

Figure 2. Height of seven wild populations of perennials collected from an Illinois prairie. Values are means of 5 replications.

The significant increase in germination of purple cone-flower, black-eyed Susan, and lamb's ear between the MM500 test and the petri dish test may be due to damping off of seedlings in the MM500 test. Cool night temperatures (<20°C), long nights, and a continuously moist media are favorable conditions that predispose plants to the root rot Pythium (Powell and Lindquist, 1992).

All of the perennials, except lamb's ear, grew well. This is in agreement with Brown et al. (1996) and Black and Gilman (1997) who reported that purple coneflower, blanket flower, Mexican hat, and black-eyed Susan grow well in full sun in southern Florida. We suspect that the decline of lamb's ear probably resulted from excessively wet conditions. The total rainfall at the University of Florida Fort Lauderdale REC for June 1997 and July 1997 was 32.05 and 24.18 cm, respectively. Lamb's ear requires well-drained soil and subirrigation is recommended because the foliage is hairy and retains moisture which may cause leaf disease (Armitage, 1989).

The lack of flowering of yellow coneflower, prairie bergamot, and blanket flower could be the result of low light levels

because these varieties require full sun (Armitage, 1989). However, many perennials will not flower the first year after they are planted.

### **Conclusions**

This project was conducted to determine if perennial seeds collected in Illinois would germinate and grow in southern Florida. Our results are in agreement with other researchers that purple coneflower, blanket flower, Mexican hat, and black-eyed Susan will grow and eventually flower in southern Florida. Yellow coneflower and prairie bergamot also grew well and have the potential for use in southern Florida. However, we would not recommend planting lamb's ear in southern Florida due to high rainfall and humidity that could lead to potential plant loss.

### Acknowledgments

This research could not have taken place without the generosity of Norma and Kent Elliot and The Prairie Patch (Niantic, IL) who provided the perennial seeds. The authors are also grateful to Maria Bravo for her technical assistance.

### **Literature Cited**

Armitage, A. M. 1989. Herbaceous perennial plants. Varsity Press, Inc. Athens. GA.

Behe, B. K. and C. M. Walker. 1996. 1996 Season sales summary. Professional Plant Growers Assoc. News 27(12):2-10.

Black, R. J. and E. F. Gilman. 1997. Your Florida guide to bedding plants. Univ. Fla., Gainesville, FL.

Brown, S. P., L. Hodyss and D. Marshall. 1996. Flowering perennials for Florida. Univ. Fla. Cooperative Extension Service Fact Sheet ENH-68.

Hartmann, H. T., D. E. Kester, F. T. Davies, Jr. and R. L. Geneve. 1997. Principles of Propagation by seed, p. 177-215. In: Plant propagation principles and practices. Prentice Hall, Upper Saddle River, NJ.

Powell, C. C. and R. K. Lindquist. 1992. Root and crown rots, p. 115-126. In: Ball pest and disease manual. Ball Publishing, Geneva, IL.

Proc. Fla. State Hort. Soc. 110:365-369. 1997.

# FLOWERING PERENNIALS FOR SOUTHERN FLORIDA—AN UNDERUTILIZED RESOURCE FOR THE LANDSCAPE

ANDREAS DAEHNICK
Palm Beach County Cooperative Extension Service
University of Florida, IFAS
West Palm Beach, FL 33415

Additional index words. Perennial, subtropical, landscape plants, south Florida.

Abstract. Perennial plants were evaluated for their ability to survive in south Florida under typical environmental conditions. Included are recommendations for culture and habit for vari-

ous types of perennial flowering shrubs. Recognized in the subtropics are three distinct type of perennial growth habits, evergreen, perennial and biperennial. This distinction will assist homeowners and landscape professionals to better select the proper perennial plants for various situations.

## Introduction

A perennial plant is defined with specific connotations in areas with distinct seasonal fluctuations characterized by change in temperature, sunlight and moisture. However, in the tropical and subtropical regions of the continental United States the

seasons are often less distinct due the evergreen nature of many subtropical plants. With this, the traditional perennial (in foliage and flower during the growing season and foliage or flower die back during the dormant season) is often forgotten.

