Section 16

Gloxinia

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Sinningia speciosa, originally from Brazil and more commonly known as gloxinia, have continued to grow in popularity throughout the years. Prior to the early 1950s, gloxinia production was limited to spring flowering of what were known as "Belgian" hybrids. This strain was produced primarily in Belgium and shipped to growers as tubers in late fall/early winter. With about six colors, this variety was characterized by very stiff leaves that curved downward, making sleeving and shipping virtually impossible. In the early 1950s, a German breeder introduced a new variety called 'Panzer's Red.' Although it had only one color, this species had softer leaves and more flowers than the "Belgian" hybrids. During this same time period, Earl J. Small Growers introduced the 'Red Velvet' series which also had more flexible leaves and up to 50 blooms per pot. This was the turning point in gloxinia production, and the Belgian strain slowly went out of favor. Because of these varietal breakthroughs, gloxinia started to be marketed as a crop to be grown "365 days a year."

This plant is very popular with florists and fills their special need for a showy potted plant, not only during holiday periods, but also during off-season periods. Gloxinia plants are also popular and prevalent at garden centers during the spring when the colorful, inverted bell-shaped flowers begin to bloom (Figure 16-1). Mass marketers take advantage of the more compact varieties that are more conducive to shipping. This plant is sold to other finishers in liner sizes ranging anywhere from 0.75 inch to 2.5 inches. Florist gloxinia pot sizes range anywhere from 3 inches to 8 inches, with the most preferred sizes within the 4-inch to 6-inch container.

Gloxinia can be grown from seed or tubers, although seed is the more economical choice. Tubers are imported mostly from Belgium and are usually available only in mid-winter; therefore, costs have increased in recent years. Because of when tubers are normally available, flowering production periods are limited to the early spring months – while gloxinia seedlings are available year-round. Rather than starting directly from seed, most finishers purchase seedlings from specialty growers and continue the growing cycle from that point.

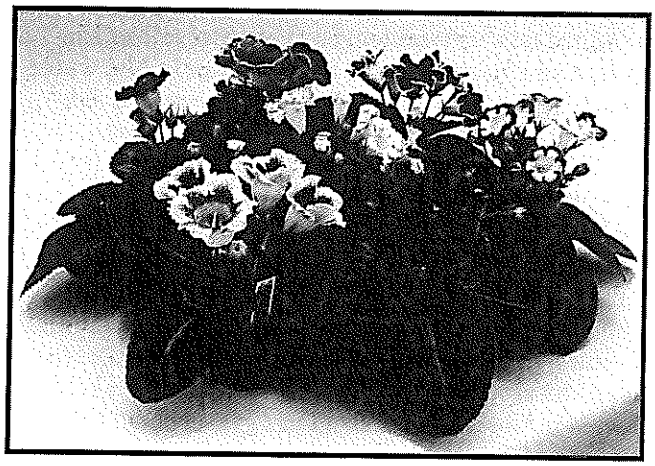

Figure 16-1. The inverted bell-shaped flowers come in many single and bicolors.

For the more adventurous grower who wishes to start from seed, an environment combining indirect light, humidity, and warm night temperatures of 65 to 70°F will be best. The grower must be careful because the seed is very fine (approximately 800,000 seeds per ounce). These seeds should be planted in a light, moist media with very little, if any, covering of the seed. Take precautions to prevent the media from drying out during the germination period. Germination of the tiny seed should occur in two to three weeks after sowing, and the seedlings will be ready for their first transplanting in approximately six weeks. Roughly four weeks later, the second transplanting takes place directly into the finishing container, making total crop time from seed to spring flowering approximately five to six months.

Plant gloxinia seedlings deep, 0.25 inch to 0.5 inch from the crown of the plant, in a loose potting soil that contains plenty of peat and soil amendments such as perlite, vermiculite, calcine clay, or coarse sand to provide good aeration. The media should be loose and porous to retain moisture, yet also provide good drainage. Poor root development and stunted foliage will result from using heavy soil mixes with poor aeration. A good solid start and stable plant will be achieved by setting the seedling well down into the media, leaving only the four uppermost leaves above the soil. Avoid intentionally removing any leaves because this will create an

open wound that could potentially expose the plant to disease problems later. Gently tap the pot to level the soil, and lightly water plants in with a good dual-purpose fungicide such as Thiophanate or Thiophanate and Subdue. Gloxinia plants thrive in high humidity and a loose, moist media with good drainage. Plants that are kept too wet will produce flowers and leaves that turn soft at the stems and show signs of rot. When possible, water gloxinia plants with tempered water and avoid wetting the leaves.

