A WORD OR TWO ABOUT GARDENING

Flower beds: some water-wise choices for Miami-Dade

In Miami-Dade flowering annuals are used for landscape color from October until late spring. With the onset of the rainy season, few survive the combination of heat and humidity. A selection of flowering annuals is presented below for use as bedding plants in local flower gardens, with an emphasis on minimizing water use. Where space in the landscape is limited, some are also suited for use in planters, containers or hanging baskets. For each plant listed a short description and planting dates are given, as well as sun exposure, soil type, water requirements and any specific nutritional or pest considerations.

**Cosmos**  This is an easy to grow annual that can be started from seed sown directly where they are to be grown. Flower colors range from white through reds, pinks, mauve and yellow as well as bicolored – often these are sold in seed packets containing a selection of mixed colors. Cosmos can be planted from mid October through February and needs full sun and a coarse free draining soil – they adapt well to infertile soil. If sowing seed directly, finish by gently tamping down and lightly watering the soil. Keep the soil just moist (use a hose with a misting nozzle) until germination, thereafter it is important not to over water. Seeds should germinate within 15 days where soil temperature remain above 65°F, and flowering commence within 2 months. Cosmos require minimal care: allow the top 1-1½” of soil to dry out between watering, apply a single **light** application of a low nitrogen fertilizer (e.g., 1lb of a 6-6-6 fertilizer per 100 sq ft.) and remove spent flowers. Deadheading will help ensure continuity of flowering. Potential pests include aphids, powdery mildew and stemrots (if over-watered). It is unlikely that cosmos will last beyond late May in Miami-Dade landscapes.

**Wax (fibrous rooted) begonia.**  There are several types of begonias that can be grown in Miami-Dade, including perennials such as cane stemmed (e.g., angel wings) grown for flowers and foliage, and the Rex begonias for their large ornamental leaves. These both require shade and moisture, whereas wax begonias require sun exposure otherwise they become leggy with reduced flowering. The bronze leaved cultivars are amenable to day long full sun. Wax begonias too are perennial but are used as
flowering annuals; in Miami-Dade transplants become available in October (for home gardeners, raising transplants from seed is difficult) and can be planted into March. They often last well into summer before deteriorating sufficiently to warrant removal from the landscape. The soil should be enriched with well rotted compost or Canadian peat making sure it remains light and crumbly. Transplants can be spaced 6” or 12” apart (landscape and planters respectively) in full sun or light shade. Apply a light application of a slow release fertilizer and water as the top of the soil becomes dry. Do not over water as wax begonias are susceptible to root and stem rots in wet soil. Powdery mildew is sometimes a problem late winter into spring, and mite damage can occur with the increasingly hot dry weather of late spring. Wax begonias are low maintenance bedding plants and are a water-wise alternative to impatiens, better able to withstand exposure to hot sun.

**Petunias**  Petunias are one of the top three most popular bedding in the U.S., with hundreds of varieties available. A member of the Solanaceae (tomato/potato family), the parentage of most varieties involves two species native to S. Brazil/Argentina, *Petunia axillaris* and *P. integrifolia*. There are four principal types: grandifloras with large often double flowers; multifloras with smaller flowers, but more profuse blooming; millifloras with the smallest flowers (especially useful for containers and mixed borders) and spreading petunias used as ground cover. Older varieties exhibited poor heat tolerance restricting their use in Florida. Newer more heat tolerant varieties have become available, but in Miami-Dade petunias cannot be expected to last much beyond late April/early May. The grandifloras are the most popular, whilst the newer spreading cultivars have proved more successful than earlier selections. Following recent University of Florida trials, some of the more heat tolerant cultivars include the ‘Shock Wave’ series, ‘Supertunia Vista’ series, ‘Whispers’ series, ‘Sanguna’ series and ‘Jamboree Lavender’ and Jamboree ‘Burgundy’. Choose an area receiving at least 4-6 hours full sun, setting