With the arrival of new and partial year residents and tourists in Florida, the expectation of floriferous and instant color Florida is amplified. In the past this demand has been met with expensive plantings of primarily annual plants.

However, with the ascent of environmental concerns, many residents and establishments would like to reduce the labor, fertilizer, water and costs associated with continual replacement of annual plantings. Low maintenance plants with longer life spans, reduced care requirements and minimal long term expenses are often preferable.

The selection of perennials available for south Florida is wide and varied. Underutilization of perennials in the semitropics often arises because of limited knowledge of application of tropical perennials, not a lack of selection.

In South Florida's version of a perennial garden, the gardener must consider that in most cases the plant will be present all year and not lose its foliage with the onset of cool weather. In the tropical and subtropical regions of South Florida perennial plants fall into three distinct categories as defined by maintenance requirements in the landscape. These categories are defined by their growth habits: 1. plants with persistent foliage through the year (properennial); 2. plants with foliage present only a portion of the year yet foliage regrows each year either prior to or after flowering (perennial); and 3. herbaceous plants which persist for consecutive years but after consecutive growing season plants perish or become unsightly (biperennial). These terms have been designated to facilitate a greater understanding of the nature of the plants for the nursery, landscape and homeowner industry. These terms are not absolute and may be effected by the location in the landscape and environmental conditions encountered throughout the life of the plants.

## **Materials and Methods**

The following information has been gathered from 6 years of trials at the Flowering Plant Trial Gardens in Mounts Botanical Garden, West Palm Beach, FL through professional consultant observations by the author in south Florida and Palm Beach County.

The following cultural requirements are recommended due to experiences specific to Palm Beach County, FL. Average conditions consist of yearly rainfall exceeding 60 inches, and sandy alkaline soil with a pH range of 7.8-8.5. Wherever possible, use 3-4 inches of appropriate organic mulch to help retain soil moisture and fertilizer and to suppress weeds. Low volume, drip type irrigation systems are also encouraged because, in addition to conserving water by placing it directly where needed, drip systems help minimize foliar wetting which can add to disease problems.

## Discussion

All plants in this list are considered excellent choices for traditional perennial type gardens in south Florida, as per the identified cultural requirements (Table 1). Anyone wishing to grow these plants can use the information as a guideline to a successful tropical "type" perennial flower garden anywhere. The terminology was chosen to assist the homeowner and landscape designer to have the greatest success in growing perennials in south Florida. Table 2 has a selection of water garden species for south Florida.

Table 1. South Florida perennial plant list.

Botanical: *Acalypha hispida* repens Common: Trailing Chenille Plant

Flower color: red Flower Season: all year Height: 0.5 ft

Growth Habit: prostrate, spreading

Cultural requirements: drought tolerant, full to partial sun, avoid foliar wet-

ting

Type: properennial

Botanical: Asclepias curassavica Common: Yellow Milkweed Flower color: yellow Flower Season: all year Height: 3 ft

Growth Habit: upright, sparse with age, regular trimming, reseeds

Cultural requirements: drought tolerant, full sun

Type: biperennial

Botanical: Barleria cristata Common: Philippine Violet

Flower color: blue Flower Season: fall, winter, spring Height: 4-6 ft

Growth Habit: upright, reseeds

Cultural requirements: drought tolerant, full sun to part shade, prefers reg-

ular watering, over watering causes excessive weak growth

Type: properennial

Botanical: Barleria repens

Common: Creeping Philippine Violet

Flower color: coral, salmon Flower Season: fall, winter Height: 1ft Growth Habit: prostrate

Cultural requirements: drought tolerant, sun to light shade

Type: properennial

Botanical: *Buddelia madagascariensis* Common: Yellow Butterfly Bush Flower color: yellow

Flower Season: winter

Height: 5 ft

Growth Habit: upright, weeping, silver-green leaves Cultural requirements: drought tolerant, full sun

Type: properennial

Botanical: Crotilaria retusa Common: Rattle Box Flower color: orange-red Flower Season: fall Height: 8 ft

Growth Habit: upright

Cultural requirements: drought tolerant, full sun

Type: properennial

Botanical: Epidendron ibaguense Common: Reed Orchid Flower color: orange/red/yellow

Flower Season: sporadically spring, summer

Height: 2-3 ft

Growth Habit: upright, loose, excellent pot plant

'Organics: addition of organic material to sandy soil by mulching reduces water loss for many of the previous plants are shallow rooted. The addition of organic mulch also reduces the risk of nutritional deficiencies through the process of decomposition and acidification of South Florida's sandy and rocky soils.

