SUMMER SOFTWOOD CUTTINGS VS. WINTER HARDWOOD CUTTINGS

JAMEE A. NIRIDER

The Berryhill Nursery Company
4001 Moorefield Road
Springfield, Ohio 45502

We had a problem. A problem rooting what the industry traditionally considers relatively easy. In 1988 we were attempting to root *Cornus*, *Prunus*, and *Forsythia* under an intermittent mist system. Most other softwood cuttings were rooting very easily and with acceptable levels of success, but for several reasons we did not like the results we were getting with these plants. Defoliation, very weak root systems and stem rot seemed the norm.

We do not have a pad and fan system for summer cooling and began to reason that our timing for cuttings (June through July) coupled with the heat at that time of year was directly linked to our rooting problems. Since heat, mist, soil mix, and rooting hormones were working with the other plants, we decided it was time to rethink the situation in regards to the mentioned plants and their cultivars.

What we decided to do was not revolutionary to our industry. In fact, it was very simple; we had overlooked the obvious. We had overlooked an established industry standard of sticking hardwood cuttings with 72°F bottom heat during mid-winter. We had followed the thought that everything should and could be rooted under mist from summer softwood cuttings. Winter hardwood cutting production is now a very integral part of our propagation cycle. It has transformed a weak summer softwood program into a very successful and predictable year-round propagation rotation.

To accomplish our task we began by using silica sand but soon found that the shear weight of the sand flat was a big problem for handling. Cuttings rooted well in sand but were hard to determine irrigation needs. When we began transplanting from the rooting flats into our cell-paks we discovered that the sand flats had roots that were very fleshy and brittle. We lost such a large percentage of roots to the transplanting process it was as though the plants had to begin root regeneration all over again. The transplants made the shift but it took longer than we liked for them to become well-rooted into the cell.

Our primary rooting medium now consists of perlite or aged pine bark. In our first year we tried using some perlite as well as the sand. The advantage of perlite over sand is quite obvious—weight or lack of it. The perlite is still difficult to read in its need for irrigation but is somewhat more forgiving than sand. The porous nature of the

perlite is a big plus for the *Prunus* genus, as we consistently get the best results from the two together.

We get an excellent root system from perlite and see very little transplant shock. The transplant goes very well and we even find it necessary to root prune as we transplant.

Aged pine bark looks to be our best overall material for the future. It offers us an excellent moisture retentive medium as well as draining very nicely. Color and vigor are improved in all species and the root system is far superior. The bark produces a very fibrous and seasoned root system. This root system is extremely tough and durable, and does need a trimming at transplant. It also matures in the cell pak much faster than the others. Pine bark is excellent for the genus *Cornus*.

The cuttings are approximately 3/16 in. in diameter and 5 to 6 in. long for all species. Cuttings are dipped into a 1% IBA powder. They are then flatted into the desired medium for rooting on an inch spacing. Cuttings are generally taken from early January to mid-February. Bottom heat (72 °F) is maintained throughout rooting. Transplanting occurs as weather permits in the spring, normally mid-April to mid-May.

Probably the most dramatic difference, besides the increase in rooting percentage success, is the time that it now takes us to produce a saleable container-grown plant. What used to take us 24 months to produce a saleable #3 container, now takes us 18 months. This schedule applies to all species mentioned. *Forsythia* would be the first to finish its growth cycle, followed by *Cornus*, then *Prunus*. All do finish on schedule.

Timing rotation: 18 months
- Cuttings taken 1-1 to 1-30 (1-1 to 1-30 = Jan 1st to Jan 30th)
- Transplant (to a 2½ x 3 in. deep Nu-pot) 4-15 to 5-1
- Transplant (to a –3 container) 6-15 to 7-1
- Finish 6-15 to 7-1 the following year

Timing rotation under old mist system: 24 months
- Cutting taken 6-1 to 7-15
- Transplant (to Nu-pot) 8-1 to 5-1 the following year
- Transplant (to #3 container) 6-15 to 7-1
- Finish 6-15 to 7-1 the following year

Plants used in this study and their 1990 rooting percentages.

Cornus × *baileyi*	98%
C. alba 'Elegantissima'	75%
C. alba 'Gouchaultii'	89%
C. sericea 'Cardinal'	83%
C. sericea 'Flaviramea'	99%
C. sericea 'Kelseyi'	57%
Forsythia × *intermedia* 'Lynwood'	82%
Prunus × *cistena*	74%