Drip tube irrigation and ebb and flow systems work well during the finishing stages. Drip tube tips placed beneath the leaves allow growers to water and fertilize the crop without wetting the leaves themselves. Ebb and flow systems produce similar results, although care must be taken not to overfeed the crop, because this will lead to high salt levels in the media that do not get leeched; this situation may cause root damage.

Gloxinias do not need as much fertilizer as other flowering potted plants such as lilies, mums, and poinsettias. A slow-release fertilizer such as Osmocote 14-14-14 may be incorporated into the potting soil if desired, but only at one-fourth of the recommended dosage. Excellent results can be obtained by alternating weekly feedings of calcium nitrate at 2 pounds per 100 gallons of water with a peat-lite formula of 15-16-17 at the same strength. Gloxinia plants react poorly to excessive amounts of ammonia or phosphate, so avoid fertilizers with a concentration of these ingredients. The fertilizer 20-20-20 has a very high amount of both of these components and is not recommended.

Growing temperatures are ideal when night temperatures remain around 65°F and daytime temperatures are approximately 75°F. In Northern climates, irrigating plants with water which is 10°F warmer or colder than the leaf temperature may cause adverse affects and injure foliage and root systems. Plant growth comes to an abrupt halt when air temperatures drop below 60°F. Temperatures below 55°F for more than a few hours will have very detrimental effects on this crop.

Light intensity in the range of that needed to grow African violets and chrysanthemums – approximately 2,000 to 2,500 footcandles – is considered the most optimum light level for growing gloxinias. During the winter months, when greenhouse temperatures are lower, this crop will perform well in higher light conditions up to 3,500 footcandles. When temperatures are hotter, however, these higher light intensities may cause yellowing of the leaves, stunting, premature budding, and/or crowded short-bloom stems that sometimes barely grow above the leaves. One or two applications of a weak solution of B-Nine may need to be applied under low-light conditions to keep the plants from stretching. Apply two to three weeks after potting or when the leaf spread of the new plants reaches approximately 8 inches. Use of high-intensity supplemental lighting for 12 to 16 hours during low-light periods can increase plant growth and decrease production time. Fluorescent or HID lighting delivering 200 or more footcandles at bench level may be used during daylight periods and extended into the night (from 8 a.m. to 10 p.m.). To continue flower bud development during postproduction periods, place plants in a bright, indirect light source such as on a windowsill, or use artificial lighting with the units 8 to 16 inches above the plants.

B-Nine can be used to produce a sturdy, well-shaped plant. Applied in a solution as a spray, B-Nine will shorten the main stem and leaf petioles, producing high quality gloxinia plants. It should be applied approximately 12 to 16 days after potting. Under low-light conditions, below 2,000 footcandles, a second application may be used 7 to 10 days after the initial application. During warmer periods of the year when flower stems may tend to stretch, Bonzi has shown promising results in alleviating this condition. Three to four weeks before flowering, when buds start to appear above foliage, one application of Bonzi as a foliar spray will control leaf expansion and stretching of the primary flower stalks.

As a disease-preventative measure, a good fungicide drench should be applied immediately after potting. A good choice would be Banrot. To protect against disease during the entire production cycle, a second application may be applied four weeks later. Eliminate possible injury to the foliage caused by drench residue by using a light foliar rinse.

Thrips, which can transmit viruses such as Tomato Spotted Wilt Virus, can attack the growing tips of small plants and cause the leaves to grow out with ragged edges, elongated holes, or cuts. These insects can be very damaging to gloxinia. A good recommendation to control thrips on non-flowering crops is to alternate sprays of several different insecticides such as Duraguard, a tank mix of Avid and M-Pede, a tank mix of Azatin and Naturalis-O, a tank mix of Orthene and Tame, and/or a tank mix of Avid and Sanmite. Blooms are delicate and easily damaged, so alternate sprays of Duraguard with

sprays of Avid mixed with Sanmite. If infestation is heavy, it may be necessary to spray up to three times a week to control freshly hatched adults from the soil or an influx of thrips from outside.

Center leaves that stiffen and become reddish-brown can be a result of cyclamen mites. The mites are small, so you need a magnifier to spot them. The mites should be controlled with Pentac, Avid, and/or Sanmite. Control Army worms or loopers with a mix of Orthene with Dipel.

Gloxinia plants can be grown throughout the year under the proper environmental conditions. They do not require disbudding, pinching, night lighting, or summer shading. Labor costs are lower than other blooming crops such as azaleas or potted chrysanthemums. These factors combine to make gloxinia profitable to a greenhouse operation.

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