Avoid foliar wetting: recommended procedure of culture is to minimize leaf wetting, plants with this designation have the tendency to have leaf rot with the introduction of overhead applications of water. It is recommended that drip or under mulch irrigation be used for best appearance and health of the plant. Avoid foliar wetting: is specified for plant material which is prone to fungal leaf spot by irrigation wetting foliage. As a general rule if the leaf surface of a plant is silver in color and/or hairy these plants will react poorly to irrigation by means of overhead watering.

Cultural requirements: full sun, organics', fertilize regularly

Type: properennial

Botanical: Erthrina herbacea Common: Coral Bean Flower color: red Flower Season: spring

Height: 10 ft

Growth Habit: upright, attractive foliage

Cultural requirements: full sun in moist locations areas, partial sun in dry

locations, organics Type: properennial

Botanical: Eucharis amazonica Common: Amazon Lily Flower color: white Flower Season: summer

Height: 1.5 ft

Growth Habit: clumping, attractive foliage

Cultural requirements: not tolerant of drought, moderate sun to shade.

Type: properennial

Botanical: Globba winitii

Common: Dancing Dragon Ginger Flower color: white, purple

Flower: spring, summer

Height: 2 ft

Growth Habit: upright, clumping

Cultural requirements: partial sun, understory, organics, even moisture

Type: perennial

Botanical: Gypsophylum sp. Common: Summer Aster Flower color: white Flower Season: all year

Height: 1.5 ft

Growth Habit: prostrate, mounding, flowers resemble daisies

Cultural requirements: drought tolerant

Type: properennial

Botanical: Hamelia cuprea Common: Bahamian Firebush Flower color: yellow and orange Flower Season: spring, summer, fall

Height: unknown

Growth Habit: upright, left untrimmed may become a small tree (20ft)

Cultural requirements: drought tolerant, full sun

Type: properennial

Botanical: Hamelia patens Common: Dwarf Fire Bush Flower color: yellow and red Flower Season: all year

Height: 5 ft

Growth Habit: up right spreading branches in tiers

Cultural requirements: full to part sun, prefers some moisture for best

appearance

Type: properennial

Botanical: Jacquemontia tamnifolia Common: Jacquemontia

Flower color: blue

'Organics: addition of organic material to sandy soil by mulching reduces water loss for many of the previous plants are shallow rooted. The addition of organic mulch also reduces the risk of nutritional deficiencies through the process of decomposition and acidification of South Florida's sandy and rocky soils.

Avoid foliar wetting: recommended procedure of culture is to minimize leaf wetting, plants with this designation have the tendency to have leaf rot with the introduction of overhead applications of water. It is recommended that drip or under mulch irrigation be used for best appearance and health of the plant. Avoid foliar wetting: is specified for plant material which is prone to fungal leaf spot by irrigation wetting foliage. As a general rule if the leaf surface of a plant is silver in color and/or hairy these plants will react poorly to irrigation by means of overhead watering.

Table 1. (Continued) South Florida perennial plant list.

Flower Season: fall, winter, spring

Height: n/a

Growth Habit: vine, sprawling, moderate growth 15 ft in a vr

Cultural requirements: full sun

Type: properennial

Botanical: Kaempferia spp.

