

Tropical Plants Offer New Possibilities for Georgia Gardens



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Tropical Plants Offer New Possibilities for Georgia Gardens

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Overview

Consumers and avid home gardeners have become more adventurous with their plant choices, and are prompting other growers and landscapers to become more savvy in catering to this spirit of landscape adventure. Anything that adds interest to the landscape design and makes it unique can evolve into a trend, such as incorporating more non-traditional plants such as exotic and tropical annuals and perennials. But flowers are taking a step back, leaving the landscapers to focus on the foliage instead, and to explore variations in texture and color.

Challenges and Opportunities for the Ornamental Industry in Georgia

The seemingly insatiable consumer demand for new plants presents a challenge and an opportunity for the Georgia ornamental industry. Georgia has a diverse climate (Fig. 2), from zone 8b in the South and coastal areas, where minimum average temperatures range from 15-20 degrees Fahrenheit, to zone 7a in the northern mountain regions, where minimum average temperatures range from 0-5 degrees Fahrenheit. A small part of North Georgia is in Zone 6b where minimum average temperatures range from -5 to 0 degrees Fahrenheit. The largest area in the state is divided almost equally between zones 8a (minimum average temperatures range from 10-15 degrees F) and 7b (minimum average temperatures range from 5-10 degrees F).

Each of these areas is characterized by unique climate, which presents both a challenge and an opportunity for industry and consumers. On one hand, recommending plants that would do well in all areas

is difficult; on another, plants that grow well in one area but not in other provide an excellent opportunity for local use. This is especially true for tender plants that may thrive in the warm weather and may even come back the next season in another, but not in other areas. Such plants may receive enormous recognition seven to eight months of the year, but because they are not truly perennial (able to survive the cold weather and grow back the next season), they may not get recommended and/or marketed by the industry. Some of these plants, termed tender perennials, tropicals,

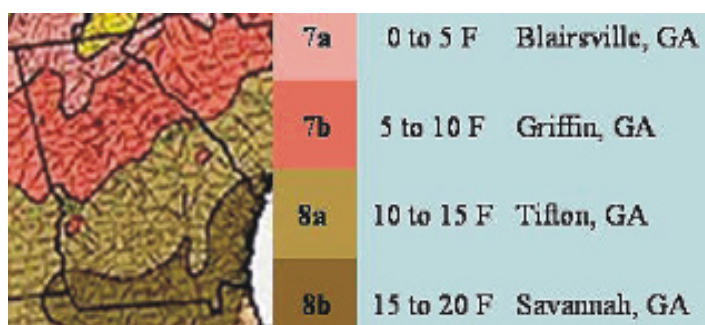


Figure 2. Georgia climate zones with average minimum temperature ranges and examples of cities in those areas (adapted from USDA hardiness map (www.usda.gov)).

etc., may receive much attention in northern areas in Florida, for example, while few growers and garden centers in South Georgia market them, although both are in the same climate zone. Thus the consumer in Georgia may be largely unaware of the benefits of these tender perennials.

In addition, many plants from the tropics hold up very well in Georgia's challenging spring and summer months, and can tolerate extremes of heat, humidity, and moisture. Some are so uniquely adapted to

low-light environments that they can be used in deep shade areas in a garden. Shade gardening, however, has challenged landscapers because of a limited selection of species, which do well in low light environments. Few flowering plants perform well in such areas, especially where light levels dip below 1000 ft-c; for example, under oak shade, light levels frequently average around 500 ft-c. But tropical plants adapted to deep shade are uniquely suited to thrive in low-light habitats with high humidity. Many of them, because of their epiphytic origins, are capable of using small amounts of dew moisture, which accumulates in the early morning hours during summer, either by direct absorption through the foliage or by channeling moisture into their leaf whorl.

Tropical plants may also be used in annual beds in combination with traditional flowering plants. The bold vegetative look of foliage plants can add height and texture, while achieving a tropical look that is attractive and highly sought after. Yet the use of tropical plants may not be limited

to landscape. Combination gardens in various size containers have become very popular with consumers. Visually appealing and colorful combinations using tropical plants alone or in combination with other flowering plants can be created (Fig. 3). Such gardens hold high appeal for gardeners in urban areas because of the limited garden space.

Finally, numerous new tropical species and cultivars — many with bold, multicolored foliage, and quite a few flowering varieties — have come to market in recent years. Some new introductions show improved cold tolerance and have been used successfully in landscapes throughout southern states, especially Florida.

