

Larson

Florida Flower Grower



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POTTED FLORIDA EASTER LILY PRODUCTION

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Production of quality Easter lilies in Florida presents problems different from those encountered in northern sections of the country.

Commercial Varieties Grown: Most lilies grown in Florida are Georgia, Ace or Croft varieties. Croft lilies were widely grown in past years, but have now lost some of their popularity due to leafscorch and root rot problems. Croft lilies produce large leaves and flowers and require more bench space per pot than Ace or Georgia varieties.

Many growers have switched to Ace lilies since they are less subject to leafscorch and root rot. Ace has slightly smaller flowers and shorter leaves than Croft, so more plants can be grown per unit area. No practical differences exist between bud count and forcing time of Croft and Ace lilies in Florida.

A popular variety in Florida is the Georgia lily. Georgia lilies are tall for pot lilies, but have higher bud count and shorter leaves when compared to Croft or Ace varieties. Georgia lilies force easily, and therefore, are widely used in Florida.

Bulb Sizes: The most popular forcing size bulb for Croft and Ace lilies is a 7 to 8 inch (measured as circumference). Normally, growers expect 3 to 5 flowers from a bulb of this size, but flower count varies widely depending on cultural practices. Eight to 9 inch bulbs should average 4 to 7 flowers and 9 to 10 inch ones 5 to 9 flowers per stem. Larger bulbs are used when very high count is desired. A Georgia bulb of 5 to 6 inches produces 4 to 5 flowers, one 6 to 7 inches produces 5 to 6 flowers and a 7 to 8 inch bulb 6 to 7 flowers. Bud counts listed are average, and a good grower should be able to produce a higher count.

Fall and Winter Handling: Florida grown lilies force faster than those produced in the North, therefore, longer storage periods are necessary for bulbs. However, long cold storage periods are known to reduce bud count. In recent years high temperature storage has been practiced until 6 to 8 weeks before planting. Bulbs are then precooled at 40 to 50°F. for 6 to 8 weeks and planted as soon as removed from storage. Precooled bulbs should be ordered from brokers so they can be planted immediately on arrival and forced for Easter. Bulbs arriving too early should be refrigerated at 45°F. until planting time. If bulbs have sprouted prior to being received by the grower, care must be exercised since a broken shoot will eliminate flowers from that bulb. Sprouted bulbs must be potted low to bury as much of the emerged shoot as possible.

Time to Pot: Florida growers generally do not attempt to establish bulbs in pots before forcing is started. High winter temperatures and light levels preclude this practice and usually make it unsuccessful, therefore, bulbs are potted and forcing started immediately. Lilies force in 60 to 75 days in Florida if precooled for 6 to 8 weeks. High light intensity, number of clear days, longer daylength and high day and night temperatures cause rapid forcing. With Easter falling on April 18, 1965, bulbs should not be potted prior to February 1, 1965.

Potting: Prior to potting, dip bulbs for 30 minutes in a mixture of PCNB 75% w.p. (Terraclor) at 3/4 teaspoon per gallon of water plus 2 tablespoons Captan 50% w.p. per gallon of water. Bulbs should be placed in pots so the nose is two inches below the soil surface. This method permits stem roots to develop which help to stabilize plants. Stem roots may also prove beneficial if roots from the basal plate are injured or killed by faulty cultural practices.

Soil: Lilies require a potting soil with good drainage and aeration to prevent root rot problems. Soil and pots must be sterilized to prevent contamination from Pythium spp. and Rhizoctonia solani. Suggested soil mixtures include 1/2 sand - 1/2 peat moss; 3/4 sand - 1/4 peat moss and 1/3 sand - 1/3 peat moss - 1/3 perlite. Use of mucks and peaty mucks for potting Easter lilies cause drainage problems. To each cubic yard of soil mix add 2 1/2 pounds of single superphosphate and 5 to 10 pounds of dolomite to raise pH to 6.5 to 7.0; or have soil tested and adjust pH according to the following table. Your county agent will supply information on soil testing at your request.

TABLE 1. Pounds of dolomite per cubic yard to raise pH one unit in mineral soils*

Soil Texture	% Clay	Content of Organic Matter		
		Low	Medium	High
Sand	1	1 1/4 lbs.	2 1/2 lbs.	5 lbs.
Sand	2	1 1/2 "	2 3/4 "	5 1/4 "
Sand	4	1 3/4 "	3 "	5 1/2 "
Loamy Sand	6	2 "	3 1/4 "	5 3/4 "

*Light grey sand has a low content of organic material. Dark to very dark grey sands have medium content material. Black soils have a high content of organic material. Where peat, compost or other materials are mixed with soils the high rates are recommended.

