

ing hours. This is extremely important; however, oversaturation of the medium can be a problem so we carefully monitor the duration of the "on" time. We usually cut down the "on" time to compensate for increased frequency. We will continue this until a small root system develops and will then start to harden the cuttings off. The nozzle that is being used is a ¼ E 5.8 parasol nozzle by Spraying Systems, Inc. It gives a fine spray without a lot of water volume. I am very pleased with this nozzle, but it does require 80 to 100 psi pressure. Ours are spaced 7½ ft. apart.

The cuttings are rooted in a 47%-shade mist area. This area is sprayed twice a week with the routine fungicide program. It is extremely important to monitor for root rot as the plants are very susceptible to this problem, especially under the high mist environment. The hardening-off process needs to be accomplished slowly. Rapid hardening-off will cause defoliation, and plants left under mist too long will get root rot. They should be ready for hardening in five to six weeks. These liners are ready for fall-canning of the same year.

PROPAGATION OF *CLETHRA ALNIFOLIA*

BLAINE A. BUNTING

Buntings' Nurseries, Inc.

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We propagate *Clethra alnifolia* from two sources:

1.) Old stock plants, or 2.) liners, bedding plants

We usually take cuttings by the second week of June in our area, which is lower Delaware (Zone 7) along the Mason/Dixon Line of the DelMarVa Peninsula. These cuttings must be taken at this time as the percentage of rooting drops drastically as the growth on the stock plants harden off.

The second group used is the young plants (liners). Softwood cuttings of 3 to 6 in. can be taken any time as long as they are growing or have green stems. These softwood tip cuttings will root easily in about a month under mist. We take growing tip cuttings from liners up until October with reasonably good results.

We use Chloromone at a 1:3 dilution for our rooting compound. Wood's Rooting Compound has been used with the same good results.

Clethra cuttings will root in almost any medium. However, I prefer half peat and half perlite in trays in outside mist beds

under full sun. The mist is set 3 sec. every 3 min. After rooting, the trays are transferred to a plastic greenhouse to grow the following spring.

We have found that these young rooted cuttings in trays need to be kept in a heated plastic greenhouse the first winter with no lower night temperatures than 35°F. Daytime temperatures may go up to 70°F on sunny days. This environment keeps the cuttings in good condition. They seem to be much slower to break in spring than most plants.

The rooted cuttings are transplanted to fertile liner-growing beds in May each year. *Clethra* is a low-growing shrub compared to some others like forsythia. We like to see it at least one foot or taller to transplant to the field the following spring. These plants should grow in the field for two summers before they are sold.

PROPAGATION OF *VIBURNUM CARLESII* HYBRIDS

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Viburnum carlesii cultivars and hybrids are desirable for their fragrant flowers, excellent foliage, lack of serious pests, hardiness, and some fall color. The U.S. National Arboretum has introduced several interspecific hybrids that show promise.

We propagate several hybrids of *Viburnum carlesii* by cuttings. *Viburnum carlesii* 'Compactum', *Viburnum* × *juddii* (*V. bitchiuense* × *V. carlesii*), *Viburnum* × *carlcephalum* (*V. carlesii* × *V. macrocephalum* var. *keteleerii*), *Viburnum* 'Cayuga' (*V. carlesii* × *V. carcephalum*), *Viburnum burkwoodii* (*V. carlesii* × *V. utile*), *Viburnum* × *burkwoodii* 'Mohawk' (*V.* × *V. carlesii*), *Viburnum* 'Chesapeake' (*V. Cayuga*; × *V. utile*), and *Viburnum* 'Eskimo' (*V. 'Cayuga'* × *V. utile*) are among those we produce.

Description of ground beds and equipment. We propagate in 4- × 48-ft. ground beds bordered by crossties or treated 6-in. wood poles. The rooting medium is Emory soil, a fine sandy loam, which has been amended over the years with sand and organic matter. I like this medium, as the clay colloidal material improves the cation exchange capacity and contains nutrients not available in artificial soils. We fumigate with methyl bromide at a rate of 1½ lb./100 ft.²

We cover the beds and support the polyethylene with 6-