



Ground Cover for South Florida: Full Sun to Limited Shade

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Introduction

The term groundcover is purely functional and, as the name implies, describes landscape plants used to cover bare ground. A plant that can function as one person's groundcover is used by others as a bedding plant (e.g., Mexican heather, blue daze or society garlic). For the purpose of this publication groundcovers are regarded as having some degree of permanency in contrast to bedding plants which include many annuals (verbenas, trailing petunias) used for fall- spring color that also act as temporary groundcover. There are also short lived perennial groundcovers (e.g., blue daze, heliotrope and *Scaevola* 'Blue Wonder') which usually struggle to survive a south Florida summer and should not be expected to give long term coverage.

Although groundcovers are usually thought of as having a clumping and/or creeping habit, other low growing plants are also used for this purpose. Groundcovers can function to fill in between adjacent accent plants or to frame/border a grouping of similar shrubs (e.g., a rose bed or hedge). As part of any planned landscape, they can form an important role in uniting the individual elements in a given section of the garden design.

Groundcover use can be unplanned as when sudden changes occur (storm damage or removal of an unsafe tree) exposing previously shaded sections of the yard to full sun. Any existing groundcover (e.g., ferns, bromeliads) will likely not survive exposure to full sun and the resulting bare ground can be an open invitation for weeds. Apart from their functional use as filler and for weed suppression, many groundcovers have inherent ornamental value (showy flowers, attractive foliage) that can be reason alone to justify their landscape use.

When an informal appearance is desired choose a trailing/creeping groundcover; for a more formal planned appearance choose one with a more upright bushy growth habit. It is easiest to keep it simple, but if you do decide to use a mixed groundcover choose at most two closely related plants with similar growth habits (e.g., purple trailing and yellow lantana). Rather than mixing groundcovers, adjacent areas can be planted in solid blocks to

affect color contrast to relieve monotony, especially when covering a large open expanse devoid of other landscape material.

The present publication is concerned with groundcovers suitable for open sunny areas¹. The most widely used groundcover for this purpose is turf grass and if well maintained it has many positive features. These include instant coverage (if sod is used), ability to withstand mowing and foot traffic, a neat appearance and effectively choking out weeds. Apart from the frequently voiced downsides (time and expense of maintenance, need for irrigation and fertilizer, plus disease and pest problems), there are situations where turf grass is not a suitable choice. This could be something as basic as a lack of reliable irrigation, or more specific - inappropriate for the landscape in question, such as creating a natural landscape featuring native plants.

Installation and Care

Before installing a new groundcover, remove existing plants, including old tree/shrub roots, weeds (hand pull if there aren't many), and loose stones. On a site with an ongoing weed problem the following steps should be followed:

- Apply a soluble fertilizer then thoroughly water to promote active weed growth.
- Once active growth is seen (5-10 days) spray with a contact herbicide (e.g., Roundup or Spectracide Triple Strike Weed and Grass Killer), wait 7-10 days and rake out all of the dead plants and debris.
- The site can be watered and left another 10 days, after which a final application of herbicide can be used to kill any new growth developing from germinated weed seeds.
- After a final raking to remove dead plants, some organic matter should be worked into the top 4-6" of existing soil (where possible – see below). The site is now ready for installation of groundcover.

Before purchasing ground cover, estimate the number of plants needed for coverage based on their recommended spacing (see below). While still in their containers, first arrange plants so that they are correctly spaced. Next dig corresponding planting holes, each with sloping sides and at least 2-3x the diameter but no deeper than the root ball (plant at grade or slightly above). A small mattock tiller can be useful when digging holes for plants in one gallon or smaller containers. On Miami limestone it is impractical to work in organic matter - for a creeping ground cover spread a 1" layer of 50/50 sand/topsoil mix (about 1 cu yd per 100 sq ft.) to encourage rooting of spreading stems.

To retard weeds while the groundcover becomes established apply a pre-emergent herbicide (read the package to see that it is safe for the groundcover you have chosen). You can also spread mulch in between individual plants, raking it back as the groundcover spreads. If you use a pre-emergent herbicide it needs to be applied directly to the soil surface before mulch is spread.

¹ For situations where shade is a significant factor consult the publication 'Groundcovers for Shade: South Florida' on line at <http://miami-dade.ifas.ufl.edu/publications.htm> .

Once the groundcover is established, prune as necessary to keep it within bounds, first removing diseased/dead stems. Occasionally thin out dense growth, especially as the summer rainy season commences, to improve air circulation – this lessens the risk of an excessive build up of moisture leading to disease problems. Pay special attention to controlling creeping groundcovers; some vigorous types can climb into adjacent shrubs, trees and fences or smother bedding plants and low growing shrubs.

Apply a slow release fertilizer such as a 14/14/14 at the rate of 1½ lb per 100 sq ft in spring and again in early fall unless otherwise indicated below. Water in well, washing any fertilizer pellets off foliage. As an approximate guide to soil moisture, the term 'moist' is used below to describe soil that forms a crumbly ball when squeezed in the palm of your hand. Soil is regarded as wet if it adheres together to form a sticky ball.

General Purpose Groundcovers for Open Sunny Areas

The ground covers described below are general purpose groundcovers for open sunny areas. In a separate publication, native Florida groundcovers for two specific natural areas in south Florida – open pineland and ocean front – will be described. In creating or restoring natural area landscapes, exotic groundcovers are of course inappropriate. The above publication includes several native groundcovers that may be useful for general landscape use.

Exercise care when choosing groundcover plants. Even though not officially listed as invasive (use banned or limited in Miami-Dade), some can grow out of control if their growth is not restricted. In some instances plants can spread from carelessly discarded stem pieces. A few of the listed groundcovers have not been widely used in south Florida. They have outstanding features (e.g., highly drought tolerant, especially ornamental) and are closely related to plants already grown locally making them worth trying in Miami-Dade landscapes.

Acacia redolens 'Prostrata'

Appearance and habit: An unusual fast growing form of acacia that develops a low, dense, prostrate, growth habit, spreading to cover an area of 12-15'. Leaves absent, phyllodes glaucous to grayish green, straight to sickle shaped. Terminal panicles of small, fragrant, yellow mimosa-like flowers during warm months of the year. Not known to be invasive.

Exposure: Requires full sun in an open site with excellent air circulation.

Soil: Soil type unimportant as long as it drains rapidly - thrives on both sandy soils and limestone. Good salt tolerance.

Care: Minimal care required – prune as required to ensure low canopy. Use a light application of a low nitrogen fertilizer in spring.

Spacing: A single plant will spread to form a 12-15' wide canopy.

Cultivars: Both 'Low Boy' and 'Desert Carpet™' remain at 12- 24" in height.

Comments: Popular in Arizona and California, but at present little used in south Florida. Well adapted to limestone and is reported to withstand brief periodic flooding (has been used in water retention basins). This is a highly drought tolerant groundcover that is worth trying in local xeriscapes. Try to avoid planting in late spring and summer when competition from weeds is most pronounced.

