dumbcane (*Dieffenbachia spp.*) and Dracaena (*Dracaena spp.*) are two plants that respond well to this method.

**Grafting** is a method of propagating a scion (a shoot or twig) with desirable characteristics, such as shape, flower, color, and rapid growth, onto a rootstock (the portion growing in the media) with certain advantages (better anchorage and growth rate). Grafting is commonly used when propagating: (1) cacti and other succulents that have a slower-than-desired growth rate, (2) plants that do not produce chlorophyll, and (3) plants that require another to supply its food (parasitic).

The most common grafting methods are the flat, or side graft, and the apical-wedge graft. Neon cacti and rebutia (*Rebutia canigueralii*) respond well to flat grafts.

§ *Flat or side graft*: This process involves:

- o Selecting a desirable rootstock plant and scion.
- o Cutting both plants at an angle with a sharp knife, so that when cut, the two pieces (rootstock and scion) will match up. Instead of cutting the rootstock and scion at an angle, use a knife to cut both pieces in half, horizontally.
- o Line up the two pieces so that the rootstock's conducting tissue (the food- and water-conducting tissues) matches that of the scion; then join the two

pieces and turn them in a screwing motion to remove any air bubbles.

- o Secure both pieces in place with an elastic band.
- o Place the plant in a warm location with high humidity and bright, indirect light.
- o Water the media as needed.

§ *Apical-wedge graft*: This method is used for cacti that are very slender and therefore do not respond well to flat grafts. Begin by selecting a slender rootstock. Slice it vertically down the center through the conducting tissue. You will not remove any tissue from the rootstock; instead you will insert the scion of the plant you want to graft into this "slit." Cut a piece approximately 2 to 3 inches long from the terminal end of the scion you want to graft. Pare both sides to expose the conducting tissue, then slip the scion into the rootstock, lining up the conducting tissues. Secure with grafting tape, raffiti, or elastic. Christmas cactus (*Schlumbergera*), responds well to apical-wedge grafts.

**Division** is used to propagate plants that are clump forming, such as snake plant (*Sansevieria spp.*), orchids, Bromeliads, and hens and chicks (*Sempervivum tectrum*). Gently pull or cut apart the plantlets. Immediately replant all the new plants after they have been separated.

**Layering** includes several methods: natural, simple, compound, and air, each with its own advantage.

§ *Natural layering* occurs when plants send out runners or plantlets. Occasionally, roots will have already formed on the plantlet. If this occurs, sever the plantlet from the parent and immediately plant in another pot with media. If roots have not formed, while still attached to the parent, place the plantlet in another pot and attach it to the media. In some cases it may be necessary to hold the plantlet to the media with 'U' shaped pins until rooting has occurred. Sever the plantlet from the parent plant once roots have formed. Spider plant (*Chlorophytum spp.*) and strawberry begonia (*Saxifraga sarmentosa*) are easily propagated by natural layering.

§ *Simple layering* is used for plants that vine. With the vine still attached to the parent plant, slice a portion of the vine. Bend it down and secure it in the media in the new pot with paper clips or wire. Once it has rooted, cut it from the parent plant.

§ *Compound layering* uses simple layering, but it is done twice with the same shoot in order to produce two separate plants. Simply slice the stem, bend it, and secure it to the media for the first rooting, then repeat

the process for the portion of the stem that is further out from the parent plant, for the second rooting. When the new plants have rooted, simply cut them from the parent and from each other and you will

§ *Air layering* entails developing aerial roots on a stem or branch. Slice a portion of the stem or branch, place moist moss around the entire wound, then cover the moss with plastic wrap. Once roots have formed, remove the plastic wrap and moss and cut off the upper portion of the stem or branch just below where the new roots have formed. Plant the newly rooted piece immediately. Dumbcane (*Dieffenbachia* spp.), Schefflera (*Brassica* spp.), and *Dracaena* spp. are easily propagated using this method.

Whatever method you choose for propagating your houseplants, be sure to use the proper tools, making sure that they are sterile, and to place the newly propagated plants in the correct environment, with the appropriate light, water, humidity, and temperature conditions, to ensure success. Be patient. Some plants respond very quickly and send out new roots shortly after being propagated, while others may take months. If you find that one method doesn't produce the results you desire, try again with another. The more experience you get in propagating plant material, the more successful you may become, and the more plants you will have to decorate your home.

## Suggested Further Reading

Toogood, A. 1999. *American Horticultural Society Plant Propagation*

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