Commercial Propagation of Southern Native Woody Ornamentals

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Colonial Williamsburg, Virginia, was one of the earliest and most refined communities of our young country. Williamsburg was carefully planned and beautiful homes and commercial buildings were planted with gardens and landscaping. The majority of the plants used in gardens were native shrubs. Only occasionally would a non-native appear, perhaps roses or fruit trees which found their way from Europe. Another famous colonial site was George Washington's estate in Mount Vernon, Virginia. George Washington, Father of our Country, was also a famous horticulturist who established extensive plant collections and well designed gardens. Once again, the major source of available garden plants was native species.
As our country grew both westerly and southerly, most of our gardens were decorated with native shrubs and trees. Gardening focused on food production.

In the Southern U.S., these trends continued until early in the 20th Century because of the lack of industrialization, the complications of the Civil War, and the agriculturally based economies. The early 1900s saw everything change and so did the preference of ornamental plants by Southern citizens. Those who could afford the luxury began to plant non-native *Camellia japonica* and evergreen azaleas throughout developing cities like Charleston, South Carolina; Mobile, Alabama; Baton Rouge, Louisiana; and other similar cities. After World War II, the South experienced the housing boom and urbanization much like cities throughout the U.S. Landscaping became more commonplace and a commercial nursery industry began rapid growth.

Production and use of mostly non-native species from Asia dominated the trend during this era, which lasted until the early 1990s. Nurseries and landscapes were dominated with *Ilex crenata*, *I. cornuta*, evergreen azaleas, *Ligustrum*, *Pittosporum*, and a few other non-native species. Only a few natives were commercially important. *Ilex vomitoria* 'Dwarf' (syn. 'Nana') , a dwarf form of the native yaupon holly was an exception to the rule and was one of the few native species produced.

The Southern U.S. is blessed with a wide diversity of native trees and shrubs. Southern species are now a very exciting and important sector of our commercial production and landscapes. The advantages of producing and planting native species is obvious, i.e. adaptation to local climatic conditions and resistance to pests.

We produce about 40 native species and nearly 700,000 native plants per year. Granted, a large number of *I. vomitoria* dwarf clones constitute a significant part of the total production. Other native species produced are very important to Southern landscapes and Southern nurseries. Some of the more important species are detailed below. Propagation information for many others can be seen in Table 1.

Gelesemium carolina, Carolina jasmine, is a vine flowering in spring that grows throughout the Southeastern woods. In cultivation it is beautiful. Recently, *Gelesemium rankanii* is getting commercial attention because it flowers in the fall and spring. We have discovered a natural hybrid, which will flower 2 weeks later in the spring than does Carolina jasmine. This new hybrid is named 'Butterscotch'.

Table 1. A summary of propagation techniques of southeastern native species.

Scientific	Common	Cultivar	Propagation information
Acer saccharum subsp. *floridanum*	southern sugar maple	'Magnolia Springs'	IBA 6250 ppm and NAA 2500 ppm, early summer-late spring
Agarista populifolia (syn. *Leucothia populifolia*)	Ocala leucothia		4-in cuttings, scar 1 side, IBA 3125 ppm, semi-mature wood
Betula nigra	river birch	Legacy™ river birch	Hard new growth, stick in May and June, quick rooting, IBA 1875 ppm
Bignonia capreolata	crossvine	'Tangerine Beauty'	2-node cuttings, IBA 2500, mid-summer
		Shalimar Red™ crossvine	" "
Callicarpa americana	beauty berry		hard new growth, cut tips one at a time, mid-summer, IBA 1875 ppm
Calycanthus floridus	sweet shrub		IBA 1875, early summer, 3-inch cuttings
Chionanthus virginicus	Grancy grey beard		Cut when it's raining, don't let it get dry, hard new growth, scar 1 side, April is best , IBA 1875 ppm
Cliftonia monophylla	black ti-ti		IBA 1800, mid-summer, 3-inch cuttings, we normally white flowering
Clethera alnifolia		'Pink Spire'	Treat like a native azalea, put in around July, KIBA 5000, propagate May through July

