

Section 13

Exacum

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Exacum affine is a member of the Gentianaceae plant family. It has grown in popularity throughout the years, mainly due to its versatility. It can be used to accent home decor, brighten windowsills, enliven patios in bowls and baskets, and be planted in the landscape under semi-shade conditions for mass color appeal. Using all three colors – white, blue, and rose (Figure 13-1), Exacum produces a very eye-catching garden arrangement. Unleashing its full potential for the future compels plant breeders as they strive to improve garden performance, increase flower size, broaden the flower color spectrum, and improve the characteristics of double-flowering varieties.

This appealing plant species is currently sold in many sizes. Seedling suppliers market Exacum to other growers in plug cell sizes ranging from .5 inch to 2.25 inches. These growers in turn replot the seedlings into containers for their blooming product customers in a broad spectrum of pot dimensions. Restaurants and motels use 3- to 4-inch pots to highlight their tables and rooms. Dish garden and color bowl producers use the same size range. Mass marketers and garden centers traditionally use product in the 4-inch to 8-inch pot size. Depending on the cultivar, Exacum plants grow well in 3-inch to 24-inch containers. They also travel long distances in boxes very well. The finished product should be shipped more on the dry side as opposed to wet, and a transport temperature should be maintained in the 50 to 70°F range.

Propagation

Propagation of Exacum should not be difficult, if growers follow a regimen similar to following a cookbook recipe. Seeds should be sown on top of the growing media surface. They can also be sown on the top surface of a growing media which has been sprinkled lightly with a thin layer of vermiculite. These seeds should be kept evenly moist for approximately four weeks or until the seedlings are well established. To promote a viable root system and to facilitate disease prevention, the seed trays should not be allowed to dry out between waterings. During the first four to five weeks of propagation, plants should be fertilized with nitrogen at a rate of 50 to 100 ppm every other watering or 250 ppm every third watering. These seedlings are ready to transplant into liners or finished pot containers



Figure 13-1. Exacum flower color ranges from white to blue and rose.

after approximately six to eight weeks. Exacum is susceptible to stem canker *Botrytis* every time transplanting occurs and should be treated with a fungicide at this time.

Exacum can also be propagated vegetatively. Two to three days before cuttings are taken, plants must be sprayed with a fungicide for *Botrytis* control. Use plants that have not developed flowers, remove any visible buds, and take two-node cuttings. After sticking these cuttings into the growing media, periodically mist plants with a very fine mist. This will keep the plants turgid while not permitting them to be excessively moist. At 70°F, proper rooting should occur in approximately four weeks.

Culture

Exacum will flower very quickly under the long warm days of summer. Fertilize plants regularly and prevent premature flower initiation by ensuring the plants are not allowed to undergo moisture stress. Moderate fertilizer levels produce the best response. Higher levels of calcium and copper are preferred by the leaf tissues. Use 20-10-20 or 15-16-17 at 250 to 350 ppm every second or third watering and higher rates during the summer months. Favorable results can also be obtained by constant feeding at a rate of 150 to 225 ppm. For higher calcium levels, alternate one of the above fertilizers with calcium nitrate plus potassium nitrate or with a Hi-Cal fertilizer. During the early production stage, approximately three weeks after potting, a healthier looking plant will be produced with an

application of a foliar spray of Phyton-27 or Tri-basic copper. Application of a slow-release fertilizer is beneficial during late spring and summer, especially when increased watering leaches out previous liquid fertilizer applications.

The lower light levels and shorter days during winter can cause several production problems. These conditions contribute to softer plants that can be easily injured and attacked by disease. During this period, growers should pay careful attention to detail. Plant watering intervals and fertilizer levels should be reduced to produce a "harder" product. Reduce fertilizer levels by one half. Water early in the morning, which will allow the foliage to be dry by the afternoon, and allow the pots to dry out thoroughly between waterings. High nutrient levels and overwatering will delay flower initiation and promote disease. Exacum grows best year-round in a loose, well-balanced soil mixture that contains plenty of peat and perlite (or Styrofoam) for good aeration. Media with more aeration must be used during the winter months if plants are kept constantly moist. Avoid overcrowding, and provide the crop with adequate spacing to provide proper air circulation.

Exacum is heat-tolerant and responds with a faster growth rate during increased daylength periods. Although flower bud initiation is not affected by daylength, plants will flower earlier and more uniformly under long-day conditions. Grow plants under full sunlight during the winter months, a very light shade of 4,500 to 5,500 footcandles during spring and early fall, and a light shade of 3,500 to 4,000 footcandles during the summer. This crop reacts to the total light energy received on the leaves, and supplemental lighting during the winter months is beneficial. Beginning at dusk during the winter and early spring, four to six hours of supplemental HID lighting or even chrysanthemum-type lighting at 10 to 20 footcandles will decrease production time by approximately two weeks. Optimum growing temperatures are 60 to 65°F at night, and 72 to 77°F during the day. Due to the seasonally variable crop timing, a saleable 6-inch flowering plant can be produced in approximately seven to eight weeks during the summer and in up to 12 to 14 weeks in the winter from a 2.25-inch seedling. Depending on the cultivar, smaller 4-inch pots can be produced in less time. Higher daytime temperatures will increase vegetative growth and reduce production times.

Height Management

A higher quality plant can be produced with the use of growth regulators to control the height.

Recommended regulators at this time are Bonzi or B-Nine. A well-shaped plant with better branching can be produced from fall through spring with one application of B-Nine at a rate of 2,500 ppm. B-Nine application, however, may not be required during any production period for cultivars that are naturally dwarf. Be sure to consult the growing information for the specific cultivar you are using. Especially during the winter months but also at other time periods, more than two applications of B-nine will delay flowering. Growth control, but very little flowering delay can be obtained by using Bonzi. Use as a spray at a rate of 25 to 30 ppm or as a drench at a rate of 0.5 to 1 ppm.

Disease And Insect Management

Stem canker *Botrytis* is the most prevalent disease problem encountered by Exacum, especially during the winter months. Slightly above or below the soil line, *Botrytis* causes a gray to tan lesion on the stem or small gray lesions at the branches. This area of the plant will become soft and die. Excess fertilizer, overwatering, or water on the plant and leaves overnight will actually aggravate this form of *Botrytis*. This infection most often occurs one to two weeks after young seedlings have been transplanted into pots.

Exacum can be infected and killed within a few days by Tomato Spotted Wilt Virus, which can be transmitted to the crop by thrips infestation. The plants can also incur physical damage from the highly mobile, extremely small insects. Preventative spraying programs are essential to deterring thrips infestation. Monitor the population by capturing the pests on sticky cards placed throughout the greenhouse, and establish a consistent scouting program. Spray the crop a minimum of once a week as a preventative measure, and more if scouting or sticky cards reveal a problem. Flowering Exacum is susceptible to chemical burns, so growers should be careful when deciding what to spray.

The most damaging insect to the Exacum crop is the broad mite. These insects cause growing tips and leaves to turn yellow, and the flower buds will fail to open. You will normally find these mites on the upper parts of the plants.

For long-lasting quality of the finished product, Exacum should be placed next to a window or an artificial light source. These plants do best in bright, indirect light with moderately moist soil. Low light conditions will contribute to faded flowers. Plants are hardy to 32°F.

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