

A WORD OR TWO ABOUT GARDENING

Red Flowering Trees to Fire-Up Miami-Dade Landscapes

An ongoing series of articles on the use of color in Miami-Dade landscapes has to date considered plants that contribute white, purple and two primary colors (blue and yellow). In this installment attention is paid to the remaining primary color red, specifically red flowering trees. A subsequent column will review shrubs and herbaceous perennials.

When in bloom red flowering trees make such a bold statement that they invariably become the focal point of the landscape. With this in mind they are best situated in such a way that their floral display does not detract from that of other flowering trees. The flower display of the two pink cassias (*Cassia javanica* or *C. grandis*) could look a tad pallid next to a royal poinciana in bloom; on the other hand Roxburgh cassia (*C. roxburghii*) which blooms later (late summer/fall) would pose no such problem. Most residential lots do not have room for two large flowering trees, so there is more potential for disconcerting color combinations when choosing smaller trees: e.g., the red caribwood and pink Madre de Cacao (*Gliridia sepium*), both of which flower in early spring.

The **royal poinciana** (*Delonix regia*) is without doubt the most popular flowering tree in Miami-Dade – the Poinciana Festival, which celebrates the tree annually each June, is Miami's oldest continuously observed festival. Royal poinciana is widely used in tropical and sub-tropical areas throughout the world as a source of both light shade and ornament. It is native to the dry deciduous forests found on the tsingy (weathered limestone) of western Madagascar; severe deforestation threatens the tree's survival in the wild. Although few would disagree that this can be a show stopping tree, the royal poinciana is not without some shortcomings as will be detailed below.

A member of the bean family (Fabaceae), *Delonix* is a genus of 10 trees with *D. regia* the only species commonly seen in cultivation (*D. elata* with pale yellow flowers is especially suited to arid climates where it is used for animal feed and in erosion control). A mature royal poinciana is low branching from a large somewhat flared trunk; growing to a height of 30 – 40' (though locally often smaller) it develops an even wider, broadly rounded (umbrella-like) canopy with long almost horizontal lateral branches. Leaves are bipinnately compound (each leaf having up to 25 primary leaflets, pinnae, which in turn comprise up to 40 pairs of small secondary leaflets), giving the foliage a pleasing feathery appearance. The inflorescence, a somewhat flattened raceme, comprises flowers having brilliant orangey red, clawed (i.e., appear stalked) petals, with the standard (enlarged upper petal found in some of the Fabaceae) white with red blotches. Flowers are followed by long (up to 2') broad pods, each containing up to 45 seeds. Pods become dark brown and woody with age and remain on the tree for several months, often well into spring, before splitting.

Royal Poinciana is grown from seed, which can remain viable for several years. This is in part due to the development of a thick testa (outer seed coat) and for this

reason seeds (unless fresh) need to be scarified (nicked or abraded), then soaked overnight in water before planting. Within 10 days, close to 90% of all seeds should germinate. Trees are fast growing, up to 3-4' per year can be expected, and should normally commence flowering after 4-5 years

Royal poinciana should be grown in full sun, avoiding areas where soils remain wet - it is particularly susceptible to root and crown rots,. As backfill use material excavated from the planting hole, supplemented with at most 10% organic material e.g., garden compost or Canadian peat. Try to avoid sites with direct exposure to strong winds (not suitable for exposed coastal locations in south Florida). The root system is shallow and the wood weak so if not uprooted, the tree can sustain significant damage in a windstorm. Surface roots can lift side walks and interfere with mowing, a feature exacerbated when grown on local Rockland soil. For all of these reasons locate the tree well away from buildings (allow at least 30'), sidewalks (at least 15') and underground utilities.

One other feature of note is the inability of other plants, including grass, to thrive underneath a royal poinciana, despite only light to partial shade from the tree canopy. Root competition has been suggested, however there is credible evidence of an **allelopathic** effect (chemical compounds synthesized by one plant inhibiting growth of others) involving fallen poinciana leaves and flowers.