Leafscorch: Croft lilies are subject to leafscorch which is characterized by browned areas on edges and tips of leaves. Browned or "burned" areas usually appear at mid-point of the stem and progress in both directions. Ace and Georgia varieties are also subject to leafscorch, but to a lesser extent than Croft.

The complete reason for leafscorch is still unknown, however, information on this problem has been gained in recent years. Maintenance of a high pH (6.5 - 7.0), high nitrogen and low phosphorus levels in the soil will help reduce or eliminate leafscorch. Syringing of lilies with water also helps to reduce leafscorch. Research at Alabama has indicated that the element Lithium is responsible for leafscorch, however, growers can do little except maintain soil pH, nitrogen and phosphorus levels in a favorable range which apparently minimizes lithium absorption.

Fertilization: A good fertilization program is necessary to maintain high bud count without causing leafscorch. Short production schedules in Florida make it possible to add phosphorus and magnesium in the soil mix and then use only nitrogen and potassium in the fertilizer program. A suggested fertilizer program utilizes a 15-0-15 or similar liquid fertilizer. Use 2 1/2 pounds per 100 gallons of water and apply every 7 to 10 days according to plant growth response. One hundred gallons should be applied to 400 square feet of bench area or approximately 1500 six-inch pots. A mixture of 2 parts calcium nitrate and 1 part potassium nitrate will make a 15-0-15; or this analysis may be obtained from your supplier.

Fertilization should be started when shoots are visible and continued until two weeks before buds open. A careful check should be maintained on pH since use of different fertilizer materials can help to maintain pH between 6.5 - 7.0. If calcium nitrate and potassium nitrate are being used and pH increases, switch to ammonium nitrate and potassium nitrate. If potting soil is made up with the proper pH range, use of calcium nitrate should maintain the proper level.

Watering: Pots should be given a thorough watering after lilies are potted to wet the entire soil mass. Subsequent watering should be done only after soil has become fairly dry. If water is applied only when needed and a well drained soil is used, root rot problems will be reduced. Pots should be placed on a porous surface to facilitate drainage. Do not place pots on plastic or other smooth surfaces, as proper drainage will not result.

Light: Easter lilies should be grown in full sunlight for best flower production and shorter stems. Additional artificial lighting is not required in Florida to force lilies as 7,000 to 10,000 foot candles are normally received on an average winter day. High light levels present in Florida are one of the reasons lilies force so rapidly.

Temperature: Lilies are usually forced at a night temperature of 60 to 70°F. If lilies are late, forcing temperatures as high as 80°F. may be used but quality and bud count will decrease. If lilies are maturing too rapidly, they should be moved to houses where a 50 to 55 degree night temperature can be maintained. Since cool greenhouses are almost impossible to find in Florida in late March and early April, storage may be the best answer to early lilies. Plants should be grown in a cool greenhouse until buds are in a white, "puffy" stage, then the soil watered, and plants placed in dark 35 to 50°F. storage. Lilies may remain in dark storage for 10 to 14 days without detrimental effects. When removed from storage, soil should be allowed to reach room temperature before plants are placed in sunlight. The fungus Botrytis can cause brown spots on petals of flowers in storage; best control is to thoroughly clean the storage area and spray interior walls and ceiling with 1 pound of Terraclor per 100 gallons.

Pests: The most troublesome insect on lilies is the aphid; malathion is the recommended control. Aphids must be controlled since they are vectors for virus diseases affecting lilies.

If problems arise with root rot even after use of sterilized soil, sterilized pots and clean bulbs; control watering and drench pots at 7 to 10 day intervals with six ounces of 70 per cent Dexon per 100 gallons of water.

Growth Regulators: Considerable research on use of growth regulators on lilies has been accomplished over the past few years. Neither B-Nine or Cycocel have proven effective in controlling height in Florida. Phosfon has been effective in height reduction, but has also caused leaf damage under Florida conditions. When Phosfon is used at rates sufficient to produce height reduction, tip burn occurs.

Contrary to popular opinion, use of a high nitrogen fertilization level does not necessarily result in tall lilies. Croft and Ace lilies should not grow too tall in Florida; Georgia lilies may be taller and staking may be necessary. Height of Georgia lilies may be reduced by withholding water, however, this may result in reduced bud count and quality. Use of smaller Georgia bulbs may be beneficial in reducing height.