Common: Peacock Ginger, Resurrection Lily

Flower color: white, blue, pink

Flower Season: spring

Height: 1.5 ft

Growth Habit: upright, clumping, often have subtle colored leaves

Cultural requirements: partial sun, understory, organics'

Type: perennial

Botanical: Loropetulum chinense rubrum 'Monraz'

Common: Razzleberry Flower color: pink-red Flower Season: spring, fall

Height: 3 ft

Growth Habit: upright, bushy, reddish colored foliage

Cultural requirements: full sun to partial sun

Type: properennial

Botanical: Medinella magnifica

Common: none

Flower color: pink-purple Flower Season: summer, fall

Height: 4 ft

Growth Habit: upright

Cultural requirements: partial sun, epiphytic, planted in the landscape

requires regular water and fertilizer

Type: properennial

Botanical: Megaskepasma erythrochlamys

Common: Brazilian Red-Cloak

Flower color: red

Flower Season: summer, fall, winter

Height: 6 ft

Growth Habit: upright

Cultural requirements sun to partial shade, organics

Type: properennial

Botanical: Odontonema strictum

Common: Firespike Flower color: red Flower Season: all year

Height: 5 ft

Growth Habit: upright, spreads by root suckers

Cultural requirements: full sun, moist/partial sun to shade may be kept

drier, organics Type: properennial

Botanical: Otacanthus caeruleus Common: Brazilian Snapdragon Flower color: blue with white throat Flower Season: spring, summer, fall Height: 2 ft

Growth Habit: upright, clumping

Cultural requirements: full sun, minimize overhead watering Type: properennial

Botanical: Pereskia bleo Common: Leaf Cactus

'Organics: addition of organic material to sandy soil by mulching reduces water loss for many of the previous plants are shallow rooted. The addition of organic mulch also reduces the risk of nutritional deficiencies through the process of decomposition and acidification of South Florida's sandy and rocky soils.

Avoid foliar wetting: recommended procedure of culture is to minimize leaf wetting, plants with this designation have the tendency to have leaf rot with the introduction of overhead applications of water. It is recommended that drip or under mulch irrigation be used for best appearance and health of the plant. Avoid foliar wetting: is specified for plant material which is prone to fungal leaf spot by irrigation wetting foliage. As a general rule if the leaf surface of a plant is silver in color and/or hairy these plants will react poorly to irrigation by means of overhead watering.

Flower color: orange/rose Flower Season: spring, summer

Height: 8-10 ft

Growth Habit: upright, sprawling, large spines

Cultural requirements: full sun

Type: properennial

Botanical: Phaius tankervilliae Common: Nun's Orchid

Flower color: white with burgundy throat

Flower Season: spring

Height: 4 ft

Growth Habit: upright, clumping

Cultural requirements: full sun evenly moist soil, well drained, organics'

Type: perennial

Botanical: Plectranthus eakanus Common: Purple Spur Flower Flower color: metallic light purple Flower Season: summer, fall

Height: 4.5 ft

Growth Habit: upright, bushy, loose

Cultural requirements: partial sun, moisture, organics', fertilize regularly

Type: properennial

Botanical: Plumbago scandens

Common: Leadwort, Native Plumbago

Flower color: white Flower Season: fall, winter

Height: 3 ft

Growth Habit: prostrate, sprawling

Cultural requirements: full sun to shade, maintains dense growth with

increased sunlight Type: properennial

Botanical: Ratibida columnifera Common: Mexican Hat Flower color: yellow-red

Flower Season: fall, winter, spring

Height: 1.5-2.5 ft Growth Habit: upright

Cultural requirements: drought tolerant, full sun, avoid foliar wettingy

Type: biperennial

Botanical: Ruellia brittoniana Common: Dwarf Ruellia 'Katie'

Flower color: blue Flower Season: all year

Height: 1.5 ft

Growth Habit: clumping, reseeds

Cultural requirements: not selective, sun to shade, flowering reduced with

onset of cool temperatures Type: properennial

Botanical: Ruellia graecizans

Common: none Flower color: red Flower Season: all year Height: 2 ft

Growth Habit: upright

Cultural requirements: moist, light sun to shade, organics', understory

Type: properennial

'Organics: addition of organic material to sandy soil by mulching reduces water loss for many of the previous plants are shallow rooted. The addition of organic mulch also reduces the risk of nutritional deficiencies through the process of decomposition and acidification of South Florida's sandy and rocky soils.