Further exploration of the landscape potential of new ornamental species and cultivars is necessary and could provide recommendations and guidelines to the industry and consumers. The goals of these investigations were to achieve an aesthetically pleasing landscape while experimenting with mixing various



Figure 3. Colorful combination gardens created exclusively with tropical foliage plants. The combination container on the left features high-light adapted plants and can be used on patios, sun decks, around pools, etc. The container on the right uses plants best adapted for low-light environments. During the cold months, a combination garden can be brought inside the house and treated as an indoor planting. This further illustrates the versatility of tropical plants.

plant habits, leaf textures and colors, and even flowers, and to raise consumer awareness, both at industry and public levels, of the alternative uses of tropical plants in the landscape.

This publication presents plant performance data collected over a three-year period in trials from two different Georgia environments, a coastal area and a mid-state area.

Trial Gardens: Locations, Conditions, and Plant Performance

Tropical Plant Trial Garden at the Bamboo Farm and Coastal Gardens in Savannah, Georgia (evaluation pe- riod April 2002 - October 2004)

Climate conditions: USDA Hardiness
Zone 8b, Minimum Temperature Average
Range 15 to 20 F.

Species planted: bromeliads, ficus, philodendron, schefflera, spathiphyllum, ferns, alocasia, colocasia, ornamental banana, gingers (alpinia, calathea, kaempferia, cornukaempferia, curcuma, globba, siphonochilus, costus).

Light conditions: full shade (light levels 500 to 1100 ft-c) (Fig. 4).

Raised beds (soil depth of 8-10 inches)
amended with 0.1 pounds of nitrogen per 100
sq.ft. at planting and once in mid summer .

Plant size at planting: 6" containers, colocala,
3-gal containers.

Plant spacing: 12" x 12" for the 6" container
size, 24" x 24" for 3-gal containers.

Irrigation: for the first 4 weeks after planting,
plants were watered twice per week and for



Figure 4. Full shade bed at the Bamboo Farm and Coastal Gardens in Savannah, Georgia.

the remainder of the season received 38
inches of natural irrigation (from April to
December, 2002).

Plant Performance and Hardiness

Throughout the growing period April - December 2002, all species planted in the garden did very well; some growing as much as one and a half times in size, creating a beautiful shade landscape.

• Although most alocasias and colocasias grow best in high light, they grew well in the shade garden, while retaining a more compact growth (Table 2). This may be a desirable trait for small size gardens. We noted that the strong-colored colocasia foliage lost the intensity of its deep purple coloration.

• Gingers (Peacock and Hidden Gingers) showed excellent performance and strong landscape impact (Table 2). Some of the best performers were *Cornukaempferia* 'Jungle Gold', *Kaempferia* 'Grande', *Curcuma* 'Emperor', *Globba* 'White Dragon', and *Calathea tigrinum*. With the exception of *C. tigrinum* and *Siphonochilus decora*, all other gingers produced flowers throughout the season (Fig. 8).

Ficus, philodendron, schefflera, bromeliads and spathiphyllum showed excellent performance and

strong landscape impact (Table 2)

No major pest or disease problems were encountered during the season of active growth and no pesticides were applied. No herbivory by deer was noted.

Planting recommendations:

High visual impact combinations were achieved by using philodendrons ('Black Cardinal', 'Prince of Orange'), bromeliads (*Guzmania minor magnifica*, *Neoregelia* 'Grace', and *Aechmea fasciata* 'Morgana'), *Spathiphyllum* 'Petite', *Homalomena* 'Purple Sword', *Kaempferia* 'Alva', *Kaempferia* 'Grande', *Schefflera arboricola* 'Luseanne', *Cornukaempferia* 'Jungle Gold', and ferns (*Selaginella involvens* 'Aurea', *Arachniodes simplicior*, *Onoclea sensibilis*) as

low- to medium height plants;

Medium to tall plants -- *Ficus benjamina* 'Midnight', *Schefflera* 'Nova', *Calathea tigrinum*, *Calathea* 'Ice Blue', *Calathea* 'Silver Plate', *Carludovica* 'Jungle Drums', *Alocasia odora*, *Alocasia wentii*, *Alocasia gagaena*, *Globba* 'White Dragon', *Curcuma* 'Emperor', *Siphonochilus decora*, *Costus amazonicus*, *Alpinia zerumbet variegata*, *Philodendron pinnatifidum*;

The tallest species, *Alocasia macrorrhiza*, *Colocasia esculenta nancyana*, *Colocasia illustris*, *Colocasia esculenta* 'Black Magic' and *Musa zebrina* should be planted toward the back of the border or in a center of an isle bed.

Table 1. Percent survival and growth in second and third years for species and cultivars in the Savannah Trial garden during the evaluation period April 2000 — October 2004.