Acalypha monostachya 'Raspberry Fuzzies™'

Appearance and Habit: Low growing to 6", spreading to 3-4' with coppery bronze leaves and numerous, deep pink almost globular fuzzy flowers. Not known to be invasive.

Exposure: Full sun in an open site that drains rapidly and permits unimpeded air circulation.

Soil: Gritty free draining.

Care: Mulch and/or use pre-emergent herbicide to control weeds in bare ground between plants, pulling back mulch as groundcover spreads. In spring pinch stems and apply slow release fertilizer at half above rate to stimulate new growth. If necessary thin in summer to ensure good air circulation.

Spacing: Plant 2-3' o.c.(on center).

Comments: Species a native of Chihuahuan Desert, but is worth trying locally as groundcover for xeric landscapes or in a dry rock garden.

Acalypha reptans var. *pygmaea* (Kitten's tail)

Appearance and habit: A miniature creeping relative of the chenille plant (*A. hispida*). Small, ovate bright green leaves and numerous bristly, bright red, catkin-like inflorescences on trailing stems throughout most of the year. Not known to be invasive

Exposure: Full sun with good air circulation.

Soil: Some added organic material to planting area.

Care: Water during dry spells and thin out as necessary to improve air circulation. Often develops signs of trace element deficiencies on limestone – apply nutritional supplements in addition to slow release fertilizer in spring and late summer.

Spacing: 15 - 20" o.c. for 1 gallon plants.

Comments: The striking red catkins contrast perfectly with bright green foliage to make for an unusual and eye-catching display suitable for covering small areas.



Acalypha wilkesiana 'Cypress Elf' also known as 'Mardi Gras' (Lace copperleaf)

Appearance and habit: A moderate to fast growing miniature copperleaf no more than 18-24" high with thin strap-like, reddish brown leaves having coral colored margins and wavy edges. Not known to be invasive.

Exposure: Protected location with some light afternoon shade, but it can take full sun if regularly watered.

Soil: Moist with some organic content; tolerates some salt (away from direct exposure to ocean).

Care: Apply mulch in between individual plants to conserve soil moisture. Prune to shape. Mealybugs can be a pest.

Spacing: 12 – 15" between plants.

Comments: Locally available; use as filler to contrast with shrubs having larger non-variegated leaves, or white flowering trees/shrubs. Best where irrigation can be supplied as copperleaf is prone to wilting.

Aloe sp. (Aloe)

Appearance and habit: Consists of a basal rosette of sessile, thick fleshy lanceolate leaves, often variegated, with (soft) spiny margins. Showy inflorescence produced

winter/spring on a tall often branched flower stalk. Most of the small commonly grown aloes readily produce offsets. Not known to be invasive in Florida.

Exposure: full sun, with at most partial light afternoon shade, and excellent air circulation.

Soil: Free draining gritty soil – incorporate some coarse sand or aggregate such as 'Perma-Till' where necessary (e.g., the marl soils of Miami-Dade).

Care: Spread a 1½" layer of inorganic mulch such as mixed ½-1" Chattahoochee river rock as a weed block - hand pull any weeds as they appear and rake back mulch as clump of aloes expands. May require water during prolonged spell of hot weather – look for a tip burn in leaves. In spring apply slow release fertilizer around the base of each plant at one third above recommended rate.

Spacing: Spread depends on aloe species – *A. brevifolia* forms 10-12 offsets spreading about 10'.

Comments: Clumping aloes are especially useful as groundcover in a dry rock garden. Apart from the familiar *A. vera*, other small clumping species include *A. dorotheae*, *A. ciliaris*, *A. brevifolia*, *A. saponaria* and *A. 'Blue Elf'*. **Caution** – not all aloes have emollient sap, *A. saponaria* can cause dermatitis.

Aptenia cordifolia (Baby sun rose)

Appearance and habit: Freely branching, prostrate, creeping stems (growing from a woody base) bear fleshy lance to heart shaped leaves. Flowering spring through summer, flowers usually single, occasionally in groups of 1-3, are daisy-like, with numerous purplish red petals. Stem pieces readily root. Baby sun rose has naturalized in at least one Florida County (St. Lucie).

Exposure: Full sun in an exposed site that permits rapid drying of soil.

Soil: Free draining sandy soil (will grow on dunes). Highly salt tolerant.

Care: Requires minimal care – no need for supplemental water or fertilizer. Should be cut back to keep within bounds. No pests, but root and stem rots likely if soil remains too moist.

Spacing: 36" for 'Red Apple', 24" for 'Variegata'

Cultivars: *A. 'Red Apple'* is most often grown. Apart from the less vigorous 'Variegata', 'Sunny Sue' is a more recent white flowering cultivar.

Comments: Baby sun rose will give rapid coverage, and is a good choice for a large open site that drains rapidly. Rainfall followed by hot, dry weather can result in rampant growth. Where growing conditions permit (such as the beach front) it can smother surrounding plants if not controlled.

Arachis pintoi and *Arachis glabrata* (Perennial peanut)

Appearance and habit: A nitrogen fixing legume that grows from a woody tap root, *Arachis glabrata* spreads by means of a thick mat of fleshy rhizomes from which decumbent to prostrate non-branching stems arise. These bear trifoliate leaves (four spear shaped leaflets) and tubular yellow flowers. Perennial peanut can spread up to 6' a year and is usually propagated vegetatively; it rarely sets seed in Florida and is not considered invasive. *Arachis pintoi* is similar but leaflets are shorter and plants more floriferous.

Perennial peanut growing in a Miami-Dade residence.

Exposure: Open site in full sun – can take partial shade but growth will not be as vigorous.

Soil: Slightly acid sandy soils are best, but perennial peanut can be grown successfully on limestone though it may be necessary to correct for nutritional deficiencies. On Miami-Dade limestone where there is little top soil spread a 1" layer of 50/50 mix (see above).



Care: After plants are installed, it is important to regularly water perennial peanut and to control competition from weeds until established. Once there is full coverage routine irrigation is no longer required. During hot dry periods an occasional watering will help maintain a full lush appearance. There is no need to use nitrogen containing fertilizers - potassium (potash) and magnesium can be applied as Sul-Po-Mag 2-3x per year, plus a top dressing of elemental sulfur. On Miami-Dade's limestone soils use a nutritional spray containing iron, manganese and zinc to correct trace element deficiencies (chlorosis). Perennial peanut should be mowed to a height of 3" (1½" for a turf like appearance) every 3-4 weeks – this will stimulate new growth and flowering. Edge as required to keep within bounds.

Spacing: 15" for 1 gallon containerized plants.

Cultivars: In Florida several cultivars of *A. glabrata* are available for landscape use – 'Ecoturf', 'Arblick' and 'Needlepoint'. Cultivars of *Arachis pintoi* are more frequently used in Australia and Hawaii.