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**Petunias can be raised from seed** — since it is so small, seed is usually pelleted to make it easier to handle. Do not cover seeds — they need light to germinate. After seedlings are potted-up allow at least 8 weeks before setting out plants in the landscape. If you aren’t enthused about starting from seed, petunia transplants are always widely available in area garden centers beginning in October.
out plants from late November through February, 6-12” off center, using a free draining soil. For spreading types, such as ‘Wave’ and ‘Tidal Wave’ allow 1½ -2’ between transplants. After about a week scatter a slow release fertilizer (e.g., Osmocote or Nutricote) around the base of each petunia – for vigorous spreading varieties supplemental applications of liquid fertilizer can be made every 3-4 weeks. Petunias require evenly moist soil; this is best achieved using a micro irrigation system. Avoid placing petunias near sprinklers, and if hand watering, apply water around the base of each plant – when wet flowers close up and stems can appear wilted. Newer varieties do not require the constant deadheading that was formerly required to ensure reliable flowering, though it may still be required for some grandifloras and multifloras. Petunias often become leggy late in the season; rejuvenate by cutting stems back by up to a half. The principal problems are stem and root diseases caused by heavy soil/over watering, otherwise petunias are usually relatively free of pest problems. Powdery mildew may be seen in late winter, while aphids, thrips, whiteflies and leaf miners are potential insect pests – the first three are vectors of plant viruses that can infect petunias.

**Impatiens** There are three species of impatiens that are commonly cultivated: *Impatiens walleriana* from Africa, known as sultanas, bizzy Lizzy or more often impatiens, is the most popular and a long time favorite as a cool season bedding plant in Miami-Dade. *Impatiens hawkeri* (New Guinea impatiens, native to New Guinea and islands in the western Pacific) may last into summer with some shade, while *I. balsamina* (common garden balsam, native to SE Asia) is the least popular. There are many cultivars of *I. walleriana*, the ‘Elfin’ series being the first of note and from which most of the present varieties are derived. The ‘Super Elfin’ series with improved heat tolerance and flower quality have been the most widely planted variety. Impatiens can be particularly impressive massed in large flowerbeds. Unfortunately local plantings have a predictable uniformity, featuring the same basic red, pink or white when there are so many more colors from which to choose. During late fall into mid-winter *I. walleriana* will grow in full sun in Miami-Dade if given adequate moisture. However dappled shade is preferable, not only extending the plants usefulness further into late winter/spring but reducing water-use.

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**There are newer more heat/sun tolerant cultivars of Impatiens including:**
- The trailing Fanfare® series, which scored well in University of Florida trials.
- Another trailing cultivar (Spellbound® series) is promoted as the most sun and heat tolerant *I. walleriana* cultivar.
- SunPatiens® a cross involving New Guinea impatiens and a wild African species has attracted attention as able to thrive in southern states under full sun.

The above varieties are all worth trying in Miami-Dade, however sun and heat tolerant doesn’t mean they require any less water. Information as to performance under South Florida conditions is lacking so for now it would be advisable to provide all three some shade from hot afternoon sun.
Impatiens is normally planted from late October through February in Miami-Dade, whilst New Guinea impatiens can be planted through April and should be provided with some shade if it is to survive into the summer. It is usual to purchase transplants from a garden center when planting impatiens, since seeds are not easy to germinate. When setting out impatiens in the landscape use a rich, moist, but free draining soil, leaving 12-18” between individual plants.

Avoid using too much fertilizer, as this will encourage leafy growth at the expense of flowers, and water carefully. Excessively moist soil, due to over watering, is the most common mistake when growing impatiens, encouraging the development of various root and stem rots. Water that is too cold or too warm can directly damage flower petals. A soaker hose/micro-irrigation system rather than a sprinkler is the best solution to watering a bed of impatiens. Apart from stem and root rots, virus diseases and bacterial leaf spots may be also be found on impatiens; arthropod pests include aphids, whitefly and thrips (including chilli thrips) as well as various mites including two-spotted spider mites and broad mites.

*Kalanchoe blossfeldiana* While several species of *Kalanchoe* find use as decorative plants (most feature ornamental foliage), *K. blossfeldiana* and its many cultivars are appreciated for their extremely showy flowers. Commonly referred to as kalanchoe, *K. blossfeldiana* is also known as Christmas kalanchoe; like poinsettia and amaryllis it is another ‘holiday plant’, though not as widely recognized as such. Akin to poinsettia, kalanchoe is a short day plant requiring a period of decreasing day length in order to set flowers (growers can artificially manipulate day length so that flowering can occur at any time of year). Kalanchoe is used as a perennial house plant but locally makes an attractive cool season bedding plant, and is especially useful for outdoor containers on a sunny patio or balcony. As a bedding plant kalanchoes can be set out between October and January, choosing a sunny area preferably with some light late afternoon shade. Provide a gritty, moist, free draining soil, and lightly top dress with a slow release fertilizer. Water around the base of each plant as the top 1” of soil becomes completely dry. As a patio plant, use unglazed terra cotta pots, again with a coarse soil mix. With older varieties of kalanchoe it was necessary to