Species and cultivar	% Survival	Growth in second and third year (% of year)
<i>Alocasia gagaena</i>	92	90
<i>Alocasia odora</i>	83	90
<i>Alocasia wentii</i>	58	35
<i>Alocasia macrorrhiza</i>	75	70
<i>Colocasia nancyana</i>	75	75
<i>Colocasia</i> 'Black Magic'	67	65
<i>Colocasia illustris</i>	58	60
<i>Musa zebrina</i>	92	90
<i>Siphonochilus decora</i>	92	90
<i>Globba</i> 'White Dragon'	100	90
<i>Alpinia zerumbet</i>	58	65
<i>Cornukaempferia</i> 'Jungle Gold'	83	95
<i>Kaempferia</i> 'Alva'	83	85
<i>Kaempferia</i> 'Grande'	92	95
<i>Calathea tigrinum</i>	75	65
<i>Calathea</i> 'Ice Blue'	83	85
<i>Ficus benjamina</i> 'Midnight'	85	35
<i>Spathiphyllum</i> 'Petite'	90	95
<i>Schefflera</i> 'Luseanne'	50	30

Plant Hardiness

The two winter periods of 2002-2004 provided opportunities to test plant hardiness. We had numerous occurrences when night temperatures were between 19 to 25 degrees F.

Percent survival and growth in second and third year for species and cultivars that survived the winters are listed in Table 1 and illustrated in Figure 5. Remaining species not listed in the table were not root-hardy and did not survive the first winter.



Figure 5. Regeneration and growth of plants in the Savannah Trial garden. A. Alocasias and Colocasias. B. *Calathea tigrinum*. C. *Globba* 'White Dragon'. D. *Siphonocilius decora*. E. *Ficus benjamina* 'Midnight'. F. *Spathiphyllum* 'Petite'. G. *Calathea* 'Ice Blue'.

Tropical Plant Trial Garden at the Research and Education Gardens, Griffin, Georgia (evaluation period May-December 2004)

Climate conditions: *USDA Hardiness Zone 7b* Minimum Temperature Average Range 5 to 10 degrees F.

Species planted: alocasia, colocasia, gingers (calathea, kaempferia, cornukaempferia, curcuma, begonia). For a complete list of species and cultivars refer to Tables 2 and 3.

Light conditions:

Full sun (Fig. 6A)

Part sun (morning shade, midday sun, afternoon shade) (Fig. 6B)

Part shade (no direct sun) (Fig. 6C)

Full shade (light levels 800 to 1100 ft-c) (Fig. 6D)

Raised beds (soil depth of 8-10 inches) amended with 0.1 pounds of nitrogen per 100 sq.ft. at planting and once in mid summer.

Plant Size at planting: 6" containers, alocasia and colocasia, 1-gal containers.

Plant spacing: 12" x 12" for the 6" container size; 18" x 18" for 1-gal containers.

Irrigation: for the first 4 weeks after planting plants were watered twice per week and for the remainder of the season (May to November) received 35 inches of natural irrigation.

Plant Performance and Hardiness

Throughout the growing period May - November 2004, most species planted in the garden did very well with some species growing as much as one and a half

times in size, creating attractive landscape beds. We planted alocasias and colocasias in a variety of areas, from full sun exposed sites to dappled shade.

The best performers were the *Alocasia* cultivars 'Hilo Beauty', 'Williams Hybrid', and 'New Guinea Gold' and *Colocasia* 'Red Stem', *C. nancyana* (Tables 2 and 3). We noted that the purple-colored underside of *Alocasia* 'Williams Hybrid' foliage lost some intensity in the full sun site. Also, the stem thickness and offshoot formation in *Alocasia* 'Williams Hybrid', *Colocasia* 'Red Stem', and *C. nancyana* was increased when grown in full sun.

Gingers (Peacock and Hidden Gingers) showed excellent performance and strong landscape impact (Tables 2 and 3). Some of the best performers were *Cornukaempferia* and *Kaempferia*, *Curcuma*, and *Calathea*.

Curcuma species were planted in part sun/shade locations where they showed consistent strong growth and flowering. *Curcuma* 'Aussie Plume' and 'Giant Plume' produced abundant flowers throughout the growing period with an average of 3 blooms per plant at any given time.

Kaempferia species were planted in full shade where they showed consistent strong growth and some flowering (*Kaempferia* 'Silver Spot'). The two new to the trade *Kaempferias*, 'Raven' and 'Silver Diamonds', with their upright habit and patterned foliage were especially successful in attracting the notice of visitors to the garden.