Perennial peanut: detail showing flowers

Comments: Where there is limited foot traffic perennial peanut is potentially a very useful groundcover substitute for turf, being relatively disease and pest free and requiring far less water and maintenance. Perennial peanut has performed well in various parts of Florida, but statewide still little used. Rarely seen in Miami-Dade but should be used more widely. Principal drawback is care required during the first year while the plants become fully established.



Asystasia gangetica (Coramendal, Ganges primrose)

Appearance and habit: A fast growing, sprawling, herbaceous perennial with 1-3" bright green, ovate, opposite leaves, flowering on and off for most of the year. Each inflorescence consists of a one sided spike of trumpet shaped blue to pinkish lavender flowers with a yellow to white throat. An aggressive plant that readily roots as it sprawls across open ground to produce dense cover.

Potentially invasive if not controlled. Seedling volunteers don't appear to be a problem but discarded stem pieces readily take root.

Exposure: Part shade to full sun.

Soil: Any free draining soil including limestone.

Care: Grows well in full sun to part shade but during drought conditions some supplemental water is beneficial. Coramendal needs to be regularly thinned and cut back to stay within bounds. Take care not to allow it to climb into neighboring shrubs.

Spacing: 3-4' o.c for 1 gallon container plants.

Comments: Useful for rapidly covering large open area, if it is kept within bounds. *Asystasia* may not be a good choice where there are shrubs/small trees or near chain link fences into which it will readily climb, smothering low growing items. When thinning/edging take care to pick up all stem pieces to prevent inadvertently spreading plants to other parts of the yard.

***Bougainvillea* sp. (Paper flower)**

Appearance and habit: Varies from sprawling vine to more compact shrubby habit. Flowers small, white and insignificant, subtended by colorful leaf-like bracts which fade, becoming thin and papery, often persisting. Leaves alternate, ovate to almost elliptical, often with axillary spines. Dwarf cultivars used as ground cover (especially those with variegated foliage) are less vigorous than larger climbing cultivars.

Exposure: Open site in full sun – good for coastal areas away from salt spray.

Soil: Tolerant of many soil types including limestone and high salt – soil must be able to drain rapidly.

Care: Roots fine and very fragile- easily damaged when planting (for use as a groundcover select 1 gallon container plants). No need to water once established. Use nitrogen containing fertilizers sparingly (late spring application only, at above rate) and correct any trace element deficiencies (iron, manganese). Flowers form on new growth as days shorten so do not prune after mid-September (can be cut back hard in spring if necessary before fertilizing). Maintaining soil on the dry side will also encourage flowering. Foliage can be chewed by bougainvillea looper (small caterpillar), and leaf spotting diseases develop on leaves that remain wet (usually as a result of excessive shade).

Spacing: Depends on cultivar – larger vining types such as 'Rosenka' 3-4', orangey gold fading to pink and 'Jamaica White' 5-8', or more compact dwarf shrubby types (2-3') such as 'Helen Johnson', fuschia purple, 'Monka' (also sold as Oo-La-La – bright magenta) and 'Pink Pixie', dark pink.

Comments: Bougainvilleas are occasionally used as a groundcover in south Florida (more so in Southern California where vining types are used to cover steep slopes). Use inorganic mulch or pre-emergent herbicide to lessen weed problems.

***Bulbine frutescens* (Snake flower)**

Appearance and habit: Closely related to aloes, bulbines are fast growing, clumping, succulent perennials with thin almost terete lance shaped leaves. During spring/summer flowering stems appear bearing many small star-shaped yellow flowers in cone shaped spikes. Not widely used – so far not known to be invasive in Florida. Reported as invasive in parts of Australia.

Exposure: Full sun or light shade.

Soil: Coarse sandy soil (should dry rapidly).

Care: Remove dead flowers to encourage further blooming. Water only during extended periods of hot dry weather – withhold water during winter. Fertilize as for aloe.

Spacing: Plant 24 – 30" o.c.

Cultivars: 'Hallmark' has sterile orange yellow flowers.

Comments: Attractive grassy foliage and showy yellow flowers combine to make an ideal plant for rock gardens or xeriscapes. Use as a groundcover in front of blue flowering plants such as *Plumbago auriculata*.

***Carissa macrocarpa* (Natal Plum)**

Appearance and habit: Species type a large rounded densely branching shrub with stems bearing forked spines and thick but pliable, glossy ovate leaves often with a soft spiny tip. Milky white jasmine like flowers produced in late spring/summer followed by bright red edible small plum like fruits. Carissa stems and leaves produce copious amounts of white latex, which unlike many other members of the Apocynaceae (to which it belongs) is not poisonous. Slow to moderate growth rate. Not considered an invasive threat. Many cultivars of which several dwarf/prostrate types are suitable for use as groundcovers.

Exposure: Full sun but will also take shade for part of the day. Flowers best when in full sun.

Soil: Any free draining soil – well adapted to limestone and has good salt tolerance.

Care: Once established should not need supplemental water. Apply slow release fertilizer in early summer. Pests usually not a problem – occasionally scale insects may be found - disease problems more likely where plants remain wet (aerial leaf blight, die-back and stem cankers). Carissa should be pruned as needed to remove dead stems and maintain a neat appearance, and for groundcover use to encourage low spreading growth habit.

Spacing: Depends on cultivars (see below).

Cultivars: 'Tomlinson', 2' x 3', thornless with large flowers and attractively colored carmine fruit; 'Tuttle', compact dense to 2' x 3½' (space both about 5' o.c.); 'Seminole Queen', low growing spreading, rounded - better adapted for poor draining sites; 'Emerald Blanket' and 'Green Carpet' both 18' x 3' spreading habit with latter having smaller leaves; 'Horizontalis' 18 x 24" spreading dense growth; 'Minima', 12-18" x 24", compact with small leaves and flowers. For dwarf cultivars space at 12-18' o.c.

Comments: Although once quite common, *Carissa* is currently underused in local landscapes and is especially suited for those desiring a low maintenance yard. Adaptable to many situations, it is an excellent choice for open, coastal sites. Try mixing with a dwarf bougainvillea such as 'Helen Johnson' for an interesting contrast in textures.



***Cuphea* sp. (Mexican Heather, Cigar Plant, Firecracker Plant)**

Appearance and habit: *Cuphea hyssopifolia* (Mexican heather), the most commonly used species in Miami-Dade, is a low growing compact sub-shrub with wiry branched stems bearing many small lance-shaped almost sessile leaves. Flowers are small, tubular, terminal, varying in color (see below) appearing during warm months of the year. *Cuphea ignea* (cigar plant): larger not as compact as *C. hyssopifolia* with long thin stems, often deep red, bearing opposite oblong leaves and more conspicuous flowers. These are borne in the leaf axils and are thin, tubular to 1", orange to scarlet with small purplish petals. *Cuphea micropetala* is similar but larger with terminal racemes of flowers.

