Propagate Herbaceous and Woody Plants by Air Layering

Air layering, also called marcotting, marcottage, Chinese layering, pot layerage, circumposition and gootee, is a vegetative method of plant propagation which involves the rooting of aerial stems while attached to the parent plant. It is one among the various special methods of layering which also include tip layering, simple layering, compound or serpentine layering, mound or stool layering, and trench layering.

This propagation method applies to many trees, shrubs, bamboo and herbaceous plants. The following fruits and plantation crops have been successfully marcotted:

Bell fruit, water apple (*Syzygium aqueum*), black pepper (*Piper nigrum*), cacao (*Theobroma cacao*), cashew (*Anacardium occidentale*), citrus (*Citrus* spp.), coffee (*Coffea* spp.), grape (*Vitis vinifera*), guava (*Psidium guajava*), jackfruit (*Artocarpus heterophyllus*), lanzones or langsat (*Lansium domesticum*), lychee (*Litchi* sp.), mango (*Mangifera indica*), mangosteen (*Garcinia mangostana*), pili nut (*Canarium ovatum*), sapodilla or chickle tree (*Manilkara zapota*), starapple (*Chrysophyllum cainito*) and tamarind (*Tamarindus indica*).

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Factors Affecting Regeneration

The formation of adventitious roots during air layering is induced by various stem treatments. These generally involve the girdling or wounding of a small part of the stem, resulting to the interruption of the downward movement of organic materials such as carbohydrates, auxin and other growth factors from the leaves and shoot tips. These materials accumulate close to the treated area and rooting occurs.

Continuous moisture, sufficient aeration, and moderate temperatures in the rooting zone affect the formation of roots on layers or marcots. These conditions can be provided by using a loose rooting medium with high water holding capacity such as a sphagnum moss. It has been observed also that the rainy season favors rooting rather than the hot, dry season.

The application of rooting hormone to the injured stem is sometimes effective. This can be applied in powder form, lanolin, or as a dilute solution.

Rooting success likewise depends on the plant species. In general, plants which can be propagated using stem cuttings will also root through air layering. Prostrate stems of some plants which naturally root at the point of contact with the soil indicate that these plants can be easily rooted using this method, as with stem cuttings.

In monocot plants such as bamboo, aglaonema, dieffenbachia and dracaena, the roots emerge from the node.

Advantages Compared to Other Vegetative Propagation Methods

1. Rooting success is more ensured through layering, including clones which will not root easily.

2. Air layering or marcotting is relatively simple to perform. With a small number of plants, it can produce more layers with less skill, effort and equipment.

3. Larger plants which are readily mature can be produced in faster time.

Disadvantages Compared to Other Vegetative Propagation Methods

1. Air layering or marcotting is laborious and therefore expensive.

2. Only a small number of layers can be produced from a parent plant than when the same plant is used as source of cuttings, buds, or scions.

3. A wider area is needed to grow stock plants to be able to produce a greater number of layers.

4. Bigger layers need special care to establish them independently on the potting containers.

References

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