Calathea species were planted in full shade where they showed consistent strong growth and even some flowering. Best performers were *C. tigrinum*, the tallest species, *C. rubifarba*, medium height, and *C. albertii*, low height. *C. 'Zebrina'*, a sport of *C. tigrinum*, has beautiful lime-green and brown patterned foliage, which stands out well in dark, shady locations. *Calathea loesnerii* 'Kopper Krome' developed 1-2 pink-colored flowers in late summer. The individual flowers lasted 4-5 weeks.

Begonia carolinifolia and *B. poponeii* showed consistent strong growth. The Giant Hardy Begonia (*B. poponeii*) was planted in full shade and in part sun.



Figure 6. Trial areas at the Research and Education Gardens, Griffin, Georgia.
A. Full sun.
B. Part sun (morning shade, midday sun, afternoon shade).
C. Part shade (no direct sun).
D. Full shade.

The large light-green foliage of *B. poponeii* and the palmate burgundy leaves of *B. carolinifolia* lent markedly tropical effect.

No major pest or disease problems were encountered during the season of active growth and no pesticides were applied.

No herbivory by deer was noted.

Planting recommendations.

Due to limited number of species in the trial garden, landscape beds were planted according to the light preferences of the plants. Nevertheless, the following plantings achieved high visual impact.

Full shade to part shade (no direct sun) areas:

Calathea tigrinum, *C. zebrina*, *Begonia poponeii*; *B. carolinifolia*, *Kaempferia* ‘Silver Diamonds’, *Kaempferia* ‘Grande’, *Kaempferia* ‘Raven’ as tall to medium height plants; *Calathea albertii*, *C. rubifarba*, *C. ‘Kopper Krome’*, *Kaempferia* ‘Silver Spot’, and *Cornukaempferia* ‘Jungle Gold’ as low height plants;

Part sun: *Alocasia* ‘New Guinea Gold’; *Curcuma* ‘Emperor’, *Curcuma* ‘Aussie Plume’ and *Curcuma* ‘Giant Plume’.

Full sun -- *Alocasia* ‘Hilo Beauty’, *A. ‘Williams Hybrid’*, *Colocasia* ‘Red Stem’, and *C. nancyana*.

Plant Hardiness: evaluation is on-going.
edly tropical effect.

Tropical Plants in Annual Beds

Tropical foliage plants may be used in annual beds in combination with traditional flowering plants. The bold vegetative look of foliage plants can add height and texture, while achieving a tropical look that is attractive and highly sought. Many of these plants tolerate high light conditions and are therefore suitable for use in combination with traditional summer bedding plants such as salvia, marigold, begonia, zinnia, etc. For light requirements of individual species, refer to Table 4. Foliage texture varies from fine (asparagus

and Boston ferns) to coarse (crotons) (Table 4). A wide variety of foliage colors, including bright yellow, orange and red, are typical of older croton varieties. The newer crotons offer a variety of leaf shapes as well.

Landscape Considerations for Tropical Plants

If you are considering using foliage plants, you should trial them outdoors, on a limited basis under the specific conditions (temperature, light intensity, humidity, air movement, soil type and topography) they will encounter in your particular landscape setting. For best results, the soil should be well-drained, rich in organic matter, with a pH range of 5 to 6.5. The soil should not be allowed to become exceedingly dry.

High visual impact combinations using plants evaluated in our trials are illustrated in Figure 10.

Production Considerations

Growers in Georgia have several options for obtaining starter material, including rooted liners in cell packs and small pots, rooted air layers and rooted cuttings. Plants can also be purchased as finished products (cell packs to small size pots) and resold without spending any production time in the greenhouse. A few of the taller species can be grown or purchased in larger containers (6-inch and larger). Production times vary depending on species, container size, growing season and geographic location.

Root-zone heating (70 degrees F) can be used to speed up production. Most of the plants listed in Tables 2 and 3 can be produced under light levels of 5,000 to 7,000 footcandles. These growing conditions would produce vigorous, compact liners or potted plants well adapted to northern summer conditions, ranging from 75 percent shade to full sun. If plants are started in northern greenhouses, they may require an acclimatization period under a partially shaded area outside with higher light levels before exposing them to full sun landscapes.

The plants should be trialed outdoors, on a limited basis under the specific conditions (temperature, light intensity, humidity, air movement, soil type and

topography) they will encounter in a landscape setting. For best landscape results with plants listed in Tables 2 and 3, the soil should be well-drained, rich in organic matter, with a pH range of 5 to 6.5. The soil should not be allowed to become exceedingly dry.

