CIR569

UF UNIVERSITY of FLORIDA
IFAS Extension

Annual Flowers for Florida [1]

R. J. Black and B. Tjia[2]

Annual flowering plants with their seemingly infinite variety of flower color and plant form fit into almost any landscape situation. They provide that necessary touch of color to an often drab landscape. Annuals planted in containers can add a splash of color to a porch, deck, or patio area. They are also enjoyed as fresh and dry cut flowers and can be a very rewarding hobby.

Annuals are plants which are grown from seed, produce flowers and seed, and die in one growing season. Biennials complete their life span within 2 years and perennials last for 3 years or longer. However, certain plants can be annuals, biennials, or perennials depending on the locality or purpose for which they are grown. As used here, the term "annual" will refer to any plant that is grown for one season.

Annuals are especially valuable in Florida. Many of them bloom during winter months, contributing splendidly toward a colorful landscape and producing blooms for home decorations. Other annual species grow and flower during the trying months of June, July. August, and September, persistently blooming through the heat and heavy summer rains.

Culture of annuals in Florida is different from that in most states because Florida has three climatic regimes. During winter, nights are cool with an occasional freeze in central and south Florida and frequent freezes in north Florida. In early spring and late fall, nights are cool, whereas high night temperatures, heavy rains. and high relative humidity are typical during summer and early fall. Careful attention must be given to these climatic regimes if annuals are to be grown successfully in Florida. Petunias, pansies. and snapdragons that grow well and flower under cool night temperatures [45-65°F (6-18°C)] should be planted in the fall, winter, and early spring. Annuals such as marigold, gazania, amaranthus, celosia, crossandra, and coleus that can tolerate high temperature and humidity should be planted in late spring or early summer. Some annuals such as wax begonias and salvias grow relatively well during both hot and cool seasons and can be planted year round in central and south Florida.

Florida's winter temperatures in the central and southern portions of the state are often not low enough to kill flowering plants such as geraniums and begonias. Although these plants are perennials and will grow outdoors for several years in mild climates, they should be treated as annuals and replaced with new, vigorous, disease- and insect-free plants each

1. This document is Circular 569, Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida. Reviewed: March 2000. Please visit the EDIS Web site at **http://edis.ifas.ufl.edu**.

2. R. J. Black, Associate Professor, Urban Horticulture Specialist, and B. Tjia, Associate Professor, Extension Floriculture Specialist, Department of Environmental Horticulture. Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida, Gainesville, 32611.

season. This will eliminate tall, unsightly plants and prevent the buildup of pathogens and insects.

While Florida gardeners are fortunate to have abundant sunshine and mild winters, they must contend with infertile sandy soils, insects, and heavy rains which necessitate repeated applications of fungicides for disease control. The addition of annual flower beds in the landscape will increase maintenance tenfold compared to turf. The homegardener should he aware of this and allocate more time for maintenance once the decision is made to grow annuals.

Selecting Annuals

It is difficult for the average home gardener to germinate seed and grow seedlings; therefore most purchase large seedlings or young plants. Before purchasing annuals, the home gardener should decide how the plants will be used in the landscape. Annuals should serve as an accent to the landscape, not a dominant feature in the setting. Those used in front of the home should harmonize with the setting, and colors should blend with each other and with the home. Large elaborate annual displays are usually too distracting for this area and are best used in the backyard.

When selecting annuals for beds or borders, it is best to limit the choice to as few kinds as possible. Combinations of many flower colors and plant forms can distract from the overall appearance of the display. Attractive flower beds can be created by using one plant species.

Flower beds should be prepared before plants are purchased. Allowing plants to remain in their original containers for prolonged periods after purchase can have a negative effect on their performance after planting. Purchase plants when you're ready and plant them as soon as possible, preferably within twenty-four hours.