Cuphea llavea is a small mounding shrub also with flowers in terminal racemes. Each flower has a violet to purple corolla tube with two

conspicuous red petal lobes the appearance of which gives the plant its common name (bat-faced cuphea). *Cuphea x purpurea* is a cross between *C. llavea* and *C. procumbens* that has given rise to several cultivars of landscaping interest (see below). *Cuphea varia* – see below.

There is a confusing number of cultivars/hybrids, many of uncertain parentage, and only a few of which are readily available – try out of area mail order sources. Cultivated cupheas are not known to be invasive in Florida.

Cuphea ignea

Exposure: Full sun preferable (can take some light afternoon shade), with excellent air circulation.

Soil: Any light free draining soil – not salt tolerant.

Care: Water as needed until established (new growth) there after as top 1-2" of soil becomes dry. Withhold water during periods of cool dry winter weather. Apply slow release fertilizer as above. Prune *C. hyssopifolia* to ensure adequate air circulation and to remove dead growth. Susceptibility to soil nematode damage (more likely on sandy soils) will cause yellowing foliage and slow decline. For *C. ignea* cut back long stems as they finish flowering – in late winter prune hard to encourage new basal growth. For *C. micropetala*, do not prune after early summer to avoid reduced flowering. Whitefly and spider mites can be pests. Where soil remains wet expect root rot (yellowing foliage and die-back).

Spacing: For *C. hyssopifolia* 24" o.c.; *C. x purpurea* cvs., 12-18".

Cultivars: *C. hyssopifolia* – ‘Compacta’, violet flowers with tighter growth than species; ‘Aurea’ light green foliage and lavender flowers; ‘Golden Foliage’ light yellowish green foliage (several other cvs with golden yellow/variegated foliage); ‘Alba’ white flowers; ‘White Whispers’ and ‘Desert Snow’ also white flowering but more compact; ‘Monga’, dwarf (8x10”) with white flowers; ‘Allyson’ (also listed as ‘Yatsubusa’) larger leaves denser flowering (deep violet flowers); ‘Monshi’ similar to ‘Monga’ but with lilac flowers. *Cuphea x purpurea* – ‘Firefly’, sprawling growth to 2’, flowers purplish red with 5 distinct red petal lobes; ‘Firecracker’, smaller to 12-14” with crimson purple flowers; ‘Georgia Scarlet’, red/purple flowers to 2’; ‘Avalon’ purple flowers. *Cuphea varia* (Susan’s Little Gem - white to pale pink flowers, delicate leaves to 15”).

Comments: Used more for edging or in mixed borders cupheas, especially Mexican heather and its cultivars and the sprawling/trailing types of other species, can also be used as a groundcover where extensive coverage is not required. Much of the attraction is the informal but at the same time neat appearance they impart to the landscape. Avoid planting individual plants too close to lessen the risk of disease in Miami-Dade’s humid climate.

***Dietes bicolor* (Yellow Morea, Wild Iris)**

Appearance and habit: A clumping herbaceous plant with 2’ narrow, leathery, sword shaped leaves arranged fan-like with bases tightly apposed. Flowers have yellow tepals with a dark brown to maroon blotch (nectar guides). Flowering, on 3’ branched stems, occurs on and off throughout the year, individual flowers lasting at most 2-3 days but quickly replaced. Plants spread by means of thick rhizomes and can be propagated by division (should be first established in containers). The related African iris *Dietes iridioides* (white tepals) is less well adapted to south Florida

conditions. Neither species is known to be invasive in Florida.

Exposure: Full sun preferred for best flowering, but light dappled shade acceptable.

Soil: Can grow on local poor rocky soil, though addition of 10-15% organic matter is beneficial. Not tolerant of salt. In heavy, wet soils prone to root and crown rot.

Care: Water until well established (clump expands) and provide a light application of a slow release fertilizer in late spring and early fall. Drought tolerant once established, but appearance improved by occasional watering during extended hot dry weather. Spent flower stems can be removed to improve flowering. Flower stems of *D. iridioides* and *D. grandiflora* are perennial and should be left; remove only seed pods as they form.

Spacing: Gallon container plants 18 – 24” o.c.

Cultivars: Cultivars have been developed but are not usually available locally. ‘Lemon Drops’ and ‘Orange Drops’ are hybrids with cream tepals having orange yellow and yellow blotches respectively.

Dietes bicolor



Comments: Once established *Dietes* will spread to provide a tall, coarse textured, grass-like ground cover with an extended period of flower production. Although often found growing beside streams in its native South Africa, *Dietes* can be used as part of a low maintenance landscape with only occasional need for supplemental water.

***Duranta erecta* ‘Gold Mound’**

Appearance and habit: A dwarf cultivar growing to no more than 2’ (cf. species type a 10-15’ blue flowering shrub). ‘Gold Mound’ rarely flowers and is grown for the striking lime

green to golden yellow foliage. 'Cuban Gold' is a similar low growing cultivar, to no more than 12", with chartreuse yellow colored foliage.

Exposure: Full sun to partial light shade.

Soil: Any free draining soil.

Care: Water until established then only during extended periods of hot dry weather. Pinch new growth to promote more bushy form. Use mulch to control weeds keeping it away from base of plant stems.

Spacing: Plant at 18 – 24" o.c.

Comments: A relatively new cultivar of *D. erecta* chosen as one of the Florida Nursery Growers Association 2005 plant selections. Can be combined with purple to blue flowering plants such as *Tradescantia purpurea* (purple queen) or *Cuphea hyssopifolia*.

***Euphorbia milii* (Crown-of-thorns)**

Appearance and habit: Scrambling slow growing 3-4' shrub with irregularly branched somewhat twisted 5-7 sided stems with many prominent 1" grey spines. Obovate bright green leaves arranged spirally toward stem tips. The inflorescence is composed of flat-topped to rounded heads of cyathia (composed of rudimentary male and female flowers). Each cyathium is subtended by two colorful bracts (cyathophylls) both red, and less frequently yellow (*var. tananaivae*), occurring naturally. Crown of thorns is in bloom year round but showiest during the driest part of the year (late winter into spring). *Euphorbia milii* readily hybridizes in the wild (some of these collected and commercially available) in addition growers have developed numerous cultivars including several with a dwarf more compact growth habit. These latter selections are especially suitable for use as groundcover². Crown of thorns is not known to be invasive.

Exposure: Full sun with minimal shade (brief partial afternoon) and excellent air circulation. Do not plant in a part of the yard where sprinklers are used routinely.

Soil: A gritty soil that drains freely (1 part Canadian peat, 1 part coarse sand and 1 part grit, well adapted to Miami-Dade's poor rocky soil). Tolerates salt – a good choice for properties near the ocean.