'Avoid foliar wetting: recommended procedure of culture is to minimize leaf wetting, plants with this designation have the tendency to have leaf rot with the introduction of overhead applications of water. It is recommended that drip or under mulch irrigation be used for best appearance and health of the plant. Avoid foliar wetting: is specified for plant material which is prone to fungal leaf spot by irrigation wetting foliage. As a general rule if the leaf surface of a plant is silver in color and/or hairy these plants will react poorly to irrigation by means of overhead watering.

Table 1. (Continued) South Florida perennial plant list.

Botanical: Ruellia squarousa Common: none Flower color: light blue Flower Season: all year

Height: 1ft

Growth Habit: prostrate

Cultural requirements: not selective, full sun to part shade

Type: properennial

Botanical: Salvia coccinea Common: Scarlet Sage Flower color: red, white, pink Flower season: all year Height: 2 ft

Growth Habit: upright; reseeds

Cultural requirements: drought tolerant, full sun

Type: biperennial

Botanical: Salvia guaranitica Common: Sapphire Sage Flower color: dark blue Flower Season: all year

Height: 4 ft

Growth Habit: upright, woody with age

Cultural requirements: drought tolerant, organics', full sun

Type: biperennial

Botanical: Salvia involucrata Common: Rose Leaf Sage Flower color: rose-pink Flower Season: fall, winter

Height: 4 ft

Growth Habit: upright, sparse with age

Cultural requirements: drought tolerant, full sun

Type: properenial

Botanical: Salvia leucantha Common: Mexican Sage Flower color: purple-white Flower Season: all year Height: 2-4 ft

Growth Habit: upright, spreading, clumps, regular pruning of old canes

improves plant appearance

Cultural requirements: sun, avoid foliar wetting

Type: biperennial

Botanical: Salvia madrensis Common: Forsythia Salvia Flower color: yellow

Flower Season: fall, winter, spring

Height: 4-6 ft

Growth Habit: upright, spreading by root suckers

Cultural requirements: drought tolerant, regular fertilizer, organics, full

sun to light shade Type: biperennial

Botanical: Salvia miniata Common: Belize Sage Flower color: red Flower Season: all year

Height: 3-4 ft Growth Habit: upright, full

'Organics: addition of organic material to sandy soil by mulching reduces water loss for many of the previous plants are shallow rooted. The addition of organic mulch also reduces the risk of nutritional deficiencies through the process of decomposition and acidification of South Florida's sandy and rocky soils.

Avoid foliar wetting: recommended procedure of culture is to minimize leaf wetting, plants with this designation have the tendency to have leaf rot with the introduction of overhead applications of water. It is recommended that drip or under mulch irrigation be used for best appearance and health of the plant. Avoid foliar wetting: is specified for plant material which is prone to fungal leaf spot by irrigation wetting foliage. As a general rule if the leaf surface of a plant is silver in color and/or hairy these plants will react poorly to irrigation by means of overhead watering.

Cultural requirements: regular water, organics', full sun to shade

Type: properennial

Botanical: Salvia uliginosa Common: Bog Salvia

Flower color: blue with white throat

Flower Season: all year

Height: 3 ft

Growth Habit: upright, spreading by underground stems, may be invasive

Cultural requirements: full sun, moist

Type: properennial

Botanical: Salvia vanhoutteii Common: Vanhouttei's Sage Flower color: dark red, burgundy

Flower Season: all year Height: 4 ft

Growth Habit: upright,

Cultural requirements: sun to shade, prefer moist areas, organics'

Type: properennial

Botanical: Senna polyfillum Common: Desert Cassia Flower color: yellow

Flower Season: fall, winter, spring

Height: 8 ft

Growth Habit: upright, tree like, excellent container plant

Cultural requirements: drought tolerant, full sun

Type: properennial

Botanical: Spathoglottis plicata Common: Ground Orchid

Flower color: blue, white, purple or yellow

Flower Season: summer

Height: 1.5 ft

Growth Habit: clumping, attractive foliage

Cultural requirements: full sun to shade, regular watering, prefers not to dry

out

Type: properennial

Botanical: Strobilanthes dyeranus Common: Persian Shield Flower color: blue Flower Season: n/a Height: 3 ft