Correct formative pruning can help develop a more wind resistant tree: maintain a single leader (trunk) to about 6-8', beyond this point apical dominance is lost and 4-5 evenly spaced , firmly attached lateral branches should be chosen to form the principal framework of the tree. Lateral branches should be pruned such that they never exceed one third the diameter of the trunk. Avoid large pruning cuts, which render the tree more susceptible to diseases such as heart-rot.

Once established royal poinciana does not require supplemental water; in order to help ensure prolific flowering avoid irrigating trees during the dry season, i.e. from late fall – a prolonged dry period is a prerequisite if trees are to flower reliably. Foliage is retained and *D. regia* flowers poorly in year round wet tropical climates. In areas with a distinct dry season, such as Miami-Dade, trees are deciduous becoming leafless before flowering in late spring. If new leaves emerge first (an unusually wet winter/early spring) only scant flowering can be expected.

Coral trees (*Erythrina* spp., Fabaceae) are widely used in sub-tropical and tropical areas of the world for landscaping, as windbreaks and as a source of animal fodder and wood for pulping. They have also found use in preventing soil erosion and, through their ability to fix nitrogen, improving soil fertility. In Miami-Dade **Indian coral tree** (*Erythrina variegata*) is the species most widely grown. The narrow, upright growing selection offered as '**Tropic Coral**' makes an excellent windbreak; a form with boldly variegated green and ivory leaves, offered as either ***E. variegata* var. *variegata*** or *E. variegata* var. *orientalis*, is most often seen in local landscapes.

A medium to large, fast-growing tree *E. variegata* can grow to about 60'; like *D. regia* it is low branching from a sturdy trunk, but develops a more domed crown. The trunk and larger limbs are armed with black prickles which become more prominent during a prolonged drought – prickles tend to be lost as trunk/limbs increase in girth. Leaves are trifoliolate (three leaflets), each leaflet ovate to

rhomboidal (diamond-shaped); inflorescence a fascicled raceme, each flower having four unequal petals (standard 1½", scarlet to crimson; the keel and two wing petals ¾", a more muted red). Erythras are bird pollinated, but unlike those species found in the Americas which typically use hummingbirds, old world species such as *E. variegata* favor passerine (perching) birds. Fruits, which are rarely seen locally, are dark brown curved pods. Like royal poinciana, it is deciduous and adapted to a seasonally wet/dry climate, losing its leaves during the dry season before flowering (foliage retained in year round humid tropics, with a concomitant reduction in flowering).

The Indian coral tree has many attributes but like the royal poinciana certain downsides, the most serious of which has manifest itself within the past 12 months. First the positive features: suited to local climate (seasonally wet/dry); prefers deep sandy soils but adapts well to local Miami limestone; fast growing (regenerates quickly after pruning/damage); storm tolerant (if appropriately pruned) and low maintenance (drought tolerant and little need for fertilizer). The tree's potential size mandates a large lot, and since it will not thrive in shade, one with full sun exposure. While a free draining site is preferred *E. variegata* can withstand soil that is temporarily (1 – 2 weeks) waterlogged. As with royal poinciana, profuse flowering requires a period of several months with little to no rainfall (3-4" is adequate). Water should be withheld therefore until after flowering; this also applies to fertilizer (since Indian coral tree can fix nitrogen little need for fertilizer nitrogen).

Seed grown trees normally flower within 4 years. Since they do not come true to type, cuttings are used when propagating specific cultivars/varieties. Large cuttings (at least 12" x 2") taken from new growth, are allowed to dry for several days before planting in a free draining but moist potting mix. Place in full sun, with protection from heavy rain (to prevent rotting); cuttings should be well rooted after 4-5 months. Although established trees exhibit good stability in windstorms, the soft wood increases the likelihood of limb breakage, necessitating routine pruning to reduce the risk of damage. Young trees respond well to pollarding, a practice that permits the tree to be grown in more confined spaces and can greatly limit potential storm damage. A drawback is that once pollarded, the tree must be pruned on an annual basis otherwise if allowed to grow out it will become unattractive with many weakly attached limbs. To avoid confusion, pollarding involves cutting back a young tree; it is not the same as topping or hat-racking where large limbs are removed from an already mature tree, a practice that is potentially dangerous and against landscape code. Pruning of Indian coral tree is best done immediately after flowering.