Care: Requires minimal care once established. Water only when extended periods of hot dry weather occur (about every 7-10 days if leaf drop is noticed). During cool winter months watering should not be required. An inorganic mulch, such as (¼-½" Chattahoochee rock preferable to organic mulch (wood chips, shredded bark), since it permits the soil to dry out more rapidly. In spring and fall apply slow release fertilizer at a third the above rate. Pruning, which is rarely required (usually only for removal of dead or rotting stems), is best done during dry months of the year. Hand-pull weeds as they appear. Apart from the risk of stem/root rot from excess moisture, flowers occasionally suffer blight and some leaf spotting may appear during summer rainy season.

Spacing: Plant dwarf cultivars at 15" o.c.

Cultivars: 'Short and Sweet'™, can grow to as much as 18" tall and spread to 2-3' (usually less) with prostrate stems bearing many small red flowers; 'Minibell', very tight growing to no more than 12" with tiny red flowers and leaves; 'Atlas', compact bushy, growth more upright, covered with yellow/peach colored flowers larger leaves; 'Dinni' similar with pale yellow flowers.

Comments: An attractive, low maintenance, colorful groundcover that is especially suited to dry, open, full-sun areas. Take care when working around plants (use gloves) to avoid prickles and poisonous white latex – contact can cause severe dermatitis.

***Ficus microcarpa* 'Green Island'**

Appearance and habit: believed to be derived from the Cuban laurel (*F. microcarpa*), 'Green Island' by comparison is slow growing eventually forming a low, ground-hugging, 3x4' mounding shrub. Chief attribute is the dense covering of rounded 3" bright green, leathery leaves. Unlike Cuban laurel and the other *Ficus* sp. that are commonly grown in south

² More detailed information on *E. milii* hybrids is available in the publication 'Crown-of-Thorns (*Euphorbia milii*)' available on line at: <http://miami-dade.ifas.ufl.edu/publications.htm> .

Florida 'Green Island' does not have destructive roots and is far less aggressive in its growth habit. It is not known to be invasive.

Ficus 'Green Island'



Exposure: Full sun or partial shade.

Soil: Any free draining soil.

Care: Once established, water when top 1-2" of soil dries out – mulch using shredded bark or nuggets (this will also help control weeds), keeping it away from the base of the stem. Fertilize as above. Prune occasionally to restrict height to 1-2' and pinch side shoots to encourage lateral growth. Unlike Cuban laurel 'Green Island' does not appear to suffer thrip damage.

Spacing: Plant 2' o.c.

Cultivars: *Ficus microcarpa* var. *crassifolia* (may be offered as *Ficus 'Green Mound'*) is similar to 'Green Island' but less prostrate growth habit (height 6' compared to a maximum of 3-4' for 'Green Island'). More suited for use as a small shrub or low hedge.

Comments: Once established 'Green Island' is an easy to maintain groundcover where extensive coverage is not required (base of a flag pole or narrow gardening sites) for both full sun and limited shade (e.g., under palms).

***Hemerocallis* spp. (Day lilies)**

Appearance and habit: Formerly part of the lily family (Liliaceae) daylilies form a separate family (Hemerocallidaceae) of about 15 species from which more than 60,000 named cultivars have been developed.



***'Miami Medallion'* day-lily.**

Day lilies are clump forming perennials (not bulbiferous like true lilies), some rhizomatous, with fibrous often thickened roots, two-ranked thin linear (strap-like) leaves grouped in 'fans' and a flower scape (the tip often branched) bearing racemes of funnel shaped flowers. Flowering occurs from spring through summer (depending on cultivar) with blooms in many colors from the palest yellow to deep burnt orange to almost red, but

always with at least an underlying hint of yellow. In a few instances flowers are fragrant. Although individual flowers are short lived (less than 24 hr) they are continuously being replaced over the blooming period of the cultivar in question. In south Florida only evergreen and some semi-evergreen types can be grown – a few garden centers/nurseries offer daylilies specifically developed for south Florida conditions.

Exposure: Full sun for most cultivars apart from those with very deep colored blooms which are more attractive with some partial afternoon shade.

Soil: Not particular providing it does not become waterlogged - enrich local sandy/rocky soils with some organic matter.

Care: Containerized daylilies can be planted at any time. Bare root plants are best planted in late fall to late winter and regularly watered until established - when planting, spread the roots over a dome of soil before adding backfill. Ensure that the crown (small area of white tissue between base of leaf fan and roots) is covered with no more than $\frac{1}{2}$ " of soil. Apply a complete slow release fertilizer in spring. Daylilies are quite drought tolerant, however they should be watered during extended periods of hot dry weather especially once scapes and flower buds develop. Where necessary provide 1" of water per week in no more than two early morning applications (flowers will wilt if watered during the heat of the day). Remove seedpods as they form to maximize flowering and dead leaves to discourage disease. After 3-4 years flowering of locally grown daylilies often declines at which time they should be lifted. This is best done in the fall, the clumps divided, the foliage cut back to 6" and the divisions then replanted.

Pests are few: in spring Eastern lubber grasshoppers may chew leaves, aphids can cause both leaf tips and flower buds to turn brown and spider mite feeding results in foliage turning yellow/tan. Leaf streak is a fungal disease that results in an elongated area of the leaf, usually next to the mid-rib turning yellow then brown. Sometimes confused with yellow streak rust, which is more serious being difficult to control on susceptible cultivars. It causes raised yellow to orange pustules and brown blotches as leaves become more heavily infected.

Spacing: Plant 12-18" o.c.

Cultivars: 'Miami Medallion' (apricot/yellow, floriferous - extended bloom season); 'Yeehaw Yellow' (golden yellow petal tips suffused burnt orange); 'Aztec Evergreen' (golden yellow, extended bloom period), Kaskel Color Mixes (local Miami grower).

Comments: Day lilies have been underutilized in Miami-Dade landscapes, but should be seriously considered with the recent availability of containerized cultivars suited to south Florida conditions. Caution for pet owners: ingesting day lilies can cause acute kidney failure in cats.

***Hymenocallis latifolia* (Fragrant Spider Lily, Chrysolute Lily)**

Appearance and habit: Herbaceous clump forming perennial developing from a subglobose bulb with basal, sessile, fleshy, linear leaves and in summer a flattened scape bearing an umbel of 6-12 fragrant white flowers consisting of a tubular perianth with 5" spidery tepals and a 2" wide staminal disc (corona). A native of south Florida found in moist, sandy coastal sites, often at the margin of mangrove swamps. Blooms summer into fall, producing long lasting flowers.

Exposure: Full sun to light shade, well suited to ocean front properties.

Soil: Adapted to moist but free draining sandy soils. Good salt tolerance and will withstand temporary inundation. Incorporate small amount of organic matter and some coarse sand into backfill if on Miami-Dade rock soils.

