



## Potential Cut Foliage Crops for Production in Full Sun in Florida <sup>1</sup>

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Most of Florida's cut foliage crops are produced under shade; however, there are numerous plants that grow in full sun that are suitable for use as florists' "greens." The use of these full-sun crops would eliminate the construction and maintenance costs associated with shadehouses. In addition, land devoid of trees, like pasture land, could be quickly brought into production. However, readers should be aware that not all of these crops will be suitable for all growers. The success of any of these crops will depend on whether they prove to be popular with florists. Furthermore, even if a crop becomes popular, it may not be profitable to produce.

The plants listed below are divided into two groups depending on their suitability for wet or drier locations. Wet locations are those with poorly drained soils where soil moisture is plentiful year-round. The drier locations have well-drained soils and are typically used to grow cut foliage crops like leatherleaf fern (*Rumohra adiantiformis*). Within each group the plants are listed in alphabetical order based on their botanical names. Common names are given in parentheses after the botanical name.

A \*\* or \* following a genus name indicates that at least one member of that genus is non-indigenous and included on the 2001 list of Florida's most invasive plants published by the Florida Exotic Pest Plant Council. The \*\* means that the genus contains Category I plants — "Species that are invading and disrupting native plant communities in Florida." A single \* indicates Category II plants — "Species that have shown a potential to disrupt native plant communities." The same symbols used after the botanical name of a plant indicates that it is specifically on the Florida Exotic Pest Plant Council's list. Those plants *should not be grown* unless they can positively be contained (for example, in a greenhouse) and kept from spreading by asexual and sexual means. When plants are being regularly harvested they may not be invasive because they are not allowed to get large and may not be able to reproduce sexually. Some, for example *Eucalyptus*, may not even produce mature foliage when they are regularly harvested. However, once harvesting is discontinued, some plants can become a problem.

On the other hand, a # after the botanical name of a plant indicates that it is native to Florida, and a # after the name of a genus indicates that one or more species in that genus are endemic to Florida. None of

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the native plants listed are known to be rare, threatened or endangered. Regardless, no native plant should be harvested illegally or from the wild if that action would put the survival of that species in jeopardy. Similarly, no non-native plant should be introduced and allowed to become a naturalized pest.

### Crops for Wet Sites

**Arundo (giant reed).** *A. donax* is a member of the grass family (Gramineae) and can grow to 18' [6 m] in height. This perennial reed is native to the Mediterranean and has become naturalized in the United States. Care should be taken to prevent this invasive plant from spreading further. The plumes (panicles) of this plant may be 2' [0.6 m] long and are very durable, not shedding their seed even when dried. The wheat-colored plumes make an attractive line material.

**Canna (canna lily).** Although canna lily flowers do not hold up well, the lanceolate, green to dark maroon leaves are suitable for use as background and filler material in arrangements. Cannas are herbaceous perennials that grow well in moist, fertile soils.

**Cyperus \* (umbrella plant, umbrella sedge, papyrus, Egyptian paper reed, dwarf papyrus).** *C. alternifolius* \* (umbrella plant, umbrella sedge), an herbaceous perennial, is often sold as "papyrus" in the cut foliage industry. The triangular stems bear geometric whorls of 10–30 leaf-like, 1/4"–1/2" [6–10 mm] wide by 4"–12" [10–30 cm] long green bracts. The striking geometric arrangement of the bracts is the characteristic that makes this form material popular. The ends of the bracts are sometimes cut off before use to produce more compact rosettes. Umbrella plants can grow to a height of 5' [1.5 m] or so but dwarf forms ('Gracilis' ['Nanus']), as well as variegated ones, are available. This non-native is fast growing, easily propagated and damaged by freezing temperatures. *C. papyrus* (papyrus, Egyptian paper reed) is also called papyrus in the cut foliage industry and is commonly used by florists. This is the plant that was actually used by ancient Egyptians and others to make paper. Papyrus is taller than umbrella plant and it is the flowers, rather than the bracts, that make it interesting from a

