

# Propagate by Plant Cuttings

Vegetative propagation using plant cuttings applies to many crops. This method allows the production of clones or plants which are considered “duplicates” of the parent plants genotypically, and usually also phenotypically. Just like other vegetative propagation methods, it is advantageous where a plant does not produce seeds, the seeds are sterile, or whenever seeds are not available.

With crops that can be easily propagated using plant cuttings, this method has numerous advantages. Many new plants can be produced in a limited space from a few stock plants. It is simple and can be easily applied without having to learn the special techniques in grafting or budding. It is rapid because there is no need to produce rootstocks.

Plant cuttings may consist of segments of the root or whole leaves or portions of leaves, or segments of stems which are used as planting materials. Depending on the plant part used, these propagules are called by special terms such as root cuttings, leaf cuttings, leaf-bud cuttings or stem cuttings. In sugarcane, the stem cutting is called **cane cutting** while in bamboo, it is **culm cutting**. Culm is the technical term for the main stem of plants belonging to the grass family **Gramineae** (alternatively named **Poaceae** ).

**Root cuttings** are segments of the root while **leaf cuttings** are either entire leaves, with or without the petiole, or portions of leaf blades. **Leaf-bud cuttings** consist of a leaf with petiole, and a short piece of the stem with axillary bud. **Stem cuttings** are segmented parts of the stem, or entire stems detached from the main branch. Where the stem cutting includes the tip or apex, it is called **tip cutting** .

Special terms are also used to classify stem cuttings such as hardwood or woody cuttings, semi-hardwood or semi-woody cuttings, softwood cuttings and herbaceous cuttings. These are classifications of stem cuttings based on the nature of wood and stage of growth.

Hardwood, semi-hardwood and softwood cuttings are taken from woody trees and shrubs while herbaceous cuttings are made from succulent, herbaceous plants like chrysanthemum, coleus, tomato, eggplant and squash.

Propagation with the use of plant cuttings is common for dicots but there are some monocots that can be rooted by this method like bamboo and sugarcane. Compared to the other methods, propagation by stem cuttings has the widest application.

## **Plants That Can be Propagated by Root Cuttings**

Breadfruit (*Artocarrpus altilis*), blackberry (*Rubus* sp.), fig (*Ficus carica*), garden phlox (*Phlox paniculata*), Japanese pagoda tree (*Sophora japonica*), lilac (*Syringa vulgaris*), *Malus* sp., oriental pear (*Pyrus calleryana*), *Rosa* spp.

### **Plants That Can be Propagated by Leaf Cuttings**

African violet (*Saintpaulia ionantha*), *Begonia* spp., *Bryophyllum* spp.), *Crassula* spp., *Kalanchoe* spp., lily (*Lilium longiflorum* and *L. candidum*), *Oxalis* spp., *Peperomia* spp., *Sedum* spp., snake plant (*Sansevieria trifasciata*), sweet potato, wax plant (*Hoya carnososa*). Generally, these plants have thick leaves.

Jasmine (*Jasminum sambac*) and dracaena (*Dracaena godseffiana*) have also been propagated experimentally by leaf cuttings.

### **Plants That Can be Propagated by Stem Cuttings**

Acerola (*Malpighia glabra*), bamboo, black pepper (*Piper nigrum*), cacao (*Theobroma cacao*), cassava (*Manihot esculenta*), citrus (*Citrus* spp.), coffee (*Coffea* spp.), eggplant (*Solanum melongena*), grape (*Vitis vinifera*), guava (*Psidium guajava*), lagundi (*Vitex negundo*), lanzones (*Lansium domesticum*), makabuhay (*Tinospora orispa*), malunggay (*Moringa oleifera*), molave (*Vitex parviflora*), Norfolk Island Pine (*Araucaria heterophylla*), passion fruit (*Passiflora edulis*), physic nut (*Jatropha curcas*), pili nut (*Canarium ovatum*), pineapple (*Ananas comosus*), rubber (*Hevea brasiliensis*), red mombin (*Spondias purpurea*), sambong (*Blumea balsamifera*), santol (*Sandoricum koetjapi*), sapodilla (*Manilkara zapote*), starapple (*Chrysophullum cainito*), sugarcane (*Saccharum officinale*), tsaang gubat (*Ehretia microphylla*), tomato (*Lycopersicon esculentum*), tubli (*Derris* sp.).

Note: Plant cuttings may not always produce the desired plant characteristic. The use of root cuttings in propagating variegated plants may result to reversion to the normal, evergreen type. This also occur when variegated snake plant (*Sansevieria laurenti*) is propagated by leaf cutting. This is because these plants are periclinal chimeras in which the inner cross sectional areas of the plant body are normal while the thin outer layers are mutated cells which are responsible for the variegation. With root and leaf cuttings, the new plant regenerate from the inner cells, resulting to normal growth and loss of variegation.

In snake plant, the variegated character can be perpetuated by division of rootstock instead of leaf cutting propagation.

### **References**

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Hartmann, H.T. and D.E. Kester. 1975. Plant Propagation: Principles and Practices. New Jersey: Prentice-Hall, Inc. pp. 211-313.

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