*Kalanchoe is propagated from cuttings which can be taken once flowering ceases (only use non-patented varieties). Allow severed end of cutting to dry out for 24-36h. After striking in a gritty, cactus soil, cuttings should root within 2 weeks and be maintained indoors during the summer. You should expect them to flower the following spring. Seeds are tiny, difficult to handle, not widely available and usually produce inferior plants. They are mostly used for breeding purposes. The majority of recent cultivars are hybrids and if not sterile do not come true from seed.*
remove spent flowers but present day introductions are self cleaning. There are a wide range of colors to choose from including red (‘Fuego’, ‘Kawi’ and ‘Nemo’); orange (‘Lanin’ and ‘Carmen’); pink (‘Kiebessy’, ‘Keruna’ and ‘Kerinci’); purple/violet (‘Bromo’, ‘Isabella’ and ‘Purpula’); yellow (‘Don Fredorico’, ‘Alexandra’ and ‘Milos gold’) and white (‘Snowdon White’ and ‘Simone’). There are also ‘Mini’ kalanchoes and the highly ornamental ‘Calandiva’ series with double flowers and an ever expanding color palette. Apart from stem and root rots (more likely if over watered), powdery mildew, aphids and damage from spider mites are other potential pests. Be careful when applying pesticides to kalanchoes especially those with an oil based formulation (labeled EC, emulsifiable concentrate) as these can be phytotoxic. Kalanchoes flower for 48 – 60 days though the period will be shorter if planted late.

**Geranium (Pelargonium x hortum).** Although pelargoniums are popularly referred to as geraniums, true geraniums belong to the genus *Geranium*. Pelargoniums are native to S. Africa with those of horticultural interest falling into one of four groups based largely on their foliage. Zonal geraniums (so called because of the patterning of the foliage) are most widely used as annual bedding plants in Miami-Dade. Flowers, which are borne in umbel-like clusters, can be single or double in various shades of red, pink, orange and white. Pelargoniums can be planted from November to February in South Florida choosing a predominantly sunny site having a gritty free draining soil. Being susceptible to root and stem rots, they will not tolerate heavy, poorly draining soil. It is usual to purchase transplants since raising pelargoniums from seed requires special attention to growing conditions. **Many different cultivars have been developed** and some of those that were well rated in University of Florida trials include the ‘Apache’ series, the ‘Maverick’ series, ‘Mayday’ (red), ‘Patriot’ (scarlet), ‘Beth’ (lavender) and ‘Puritan 2’ (white). In the landscape, water around the base of each plant only as the soil surface dries; if allowed to wilt, leaves yellow and drop making for spindly, unattractive plants. Apply a slow release fertilizer (i.e. 10/10/10) at the time of planting, and then at 8-week intervals. Mulching to prevent soil from being splashed onto leaves as well as regular deadheading to remove spent flowers can help avoid disease. Inspect plants for aphids, and spider mite damage. Pelargoniums have limited heat tolerance and should be provided with partial afternoon shade from hot afternoon sun. For this reason they are usually easier to maintain as container plants when they can be moved as necessary to protect them from excessive heat or rainfall.

Seed is available though more expensive than that for most other bedding plants. Pelargoniums have a hard seed coat that inhibits germination, and the seed needs to be scarified (scratched) before sowing. Most commercial seed, especially if pelleted has already been treated to ensure reliable germination. Successful germination also depends on avoiding variations in soil temperature, a constant 70-75°F being ideal. Once seedlings have germinated, it is essential to avoid fluctuating soil moisture levels. Propagation using soft wood cuttings can also be used but for commercial growers seeds used to raise hybrid and F1 selections are finding greater use.
Too much shade inhibits flowering and causes plants to become leggy. Although perennial, pelargoniums cannot withstand the hot, humid conditions of a typical S. Florida summer.