florist's perspective. The globe-shaped inflorescence is composed of 100–200 fine-textured ray flowers that may reach 12" [30 cm] in length. *C. haspan* # (dwarf papyrus) is 2'–3' [0.6–0.9 m] tall with an inflorescence that is composed of many spikelets arranged in a partial ball. Although it is smaller, it is very similar in most respects to its larger brethren and is also a distinctive form material. Like most other members of the genus, it is fast growing, cold sensitive and requires lots of water. Another "dwarf" *Cyperus*, *C. prolifer* \*, is not a native species and should not be planted. It has spread to many lakes from homeowner plantings and may become a problem in the future. None of these plants should be allowed to escape cultivation as they may become weedy pests. Stems without flowers (except in the case of *C. papyrus*) are preferred because flowers shed pollen and drop flower parts, producing a mess. Besides being used fresh, *Cyperus* can be air dried or glycerine treated.

**Equisetum # (scouring rush).** *E. hyemale* # is an herbaceous perennial that has slender, silicaceous, dark green, hollow stems that may reach 4' [1.3 m] in height. There is a regular pattern of black (and sometimes white) concentric bands at each node. This plant is easily propagated and makes a good line material in floral design. It can also be used as a form material, especially when bowed into geometric shapes. Scouring rush was so named because the silicon in its stems made it useful for cleaning and polishing. This crop spreads rapidly in appropriate habitat and therefore might be best suited to culture in containers.

**Eriocaulon # (hat-pins, pipewort).** The compact, 1/2" [1.2 cm] diameter white flowers of this herbaceous perennial (*E. decangulare* #) are borne on long, thin stalks and flower in summer. Their resemblance to large hat-pins led to one of the common names for this plant. Hat-pins are found in wet pine flatwoods, lake shores, pond margins, ditches and other wet areas. Hat-pins can be used as both form and line materials.

**Salix (Dragon-claw willow, corkscrew willow).** Florists use the spirally twisted branches of *S. babylonica* var. *pekinensis* 'Tortuosa' [formerly *S. matsudana* 'Tortuosa'] (Dragon-claw willow,

corkscrew willow), with the leaves removed, as a decorative element in floral arrangements. Willows are fast-growing, short-lived, tolerant of many soil types and require lots of water. They are easily propagated from cuttings. A hybrid, *Salix* x 'Golden Curly', combines the twisted branches of *S. babylonica* 'Tortuosa' with the golden bark of *S. alba* 'Tristis' (golden weeping willow). Other *Salix* varieties with red stems are also available.

**Scirpus # (soft-stem bulrush).** Soft-stem bulrush (*S. validus* #) is found around marshes, streams and ponds. The thin (1/4" diameter [0.6 cm]) green stems may reach lengths of 5' [1.5 m] or more, but may be kept shorter using harvesting pressure. The hollow stems are round and taper to a sharp point at the end. Stems make excellent line materials and have exhibited acceptable vase life in our tests.

**Typha # (cattail).** The brown flower spikes of *Typha* spp. are used as line material in floral arrangements. Cattails are usually propagated by division and should be controlled so they do not become a nuisance. Flower spikes are produced January through June by the three species of cattail that occur in Florida.

## Crops for Drier Locations

**Bambusa (bamboo).** 'Alphonse Karr' bamboo (*B. multiplex* 'Alphonse Karr', formerly *B. glaucescens* 'Alphonse Karr') is a member of the grass family (*Gramineae*). This clumping bamboo has shown excellent vigor and produces attractive ivory and green striped stems (culms) that are suitable as line items in floral arrangements. Stems may be used singly or in groups. The leaves should be removed before shipping because they wilt quickly after harvest. Cultivars with golden ('Golden Goddess') and white-striped ('Silver Stripe') culms exist.

**Caladium (fancy-leaved caladiums).** Caladium leaves come in a variety of colors (white, pink, green, red, etc.), patterns (streaked, mottled, etc.) and leaf shapes (arrowhead, heart, strap). Caladium leaves have long petioles (leafstalks) and can be used as mass or form material in arrangements. The published vase life for the cultivar 'White Wings' is reported as 10–14 days; however,

the vase life of other cultivars may be different. Caladiums do best in soils high in organic matter. These tuberous perennials are tropical plants that can be damaged by temperatures below 60°F [16°C]. Because of this, the tubers are dug up in the fall when grown outdoors in northern Florida. Caladiums can be grown year-round in heated greenhouses.