Scientific	Common	Cultivar	Propagation information
Clethera alnifolia		'Ruby Spice'	
		'Hokie Pink'	
		'Hummingbird'	*see above
Gelsemium hybrid		'Butterscotch'	4-inch cuttings, get rid of tender tips (1 at a time), dip in IBA 1250 ppm
Gelsemium rankinii	Rankinii jasmine		*see above
Gelsemium sempervirens	Carolina jasmine	Lemon Drop™ Carolina jasmine	*see above
	Carolina compacta		
Hydrangea arborescence		'Annabelle'	One-node cuttings, trim leaf tips, late May early June, IBA 1250 ppm
Hydrangea quercifolia	oakleaf hydrangea	Dayspring™ oakleaf hydrangea	KIBA 3000 ppm, stiff new growth, 4-inch cuttings, trim leaf tips
		'Alice'	" "
		Snowflake™ oakleaf hydrangea	" ", keep isolated from other types *of hydrangea*
Ilex cassine var. *myrtifolia*	cassine holly		IBA 2500, semi mature cuttings, July-September
Ilex glabra	gallberry holly	'Compacta'	IBA 1875, 4 in cuttings, mid-summer
		'Densa'	
		'Shamrock'	

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Ilex vomitoria	yaupon holly	'Kathy Ann'	Cuttings should be branched to soil
		'Hightower'	" ", 4-in cuttings, scar on 1 side, stick in late summer and fall
		'Ocracoke'	" "
		weeping cultivar	" ", very unpredictable, difficult
		'Shadow'	*see Kathy Ann Batson
Ilex vomitoria	dwarf yaupon holly	'Schilling's Dwarf'	IBA 1875, October-May, no dip July-September, dip after 1st frost, cuttings should be branched to soil and stuck, shallow, branched cuttings, lower branch at soil level
		Bordeaux™ yaupon holly	" "
Illicium floridanum	Florida anise	'Head's Compact'	KIBA 5000, mid summer
Illicium parviflorum	star anise		KIBA 5000, mid summer
Itea virginica	sweet spire	'Henry's Garnet'	4-in cuttings, IBA 1875, late spring to early summer
		'Longspire'	" "
		'Saturnalia'	" "
Juniperus virginiana	eastern red cedar	'Brodie'	IBA 3750 ppm and NAA 1500 ppm, winter cuttings, brown wood for the cuttings

Scientific	Common	Cultivar	Propagation information
Leucothoe axillaris	coast leucothoe		4-inch cuttings, scar one side at a time, IBA 3125 ppm quick rooting 4in cuttings, scar one side at a time, IBA 3125, stick in high peat moss soil mix IBA 10000 and NAA 500 on very hard cuttings
Lonicera sempervirens	trumpet honeysuckle	'Canary'	One-node cuttings, mature new growth, thick cuttings, KIBA 5000
		'John Clayton'	
		'Allan Bush'	
Magnolia grandiflora	southern magnolia	'Little Gem'	Leave cuttings with 3 leaves, cut ½ of leaf off, cut below leaf node, IBA 20000, no pubescent hair on scarred end, don't over water or stress, each variety is slightly different, graft 1 inch or smaller root stock in January with cleft graft, cover with styrofoam cup; add soil to seal, seed germination: clean fresh seed, stratify for 2 to 3 months and plant
		D.D. Blanchard™ southern magnolia	" "
		'Southern Lights'	" "
		Green Back™ southern magnolia	" "