As well as having soft wood, Indian coral trees are surface rooting and can pose a problem if planted too close to side walks and underground utilities. Insect borers can be of concern, more so on weakened trees, but far more serious is damage from the erythrina gall wasp, first reported in Miami-Dade in October of 2006. The developing wasp larvae cause severe distortion and galling of new growth and in Hawaii, where the wasp was first found in 2005, planting coral trees is not recommended at present. Tree deaths have been reported in Hawaii, where removal of infested growth was tried as a control but only served to stimulate new shoots,

which immediately became re-infested with gall wasp larvae. At least one systemic insecticide (imidacloprid) appears to offer some hope of control.

The **hummingbird tree** (*Sesbania grandiflora*), also in the Fabaceae, is smaller (to 25') and even faster growing than *E. variegata*. The compound leaves are pinnate; the pea-like flowers, large, falcate (beaked), and bright scarlet – pink to white flowering trees also occur. While the flowers are very showy, this is not a tree that can be wholeheartedly recommended. It is a short-lived (20 years at most), very fast growing tree. Like many fast growing trees the wood is soft and therefore susceptible to insect borers and easily damaged in windstorms. Recovery from storm damage/extensive pruning is poor.

A far better choice as a small (at most 20'), red flowering tree is **caribwood** (*Poitea carinalis*), with thin gracefully arching branches and delicate feathery foliage. Briefly fully deciduous in late winter/early spring, caribwood then becomes covered in a mass of crimson pea-like flowers for 3-4 weeks, quickly followed by the emergence of new foliage. Neighboring trees tend to flower synchronously making for an especially impressive display when used as a small street tree – the fact that it is also low maintenance is an added bonus. Caribwood is the national tree of Dominica where it grows on exposed rocky hillsides; not surprisingly it is extremely drought tolerant and adapts well to infertile soils such as those in Miami-Dade. Again a prolonged dry period without supplemental water is imperative to ensure reliable flowering. In fact once established the tree requires neither water nor fertilizer; high nitrogen turf fertilizers should be kept away from the root zone.

Another low maintenance, underutilized small tree also from the Caribbean is the **Jamaica poinsettia** (*Euphorbia punicea*). Growing locally to about 20' it has thick rounded branches bearing prominent leaf scars and at their tips, whorls of oblong to narrowly obovate dark green leaves. Like the common poinsettia (*E. pulcherima*) the true inflorescence is rather insignificant, comprising a corymbose cyme of yellow cyathia (highly modified flowers). It is the large bright scarlet cyathophylls (bracts) subtending the inflorescence which, from winter into spring, are the principal ornamental feature. A reason Jamaica poinsettia is not seen more often could be due to reported problems of propagation. Cuttings should be taken from specimens having especially colorful bracts, allowed to dry for 2-3 days then rooted in barely moist coarse sand followed by occasional light misting. Cuttings are best taken in late winter. Situate the tree in full sun and maintain soil on the dry side.

The **flame kurrajong** (*Brachychiton acerifolius*) from Australia is one of the world's most spectacular flowering trees. A deciduous, upright tree to 30 – 40', it develops a swollen trunk and a canopy with a conical outline. As the specific epithet *acerifolius* suggests, the leaves resemble those of maples (*Acer*). In late spring while still leafless the tree is covered in sprays of crimson, waxy, bell shaped flowers - each consists of a petaloid calyx, the flowers lack true petals. The fruits are boat-shaped follicles containing seeds covered with stiff irritating hairs. Brachychitons prefer somewhat sandy, neutral to slightly acid, moist but free draining soils, though they tolerate drought conditions once established. Prone to develop root rots, Brachychiton will not survive where soils become waterlogged. Exercise caution when placing the tree; weak branches render the flame kurrajong susceptible to

storm damage. Where space is a problem, the **dwarf kurrajong**, *B. bidwillii* grows as a 12' small tree/shrub with flowers ranging from salmon pink to orangey red. It is highly drought tolerant and commences blooming much earlier than *B. acerifolius* – 3 years compared to at least 8 years when grown from seed. Both of these trees are available locally.