**Callicarpa # (beautyberry, beautybush).** The slender stems of the native shrub, *C. americana* #, are used as line/form materials by florists. The leaves are removed from the stems to focus attention on the clusters of purple or white fruit that circle the stem. Stems are harvested after the fruit ripen in late summer. Beautyberry has a moderate growth rate and can reach 7' in height. Non-native species and cultivars of *Callicarpa*, e.g., *C. dichotoma* (purple beautyberry), are also available. They deserve investigation because of their compactness, berry color and density of fruit production.

**Callistemon (bottlebrush).** Like eucalyptus, bottlebrushes are native to Australia and may be severely damaged when temperatures reach 20°F [-7°C]. Although bottlebrushes are named for their showy flowers, it is the stems encircled with clusters of hard, brown, woody capsules that are used in floral arrangements. Bottlebrushes are tolerant of a wide variety of soils and soil moisture conditions.

**Cedrus (deodar cedar).** The needles on this member of the pine family (*Pinaceae*) are about 3/4"–1 1/2" [19–38 mm] long and can be bright green, yellow-green or bluish-green depending on the cultivar. Deodar cedars (*C. deodara*) are fast growing, especially when watered and fertilized regularly, but are drought tolerant and relatively free of pests. Stems are long and supple, making them suitable for use as line items in arrangements and in garland and wreath making. Small pieces can also be used as filler. The sale of crops like this and leyland cypress (x *Cupressocyparis leylandii*) during December can help offset the lack of demand for more traditional Florida cut foliage at that time of year.

**Codiaeum (croton).** The colorful yellow, green, red and black foliage of crotons (*C. variegatum*) can be used as focal points in arrangements. In addition to use as mass and form

materials, linear croton foliage is used as line material in smaller arrangements. Frequent handling may cause dermatitis, so precautions should be taken. Croton foliage exhibits excellent vase life even when held in floral preservatives. Crotons are cold sensitive, so most full sun production is limited to south Florida.

**Cornus # (flowering dogwood).** The foliage of flowering dogwood (*C. florida* #) makes good filler material. In addition, cut branches of flowering dogwood can be forced into flowering during late winter and spring by placing branches in water or forcing solution (high quality water containing some carbohydrate source like sucrose) and holding them indoors until the flowers start to develop. Cyphers states that "warm temperature hastens forcing but produces weak and sickly growth." The familiar white bracts add a spring-like accent to floral arrangements. This product is not a traditional cut foliage item but has potential for sales by cut foliage producers. Dogwoods do best when supplied with ample moisture and fertile soils.

**Cortaderia (pampas grass).** Pampas grass (*C. selloana*) is an evergreen grass valued by florists for its 1'-3' [0.3-0.9 m] silvery-white flower plumes that are produced in late summer. These plumes are used mainly in dried floral arrangements, but occasionally also in fresh arrangements. Pampas grass grows rapidly and tolerates almost any soil type and moisture condition. The plumes of female plants are showier and more attractive than those produced by male plants.

**x Cupressocyparis (Leyland cypress).** This hybrid coniferous tree (x*C. leylandii*) grows rapidly in Florida. In England, its foliage is commonly used for wreath making. This crop, like deodar cedar (*Cedrus deodara*), is useful for increasing sales during December when cut foliage sales from Florida are traditionally slow. Leyland cypress have relatively few cultural problems in Florida but can suffer from several fungal diseases, especially if the plants are stressed due to poor soil water drainage or drought stress.

**Elaeagnus \* (silverberry, silverthorn).** *E. pungens* \* is a drought-tolerant shrub with thorns and alternate silvery leaves (hence the common name -

silverthorn). However, there are cultivars that do not have thorns and ones that have variegated leaves. Stems make good filler material and are suitable for preservation using glycerine. Leafless stems are also used to make wreaths. Mites can be a problem on this crop.

**Eriobotrya (loquat).** Loquat (*E. japonica*) are native to central China and southern Japan and grow rapidly on well-drained soils in Florida. Loquat are hardy to about 20°F [-7°C]. The elliptical leaves of this evergreen tree have prominent veins, are dark green on top and pubescent (hairy) underneath and are about 10" [0.25 m] long when grown in full sun. While production under shade will produce larger, flatter leaves, sun-grown leaves and stems are also used as filler and background materials in floral arrangements. Glycerine-treated loquat leaves are considered by some to be among the handsomest of treated leaves.