Care: Spider lilies are most readily available in one and three gallon containers – if using bulbs plant with the neck just above soil level. Soil should be kept moist until established. Although found in moist to wet coastal locations, spider lily withstands drought conditions unless soil becomes totally dry. During winter reduce watering. Apply fertilizer at half above rate in spring. Every 3-5 years lift clumps and remove offsets for replanting. Lubber grasshoppers are particularly attracted to spider lilies (chewing damage in spring), otherwise insect pests unimportant. Leaf spotting diseases and rust may affect foliage.

Spacing: Plant 2-3' o.c.

Comments: Foliage coarser texture than day lilies but a better choice for seaside locations. In such situations can be used as a mixed groundcover with railroad vine. Caution: toxic to humans and animals if ingested, can cause contact dermatitis in susceptible individuals.

***Lantana* spp.**

Appearance and habit: Shrubs to herbaceous perennials, bushy to trailing, some with spiny stems, leaf margins toothed, surface rugose. Inflorescence composed of terminal rounded to flat heads of small salverform flowers in colors ranging from yellow, through

orange red to blue depending on species/cultivar. *Lantana camara* is extremely invasive, however there are sterile hybrids available (see below under cultivars) that do not produce viable seed. *Lantana montevidensis* is a trailing species widely used as a groundcover with lilac to violet flowers that is not presently regarded as invasive. *Lantana depressa* var *depressa* (pineland trailing lantana) is a sprawling low growing shrubby plant with yellow flowers native to Miami-Dade rockland. Some controversy regarding authenticity of nursery grown specimens of latter species since most appear to have hybridized to some degree with *L. camara*.



Mixed Planting: *Lantana montevidensis* and *L. depressa*

Exposure: Full sun.

Soil: Not particular as to type providing it readily drains. Good tolerance of salt.

Care: Once established lantana is drought tolerant though appearance is improved if soil is kept just moist. The trailing *L. montevidensis* is less drought tolerant than other species. Apply slow release fertilizer in spring at half above rate. Prune to encourage lateral growth and branching. Few insect pests though infestation with whitefly (black sooty mold) or lantana lace bug may occur (*L. montevidensis* resistant to lace bug), caterpillars may chew foliage and spider mites cause leaves to appear dry and dusty. Use gloves when handling lantana as leaves can cause dermatitis in susceptible individuals.

Spacing: Plant 18" o.c.

Cultivars: The following *L. camara* sterile hybrids (most crosses involving *L. montevidensis*) can be used as groundcover – ‘Sunburst’ (bright yellow); ‘New Gold’ (golden yellow); ‘Gold Mound’ (very floriferous bright yellow – appears very similar to ‘New Gold’); ‘Spreading Sunset’ (golden orange to reddish orange); ‘Cream Carpet’ (creamy white with yellow center); ‘Mozelle’ (inflorescence creamy yellow to pale rosy pink); ‘Miss Huff’ (orange yellow and pink inflorescence). *Lantana montevidensis* – species type, lavender flowers; ‘Alba’ (white trailing lanatana with chalk white flowers).

Comments: Many cultivars are available but take care to use only those that are sterile. Most popular as groundcovers are ‘Gold Mound’ and the lavender trailing *L. montevidensis* (try mixing this with white cv. ‘Alba’). Lantana is a good choice for seaside

locations and attracts butterflies. Caution – lantana is poisonous³. It is not advisable to plant lantana if you have outdoor dogs or cats or livestock such as horses. Be careful when working near lantana, it can cause itching/dermatitis in susceptible individuals.

***Liriope* spp. (Lily Turf)**

Appearance and Habit: Formerly members of the lily family (now part of the Ruscaceae⁴), there are two principal species; *Liriope muscari* (common lily turf) and *Liriope spicata* (creeping lily turf. Most cultivars are of the former species which include clumping and some spreading types (see below) while *L. spicata* is a vigorous fast spreading type. The common lily turf has tuberous roots and dense clumps of 18" dark green, linear, grass-like foliage. Creeping lily turf is a rhizomatous spreading plant and develops a mat of somewhat shorter grassy foliage. In late summer to fall purplish stems produce spikes of tiny flowers (akin to grape hyacinth), deep violet for *L. muscari*, and paler violet to white for *L. spicata* (leaf size and appearance as well as flower color can vary depending on cultivar). Fruits, where formed, are berry-like, dark blue almost black. Where limited ground coverage is needed, use clumping types (*L. muscari* cvs.) which are easier to keep within bounds. The spreading types (*L. spicata*) will give quicker coverage but are only suitable for sites where there is shade.

Exposure: In Miami-Dade part shade is beneficial though there are a few cultivars that tolerate full sun.

Soil: Prefers a moist, slightly acid, light, free draining soil. Most important that soil never remains wet – as can occur during summer rainy season when grown under shade, thereby increasing the risk of disease. *Liriope muscari* is not as salt tolerant as *L. spicata*.

Care: Although liriope can be planted at any time *L. muscari* is best installed during late winter into early spring so as to take advantage of the period of most active growth that occurs from late spring into early summer. Incorporate no more than 20% organic matter (fresh compost, Canadian peat) into rock based soils and water until established. It is very important not to plant too deep – best if just above grade to allow for settling after planting. Although tolerant of drought, appearance is improved if soil is not allowed to dry out but kept just moist. In Miami-Dade plants exposed to day long hot sun will need to be irrigated. Shredded pine bark can be used as mulch to reduce weed growth but it should be kept away from the base of the liriope. Mulch should be raked back as clumps expand.

Several pre-emergent herbicides can be used after planting to control broadleaf weeds, while there are specific post-emergent herbicides for use in controlling grass weeds and sedges respectively. Apply 2-3 light applications of slow release fertilizer or organic fertilizer plus trace element supplement between March and October then reduce watering during winter. Cutting back and raking out old foliage during late winter helps to limit the risk of disease and invigorates established plantings. Scale insects (especially fern scale) are the principal insect pest while crown rot (*Phytophthora*), various root rots and leaf spots (anthracnose) can be a problem where there is excessive moisture. Material for propagation can be obtained by lifting and dividing established clumps of liriope

Spacing: For *L. muscari* cultivars (clumping types), 6 – 10" in alternating rows, *L. spicata* and other creeping types 12 – 16".

Cultivars: Choose *L. muscari* cultivars that are adapted to full sun; under local conditions many are more suited to partial shade especially most of those with variegated foliage. The following have been found to withstand full sun in Texas and/or the Deep South – 'Big Blue' (dark green leaves, deep blue inflorescence); 'Evergreen Giant' (grown for thick dark green leaves, white inflorescence hidden within foliage); 'Royal Purple' (green foliage, deep purple inflorescence). Of the variegated cultivars 'Silvery Sunproof' is the most tolerant of full sun though in Miami-Dade some partial afternoon shade will be beneficial.

Comments: Used more extensively further north, where many more cultivars are able to withstand full sun exposure, finding use as a substitute for grass (will not withstand foot traffic). In Miami-Dade unsuited for covering large open expanses - useful for small

³ Most of the literature on lantana toxicity pertains to *L. camara*.

