

PROPAGATION OF DOGWOODS BY CUTTINGS

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Last year, as many of you may remember, I spoke generally on the propagation of dogwood. This year I intend to limit my comments solely to the propagation of dogwood by cuttings.

With all species of dogwood, we take the cuttings in late June and early July. The cuttings are placed in flats in a medium of $\frac{1}{3}$ sand, $\frac{1}{3}$ peat moss, and $\frac{1}{3}$ coarse perlite. Several flats of cuttings were prepared with medium of pure washed concrete sand. These, however, did not root nearly as well as those in our standard mixture. The cuttings are taken only from the current season's growth. In the case of *Cornus alba*, and varieties, if the growth is long enough, cuttings from secondary growth may be used. With *Cornus florida* and its cultivars and *Cornus kousa* only tip cuttings are used. The cutting length is four to six inches and the lower leaves are removed. Following removal of leaves, cuttings of *Cornus florida* and varieties, and *Cornus kousa* are given a wound of $\frac{1}{2}$ to $\frac{3}{4}$ inch in length. The cuttings are then given various hormone treatments prior to placing in the rooting medium. Generally 96 to 120 cuttings are placed in each flat dependent on the size of the cuttings. Prior to setting, cuttings of *Cornus alba* and *Cornus stolonifera* varieties are given a hormone treatment of Seradix No. 2 powder (0.3% IBA). Several flats were given a treatment of No. 2 Seradix plus Benlate. The Benlate was added to the hormone powder at the rate of one ounce Benlate to ten ounces hormone powder. Following treatment, cuttings are placed over bottom heat at 72°F. and under intermittent mist controlled by a moisture leaf. The cuttings are usually well rooted within a three week period. They may then be hardened off and left in the flat or potted. The potted cutting, however, will develop to a larger size than those left in the flat. Flats in which cuttings were allowed to remain over winter developed a considerable amount of damping off, while those treated with a hormone and Benlate showed very little. With *Cornus florida* and cultivars and *Cornus kousa*, we used Seradix #3 (0.8% IBA), or Jiffy Grow diluted 1:5. In some cases the Seradix #3 was mixed with Benlate as above. Where Jiffy Grow was used, the cuttings were given a quick dip to the depth of the wound. The rooting is slower than with *Cornus alba*, taking five to six weeks. We have found once rooting has taken place it is better to let these cuttings remain in the flat until after dormancy, then pot prior to growth in the spring. In all cases, except where Benlate was used, there was some incidence of damping off during the rooting period. The use of Benlate also seemed to encour-

age the development of a heavier root system. When we have potted *Cornus florida* cultivars or of *Cornus kousa* prior to dormancy, we seem to have trouble getting the potted liners to start growth in the spring, while if potted after dormancy no such trouble is encountered. A comparison of some of the results obtained the last two years is shown in table 1.

Table 1. Rooting results obtained with cuttings of five species of *Cornus* during 1971 and 1972.

Cultivar	Year	Cuttings Prepared	Hormone Treatment	Number Rooted	Percent Rooted
<i>Cornus alba</i>	1971	1,260	Seradix #2	1,230	97.7
'Argenteo-marginata' (<i>'Elegantissima'</i>)	1972	1,140	"	1,095	96.0
<i>Cornus alba</i>	1971	1,440	Seradix #2	1,394	96.8
'Gouchaultii'	1972	600	" *	591	98.5
<i>Cornus stolonifera</i>	1971	300	Seradix #2	295	98.3
'Flaviramea'	1972	420	"	402	95.7
<i>Cornus florida</i>	1971	290	J. G. 1:5	227	78.3
'Rubra'	1972	190	Seradix #3*	174	91.5
<i>Cornus florida</i>	1971	290	J. G. 1:5	217	74.8
'Cherokee Chief'	1972	380	"	291	76.5
<i>Cornus florida</i>	1971	390	Seradix #3	264	67.7
'Sweetwater'	1972	190	"	122	64.2
<i>Cornus kousa</i>	1971	200	Seradix #3	109	54.5
	1972	280	" *	182	65.0

* Seradix and Benlate (1 oz. Benlate to 10 oz. Seradix)

I think it is evident from the results shown above that, without the addition of Benlate, the result of the two years were quite consistent; however, the addition of Benlate to the hormone powder improved rooting.

MODERATOR WOOD: After your cuttings were rooted you say you didn't want to transplant them until after dormancy. How much new growth had developed prior to transplanting when they were dormant?

LES CLAY: With *Cornus florida* and *C. kousa* we found, after rooting, very little initial top growth the first year.

MODERATOR WOOD: While they are in the flat, before you transplant them, but after they are rooted — you allow new growth to develop, then they go dormant, then you transplant them. Is there much new growth put on in the flat?

LES CLAY: No — not much new growth in the flat. It seems if we transplant prior to the cutting losing its leaves we have

trouble making the buds break the next spring. But if the leaves stay on and they remain in the flat until the leaves normally drop, then there seems to be no trouble whatsoever.

MODERATOR WOOD: Bruce Briggs was born and raised in the industry, in his father's business of Brigg's Nursery, Olympia, Washington. Bruce is one of the most innovative people in our industry. If there is anything around to try, Bruce is going to try it. When anyone in the industry, whether it be in Oregon, Washington, or any place else needs any help, all they have to do is yell for help and Bruce is right there at the front of the line. Bruce Briggs:

RESEARCH AT THE NURSERY LEVEL, II

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At the 1969 Eastern meeting, I gave a paper entitled, "Research at the Nursery Level"(1) My talk today pursues some of these ideas further and will be in a similar format (mostly slides with some discussion and, hopefully, some questions at the end).

ROOTING IN AIR

We first constructed an air rooting chamber several years ago as a teaching device and the basic structure was described in the 1965 and 1966 IPPS Proceedings (2,3). We have continued using the chamber as a research tool because it offers a quick observation of the rooting progress without, in any way, disturbing its continuance.

Rooting in the air chamber has always been poor in the late fall and winter months. We have decided that this is not only a temperature factor, but that light intensity is much more critical with cuttings under these conditions than when they are struck in a solid medium. This year, even in the long days during July, when the tops were shaded 60%, cuttings which rooted in seven days in full light took over 14 days to root in the shade.

As mentioned in earlier articles, one factor which has needed improvement in this air chamber is a safety provision, in case of a power or water failure. An IPPS member in our area, Warren Berg, used a tray of water under the cuttings to keep them moist. We have been using this method, keeping the mist above and the water-filled tray about an inch or so from the bottom of the cuttings, with the water heated by an electric cable to around 20