Selling Foliage for Landscapes

Foliage plants offer landscapers new design elements and can help create a niche for growers. Growers should compare production costs versus shipping costs of finished plants. Foliage plants for landscape should be marketed right along with bedding plants. However, the foliage should be priced appropriately because of plants' higher production and/or shipping costs. The foliage could be marketed as specialty annuals.

A number of plants discussed are used in central and southern Florida landscapes and as interiorscape plants in the north. It is very likely that some landscapers and consumers may identify these plants as for "interior use only" and may be reluctant to plant them outdoors.

Here are some points to you can discuss with potential customers who may be reluctant to use foliage plants outdoors:

Foliage plants placed in outdoor beds should be considered annuals that will not last "forever." This may be a misconception based on the expectation of interior foliage plants.

•

Foliage plants have potential bedding applications with flowering plants offering additional textures, colors and height to landscapes.

Foliage plants are essentially maintenance free in landscapes having few insect and disease problems and do not require removal of dead flowers.

•

Most foliage plants thrive in humid conditions and handle excess moisture well. Most plants in Tables 2 and 3 tolerate chilling, especially if night temperatures in late summer drop slowly. Several of the plants even withstand freezing temperatures for short periods if humidity is high and the air is still.

•

The majority of foliage plants perform very well in low-light environments, where few flowering plants do.

Marketing Strategies

Here are a few marketing tips to help you sell foliage plants as annuals.

Plant trial and demonstration gardens, both in sun and shade areas, and incorporate foliage plants along with traditional flowering annuals and perennials.

Volunteer to plant display beds in high traffic areas in local municipalities.

Sponsor educational seminars for landscapers and gardening clubs and invite expert speakers.

Sponsor an open house with tours of your greenhouse/garden center and display areas with foliage demonstration plantings.

Advertise a garden photo contest and submit a story about the winners to local media outlets.

Write an article on the use of foliage for local and/or regional media newspapers and/or magazines.

Volunteer to be on a local radio garden program to discuss the use of outdoor foliage.

Distribute informational packages that discuss appropriate plant combinations, design ideas, planting and care recommendations.

Invite a garden club or landscape group for lunch and test ideas.

Search the Internet for ideas and sample marketing tactics.

Summary

A wide variety of new tropical plants are available on the market. Many have shown marked potential for the landscape in Georgia. Depending on the climate zone, some of these species can be treated as perennials, while others are strictly annuals.

Tropical plants can create an aesthetically pleasing landscape with a great variety of plant habits, foliage

textures and colors, and even flowers. They can widen the plant palette for landscapers, growers, and consumers in Georgia.

The Foliage Trial Gardens at the University of Georgia were made possible by donations from Fafard, Agri-Starts Inc., Twyford International Inc., and Casa Flora Inc., and with grant support from the National Foliage Foundation.

Table 2. Selected species suitable for full shade (500-1000 ft-c)*.

Scientific (Common Name)	Use	Height (Inches)	Foliage	Flower	Performance and Landscape Im- pact Comments
<i>Alocasia gaganena</i> (Fig. 7A)	Medium to tall background and specimen plant	40-48	Medium green undulated with prominent veins	N/A	Strong; growth compact
<i>Alocasia macrorrhiza</i>	Medium to tall background and specimen plant	40-50	Thick, medium green, glossy leaves on upright stems	N/A	Strong; growth compact
<i>Alocasia adora</i>	Medium to tall background and specimen plant	40-50	Glossy, light green, arrow-shaped leaves	N/A	Strong; growth compact
<i>Alocasia wentii</i>	Medium to tall background and specimen plant	36-40	Glossy, dark-green	Flowers throughout summer	Strong; growth compact
<i>Alocasia macrorrhiza</i> ‘New Guinea Gold’ (Fig. 7C)	Tall background and specimen plant	38-42	Thick, dark green, large glossy leaves on upright stems; arrow-shaped leaves with gold speckling	N/A	Strong growth; produces 4-5 leaves per plant; leaves held at wide angle to stem
<i>Colocasia esculenta</i> ‘Black Magic’ (Fig. 8B)	Tall background and specimen plant	32-36	Dark plum to black	N/A	Strong; in shade leaves become greener and larger; compact growth
<i>Colocasia esculenta nancyana</i> (Fig. 8B)	Tall background and specimen plant	40-50	Green with creamy- yellow variegated center veins	N/A	Strong; in shade green veins more prominent; com- pact growth
<i>Colocasia illustris</i> (Fig. 8C)	Tall background and specimen plant	40-50	Dark purple leaves with green veins	N/A	Strong; in shade green veins more prominent; com- pact growth
<i>Cornukaempferia</i> ‘Jungle Gold’ (Fig. 9N)	Groundcover, mass planting	6-8	Round velvety leaves with silver spots on dark back- ground	Orange	Strong perfor- mance and im- pressive landscape impact
<i>Kaempferia</i> ‘Alva’	Groundcover, mass planting	6-8	Oval, medium green with brown spots	Pale lavender	Strong and good landscape impact; all season long flowers

