

NEW PROPAGATION TECHNIQUES

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At Flowerwood Nursery Inc., Loxley Division, we propagate all liners for Loxley's production. We also propagate all liners for three other Flowerwood divisions. Some of these are for liner sales. We produced a total of just under 5 million units in 1989.

PROPAGATION METHODS

We direct stick cuttings in Lerio 2¼-, 3¼-, and 4-in. cups. We root our cuttings under intermittent mist. Our main rooting structures are gutter-connected hoop houses, which we cover with two layers of plastic. This plastic is then inflated.

Our cutting crews consist of two 10-person crews. Each person cuts and sticks their own cuttings. The two crew leaders are responsible for dipping the cuttings in the rooting hormones. Since this is a very important step in the rooting process, we trust it only to our crew leaders.

Flowerwood Nursery has been very successful with this propagation system. We are never satisfied with slow-rooting or poor rooting percentages. As a result of trying to speed up rooting and increase rooting percentages, we have developed many new propagation techniques.

Testing procedures. We have set up a simple testing procedure for use for a cultivar that is slow to root. We also use this procedure on hard-to-root or new cultivars we have not rooted before. We fill a tray with thirty-six 3¼-in. Lerio cups. That gives us six treatments with six replications per treatment. One treatment will be the control with no rooting hormone used. Two treatments will be run with different strengths of the potassium salt of indolebutyric acid (IBA). Two strengths of IBA will be tried, and three different strengths of the combination of IBA plus naphthalenacetic acid, (NAA) will be tested.

Usually we can gain enough information from these tests to make an intelligent guess as to the best hormone to use. More trays can be added and different hormone combinations can be used to fine tune this testing system.

Using NAA. The results of many years of testing has shown that the addition of NAA to IBA helps speed the rooting process in come cultivars. Without the proper rooting hormone some cuttings only form a callus at the end of the cutting, with a single root often forming off that same callus. At this point, the cutting can become

lazy. It can take up water and some nutrients through the callus. We have found that the addition of NAA to the IBA solution speeds the cutting through the callusing stage, and then it produces more roots faster.

K-IBA—Potassium salt of IBA. IBA and NAA must be mixed with alcohol. Some cultivars we propagate are alcohol-sensitive. In those cases we use the rooting hormone, K-IBA, which is mixed with water. We root all azalea cultivars in K-IBA, ranging from 8000 ppm for indicas to 3000 ppm for kurumes. Barberries root well in 3000 K-IBA. *Ilex* × *attenuata* 'Fosteri' needs 10,000 K-IBA. As a rule for rooting junipers, we use IBA for dormant wood and K-IBA for actively growing wood.

As a result of using a wide range of rooting hormones at different strengths, we have learned to root many cultivars that are considered hard to root. The following are some examples of plants we have learned to propagate more effectively by upgrading our propagation techniques

Chionanthus virginicus Grancy gray-beard is very hard to root. Our first attempt resulted in 4% rooting success out of 10,000 cuttings taken from seedling-grown plants. We took cuttings from those 4% and had a better cutting percent the next year. By following this procedure our rooting percentages have increased each year.

We take cuttings in early spring of hardened-off new growth. We dip them in 1250 ppm IBA.

Acer palmatum We take cuttings of dwarf Japanese red maple in early spring as soon as the new growth has hardened. The bigger the diameter of the stem the better it roots. Dip the cuttings in IBA 6250 + NAA 2500. We overwinter the liners in a cool house, which never drops below 25° F. The liners are planted the following spring.

Cornus florida 'Stokes Pink' and 'Weaver's White' We dip these cuttings in 10,000 K-IBA using a slightly stiff, new-growth cutting taken in early spring. We take a two-node cutting, sticking one node under the soil. In the fall the best of these rooted liners are picked out and planted in 5-gal cans. The rest are overwintered in a cool house and planted in 1-gal in spring. They are then shifted to 7-, 10-, and 15-gal in late summer.

Osmanthus fragrans. Sweet olive, or fragrant tea olive, is an example of a species that roots better when stuck at a particular time of year. In our area, sweet olive rooting is spectacular when cuttings are stuck around the first of August. We use a new-growth cutting that has hardened off. The bigger the caliper of the cutting, the better it roots. The dip is 15,000 ppm K-IBA.

Mandevilla 'Alice duPont' This is a fairly new cultivar for us. So far it has been an excellent seller. We take a one-node cutting and trim off half of the leaf surface. Dip the cuttings in IBA 2500. *Mandevilla* roots quickly and grows rapidly. We stick the cuttings in July, plant out the liners in October, and sell the gallon plants in April.

Hydrangea quercifolia Oakleaf hydrangea roots well in spring to early summer. Take a one-node cutting and trim off 1/3 of the leaf surface. Dip the cuttings in 3000 ppm K-IBA. We have found the liners do not overwinter well in a warm house. They must be kept cool during the winter.

Vaccinium cvs We are currently growing five cultivars of blueberries. A special soil mix is needed to root their cuttings successfully. Our usual propagation soil mix consists of 3 parts bark, 3 parts perlite, and 2 parts peat moss, but blueberries root well in a soil mix of 1/2 peat moss and 1/2 bark. Dip the cuttings in 8125 ppm IBA + 750 ppm NAA. Use a spring cutting of hardened-off new growth.

Trachelospermum asiaticum. Asiatic jasmine cuttings are very easy to root. However, we always had trouble making a full liner. Now, when we cut Asiatic jasmine, we take a group of four to five cuttings and stick them in the center of a 3 1/4-in. cup. The result is a fuller liner in about half the time.

Nandina domestica 'Compacta'* and 'Harbour Dwarf'. These two nandinas usually produce one plant stalk per one cutting stuck. In an effort to grow a fuller, better-looking plant we came up with two methods to promote suckering. Suckering fills the pot with new stalks, resulting in a salable plant much quicker.

The first method used to promote suckering is digging up suckers from stock beds. Planting these in cans results in a plant that is likely to sucker.

The second method is to root a cutting with one node under the soil. When the liner is transplanted, bury it deep enough to cover the next node up the stem. The result is suckering from one or both of the nodes.

CONCLUSIONS

The ability to use a wide range of rooting hormones and propagation techniques has contributed greatly to the success of propagation at Flowerwood Nursery. The system we use has evolved over the years and will continue to change in the future. Dedicated personnel is what keeps the changes moving in a positive direction.

* Please see the editorial note on p. 385.