After beds are prepared and the kinds and quantity of annuals to be planted are determined, purchase good quality plants. Look for young, healthy, disease- and insect-free plants with dark green foliage. It is not necessary that plants are in bloom when purchased. If plants reduced in price for sale have been subjected to water stress, are tall and spindly, or have nutrient deficiency symptoms, they are certainly not a bargain and should not be purchased. Plants that have been improperly maintained or held too long seldom recover, and if they do, they will never reach their full potential. This is true especially with snapdragons, pansies, celosias, and zinnias.

Seasonal adaptation should be considered when purchasing annuals. Cool-season annuals such as snapdragons and pansies that do well during winter are poor selections when purchased in March or April. To help select the correct annual for a particular season, consult Table 1.

Selection of annuals should be greatly influenced by the available light in an area. Some annuals, such as marigold and ageratum, perform best in full sun. Others, such as impatiens and dahlia, grow best in areas receiving several hours of morning or afternoon sun. There are no flowering annuals that will perform well under heavy shade. However, annuals such as crossandra and tuberous begonia grow best in areas receiving no direct sunlight. Optimum and acceptable light levels for many annuals are presented in Table 1.

Site Preparation

Annual planting sites should be spaded or tilled at least six inches deep several weeks before planting. Florida's sandy soils have very low nutrient and water holding capacities. Incorporation of 2 to 3 inches of organic matter into planting beds will increase nutrient and water holding capacities of these soils. Organic materials such as leaf mold or peat should be thoroughly mixed into the soil.

Garden soils, especially in recently developed areas, are frequently infertile Flower beds should be fertilized prior to planting or at planting time and repeated on a monthly basis. Apply 6-6-6 or a similar complete fertilizer at the rate of 2 pounds (908 g) per 100 square feet (9.3 m^2) of bed area. Application rates for higher analysis fertilizers are presented in Table 2. Controlled release fertilizers are ideal for Florida's sandy soils. Plants usually grow much better with a continuous nutrient supply and labor is reduced since controlled release fertilizer application frequency is less than for rapid release fertilizers.

Controlled release fertilizers can be incorporated uniformly throughout the soil before planting and applied on the soil surface of established plantings (Table 3).

Annuals can be damaged by nematodes. These micropscopic worms are present in most soils in Florida and are likely to reach damaging levels where susceptible annuals are grown repeatedly. Treating annual beds with a soil fumigant is highly desirable prior to planting, especially if high levels of nematodes are known to be present in the soil. Fumigation will also help to control weeds and soilborne fungi. For information on selection and use of soil fumigants, contact your local County Extension Office.

Planting and Care

Annuals purchased in compartmentalized plastic flats usually have pot-bound root systems. If planted intact, the root svstem will be slow to establish in the surrounding soil and plants will suffer moisture stress. A preferred method is to lossen and untangle the root system without breaking the soil ball. Plants will usually recover rapidly and become established quickly. Tall and spindly plants should be pruned to half their original size to produce more attractive plants with more flowers. Spacing of plants in a bed should be based on the mature size of a particular plant become established.

Weeds should be controlled either by hand weeding or mulching. Black plastic mulches should never be used except when a layer of organic mulch such as woodchips or pine bark is added on top of the black plastic. Temperatures of 117-119°F (47-48°C) have been recorded 1 to 3 inches above uncovered black plastic mulches. The addition of organic matter over the plastic reduces heat absorption and masks the artificial appearance of black plastic.

Mulching materials should not come in contact with plant stems. The high moisture environment created by mulch increases the.chances of stem rot which can result in plant death (Figure 1). Some annuals such as petunias develop yellow leaves (chlomsis) when mulched with cypress or pine bark. This condition is not due to a nitrogen deficiency and cannot be corrected by the addition of fertilizer.

Figure 1 .

Another approach to the culture of annuals in Florida is to grow them in pots. In areas where the soil is very poor or where tree roots limit growth, it is easier to plant small plants into inexpensive plastic pots filled with good soil and place the pots into flower beds. Sink pots into the soil until the top surface of the pots is at soil level. In addition to growing annuals where normally they won't grow, growing annuals in pots eliminates nematode problems, reduces water and fertilizer usage, and allows for easy replacement of plants in the flower bed.