Scientific (Common Name)	Use	Height (Inches)	Foliage	Flower	Performance and Landscape Im- pact Comments
<i>Kampferia</i> 'Silver Spot'	Groundcover, mass planting	6-8	Oval, medium green leaves on long petioles	N/A	Strong perfor- mance and im- pressive landscape impact
<i>Kaempferia</i> 'Grande'	Medium height, specimen mass planting	16-20	Oval, silver-spotted leaves on long	N/A	Strong perfor- mance and im- pressive landscape impact
<i>Kaempferia pulchra</i> 'Raven' (Fig. 9L)	Medium height, specimen; mass planting	18-24	Lanceolate, purple and silver-spot- ted leaves on long petioles	N/A	Strong perfor- mance and im- pressive landscape impact
<i>Kaempferia</i> 'Silver Diamonds' (Fig. 9M)	Medium height, specimen; mass planting	14-18	Elongated oval, purple and silver- spotted leaves on long petioles	N/A	Strong perfor- mance and im- pressive landscape impact
<i>Calathea tigrinum</i> (Fig. 9I)	Medium height, specimen; mass planting	16-22	Elongated oval, vel- vety medium green leaves with brown striped and purple underside	N/A	Strong perfor- mance and im- pressive landscape impact
<i>Calathea</i> 'Zebrina' (Fig. 9I)	Medium height, specimen; mass planting	16-22	Elongated oval, velvety bright green leaves with brown striped and purple underside	N/A	Strong perfor- mance and im- pressive landscape impact
<i>Calathea</i> 'Silver Plate' (Fig. 9E-F)	Medium height, specimen; mass planting	16-18	Oval, creamy-green glossy leaves on long petioles	Pale lavender-blue pine cone-shaped flowers, 2-3" long	Foliage goof for contrast and im- pressive landscape impact
<i>Calathea albertii</i> (Fig. 9K)	Low height, mass planting	14-16	Elongated oval, shiny leaves with white spots on upper side, purple tinted below	Few white small flowers in late sum- mer	Strong perfor- mance and im- pressive landscape impact
<i>Calathea loesnerii</i>	Low height	12-14	Elongated oval, shiny	Pink pine	Good perfor- mance and land- scape
'Kopper Krome' (Fig. 9G)	specimen; mass planting		leaves with lighter green center, purple-tinted below	cone-shaped flow- ers, 1.5-2" long	impact; attrac- tive, long-lasting flowers
<i>Calathea rubifarba</i> (Fig. 9J)	Medium height specimen; mass planting	14-18	Lanceolate, dark- green leaves on long petioles, purple tinted below; hairs on both sides	N/A	Strong perfor- mance and im- pressive landscape impact; attractive ruffled and hairy leaf texture
<i>Curcuma</i> 'Emperor' (suitable for part shade)(Fig. 9D)	Medium height, specimen	26	Strap-shaped leaves with thin white var- iegated margins	White pine cone- shaped flowers 6" long	Strong perfor- mance and strong landscape impact especially with flowers