⁴ The Ruscaceae includes plants such as ponytail palms, dracenas and sansevierias.

areas particularly where exposure to sun can vary during the course of a day – in the lee of a north to south wall or tall hedge, or at the base of a tree or to fill in between adjacent shrubs.

***Malpighia coccigera* (West Indian Holly)**

Appearance and Habit: A slow growing small shrub (18-30" x 24-36"), native to the Caribbean basin, having prostrate to decumbent stems bearing numerous small, rounded, dark green leaves with dentate margins (resemble miniature holly leaves). In summer briefly covered with masses of small white to pale pink/lilac flowers followed by showy red drupes (fruit production often limited in cultivated types). Unrelated to true hollies (*Ilex* sp), belonging to the Malpighiaceae a family of mainly tropical plants that includes the familiar ornamental shrub thryallis and acerola (Barbados cherry).

Exposure: Full sun if regularly watered, otherwise some part shade in the afternoon is preferable.

Malpighia coccigera

Soil: Moist, never wet, organically enriched soil. Adapts well to Miami-Dade's high pH soils, but only limited salt tolerance – less than related Barbados cherry (*M. emarginata*).

Care: Enrich soil with organic matter - especially on sandy soils to lessen risk from parasitic soil nematodes (risk of nematode damage far less on Miami-Dade's rock soils). Mulching will also help to suppress nematode damage as well as conserve soil moisture and control weeds. Clip occasionally to keep at an even height and tip prune to encourage lateral branching.

Spacing: 2-3' o.c.

Cultivars: A variegated form as well as several others differing in growth characteristics have been developed, but are rarely offered by local growers.

Comments: Despite being selected in 2000 by Florida Nursery Growers Association as one of the 'Florida Plants of the Year', West Indian holly remains under utilized in Miami-Dade landscapes. Provides a neat, fine textured groundcover where extensive coverage is not required, with attractive almost dainty foliage and flowers.



***Philodendron bipinnatifidum* (Selloum, Tree Philodendron)**

Appearance and Habit: A large self-heading philodendron that develops a 6-8' stem which becomes decumbent without support, producing a sprawling plant with large (to 3'), dark green, pinnately lobed leaves (deeply dissected). Stems produce thick aerial roots and display prominent leaf scars.

Exposure: Full sun to partial shade, preferably protected from cold drying winds.

Soil: A free draining sandy enriched soil, but will succeed on Miami-Dade's limestone soils. Not tolerant of salt.

Care: Plants that have been under shade should be gradually acclimatized to full sun before installing. Incorporate some organic matter into backfill and mulch area between plants to control weeds. Water until established, thereafter regularly during periods of hot dry weather. Reduce watering during winter. Apply slow release fertilizer at above rate in March, June/July and October. Mites and scale insects are occasional pests and stem rots where there is poor drainage. General yellowing of leaves is usually due to lack of fertilizer

(nitrogen). Failure to provide a complete balanced fertilizer can also result in potassium deficiency symptoms (leaves with reddish brown margins).

Spacing: Plant 3-5' o.c.

Cultivars: The popular Philodendron "Xanadu"⁵ is a miniature hybrid form of *P. bipinnatifidum* that only grows to 3'.

Comments: For large areas where coarse textured foliage is appropriate, Selloum can be used. Although well able to withstand full sun, appearance is improved where there is partial shade from hot afternoon sun. Insufficient water and lack of fertilizer together with poor soil usually result in small chlorotic leaves.



Portulaca - Sunrise/Sunset

Care: Best planted in late winter/early spring. Inspect plants for damage after frost and thin out in summer to permit rapid drying out of soil plant surfaces.

Spacing: 15" o.c.

Cultivars: 'Eubi' series; 'Sunrise' (orange flowers); 'Sunrise/Sunset' (orange and magenta flowers – also labeled "War and Peace" in some local nurseries).

Comments: Short lived but can be maintained using cuttings which readily root.

***Portulaca oleracea* (Purslane)**

Appearance and Habit: Short lived mat-forming perennial with prostrate reddish stems and small round fleshy leaves, flowering for much of the year. Flowers yellow but also purple pink or white cultivars available.

Exposure: Open site with full sun – avoid shade.

Soil: A gritty/sandy soil with perfect drainage – well adapted to Miami-Dade's poor rocky soils.

***Ruellia squarrosa* (Blue Shade, Purple and White/Creeping Ruellia)**

Appearance and habit: A low growing (12") herbaceous perennial spreading by underground rhizomes; stems with opposite grayish green, soft hairy leaves. Flowers are solitary in leaf axils, tubular (salverform) with five violet to purple petals each with a raised white line. Does not appear to be as weedy as *R. tweediana* (syn. *R. brittonia*) the familiar Mexican bluebell. May pose more of an invasive threat near wetlands.

Exposure: Will accept full sun (best if soil remains moist) or shade. Site should provide good air circulation.

Soil: Well adapted to local limestone soils, especially if somewhat enriched and kept moist. Not tolerant of salt.

Care: Some limited drought tolerance, but appearance best if irrigated, especially during periods of hot dry weather, less so during cool winter temperatures. Where there is some light shade from hot afternoon sun, frequency of watering can be reduced. Lightly shear periodically to remove spent blossoms to extend flowering (also encourages thicker plant growth).

Spacing: 12" between plants.

Comments: More restrained in habit than the common Mexican bluebell, creeping ruellia is well adapted to Miami-Dade conditions. Especially useful for sites receiving full morning sun followed by some afternoon shade.

⁵ Now listed as a distinct species, *Philodendron xanadu* Croat, Mayo & J. Boos 2002 (in MBG Tropicos).

***Stachytarpheta jamaicensis* (Blue Porterweed)**

Appearance and Habit: A low sprawling shrub usually no more than 1-3' high but spreading up to twice as much. Stem bases somewhat woody, becoming smooth and exhibiting repeated forked branching. Leaves 3 x 2", grey green, surface rugose, margins coarsely toothed. Inflorescence a tall upright spike, the rachis somewhat thickened and bearing numerous small pale blue and white flowers. Fast growing but rather short-lived, it readily re-seeds. May become weedy in landscape but usually not excessively so. Not to be confused with the more commonly available non-native *S. cayennensis* (syn. *S. urticaefolia*), a taller more upright shrub. Latter readily crosses with native species (e.g., *S. x intercedens* similar to *S. jamaicensis* but with darker green leaves and sterile pollen).

Exposure: Full Sun – will take coastal exposure if sheltered from direct salt spray.

Soil: Thrives on poor rocky soil.

Care: Once established highly drought tolerant, though some supplemental water improves appearance. Little, if any need for fertilizer. Porterweed can be allowed to grow with pruning limited to removing dead stems and cutting back as needed to keep within bounds.

Spacing: Plant at 2-3' o.c.