Pests and Diseases

Annuals have insect and disease problems, and to maintain healthy and attractive plants these problems must be recognized and control measures initiated.

The best method of reducing insect and/or disease problems is to keep the plants growing vigorously and free from stress. Cultural practices that should help to reduce insect and disease problems are as follow: (1) select a planting site which provides desirable growing conditions for a particular annual; (2) avoid planting in corners where light intensity and air circulation are minimal; (3) keep plants growing vigorously by following a regular fertilization and irrigation schedule; (4) avoid frequent wilting since water-stressed plants are more susceptible to infestation by thrips and red spider mites; (5) remove spent flowers from plants such as marigold, salvia, snapdragon, and geranium, which do not naturally fall from the plant; (6) prevent pathogenic fungal spores from germinating by keeping water off plants as much as possible and

providing good air circulation around plants by allowing ample space between plants at planting; and (7) remove weeds from flower beds since they are frequently host to insects and/or disease organisms.

Annuals should be monitored frequently for insects and diseases. Infestations detected in the early stages can be controlled before the entire flower bed is infested. An insect infestation on a few plants can be controlled by picking insects off by hand or in the case of disease, by removing infected leaves. For severe infestations, chemical control will be needed. Contact your local County Extension Office for recommendations on selection and application of pesticides.

Table 1.

Table 1. Annual flower planting guide.

	Exposure				North Florida*		Central Florida		South Florida		
Name	Full Sun	Sun- A.M. or P.M.	No Direct Sun	Cold Tolerance	Planting Date	Removal Date	Planting Date	Removal Date	Planting Date	Removal Date	Spacin (Inche
Ageratum	XX			Tender	Mar. 1-15	Aug.	Feb.15-Mar. 15	July	Feb. 1-Mar. 1	June	10-12
Alyssum	XX			Tender	Mar. 1-15	July	Feb. 15-Mar. 15	July	Oct. 1-15 Feb. 1-Mar. 1	Mar. June	6
Amaranthus	XX			Tender	Mar. 15-30	Sept.	Mar. 15-30	July	July-Aug. Mar. 1-15	First Frost July	14-18
Asters	XX			Tender	Mar. 1-15	July	Feb. 15-28	June	Oct.-Feb.	June	12
Baby's Breath	XX	X		Hardy	Feb.15-Mar. 15	June	Feb.-Mar.	June	Aug.-Dec.	Mar-Apr.	12
Balsam	XX	X		Tender	Mar. 15-30	Aug.	Mar. 1-30	July	Mar. 1-30	June-July	8-12
Begonia(Nonstop)		XX	X	Tender	Mar. 1-15	June	Feb. 15-28	May	Nov-Mar.	May	12-14

Table 1.

Begonia(Thberous)		X	XX	Tender	Mar. 1-15	June	Feb. 15-28	May	Oct.-Jan.	Apr.	12-14
Begonia (Wax)	XX	X		Tender	Mar. 15-30	Sept.-Oct.	Feb.15-28	Sept.	Sept.-Nov.	Aug.	12-14
Browallia	XX	X		Hardy	Mar. 1-15	Aug.	Feb. 15-28	Aug.	Oct.-Feb.	Aug.	12
Calendula	XX			Hardy	Feb.-Mar.	June	Nov-Feb.	June	Jan.-Mar.	May	8-10
Carnation (China Doll)	XX			Hardy	Nov.-Feb.28	June	Nov.-Feb.28	May	Oct. -Jan. 15	Apr.	8-10
Celosia	XX			Tender	Mar.15-July	Seed Set	Mar-July	Seed Set	Feb.-Sept.	Seed Set	14
Coleus	X	XX		Tender	Apr.-Aug.	Oct.	Apr.-Aug.	Oct.-Nov.	Mar-Sep1.	First Frost	18-24
Calliopsis	XX	X		Hardy	Mar.-May	First Frost	Mar.-May	First Frost	Feb.-June	First Frost	12
Cosmos	XX			Tender	Mar. 15	Aug.	Feb.	July	Nov-Feb.	June	12-14
Crossandra		XX	XX	Tender	May-July	Oct.	Apr.-July	Oct.	Mar-Aug.	Nov.	8-12
Dahlia	X	XX		Tender	Mar. 15-30	Aug.	Mar. 1-15	Aug.	Sept.-Dec.	July	18-20

Table 1.

