



PLANTS FROM CUTTINGS

It is possible to grow a whole new plant from a tiny piece because plants possess TOTIPOTENCY, which means that every living cell of that plant contains the genetic information necessary for reconstituting all the plant parts and functions!

The drawback to cloning is the lack of genetic diversity, which keeps a species strong and vigorous and better able to survive natural ecological disasters. Keep that in mind before filling your garden with multiple clones of just one “mother” plant.

In cloning plants, we are taking advantage of adventitious roots; each node or bud on the stem are sites of meristematic tissues that are necessary for the initiation of adventitious roots. The first response to a wound on the stem is for scar tissue to form as a protection against pathogens. Then the cells in the vascular tissues begin to divide and initiate growth. This inherent ability varies by degree among plant species. Our job as plant propagators is simply to set up the life support systems needed to facilitate these processes.

LIFE SUPPORT SYSTEMS

Water is necessary for uptake of nutrients within the plant tissues.

Water vapor and humidity helps to reduce the rate of transpiration.

Oxygen is necessary to enable tissue respiration, both around the leaves and at the base of the cutting where missing tissues (roots) will be forming.

Light. Low level, but bright light allows some photosynthesis to take place.

Temperature should be kept fairly stable, with the optimum range being 55 to 75 degrees. Cuttings may still root at a lower temperature; but it will take longer.

TYPES OF CUTTINGS

Leaf cuttings. The cut leaf must generate both root and shoot, but even so, some plants are easy to propagate from a leaf.

Herbaceous. Cuttings of fleshy plants such as succulents; need to create scar tissue over the cut before they are placed in a moist rooting medium.

Softwood. Tip cuttings of new spring growth; these wilt easily and are prone to bruising, and therefore rot.

Greenwood. A little later in the season, the growth is still young, but you can see the base of the stem darkening and feel the stem firming.

Semi-ripe. The stems are harder and buds can be seen developing at the nodes. Your cuttings will be from this year’s growth, such as dormant buds just beginning to swell, but the plant is not actively producing new growth at the time.

Hardwood. These cuttings are taken when the plant is dormant. Be sure to use a different cut—one angled across the stem, the other straight—so that you know which end needs to reach up to the light, and which one will grow down into the soil.

Layering. This process works really well for vining and caning plants. The “cutting” is not detached from the mother plant; it may help to wound the tissue at a node, but often all you need to do is create firm contact between a node and the soil and wait until roots have formed. When there is substantial new root and shoot growth, the clone can be cut from the mother plant.

Root cuttings. These are most often sections of root pieces, and the one type of cutting that does not necessarily produce a clone of the parent plant. Be sure when you take the cuttings that you will be able to determine which end was at the top and which was growing down. If that’s not possible, lay the root cutting on its side.

BE SURE TO LABEL YOUR CUTTINGS with: species name, date the cuttings are struck, how many, and what type of rooting hormone, if any, you may have used.