Comments: Trouble free, if somewhat coarse, native, sprawling groundcover that attracts many nectar feeding butterflies.

***Trachelospermum asiaticum* (Small Leaf Confederate Jasmine)**

Appearance and Habit: A climbing shrub (with support) that is more appreciated in the landscape as a groundcover where it forms a dense mat of much branched hairy stems bearing 1-2" elliptic to ovate shiny, dark green leaves. White to yellow jasmine like flowers appear in terminal cymes on short lateral shoots produced on old growth. However when used as a groundcover flowers are rarely if ever seen. Not a true jasmine, belonging to the same family (Apocynaceae) as *Stephanotis* and hoyas. Distinguished from true jasmines by leaves and stems containing milky sap and flowers having corolla lobes twisted - overlapping to the right.

Exposure: Full sun to partial shade (especially from hot afternoon sun), preferably with some protection from cold drying winds.

Soil: Organically enriched moist but free draining soil.

Care: Once established water as needed (more so in full sun) to maintain soil moisture, cutting back on frequency during coolest part of the year. On Miami limestone correct if signs of trace element deficiencies become evident. Prune back excessively long shoots and thin out during summer rainy season to improve air circulation.

Spacing: 12-15" o.c.

Cultivars: 'Red Tip' (new growth tinged red); 'Bronze Beauty' (new growth with bronze tinge); 'Variegatum' (variegated ivory/light green foliage); 'Theta' (leaves very narrow, 1/8", with thin silvery streak down the middle); 'Mini Mound' (very compact, only 4 – 8" high with much smaller leaves than species type).

Comments: Not as vigorous as the more familiar confederate jasmine, *T. jasminoides*, but better suited as a groundcover – denser coverage and not as prone to climb into neighboring shrubs. If exposed to day long hot sun ensure that soil does not become too dry. A good choice for circular driveway islands to fill in around shrubs/small trees..

***Tradescantia pallida* 'Purple Heart' (Purple Queen)**

Appearance and Habit: An herbaceous perennial with erect to decumbent stems and somewhat succulent leaves. Individual leaves are a uniform deep reddish purple (though suffused with green as shade increases), lance-shaped to oblong, curved inward about the mid-rib to form a shallow trough, the base clasping the stem. Single small flower with 3 pink petals appear during summer. The species type has green leaves, the margins tinged red but coloration increasing with sun exposure. The cultivar 'Purple Heart' pictured below is the form commonly seen in cultivation.

Tradescantia pallida 'Purple Heart'



Exposure: Amenable to part shade, but some exposure to sun necessary for leaves to develop full color. Day long hot sun tolerated but foliage can appear dull and tired unless soil moisture maintained.

Soil: A moist but free draining enriched soil for optimum appearance, but will grow on local rock soils.

Care: Fast growing so cut back as required to stay within bounds – take care sap can cause contact dermatitis in sensitive individuals. Thrives with little attention but for best appearance grow where there is some partial afternoon shade or water if exposed to continuous hot sun.

Spacing: 2' o.c.

Comments: Purple Queen can be overpowering if used in large blocks - try interspersing with *Duranta* 'Gold Mound', *Allamanda* 'Golden Butterflies' or *Lantana* 'Gold Mound'. *Tradescantia*.*sillamontana* (white gossamer) is a xeric species from northern Mexico having fleshy, grayish green leaves covered with fine silky hairs, and bears terminal cymes of purplish pink flowers during summer. It is more drought tolerant than 'Purple Queen' and will withstand full sun locations (availability in south Florida limited).

Tulbaghia violacea (Society Garlic)

Appearance and Habit: A vigorous clumping plant within the lily⁶ family growing from a corm-like rhizome which produces green to grayish green, linear to strap like slightly fleshy leaves. Umbels of small pale purple tubular flowers with flaring tepals are borne above the foliage on 2' terete stems (scapes). Flowers are faintly sweet smelling but foliage especially if bruised has a distinct smell of garlic. *Tulbaghia simmleri* (syn. *T. fragrans*) is occasionally seen - leaves are wider than *T. violacea* with each inflorescence (an umbel) comprising twice as many flowers. Individual flowers smaller and a pale pinkish purple. Resembles lily of the Nile hence common name pink Agapanthus.

Exposure: Full sun to light shade (flowering poor if shade is excessive).

Soil: Light, free-draining organically enriched soil.

⁶ Tulbaghia has also been placed in the Alliaceae (onion family).

Care: Once established society garlic can withstand periods of drought, though appearance and flowering are greatly improved if soil remains moist. Mulching will help keep soil moist as well as suppressing weeds - avoid piling mulch against the stems and rake back as clumps expand. Apply fertilizer at half the above recommended level. Every 3 years clumps can be split in spring and the divisions replanted. Apart from snails, there are few pests of significance.

Spacing: Plant 12" o.c.

Cultivars: 'Silver Lace' (also offered as 'Variegata', larger flowers than species type – foliage grey/green, margin striped white giving it a silvery appearance). 'Tricolor' is similar in appearance to 'Silver Lace' except for slight pinkish tinge to new foliage. A few specialist growers outside of Florida offer several other cultivars/sub-species with white, striped and pale mauve flowers. Many attractive hybrids have been developed, especially with *Tulbaghia cominsii*.

Comments: Ideal where grass like foliage is required – more suited to full sun in Miami-Dade than liriope – with the bonus of attractive long lasting flowers. Planted en masse, the garlicky odor of foliage can be overpowering at close quarters – extensive plantings are best situated at a distance from residence.

***Zephyranthes candida* (Fairy lily)**

Appearance and Habit: One of a group of herbaceous perennial plants commonly known as zephyr or rain lilies, though not true lilies (grouped with daffodils and Amazon lilies in the Amaryllidaceae). Clump forming from offsets of underground bulbs with linear grass like leaves and white crocus-like flowers borne on hollow leafless stems. Flowering occurs several times during the year (mainly summer into fall) usually in response to rainfall, especially after a period of dry weather. Other species are found in cultivation including *Z. rosea* and *Z. citrina* with pink and yellow flowers respectively. Container plants available but it is more usual to start plants from bulbs. Native rain lily, *Z. atamasco* found in north Florida, non-native species reported in the wild in a few north and central Florida counties.

Exposure: Full sun to part shade.

Soil: Organically enriched moist, but well drained soils.

Care: During periods of dry weather flowering can be induced by withhold water for a short period followed by thorough irrigation. Bulbs should be left in the ground - flower production is heaviest where clumps become crowded. In a warm winter climate such as that experienced in Miami-Dade, rain lilies may remain evergreen if soil is not allowed to dry out. If foliage dies down and bulbs enter dormancy curtail watering until foliage re-appears in late winter/spring.

Spacing: bulbs, plant at 3" intervals and 1" deep.

Comments: Zephyr lilies require minimal care and the white flowers of *Z. candida* are especially effective in a section of the yard that receives some partial late afternoon shade.

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