Dianthus	XX			Hardy	Feb.	July-Aug.	Feb.	July	Oct.- Feb.	June	10-12
Digitalis (Foxglove)	XX	X		Hardy	Sept.-Dec.	July	Sept.-Dec.	July	not recommended		12
Dusty Miller	XX	X		Tender	Feb.-Apr.	Sept.	Feb.-Apr.	Aug.	Oct.-Mar.	Aug.	12
Exacum	XX	XX		Tender	Mar.-July	When overgrown	Mar-July	When overgrown	Feb.-Oct.	When overgrown	12
Gaillardia	XX	X		semi-Hardy	Mar.-May	Aug.	Mar-May	Aug.	Feb.-May	Aug.	12-18
Gazania	XX			Tender	Mar.-May	Nov.	Feb.15-May	Nov.	Nov.-May	Nov.	8
Geranium	XX	X		Tender	Mar.-Apr.	July	Feb.-Mar.	July	Oct.-Mar.	June	16-30
Hollyhock (Althaea rosea)	XX	X		Hardy	Mar. 15-June	First Frost	Feb.15-July	First Frost	Aug.-Sept.	First Frost	12
Impatiens		XX	X	Tender	Mar.15-July	First Frost	Mar. 1-July	First Frost	Sept.-June	First Frost	8-12
Kalanchoe	XX	X		Tender	May-July	First Frost	May-Sept.	First Frost	Sept.-Dec.	First Frost	12
Lobelia	XX	X		Tender	Mar. 15-Apr.	Aug.	Feb.15-Apr.	Aug.	Sept.-Feb.	July	6-8

Table 1.

Marguerite Daisy	XX			Tender	Feb. 15-Apr.	June-July	Feb.-Apr.	June-July	Oct.-Feb.	June	12-14
Marigold	XX			Tender	Mar.15-May	3-4 months after planting	Mar.- Aug.	3-4 months after planting	Feb-Dec	3-4 months after planting	8 24
Nicotiana	XX	X		Tender	Mar.15-July	Aug.-Sept.	Mar. 1-July	Aug.-Sept.	Feb.-May Aug.-Sept.	July-Aug. Apr.-May	16-24
Ornamental Pepper	XX			Tender	Mar.-July	Oct.	Mar.-July	Oct.	Mar.- Aug.	Nov.	8-10
Pansy	XX			Hardy	Oct.-Feb.	June	Oct.-Feb.	May	Oct.-Jan.	Apr.	10-14
Pentas	XX	X		Tender	Mar.-May	Leaf disease	Mar.-May	Leaf disease	All year	Leaf disease	12-14
Petunia	XX	X		Hardy	Oct.-Feb.	May-June	Oct.-Feb.	June	Sept.-Feb.	May	12-18
Phlox	XX			Hardy	Mar.-Apr.	Aug.	Mar.-Apr.	Aug.	Feb.-Mar.	July	8-14
Portulaca (Rose moss)	XX			Tender	Apr.-July	First Frost	Apr.-July	First Frost	Mar.- Aug.	First Frost	10-12
Rudbeckia	XX			Hardy	Mar.-Apr.	Aug.	Mar.-Apr.	Aug.	Feb.-Mar.	July	15-18
Salvia	XX	X		Tender	Mar.15-Aug.	When deteriorated	Mar. 1-Aug.	When deteriorated	Feb.15-Dec	When deteriorated	8-12

Table 1.