Far more familiar Australian flowering trees, the bottlebrushes are commonly seen in Miami-Dade especially in older, established landscapes. The **weeping bottle brush** *Callistemon viminalis* is the most widely planted species, and is another option where a small (to 25'), evergreen, red flowering tree is required. Graceful and willowy with alternately arranged, small, light green leaves, and terminal, cylindrical, brush-like flower spikes, mature trees develop attractively furrowed bark. Suckers commonly sprout from the lower trunk and these need to be removed, especially from young trees, to avoid them becoming more shrub-like. Callistemons require full sun and somewhat more organically enriched soils than the previous two trees, and are less tolerant of drought; soil should be no more than moist, wet soils encourage disease. Choose small container specimens as large trees are difficult to transplant. After installing apply mulch, especially on sandy soils, to help prevent potential damage from root nematodes. Trees are also prone to witches broom (*Sphaeropsis* knot, production of multiple, thin, weak shoots) and associated dieback. This is usually the result of careless pruning – use clean cutting tools.

Like the bottlebrush tree, the **Malay or mountain apple** *Syzygium malaccense* is also in the myrtle family (Myrtaceae). More likely to be found locally in tropical fruit tree collections, *S. malaccense* makes an especially impressive, medium-size, evergreen landscaping tree. Strong apical dominance produces an upright tree to 25 – 30' (locally), with a short bole ($\approx 5'$) and a dense conical to cylindrical crown. The base of the trunk tends to flare as the tree ages. Leaves are shiny, simple, entire, up to 12" long and oblong to slightly obovate. The 2" flowers are found packed in cymose clusters borne directly on the larger limbs and trunk (cauliflorous). Individual flowers are bright crimson and, typical of the myrtle family, have prominent stamens (resemble a pin cushion). Hidden by the tree's dense canopy, flowers may not be visible right away; the first hint a Malay apple is in bloom is often the bright crimson carpet of flower parts underneath the tree. In Miami-Dade expect flowering mid-winter to early spring, though timing can be highly erratic, particularly if there is unseasonably cool weather.

Although compared to the above trees Malay apple is least adapted to local conditions, it can with care become a very attractive component of a Miami-Dade landscape. Native to the lowland humid tropics of SE Asia, freezing temperatures will severely damage if not kill young trees (must be protected). Foliage on mature trees appears burnt as temperatures approach 40°F, especially if soil moisture is not maintained. More extensive leaf drop and damage to stems is seen as temperatures fall further. Though fast growing, cold damage can set back tree development – active growth occurs only above 70°F.

Malay apple can survive short periods without rainfall, but prefers moist to wet soil - a 3" covering of mulch maintained out to the edge of the tree canopy is beneficial. In areas with a distinct dry season (such as Miami-Dade) supplemental

water will be required. The tree benefits from 2-3 applications per year of a complete slow release fertilizer. Trace element deficiencies can develop on local calcareous soils (iron and manganese). These can be corrected using appropriate nutritional supplements.

Locally Malay apple has no serious insect pests, and the only disease of note is algal leafspot (guava rust could potentially be a more serious problem). Fallen fruit spoils rapidly becoming messy and attracting flies if not removed – when fresh it is highly decorative (glossy, bright red) and edible - crisp and refreshing, if somewhat insipid. Tree roots are not a problem, but the dense canopy needs to be opened up to help reduce the risk of storm damage. Standing underneath a tree in bloom, the brilliant red of the flowers seen against the shiny green foliage is stunning – as Edwin Menninger the unofficial dean of flowering trees stated, Malay apple is truly one of the tropics most beautiful flowering trees.

John McLaughlin

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