Scientific (Common Name)	Use	Height (Inches)	Foliage	Flower	Performance and Landscape Im- pact Comments
<i>Costus amazonicus</i> (Fig. 9C)	Medium height, specimen	20	Elliptic, medium green leaves on twisted stems	Orange 1” flowers through summer	Good perfor- mance and good landscape impact when flowing
<i>Globba</i> ‘White Dragon’ (Fig. 9B)	Medium height, specimen	24	Strap-shaped glossy green leaves	flowers highly orna- mental	Strong perfor- mance and strong landscape impact especially with flowers
<i>Siphonochilius decora</i>	Medium height specimen	25	Strap-shaped, me- dium green leaves	N/A	Good perfor- mance; less land- scape impact
<i>Begonia poponeil</i> Giant Hardy Begonia ** (Fig. 10B)	Medium height ,specimen	22-28	Large light-green leaves on upright petioles	White flowers spring through sum- mer	Good perfor- mance; strong landscape impact
<i>Begonia carolinifolia</i>	Mediiium height, specimen	22-28	Dark-green palmate leaves burgundy underneath upright	Small white flowers on upright stalks in spring	Good perfor- mance; strong landscape impact
<i>Musa zebrina</i>	Medium height, specimen	22-26	Dark-green palmate leaves burgundy underneath upright	White flowers spring through sum- mer	Good perfor- mance; strong landscape impact
<i>Ficus benjamina</i> ‘Midnight’	Medium height, specimen; mass planting	12-24	Dark-green leaves; fine overall texture	N/A	Good perfor- mance; good landscape impact
<i>Schefflera</i> ‘Luseanne’	Medium to tall height, specimen; mass planting	12-24	Medium-green leaves; fine overall texture	N/A	Good perfor- mance; good landscape impact
<i>Schefflera</i> ‘Nova’	Tall; specimenl mass planting	24-30	Medium-green large umbrella-shaped leaves	N/A	Good perfor- mance; good landscape impact
<i>Philodendron pin- natifidum</i>	Tall; height, speci- men; mass planting	18-24	Medium-green leaves, reddish- brown spotted long petioles	N/A	Good perfor- mance; strong landscape impact
<i>Philodendron</i> ‘Black Cardinal’	Low height, mass planting	10-12	Deep burgundy leaves	N/A	Good perfor- mance; strong landscape impact
<i>Philodendron</i> ‘Prince of Orange’	Low height, mass planting	10-12	Youn g leavs col- ored bright orange	N/A	Good perfor- mance; strong landscape impact
<i>Aechmea</i> ‘Morgana’	Low height, mass planting	10-12	Silver foliage; fine overall texture	Large pink flower	Good perfor- mance; srong landscape impact
<i>Aechmea</i> ‘Debbie’	Low height, mass planting	10-12	Medium-green foliage	Red color in leaf whorl before and during flower	Good perfor- mance; attractive foliage and flower

Scientific (Common Name)	Use	Height (Inches)	Foliage	Flower	Performance and Landscape Im- pact Comments
<i>Neoregelia</i>	Low height, mass planting	10-12	Strap-shaped leaves medium-green leaves	Orange-red flower on long stalk	Good performance;a ttractive foliage and flower
<i>Spathiphyllum</i> ‘Pe- tite’	Low height, speci- men; mass planting	10-12	Medium-green leaves; fine overall texture	White flowers through summer	Good perfor- mance; strong landscape impact with the flowers

* Recommendations based on research conducted in trial gardens in Savannah and Griffin, Georgia

** Good performance in part sun

Table 3. Selected species suitable for full shade (500-1000 ft-c)*.

Scientific (Common Name)	Use	Height (Inches)	Foliage	Flower	Performance and Landscape Impact Comments
<i>Alocasia</i> ‘Williams Hybrid’ (Fig. 7B)	Tall background and specimen plant	42-44	Medium green undulated with prominent veins	Strong flowering through summer	Very strong; im- pressive landscape impact; increase stem thickness in full sun
<i>Alocasia</i> ‘Hilo Beauty’ (Fig. 7C)	Medium to tall background and specimen plant	34-38	Beautiful variegated leaves with camou- flage-like pattern of dark greens and yellows	N/A	Strong growth; im- pressive landscape impact
<i>Colocasia</i> <i>esculenta</i> <i>nancyana</i>	Tall background and specimen plant	36-40	Green with creamy- yellow variegated center and veins	N/A	Strong growth; good impact; in- creased stem thick- ness and offshoot formation (sucker- ing in full sun
<i>Colocasia</i> <i>esculenta</i> ‘Red Stem’ (Fig. 8A)	Tall background and specimen plant	34-38		N/A	Strong; good impact; attractive red leaf petioles; in- creased stem thick- ness and offshoot formation (sucker- ing) in full sun

Scientific (Common Name)	Use	Height (Inches)	Foliage	Flower	Performance and Landscape Impact Comments
<i>Colocasia esculenta</i> ‘Ruffles’	Medium to tall background and specimen plant	34-38	Green with cramy- yellow variegated veins	N/A	Strong; less impactq
<i>Curcuma</i> ‘Aussie Plume’, ‘Giant Plume’ (Fig. 9A)	Tall background and specimen plant	34-38	Medium-green leaves	Bright-pink bracts and yellow flowers	Strong perfor- mance and strong landscape impact; flowers throughout summer and fall; great for cut flowers

Table 4. Selected species suitable for full shade (500-1000 ft-c)*.