**Eucalyptus (argyle apple, silver-dollar tree, cider gum, silver-dollar gum, silver-leaved mountain gum, omeo gum).** Besides being used fresh-cut, eucalyptus are suitable for drying, preserving and use in potpourri. They are fast growing and come in a range of leaf colors, shapes and arrangements. The glaucous, blue, juvenile foliage of species like *E. cinerea* (argyle apple, silver-dollar tree) and *E. gunnii* (cider gum) are favored by florists. Therefore, the plants must be cut back regularly to prevent mature leaves from developing. *E. cinerea* is damaged by subfreezing temperatures in Florida and is prone to leaf spot. *E. gunnii* is less cold sensitive but is perhaps more prone to develop leaf spot than silver-dollar tree. Other species of eucalyptus routinely used as cut foliages that have been produced in Florida include *E. polyanthemos* (silver-dollar gum) and *E. pulverulenta* (silver-leaved mountain gum). *E. neglecta* (omeo gum) has good vase life and has been found to be fast growing, cold hardy and disease resistant; however, this species may not prove to be very popular with florists because its leaves are larger and lack the blue waxy coating of *E. cinerea* and *E. gunnii*.

**Hymenocallis (spider lily).** Spider lilies (*H.* spp.) are bulbous herbs with leaves that are (12+" [0.3 m]), long, narrow (3" [8 cm]), succulent, glossy

leaves. Spider lilies grow readily when planted in rich soils in frost-free areas. Propagation is generally done vegetatively by planting some of the numerous offsets produced at the base of the plant. Spider lily leaves are used as line materials and appear to have good vase life.

**Ilex # (hollies).** While Florida is not the area to grow English holly (*I. aquifolium*), there are other hollies that can be grown in Florida for use as cut foliage. There are many evergreen cultivars of American holly (*I. opaca* #) and American holly x *I. cassine* hybrids that exhibit interesting leaf shapes and berries. These hollies are easy to grow and have few cultural problems. Like English holly, some cultivars of Chinese holly (*I. cornuta*) possess spines. Regardless, Chinese hollies hold up quite well as florists' "greens" and are available with highly variegated foliage.

**Illicium # (Florida anise-tree, purple anise, Chinese anise, star anise).** These aromatic shrubs require little care and will tolerate temperatures of 14° to 23°F [-5° to -10°C]. *I. floridanum* # (Florida anise, purple anise) is a native while *I. anisatum*, formerly *I. religiosum*, (Chinese anise, star anise) is introduced. Anise cuttings are long lasting and are used as grave decorations in Buddhist temples in Japan. The anise fragrance of the foliage adds extra interest to this crop. Illicium foliage can be air dried or glycerine treated and used as line and filler material.

**Juniperus (Pfitzer juniper).** Pfitzer junipers (*J. x pfitzeriana*, formerly *J. x media*) respond well to cutting, are relatively trouble-free and come in an assortment of foliage colors. 'Pfitzeriana' has fine textured gray-green foliage, 'Pfitzeriana Glauca' has blue-green foliage and the foliage of 'Pfitzeriana Aurea' is yellowish. The foliage of this shrub makes a durable filler material and longer stems can be used as line material in small arrangements. Juniper foliage can be stored at 32°F [0°C] for 1–2 months. Many other of the numerous species, intergeneric hybrids and cultivars of junipers are also suitable for cut foliage use.

**Ligustrum \*\* (Chinese privet, Japanese privet).** Both Chinese privet (*L. lucidum* \*\*) and Japanese privet (*L. japonicum*), as well as their many

cultivars, can be used as line and filler material. These privets grow well throughout Florida and have few of the cultural problems (e.g., susceptibility to fungal leafspot, mites and nematodes) associated with other woody cut foliage crops like pittosporum (*P. tobira*). Privets thrive on good soils and tolerate poor soils. The all green foliage of *L. japonicum* 'Recurvifolia' has held up well in tests. Ligustrum cultivars with highly variegated foliage are attractive but grow more slowly than nonvariegated ones. Privet foliage is used fresh and preserved using glycerine. *L. sinense* \*\*, another ligustrum with the common name Chinese privet, has not held up well in postharvest testing, is prone to leaf spot disease, and is a category I plant for all areas of Florida on the Florida Exotic Pest Plant list. Growers should pass on growing *L. sinense*.

