

Softwood Cutting Propagation of Northeast United States Native Shrub Species[©]

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INTRODUCTION

There is strong consumer interest in native plants for landscaping to create natural gardens that attract wildlife and are not invasive. For growers to capitalize on the native market, they must expand their product lines by adding new species. Landscape plants are often used in locations with challenging environmental conditions including reflected light, high temperatures, inadequate water supply, infertile soil, road salt, and pedestrian pressure. Expanded use of native species will be most successful if growers, landscapers and consumers know which native species will perform well in challenging landscape situations. Research I have conducted at the University of Connecticut has identified underused native shrubs that are adaptable and have the potential to become revenue-generating crops for the nursery industry. Each plant offers gardeners multiple ornamental attributes such as interesting summer foliage, refined habit, edible fruits, attractive flowers, and respectable fall foliage color. These native shrubs have been unused in the landscape because their landscape adaptability was unknown and because production systems have not been developed. Some native shrubs are already being successfully produced by the nursery industry and are widely used in the landscape. Growers must be able to produce these newly identified native shrubs using production systems whose efficiencies are on par with those already used to produce successful native shrubs crops. The goal of the research presented here is to develop commercially viable propagation systems for these novel native shrubs.

METHOD AND RESULTS

During the 2011, 2012, and 2013 growing seasons, propagation by softwood stem cuttings was evaluated for the following native shrub species: *Ceanothus americanus* (New Jersey tea), *Corylus cornuta* (beaked filbert), *Eubotrys racemosa* (sweetbells), *Lonicera canadensis* (American fly honeysuckle), *Myrica gale* (sweet gale), *Prunus pumila* var. *depressa* (creeping sand cherry), *Vaccinium stamineum* (deerberry), *Viburnum acerifolium* (maple leaf viburnum), *Viburnum lantanoides* (hobblebush). Softwood stem material was collected from mature plants and processed into cuttings 10 to 15 cm in length with two to three nodes. Cuttings were wounded and dipped in talc-based, IBA rooting hormone [Hormodin[®] (OHP Inc., Mainland, Pennsylvania)] at 0 ppm, 1,000 ppm (Hormodin #1), 3,000 ppm (Hormodin #2), or 8,000 ppm (Hormodin #3). Dipped cuttings were inserted into 1.3-L plastic flats filled with medium composed of Canadian sphagnum peat moss, horticultural-grade vermiculite, and horticultural-grade perlite (2:1:1, by vol). Flats of cuttings were held on a polyhouse bench under intermittent mist that provided 10 s of mist every 6 min. After 8 weeks, rooting success was evaluated and the optimal propagation conditions are reported in Table 1.

Table 1. Rooting success.

Native species	Time of year	IBA (ppm)	Rooting (%)
<i>Ceanothus americanus</i>	June	3000	50-60
<i>Corylus cornuta</i>	June, July, Aug.	3000	80-90
<i>Eubotrys racemosa</i>	June, July	0, 1000, 3000	100
<i>Lonicera canadensis</i>	May, June	3000	45-50
<i>Myrica gale</i>	June	3000	90
<i>Prunus pumila</i> var. <i>depressa</i>	June, July	3000	90
<i>Vaccinium stamineum</i>	June	1000, 3000	85-90
<i>Viburnum acerifolium</i> ^X	June, July, Aug.	0, 1000, 3000	100
<i>Viburnum acerifolium</i> ^Y	July	3000, 8000	65-80
<i>Viburnum lantanoides</i>	June	3000, 8000	80-85

^XTwo node cuttings.

^YSingle node cuttings.

Abbreviations: IBA = indole-3-butyric acid.

CONCLUSION

For a native plant to be considered a viable commercial crop for general wholesale nurseries it must be able to be propagated with at least 80% propagation success. Growers focusing on production of only native plant material may find lower percent rooting to be acceptable. *Eubotrys racemosa* and *V. acerifolium*, from cuttings with a minimum of two nodes, were the easiest shrubs to propagate and have the most obvious potential to become mainstream nursery crops. *Myrica gale* and *P. pumila* var. *depressa* were also very easy to propagate from cuttings at commercially viable rates. *Corylus cornuta*, *V. stamineum*, and *V. lantanoides* could be rooted at rates above 80%, and likely can become commercial crops especially if propagation success can be further increased by improving rooting techniques. Without development of improved propagation methods for *C. americanus* and *L. canadensis*, it is unlikely that these two species will be viable crops for large wholesale growers, but may still hold promise for specialty native plant producers. One propagation technique that has proven to be critical in dramatically increasing propagation success with some of the native species (*C. cornuta* and *V. acerifolium*) is overwintering rooted cuttings in their propagation flat and repotting in spring. Leaving cuttings undisturbed for the first overwintering period will likely significantly improve propagation success with other native shrubs species such as *C. americanus* and *L. canadensis*. I am currently conducting container production studies with these native shrub species and others evaluating media properties, fertility and pruning.