**Gerebera daisy** (*Gerebera jamesonii*) Many cultivars of this South African native (also known as Transvaal daisy) are available and include both vivid reds and oranges as well as more pastel yellows and pinks. Gerbera daisy is a clump forming plant, with the leaves of each off-set forming a basal rosette from which a single long-stemmed flower emerges. Transplants can be set out from late October through March in full sun with some light afternoon shade during spring as temperatures increase. Install with the top of the rootball slightly above grade using a somewhat sandy soil mix, and help prevent future disease problems by not covering the crown of the plant with soil. Provide a light application of a complete slow release fertilizer for annuals (e.g., 14/14/14 –NPK). Flowers are long lasting and popular cut for indoor arrangements. Apart from crown rot, leaves can suffer from various fungal leaf spots (avoid sprinklers), and most notably powdery mildew (ensure good air circulation), while arthropod pests include aphids, leaf miners, thrips and whiteflies. There are many cultivars varying not only in flower color but flower size. The University of Florida has recently developed several new gerbera daisy cultivars with increased resistance to powdery mildew and these are worth considering as they become commercially available.

**More water-wise choices include:**

**Dahlberg daisy** (set out Nov - Feb) small bushy annual with lacy foliage and numerous small, yellow flowers; **Red Salvia** (Feb to April), many colors (red, white, blue, purple, lavender and pink), remove spent flower spikes - may last well into summer if they don't succumb to heavy rainfall; **Staice** (sea lavender, set out Nov - Dec) needs cool temperatures to flower; **Moss rose** (March-April), easy to grow from seed; flowers briefly so make staggered plantings at weekly intervals. **Gaillardia** (blanket flower, set out March-April) can last well into summer if they don't succumb to heavy rain; **Gaura** (set out Feb - March) is an attractive airy perennial tolerant of drought and poor soil lasting locally till the start of rainy season. Available as transplants; **Gazania** (set out November – April) large daisy-like flowers in a variety of colors (yellow, orange, red and pink), grow from seed or some cultivars such as ‘Sunbathers series’ with semi-double flowers only available only as transplants. Root and crown rot if over-watered, potential...
pests - aphids, mites, thrips and whitefly Angelonia (summer snapdragon, set out Nov - Feb) a choice of colors ranging from white to pink, red and purple, newer cultivars don’t require deadheading and can be used as cut flowers, thrips may be a problem, deteriorate with the start of rainy season; Verbenas (Feb - April) extended period of flowering, and a wide range of colors (white, pink, red, blue, mauve and purple). Can be grown from seeds, or transplants also available. Powdery mildew can be a problem - less susceptible cultivars include ‘Aztec Magic Purple’, ‘Aztec Wild Rose’, ‘Aztec Silver Magic’, ‘Lanai Royal Purple with Eye’, ‘Rapunzel Hot Rose’, ‘Superbaena Pink Shades’ and ‘Superbaena Dark Blue’. Verbenas and cucurbits (squash, cucumbers, etc.) are susceptible to the same species of powdery mildew – don’t grow them together. Zinnias are easy to start directly from seed (soil >70°F) and are drought and heat tolerant; transplants can be set out starting in February – the ‘Profusion’ series is especially popular as a bedding plant. Alternaria and bacterial leafspots as well as powdery mildew are potential problems. Fan flower (Scaevola) white and blue cultivars (set out, Nov – Feb), perennial but deteriorates locally with the start of rainy season – ideal for hanging baskets, water more often as temperatures rise in late winter. ‘Blue Daze’ a low growing selection of Evolulus glomeratus (set out Feb to April) that also has blue flowers – highly drought tolerant during winter, provide more water as temperatures rise in spring. Depending on how wet it is during the summer rainy season, ‘Blue Daze’ may last into August though usually finished by the end of September. ‘Hawaiin Blue Eyes’ is a more recent cultivar.

For fragrance three flowering-annuals that adapt well to containers/hanging baskets:

Heliotrope: set out Feb – March providing a free draining, moist soil but avoid overwatering. Adapted to full sun (some afternoon shade from late spring is beneficial). An old-time favorite having clusters of fragrant blue, purple or white flowers (look for ‘Scentropa’ or the more compact ‘Marino’ or ‘Nagano’ cultivars).

For continuous flowering remove spent flowers


Lobularia (sweet alyssum), low-growing having small white flowers in compact terminal balls. Set out Oct-Feb in full sun and a free draining soil. The cultivar ‘Snow Princess’ performed well in Florida trials being more heat tolerant lasting into early summer; repeat flowering without having to deadhead.

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