

Making The Most Of Compost

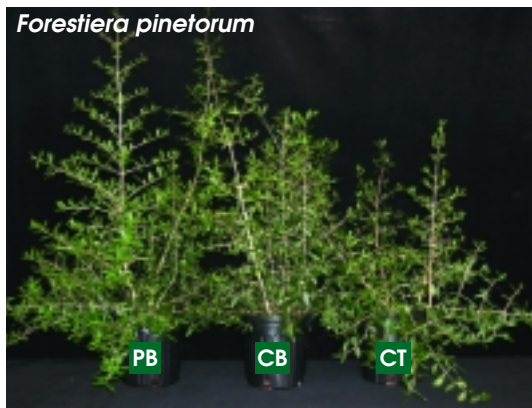


New research shows that containerized native species respond well to compost-based media.

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A large segment of the ornamental nursery industry is dependent on peat moss as a major component of their potting media. While Canadian sphagnum peat is still considered superior, Florida peat (sedge peat) is used in some commercial mixes. Florida ranks in the top five states nationally in the production of horti-

cultural peat with an annual mining-industry value estimated at \$8.18 million in 1999. Both economical and environmental implications of peat usage have resulted in the development of new substrate substitutes worldwide, most of which use waste by-products. Mandated processing of waste by-products in the United States has inspired national interest in addressing the



Shoot dry weights (in grams) of Florida ornamental plants grown with 0%, 50%, or 100% compost.

Scientific Name	Common Name	Compost ^{z,y}		
		100%	50%	0%
<i>Bacopa caroliniana</i>	Lemon bacopa	5.9 ^{NS}	7.5*	5.0
<i>Cordia globosa</i>	Butterfly sage	4.2**	4.1**	1.8
<i>Coreopsis gladiata</i>	Coastalplain tickseed	10.0 ^{NS}	9.7 ^{NS}	6.3
<i>Forestiera pinetorum</i>	Florida privet	28.7 ^{NS}	34.4*	28.4
<i>Gaillardia pulchella</i>	Blanket flower	19.4*	20.4*	14.1
<i>Hamelia patens</i>	Firebush	7.4**	4.2**	1.8
<i>Helianthus angustifolius</i>	Narrowleaf sunflower	20.7*	17.6 ^{NS}	14.4
<i>Heliotropium angiospermum</i>	Scorpions tail	12.0**	8.3**	1.5
<i>Lantana depressa</i>	Pineland lantana	7.9*	5.0 ^{NS}	1.9
<i>Lobelia cardinalis</i>	Cardinal flower	2.6 ^{NS}	2.2 ^{NS}	2.5
<i>Monarda punctata</i>	Spotted beebalm	14.8**	12.4*	7.6
<i>Myrcianthes fragrans</i>	Simpson's stopper	9.6 ^{NS}	10.9 ^{NS}	7.7
<i>Psychotria nervosa</i>	Wild coffee	1.5 ^{NS}	1.3 ^{NS}	0.9
<i>Rudbeckia hirta</i>	Black-eyed Susan	11.8**	7.8 ^{NS}	5.8
<i>Ruellia caroliniensis</i>	Carolina wild petunia	6.5**	4.4**	1.9
<i>Salvia coccinea</i>	Tropical sage	12.0**	9.6**	3.3
<i>Symphotrichum carolinianum</i>	Climbing aster	15.3**	13.8**	5.7
<i>Viburnum obovatum</i>	Walter's viburnum	15.1 ^{NS}	15.5 ^{NS}	13.8

^z Comparisons were established between peat-based mix (0% compost) and other individual treatments within each row (NS = not significant, * = significant at P≤0.05, ** = significant at P≤0.01).

^y Compost consisted of 1:1 yard trimmings:biosolids, Solid Waste Authority of Palm Beach County, West Palm Beach, FL.



Performance of Florida shrubs grown in peat- and compost-based media for 8 (*Cordia globosa* and *Hamelia patens*) or 18 (*Forestiera pinetorum* and *Viburnum obovatum*) weeks. PB = peat-based commercial mix (40% Florida peat, 50% pine bark, 10% coarse sand); CB = compost-based mix (40% compost, 50% pine bark, 10% coarse sand); CT = compost (1:1 yard waste:biosolids).

effectiveness of using composted biosolids and yard trimmings to grow containerized plants. The objective of this study was to evaluate 18 ornamental species grown in peat-based or compost-based media.

Study Set-Up

Selection of the species for this study was based on their native association to Florida's hammocks, wetlands, and flatwoods. Also, all of these species were available in the trade, were popular among consumers for their ornamental value, and had proven performance in Florida landscapes.

Plants were transplanted in containers filled with a biosolid:yard waste compost, a commercial peat-based mix, or a formulated compost-based mix (4:5:1, compost:pinebark: sand).

Research Results

At eight or 18 weeks (depending on the species), after transplanting in 100% compost, shoot dry weights of climbing aster, butterfly sage, blanket flower, firebush, narrowleaf sunflower, scorpions tail, pineland lantana, spotted beebalm, black-eyed Susan, Carolina wild petunia, and tropical sage were 1.4 to 8.0 times greater than that of plants grown in the peat-based medium. This differed from results of our previous experiments where media with more than 50% compost reduced the shoot weight of seven out of the 10 non-native perennial species evaluated. Other native species evaluated, such as lemon bacopa, coastalplain tickseed, Florida privet, cardinal flower, wild coffee, and Walter's viburnum, showed no differences in shoot dry weight among media, thus re-emphasizing differential growth responses to media amended with compost.

Results from these studies show that media amended with compost can serve as a stable, viable, and inexpensive alternative to current commercial peat-based media for the production of ornamental native species. ■

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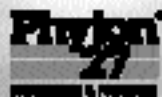
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