Scientific (Common Name)	Use	Height ¹ (in inches)	Floiage texture	Leaf color	Preferred light level	Comments
<i>Asparagus densi- florus</i> “Sprengeri” (Sprenger asparagus)	Groundcover and border edge plant	12-18	Fine Mint green	Mint Green	50% shade to full sunt	Cascades well; copers well with drough
<i>Asparagus densiflorus</i> “Meyersii” (foxtail fern)	Groundcover and spccimen plant	12-18	Fine	Medium green	50% shade to full sun	Grows as a tight clump
<i>Chlorophytum co- mosum</i> “Vittatum” (spider plant)	Groundcover and border edge plant	12-15	Medium	White green	50% shade to full sun	Different variet- ies; all green; white border and green center; green border and white center
<i>Codiaeum variegatum</i> (croton)	Mass plant- ing border, background and specimen plant	12-24	Coarse	Yellow, orange, red, pink and green	75% shade to full sun	New cultivars with a variety of textures and colors
<i>Ficus benjamina</i> (weeping fig)	Border, back- groundf and specimen plant	18-36	Medium	Medium to dark green	75% shade to full sun	Green and varie- gated cultivars
<i>Nephrolepis exaltata</i> “Bostoniensis Com- pacta” (compact Boston fern)	Groundcover and border plant	12-18	Fine	Light to medium green	75% shade to full sun	Some tender florist varieties add new textures and colors
<i>Dracaena reflexa</i> (Malaysian dracaena)	Mass plant- ing, border backgroundf and specimen plant	18-36	Medium to coarse	Yellow and green variegation	75% shade to full sun	Strong variega- tion has landscape impact

Scientific (Common Name)	Use	Height ¹ (in inches)	Floiage texture	Leaf color	Preferred light level	Comments
<i>Schefflera actinophylla</i> (com- mon schefflera)	Border back- ground and specimen plant	18-48	Medium to coarse	Medium green	50% shade to full sun	Mostly green and a few variegated cultivars
<i>Schefflera arboricola</i> (dwarf schefflera)	Border back- ground and specimen plant	12-36	Medium	Dark green	75% shade to full sun	Green and varie- gated cultivars
<i>Zebrina pendula</i> (wandering jew)	Groundcover	6-10	Medium	White and green	30-75% shade	Multicolored foliage on some cultivars

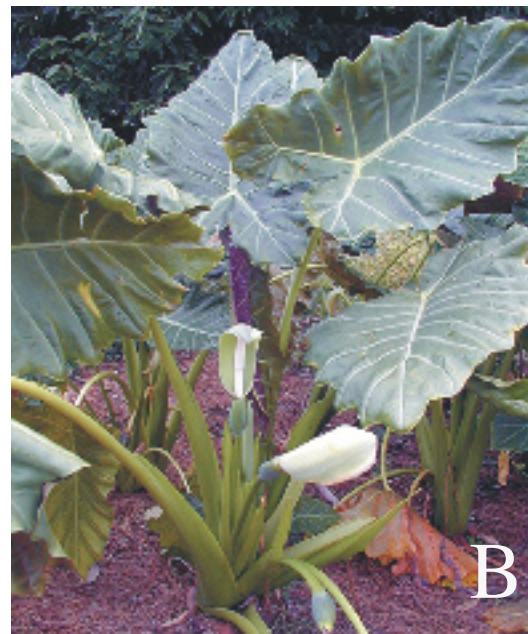


Figure 7. Alocasias

A. *Alocasia gagaena*.

B. *Alocasia* "Williams Hybrid".

C. *Alocasia* "New Guinea Gold".

D. *Alocasia* "Hilo Beauty".



Figure 8. Colocasias
A. *Colocasia* “Red Stem”
B. *Colocasia* “Black Magic” (top) and
Colocasia nancyana.
C. *Colocasia illustris* (left).



Figure 9. Gingers.

A. *Circuma* "Aussie Plume," B. *Globba* "White Dragon," C. *Costus amazonicus*,
D. *Curcuma* "Emperor," E-F. *Calathea* "Silver Plate"



Figure 9 cont'd. Gingers.

G. *Calathea* "Kopper Krome," H. *Calathea* "Ice Blue," I. *Calathea* "Zebrina" and *C. tigrinum*
 J. *Calathea* *rubifarba*, K. *Calathea* *albertii*, L. *Kaempferia* "Raven".



Figure 9 cont'd. Gingers,
L. Kaempferia "Raven," *M. Kaempferia* "Silver Diamonds," *N. Cornukaempferia* "Jungle Gold"

Figure 10. Examples of successful combinations using various foliage textures and colors. A. Planting of *Calatheas*. B. The foliage of the Giant Hardy Begonia creates nice contrast next to the dark burgundy leaves of *Canna*. C. Planting of *Kaempferias*. D. *Alocasia gagaena* (back), *Peace Lily*, *Calathea*, "Silver Plate" and *Cornukaempferia* "Jungle Gold".

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