Shasta Daisy	XX	X		Hardy	Oct.-Dec.	July	Oct.-Dec.	July	not recommended		12
Snapdragon	XX	X		Hardy	Oct.-Feb.	June	Oct.-Feb.	May	Nov-Feb.	Apr.-May	10-15
Statice	XX			Hardy	Feb. 15	June	Dec.-Jan.	June	Sept.-Jan.	May	8-10
Strawflower	XX			Tender	Mar. 15	Aug.	Feb.	July	Nov.-Feb.	June	12-14
Streptocarpus		XX	X	Tender	Mar.-Apr.	June	Mar.-Apr.	June	Feb.-Mar.	May	10
Sweet Williams	XX	X		Hardy	Mar-Apr.	Aug.	Mar-Apr.	Aug.	Feb.- Mar.	May	10-12
Thunbergia (alata)	XX	X		Tender	Mar.-May	First Frost	Mar.-May	First Frost	Feb.-Apr.	First Frost	8-10
Torenia	XX	X		Tender	Mar.15-June	Leaf yellowing	Mar.1-June	Leaf yellowing	Feb.-Oct.	Leaf yellowing	12-18
Verbena	XX			Hardy	Mar.1-May	When undesired	Feb.15-May	When undesired	Feb.-Apr. Sept.-Nov.	When undesired	12
Vinca (Catharanthus) (periwinkle)	XX	X		Tender	Mar.-July	When undesired	Feb.15-July	When undesired	All year	When undesired	12

Table 1.

Zinnia	XX			Tender	Mar.-June	Leaf disease	Mar.-June	Leaf disease	Feb.-Mar. Aug.-Sept.	Leaf disease	12-15

Several plants in this table are perennials but may be grown as annuals.
Exposure: X = acceptable performance; XX = optimum performance.
*North Florida - Pensacola to Jacksonville and south to Ocala.
Central Florida - Leesburg south to Punta Gorda and Fort Pierce.
South Florida - Stuart to Fort Myers and south to Homestead.

Table 2.

Table 2. Suggested fertilizer application rates for annuals

Fertilizer Analysis	lbs/l00 sq. ft.
6-6-6	2.0
8-8-8	1.5
10-10-10	1.2
12-4-12	1.0
12-12-12	1.0
15-30-15	0.8
16-4-8	0.8
16-8-24	0.8
20-20-20	0.6
25-5-20	0.5

Table 3.

Table 3. Suggested controlled release fertilizer application rates for annuals.

	Osmocote 14-14-14 Last 2-3 mo.	Sierrablen Nursery Mix + Iron 19-6-10 Last 4-5 mo.	Osmocote 18&12 Last 4-5 mo.
New Plantings 100 ft^2 of bed incorporated 4" deep	4 to 5 lbs.	6 to 7 lbs.	7 to 8 lbs.
Established Plantings 100 ft^2 of bed surface applied	5 to 7 lbs.	6 to 7 lbs.	7 to 8 lbs.

Table 3.

Table 3. Suggested controlled release fertilizer application rates for annuals.

	Osmocote 14-14-14 Last 2-3 mo.	Sierrablen Nursery Mix + Iron 19-6-10 Last 4-5 mo.	Osmocote 18&12 Last 4-5 mo.
6" standard or azalea pot	1 teaspoon (level)	1 teaspoon (level)	1 teaspoon (level)
1 gallon can	1 teaspoon (heaping)	1 teaspoon (heaping)	1 teaspoon (heaping)
2 gallon can	2 tablespoons (level)	1 tablespoon (heaping)	1 tablespoon (heaping)
3 gallon can	2 tablespoons (heaping)	2 tablespoons (level)	2 tablespoons (level)

NOTES:

The above rates are maximums. Do not exceed these recommendations.

The above rates should be reduced when a build-up of salinity occurs as a result of infrequent or light irrigation, poor drainage, or high salinity levels in irrigation water.

To simplify information in this publication, trade names of products were used. No endorsement of these specific products is intended nor is criticism implied of similar products which were not mentioned.