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Magnolia virginiana	sweet bay	'Santa Rosa'	IBA 20,000 ppm, new mature cutting in late spring and early summer
Myrica cerifera	southern wax myrtle		Seed germination: clean fresh seed by rubbing off wax coating with abrasive Surface, stratify for 2 months and plant; by cutting, semi-mature cuttings, IBA 1875 ppm
Prunus caroliniana	cherry laurel	Cherry Ruffle™ cherry laurel	Winter cuttings, reddish cast on stem, scar on one side, KIBA 15000 ppm
Quercus shumardii	Shumard oak		Seed: use tree pot, plant fresh seed in greenhouse in the fall
Quercus virginana	southern live oak		Seeds: pick up and plant seeds ASAP before worm eats acorn, fresh seed-fall plant in greenhouse using tree pot
Rhapidophyllum hystrix	needle palm		Feb. and March, cut flowers from male plants and transfer to flowering female trees, lay cut male flower on female flower and let pollen fall on the female to pollinate, harvest mature seed in December, seed germination: plant and wait 2 years for germination, some reports say to break hard seed coat and germination is faster

Scientific	Common	Cultivar	Propagation information
Rhododendron austrinum	florida swamp	Select Yellow #1	Soft new growth, KIBA 5000 ppm, stuck in May until mid June
		Select Yellow #2	
		'Sunrise'	
Rhododendron canescens		'Varnador's Pink'	*see above
Rubus allegheniensis	blackberry	Navaho™ sow-teat blackberry	Node cuttings, one grows in ground, IBA 1250, cut in summer Harvest or purchase seeds fresh, clean from burr and plant immediately, watch for worms and grubs during the cleaning process and eliminate if present, some will clone
Viburnum obovatum	Walter's viburnum		IBA 2500 ppm, new Spring growth, not real or blackhaw virburnum limber
Vitis rotundifolia	muscadine grape		KIBA 3000 ppm, 2 node cuttings
Wisteria frutescens		'Amethyst Falls'	KIBA 3000 ppm, in early summer through late spring, 3 to 5 inches

Another new clone of Carolina jasmine is a ground cover, mounding, non-vining form, which we will name 'Lemon Drop'.

The oakleaf hydrangea, *Hydrangea quercifolia,* has recently become very popular. Two cultivars were produced very early, Snowflake™ oakleaf hydrangea and 'Snow Queen'. Recently, other selections have been made. Our selection, 'Dayspring', is now adapted to heat and humidity. It has outstanding purple-maroon fall color. Dr. Michael Dirr's 'Alice' is robust and easy to produce.

Magnolia grandiflora, the most famous Southern tree species in the last few years, has exploded with commercial opportunities. The challenge of being a successful producer of southern magnolia is the challenge of propagation. Each successful propagator has a different technique. Some of our best cultivars are 'D.D. Blanchard™ southern magnolia, and 'Little Gem'. One to look for in the future is 'Teddy Bear', a very columnar, compact brown-black clone with dark-green leaves.

Production of native species is now a major factor in Southern nurseries and Southern landscapes. Many species are being recognized beyond the native ranges because of their beauty and hardiness and they are finding niches in the Midwest, Northeast, Europe, and occasionally in other horticultural markets around the world.

Question and Answer Period: Thursday Morning General Session I

Bruce Briggs: What effect, if any, did the recent hurricanes have on southern nurseries?

Jim Berry: It could have been a hair-raising experience, but it wasn't for me. One of our nurseries is on the shore of Mobile Bay. Hurricane Frederick emptied the Bay in 1979, but Hurricane George filled the Bay up and we had lots of rain, lots of high tide, and we had quite a few plants go under water. It was slightly salty. When it receded we checked the EC and we did leaching. Some of the azaleas were affected, but by next spring we think they will be alright. We had minimal plant damage.

Mary Irish: Can pollarding actually shorten the life of a tree?

Peter Del Tredici: Pollarding and coppicing were developed as agricultural systems in Europe to promote the continuous yield of firewood. Pollarding is essentially coppicing at a higher level so that grazing animals cannot destroy the new developing wood. If it's done right by starting the technique at a young age, it can increase the life span of the tree. Problems arise when mature trees are pollarded.

Elizabeth Davison: Do you see any gradation or gradient in juvenility in root systems? Are suckers from roots closer to the trunk more juvenile than suckers that emerge 10 ft from the trunk?

Peter Del Tredici: There is work that has addressed this question. I believe the same general rule applies below ground as above ground. The further out you go on the root system the less juvenile it is.