

veloped enough so that spray comes in contact with all areas of what will be the mature plant. New growth from underground may not be affected in spray applications.

Broschat and Donselman should give us much better recommendations when their work is finished, we hope by the spring of 1988. They're starting over, looking at other growth regulators instead of only paclobutrazol (They're also doing very interesting work on red ginger and banana which may lead to new crops for Florida growers).

Benny Tjia reports tentative results using paclobutrazol as a drench at 0.375 mg a.i. per 6-inch pot. He also likes the look of ancymidol as a drench since you apparently avoid paclobutrazol's rounded leaf effect (more noticeable at higher concentrations) and get better leaf spacing. He drenched 'Golden Torch' tissue culture plantlets received from Oglesby at about 8 inches and reports no delay in flowering. All of this, of course, is tentative. Tjia is also examining flowering control, along with Criley in Hawaii, and production methods of rhizomes.

What is interesting in this area of heliconia pot research is the velocity of change. Not quite four years ago heliconia really started as a pot plant. Within those four years we've come to very nearly having a full color line of chemically controlled 6-inch pot size flowering plants. Compare this to the time it took Yoder to develop year round mums or Ecke to develop the poinsettia. This heliconia success has substantially been achieved through Florida growers and researchers working in concert. Broschat, Donselman, Tjia, Kraft, Lovell, Greendale, and Nye have all stuck their

collective necks out on a crop that is just now gaining national grower interest.

Recommended Varieties. While several important dwarf varieties are one to two years away from introduction, we can recommend now for 8- and 10-inch pots: 'Tropical Nights Tangerine' and 'Tropical Nights Pink', 'Andromeda' and 'Golden Torch'. For 6-inch pots: 'Tropical Nights Tangerine' and 'Tropical Nights Pink' with paclobutrazol and 'Choconiana' without paclobutrazol. All these are excellent warm-weather crops. For winter sales (Christmas and Valentine's Day) look to *H. angusa* ('Holiday' or 'Christmas'). Although this species is more difficult to grow than *H. psittacorum* and is in extremely short supply, it will take cooler temperatures and more shade than the above varieties of *H. psittacorum*. We strongly recommend that growers trial 'Holiday' before getting into any real numbers. Manatee Sound Farm has detailed culture information. In any case, at Christmas and Valentine's Day wholesalers and retailers will go to great length to get 'Holiday' since the red and white blooms say two things: tropics and the holiday season.

While we have much to learn about heliconia as a pot plant (there are over 300 species, ten percent of which we think have commercial application), we have enough information now on markets and culture to give innovative growers a very profitable crop. Those growers appropriately working in new profitable crops stand to benefit most. As the adage goes: Be neither first nor last into something new.

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SUCCESS IN WOODY PLANT TRIALS AT WALT DISNEY WORLD

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Abstract. Many elements are necessary to have a successful woody test program. These include defining objectives, documenting results, and overall supervision of the program. Using these objectives enables different woody species to be tested and evaluated at the Walt Disney World Nursery.

The woody plant trials are an integral part of our horticulture program at Walt Disney World. We need woody plants to be tried and evaluated that are relatively new or under used in the central Florida area. We have been successful in this program by documenting our evaluations in a way that can be retrieved by the growers, supervisors, and interested industry professionals.

Documentation Systems

Our plant cards are the "roots" of our entire documentation system. From these cards, information is logged in that later "feeds" our "Permanent Plant Recording System" (1) and "Woody Plant Trials" booklet. These cards also

provide a space on the back for the grower to keep cultural notes. This section is labeled "Data Entries." All three of these sections need to be maintained in order for the plant species to be tested and evaluated properly.

Plant Cards

The first section of the plant card deals with information that will be fed into our "Permanent Plant Recording System." This computer program allows us to sort by some of the twenty-four bits of information that have been recorded on this plant (Table 1). This is useful for knowing

Table 1. Data included in the Permanent Plant Recording System.

1. SCIENTIFIC NAME	13. DIRECT SOURCE
2. COMMON NAME	14. ORIGINAL SOURCE
3. NAME RECEIVED	15. SOURCE ACCESSION NUMBER
4. ACCESSION NUMBER	16. HOW RECEIVED
5. FAMILY	17. DATE RECEIVED
6. COLLECTION	18. NUMBER RECEIVED
7. NATIVITY 1	19. DISPLAY LABEL
8. NATIVITY 2	20. DISPLAY COLOR
9. AUTHORITY	21. DISPLAY PERIOD
10. LOCATION 1	22. FORM
11. LOCATION 2	23. PHOTO
12. LOCATION 3	24. DEAD FILE

Table 2. Parameters evaluated in the Woody Test Booklet.