**Liriope (lilyturf, Florida bear grass).** *L. muscari* 'Evergreen Giant' is a perennial evergreen with dark green leaves that generally reach a height of 1 1/2' [0.5 m] and are about 3/4" [19 mm] wide. Leaves are harvested by pulling and make fine line material. This crop does well under shade, but it can also be grown in full sun if adequate moisture and fertilizer are provided. This is one of the most trouble-free liriopes, but there have been problems with dieback caused by the fungal pathogen *Phytophthora*.

**Magnolia # (Southern magnolia).** The large (up to 10" [25 cm] long), glossy, dark green leaves of the southern magnolia (*M. grandifolia*) are durable fresh-cut foliage, and leaves can be preserved using glycerine. This native tree is well adapted to Florida and requires little care. Cultivars of this species provide a range of leaf sizes and shapes. 'Bracken's Brown Beauty' and 'D. D. Blanchard' are cultivars that have leaves with attractive brown undersides.

**Myrtus (myrtle).** *M. communis* has long, straight stems with dense, dark-green glossy foliage. Myrtle is used as a line material and as filler. It is durable and has a pleasant fragrance. Myrtle is tolerant of a variety of soils as long as they are well-drained. Myrtle should be stored at 35°–40°F [2°–4°C]. Mites and thrips can be a problem on this crop.

***Nandina* \*\* (heavenly bamboo).** Heavenly bamboo (*N. domestica* \*\*) is a carefree evergreen shrub that can grow to 8' [2.4 m] in height. Because of its potential invasiveness, growers should only grow this crop if they are prepared to keep the plants in check and destroy them if they are taken out of cut foliage production. Heavenly bamboo is tolerant of droughty conditions and will grow fairly rapidly on fertile soils. The pinnately compound leaves of heavenly bamboo make a nice open filler material. In addition, stems, both with and without berries, are sold to florists. Cultivars are available that have reddish leaves throughout most of the year. Many cultivars of heavenly bamboo available for the landscape industry have dwarf growth habits that are less suitable for cut foliage production than more vigorous varieties.

***Pennisetum* \*\*, \* (fountain grass).** The species (*P. setaceum* \*, formerly *P. ruppelii*) has arching narrow green leaves that may exceed 12" [0.3 m] in length and a flower spike about 1" [2.5 cm] in diameter by 10" [25 cm] in length. The flower spike of *P. setaceum* has a rose tint and there are cultivars available with red to violet foliage and spikes (plumes). *P. setaceum* 'Rubrum' has greyed-purple foliage and spikes and has held up well as a fresh-cut foliage in our tests. Fountain grass is also used in dry arrangements and this may be beneficial since this perennial goes dormant in the winter. Sales of dried material could generate income during months when fresh material is not available. It is suggested that the flower spike be sprayed with hairspray before drying to cut down on possibilities of allergy problems and to insure that it will hold together. Shattering of untreated flower spikes has not been a problem in our tests. Fountain grass is drought-resistant and tolerant of a variety of soil types. *P. setaceum* 'Rubrum' reportedly does not set seed; this will help keep it from becoming an introduced pest plant unlike its relative Napier grass (*P. purpureum* \*\*).

***Photinia* (red top).** *P. glabra* is a fast-growing shrub that has proven to be quite durable as a cut foliage crop. However, care must be taken to harvest stems when they have good red color and are hardened off. Additionally, thorough hydration of stems before packing and storage will help ensure their arrival in a turgid state. Even if stems are

showing moderate signs of wilt when unpacked, recutting of the stem and placement in good-quality water will quickly return stems to good turgidity. *P. x fraseri* is not as suitable for cut foliage use because leaves are larger and lack the deep and persistent red color (especially during the summer) of *P. glabra*.