Growth Habit: upright, shrubby grown for purple/silver iridescent foliage Cultural requirements: dry to moist/never wet, organics, partial sun to

shade Type: properennial

Botanical: *Tacca chantrieri* Common: Bat Plant Flower color: black Flower Season: all year

Height: 3 ft

Growth Habit: upright clumping

Cultural requirements: partial sun to shade, understory, even moisture to

wet but not standing water, do not let dry out

Type: properennial

Botanical: Tagetes lucida Common: Mexican Tarragon Flower color: yellow Flower season: fall, winter

Organics: addition of organic material to sandy soil by mulching reduces water loss for many of the previous plants are shallow rooted. The addition of organic mulch also reduces the risk of nutritional deficiencies through the process of decomposition and acidification of South Florida's sandy and rocky soils.

'Avoid foliar wetting: recommended procedure of culture is to minimize leaf wetting, plants with this designation have the tendency to have leaf rot with the introduction of overhead applications of water. It is recommended that drip or under mulch irrigation be used for best appearance and health of the plant. Avoid foliar wetting: is specified for plant material which is prone to fungal leaf spot by irrigation wetting foliage. As a general rule if the leaf surface of a plant is silver in color and/or hairy these plants will react poorly to irrigation by means of overhead watering.

Height: 1.5 ft

Growth Habit: upright, sprawling

Cultural requirements: sun to partial sun, drought tolerant

Type: properennial

Botanical: Tibouchina grandifolia

Common: Tibouchina Flower color: purple

Flower Season: winter, spring, summer

Height: 10 ft

Growth Habit: upright

Cultural requirements: full sun, even moisture

Type: properennial

Botanical: *Turnea subulata* Common: White Alder

Flower color: white with dark purple center

Flower Season: all year

Height: 2 ft

Growth Habit: prostrate, spreading

Cultural requirements: drought tolerant, regular water, fertilize, nutrient

deficiencies with over watering

Type: biperennial

Botanical: Verbena maritima Common: Beach Verbena Flower color: light blue-purple Flower Season: spring, summer Height: 1 ft

Growth Habit: prostrate, spreading

Cultural requirements: drought, salt tolerant, avoid foliar wetting

Type: Biperennial

Botanical: Zinnia angustifolia

Common: Dwarf Zinnia, Creeping Zinnia

Flower color: white Flower Season: all year

Height: 1 ft

Growth Habit: upright, spreading

Cultural requirements: drought tolerant, minimize overhead watering

Type: biperennial

Organics: addition of organic material to sandy soil by mulching reduces water loss for many of the previous plants are shallow rooted. The addition of organic mulch also reduces the risk of nutritional deficiencies through the process of decomposition and acidification of South Florida's sandy and rocky soils.

'Avoid foliar wetting: recommended procedure of culture is to minimize leaf wetting, plants with this designation have the tendency to have leaf rot with the introduction of overhead applications of water. It is recommended that drip or under mulch irrigation be used for best appearance and health of the plant. Avoid foliar wetting: is specified for plant material which is prone to fungal leaf spot by irrigation wetting foliage. As a general rule if the leaf surface of a plant is silver in color and/or hairy these plants will react poorly to irrigation by means of overhead watering.

Table 2. Aquatic perennials for water gardens.

Botanical: Nymphaea 'Dauben'

Common: Tropical Water Lily 'Dauben'

Flower color: white/pale blue Flower Season: all year

Height: n/a

Growth Habit: spreading, leaf pads up to 1.5 ft in width

Cultural requirements: full to part sun, may flower all year with regular fer-

tilization

Type: perennial

Botanical: *Nymphaea* 'Gene Joyner' Common: Tropical Water Lily 'Gene Joyner'

Flower color: white with blue cast Flower Season: spring, summer, fall

Height: n/a

Growth Habit: spreading, leaf pads up to 3 ft in width

Cultural requirements: full sun

Type: perennial