Genus Species:		Cultivar:					
Source:		Form:					
ITEMS FOR EVALUATION	DATE PLANTED	DATE E1	DATE E2	DATE E3	DATE E4	DATE E5	NOTES
Caliper							
Height							
Foliage Comments:							
Color, Texture							
Flower Comments:							
Shape, Color, Size							
Rain Tolerance							
Sun Tolerance							
Heat Tolerance							
Cold Tolerance							
Disease Resistance							
Vigor/Branching							
Overall							

KEY: E = EXCELLENT G = GOOD F = FAIR P = POOR

how many plants we are testing that are native to China for example. Also, we are currently striving to record each plant species on the property on this program. This program will also let us keep track of how we located various plant species by looking at "direct source" or "original source." Another part of our permanent records is maintaining a slide photo of each plant species. One is permanently maintained in our slide file cabinet. A second is maintained in another cabinet and can be used for lectures and discussion. Whether a plant species has a slide is determined by looking in the photo comment section.

Woody Test Booklet

The second section of the plant card deals with information that will be fed into our "Woody Test Booklet." The booklet is produced once per year with the first printing done this past April. The booklet is our means of disseminating our test results both to our personnel and the horticulture community. It is closely patterned after our annual trials booklet which is printed twice yearly (summer and winter).

The plant card allows us to evaluate the species for several characteristics over a five year period (Table 2). Characteristics such as caliper and plant height are done at the same time each year for comparison purposes. Comments such as foliage, flower, and rain tolerance are noted throughout the year. We have also adopted a scale similar to our annual trials booklet to rate subjective comments. These are excellent, good, fair, and poor. Each plant species is also given an overall rating. This makes it easy for the user to quickly scan the booklet and pull out any promising species.

Dated Entries

The third section of the card, as mentioned before, is titled "Dated Entries" (Table 3). This section allows the grower to make notes such as seed scarification, germination dates, and so on. Also, this section provides an area where dated comments can be made. This may include nutrient deficiencies, fertilizer applied, and date remedied. This information will be invaluable if future crops of this plant need to be grown.

Table 3. Dated entries in the Permanent Plant Recording System.

[illegible]

Supervision and Commitment

The last area of testing woody plants involves supervision and commitment. Daily cultural standards need to be maintained such as watering, fertilizing, and pest control. "No pruning" is a standard rule that is maintained so natural shape can be fully evaluated. Weekly inspections are

Table 4. Twenty-five notable species evaluated at the Walt Disney World Nursery Plant Trials.

Botanical name	Common name	Comments
1. <i>Aphanathe aspera</i>	Muku Tree	Deciduous Tree
2. <i>Callicarpa japonica</i>	Beautyberry	Light pink flowers in summer
3. <i>Cercis canadensis</i> 'Texensis'	Texas Redbud	Improved selection
4. <i>Chilopsis x catalpa</i>	Chilopsis x catalpa	Pink flowers in Spring
5. <i>Coursetia axillaris</i>	Coursetia	Pink flowers in Spring
6. <i>Deutzia gracilis</i> 'Nikko'	Deutzia	White flowers in Feb., ground cover
7. <i>Ehretia anacua</i>	Knackaway	Sandpapery leaves
8. <i>Firmiana simplex</i>	Chinese Parasol Tree	Palmate leaves, deciduous
9. <i>Gordonia axillaris</i>	Gordonia	White flowers, small tree
10. <i>Heteropteris glabra</i>	Redwing	Yellow flowers, red samaras in June
11. <i>Ilex x attenuata</i> 'Sunny Foster'	Sunny Foster	Brilliant yellow new growth
12. <i>Itea virginicus</i>	Virginia Willow	Red Fall color
13. <i>Livistona rigida</i>	Livistona	Potential cold hardy palm
14. <i>Livistona saribus</i>	Livistona	Potential cold hardy palm
15. <i>Malpighia glabra</i>	Barbados Cherry	Rose flowers in January
16. <i>Nandina domestica</i> 'Firepower'	Firepower	Brilliant red winter foliage
17. <i>Nerium oleander</i> 'Hardy Red'	Hardy Red	Potential cold hardy oleander
18. <i>Pavonia lasiopetala</i>	Rock Rose	Pink flowers in Summer, Fall
19. <i>Pistachia texana</i>	Texas Pistachio	Evergreen Tree
20. <i>Pyracantha</i> N.A. #48240	Pyracantha	Excellent 3' mass plantings
21. <i>Quercus salicina</i>	Oak	Evergreen Tree
22. <i>Quercus polymorpha</i>	Monterey Oak	Bronze new growth
23. <i>Rhodoleia</i> sp.	Rhodoleia	Evergreen shrub, small tree
24. <i>Styrax japonica</i>	Japanese Snowball	White flowers in Spring
25. <i>Viburnum erosum</i>	Viburnum	Deciduous shrub

needed to note plant changes such as flower color, foliage characteristics, and overall plant vigor. Labels are also maintained so plant names are easily seen and recognized. All these processes are pointing to and separating out those plants that are our "best prospects."