***Pinus* # (pine).** Pine branches can be used for decorative purposes all year long but are most used during the winter holidays. Selling this crop during the winter holidays could help offset the seasonally low sales of major Florida cut foliage crops. Besides their use in floral arrangements, pine branches can be made into wreaths and garlands. Sand pines (*P. clausa* #), which grow throughout the state on excessively drained soils, may be the ultimate cut foliage crop produced in Florida since whole trees are harvested for use as Christmas trees.

***Prunus* # (cherry laurel).** *P. caroliniana* (cherry laurel) branches with their shiny green foliage are sometimes used as filler material; however, it is important to be aware that the leaves are poisonous. This evergreen plant grows mainly in the northern half of the state in a variety of soil types.

***Quercus* # (turkey oak).** Turkey oaks are commonly found in sandhills and dry pinelands. Turkey oak (*Q. laevis*) leaves have the pointed lobes that somewhat resemble a turkey's foot. The leaves are mainly used for autumn arrangements after they turn red. Turkey oak leaves are often treated with glycerine and dyes.

***Serenoa* # (saw palmetto).** Florida's ubiquitous saw palmetto (*S. repens*) is frequently sold as a cut foliage crop. The distinct shape of this form material and the availability of both green and bluish-gray leaves make this an interesting item for floral designers. Generally the smaller fronds are preferred by florists. Fronds are often spray painted, coated with glitter and/or cut into geometric shapes.

***Tillandsia* # (Spanish moss).** Spanish moss (*T. usneoides*), a ubiquitous gray epiphyte that hangs from tree branches, is harvested and used in floral arrangements, especially to cover construction materials like floral foams. Spanish moss may be treated with an insecticide and dried prior to shipment.

**Vaccinium # (blueberries).** While the popular wild harvested *V. ovatum* (Californian huckleberry) does not grow in Florida, we have other *Vacciniums* that do grow well here — especially the commercial southern highbush blueberries (interspecific hybrids of *V. ashei* [rabbit-eye blueberry], *V. corymbosum* # [swamp blueberry], and *V. darrowi* # [blueberry]). Blueberry foliage is glaucous blue in color and is suitable for use as cut foliage. Since they are native, they have relatively few disease or pest problems; however, under conditions of commercial production and use, the foliage will require occasional fungicide treatments to prevent blemishes. Blueberries require well-drained soils of low pH (4.0–5.2), and supplemental watering during the establishment phase and during times of drought. Mulching blueberries is beneficial, and nitrogen fertilization should be with ammoniacal nitrogen, not nitrate nitrogen.

**Viburnum # (Sandankwa viburnum, small viburnum, sweet viburnum).** Easily propagated from cuttings, viburnums have good potential for use as fresh and preserved filler material. Foliage of the non-native Sandankwa (*V. suspensum*) and sweet (*V. odoratissimum*) viburnum is evergreen and fairly large (4"–6" [10–15 cm] long). Branches of small viburnum (*V. obovatum* #), a semi-evergreen native shrub, have exhibited good vase life in our studies. The leaves of this species are small enough for use as filler material in almost any size arrangement and long stems make nice line elements. Once established, small viburnum tolerate a variety of soils, even excessively well-drained ones. Sandankwa and sweet viburnum are also tolerant of a variety of soils but not to the same extent as small viburnum.

**Vitis # (grape).** Grape vines are used to make holiday wreaths for florists. Additionally, grape leaves can be used as filler material in arrangements. Grapes are a relatively trouble-free and vigorous crop in Florida. In fact, there are several species of *Vitis* native to Florida. It is also possible to use the prunings from commercial vineyards for cut foliage.

**Yucca # (bear-grass, Spanish dagger, Spanish bayonet, spineless yucca).** The long (2 1/2'–4' [0.8–1.2 m]), narrow (2 1/2"–3 1/2" [6–9 cm]),

succulent leaves of bear-grass (*Yucca filamentosa* #), Spanish dagger (*Y. aloifolia*), Spanish bayonet (*Y. gloriosa*), and spineless yucca (*Y. elephantipes*) are durable as cut foliage for use in large arrangements. Yuccas grow well in full sun on well-drained soils. Bear-grass (*Y. filamentosa* #) should not be confused with bear-grass from the Pacific Northwest (*Xerophyllum tenax*) or Florida bear-grass (*Liriope muscari* 'Evergreen Giant'). Yucca foliage can be preserved with glycerine.