We have pulled out of our test program at the Nursery 25 plants that look to be our best (Table 4). These are the

plants that hold the best chance for being good performers in the central Florida area.

Literature Cited

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Proc. Fla. State Hort. Soc. 100:167-174. 1987.

HISTORY OF TURFGRASS PRODUCTION IN FLORIDA

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Abstract. The earliest recollections of commercial sod in Florida are from the 1920's, but there is evidence of St. Augustinegrass planting in 1880. Turfgrass producers in Florida developed technology to solve the cultural requirements of vegetatively propagated grasses, their pest problems, and the market demands of the peninsula. New ways of harvesting and packaging the cut sod product were improvised. New varieties of St. Augustinegrass (*Stenotaphrum secundatum* [Walt.] Kuntze) and bermudagrass (*Cynodon* spp.) were developed. Other species (e.g., bahiagrass, *Paspalum notatum* Flugge, carpetgrass, *Axonopus affinis* Chase, centipedegrass, *Eremochloa ophiuroides* [Munro] Hack.; siltgrass, *Paspalum distichum* L.; and zoysiagrasses, *Zoysia* spp.) were developed into marketable products, and other innovations were made by Florida turfgrass producers. The turfgrass industry in Florida has grown to a \$100 million industry which employs several thousand persons. The product of this industry is managed in urban lawns, sports areas, and roadsides, across 1.5 million acres of Florida. In addition to its economic contributions, turfgrass production contributes to the Florida environment, by providing safe, sanitary, outdoor play areas for children and grownups, by providing a cover for conserving the soil, filtering pollutants, moderating temperatures, and serving as a palette for other landscape designs.

Turfgrass production had an exciting beginning in Florida. Unique soil and climatic conditions were encountered by early pioneers, necessitating special ways of adapting to the stresses. We study the history of this industry for two reasons:

The authors express their sincere thanks and admiration to turfgrass leaders who have contributed information, including Dr. Roy Bair, Mr. Ed Davis, Mr. Ralph Hammer, Mr. Elmer Kirkland, and Mr. Arthur Wolf.

1. This is an important chapter in the history of the United States, in which brave and creative men and women constantly set about trying to think of a better way of doing something.
2. The history of turfgrass production in Florida illuminates the nature of our grasses and the ways to manage them.

The Early Years (pre-1940)

The early Anglo settlers of Florida may have had many reasons for growing turfgrass, but none is more obvious than mosquito control. At Lignum Vitae Key a stone house was built on high ground, facing prevailing winds. A rough turf area was maintained on the windward side, so that mosquitoes and other biting insects would tend to be blown away. As turfgrass technology continued to improve, and the turfgrass product became more easily attainable, standards improved and additional uses for turfgrass were developed.

St. Augustinegrass was the first recorded turfgrass in Florida. In his diary, A. M. Reed described activities at his St. Johns River plantation near Orange Park (J. P. Waterbury, personal communication) (27). In the record for 11 Nov. 1880, Mr. Reed states, "George planting St. Augustine grass in avenue in afternoon." Although earlier records exist for the presence of St. Augustinegrass (*Stenotaphrum secundatum*) in Florida (for example Rugel's 1845 collection from Terraciera Bay, now Manatee County), George was the first documented grower of St. Augustinegrass. Because of its relatively good shade tolerance and ease of management in lawns, St. Augustinegrass assumed great importance as a turf in Florida. Other species of turfgrasses later had a large impact on Florida, but none was used so widely and for such a long time. Before 1920, Mr. Ralph R. Hammer had noticed St. Augustinegrass lawns in Davie, Florida, and by about 1928 to 1930 he noticed trucks loaded with sod in the Miami area (R. R. Hammer, personal communication). Hammer reasoned that that sod probably came from the Homestead area because of the thick, marl bottom. The Melrose Nursery in Miami was reported to be producing sod in the 1920's and 1930's (Ed Davis, personal communication). In 1934, Ruben Resmondo had 2 acres of 'Florida Common' planted for sod near the Miami River (Kenneth Resmondo, communicated through Ed Davis).

In 1929 Enlow and Stokes (8) mentioned various other turfgrass species and varieties, e.g., zoysiagrass (*Zoysia*