

Crop: Exacum
Scientific Name: Exacum affine (*Gentianaceae*)

I. Introduction

- A. Exacum is native to the Socotra Islands, southeast of Yemen in the Middle East.
- B. Common names are Persian violet, Arabian violet, German violet or Exacum.
- C. The flowers are blue or white with yellow stamens and 1.301.5 cm (1/2 inch) in size.
- D. The flowers have a mild fragrance.
- E. *Exacum affine* is an annual.

II. Cultivars, Clones, Breeding and Development

- A. The 'Midget' series is a dwarf, uniform variety of exacum. The plant is 13-15 cm (5-6 inches) tall at flowering. The blue and white flowering types are ideal for 10 cm (4 inch) pots.
- B. 'Blue Champion' is a polyploid type with large blue flowers. A good variety for 15 cm (6 inch) pots.
- C. 'White Champion' has white flowers with yellow stamens and the same features as 'Blue Champion'.
- D. 'Exacum Double Champion' will produce about 50% double, blue flowers. The single flowers open at the same time as the 'Blue Champion' flowers, while the double flowers will open 2-3 weeks later.

III. Flower Induction Requirements

- A. Plant size and total amount of light perceived determine flower initiation and development.
- B. Manipulation of day length cannot be used to control flowering.

IV. Environmental Requirements

A. Light

1. Exacum plants are grown under full sunlight. Some shade may be necessary during the summer, especially for seedlings and recently transplanted seedlings.
2. Plants developing under low light intensities are "soft" and may collapse if not staked. Flowering will be poor.
3. Excessive light and heat will result in poor flower color.

B. Temperature

1. During seed germination keep 22-24°C (72-75°F)
2. Exacum grows best at 16-18°C (59-60°F) night and 22-25°C (72-77°F) day temperature.
3. Temperatures below 15-16°C (59-60°F) result in poor and chlorotic growth.

C. Water

1. Exacum is very susceptible to *Botrytis* and good watering practices are important.
2. Wet foliage and watering in the afternoon should be avoided. Allow the plants to dry between waterings to produce fast and good growth.
3. Wilting from inadequate watering should be avoided, as the plants can not easily recover.

D. Nutrition

1. Exacum is a moderate feeder and fertilizing once a week with 140-160 ppm nitrogen, 20-30 ppm phosphorous and 120-140 ppm potassium has been recommended. Start feeding 3-4 weeks after transplanting.
2. Iron and manganese deficiency can easily occur and a supplement of micronutrients may be required.

V. Cultivation

A. Propagation

1. Exacum can be propagated by seed or terminal cuttings.
2. Seed is the most commonly used form of propagation.
3. Seed propagation
 - a. There are 35,000 seeds per gram.
 - b. The seeds require light for germination and shouldn't be covered after sowing. For proper germination, the media should be constantly moist.
 - c. Germination occurs in 2-3 weeks at 22-24°C (72-75°F).

B. Planning and Media

1. A medium containing peat and perlite or vermiculite for good aeration is suitable for production of exacum.
2. The pH should be kept at 5.5-6.0.
3. The seedlings are transplanted into 6 or 10 cm (2 1/4 or 4 inch) pots, 4 to 7 weeks after sowing.

C. Spacing

1. Close spacing and reduced air circulation easily result in *Botrytis* attacks.
2. The plants can initially be grown pot to pot, but as they become crowded prompt spacing is required.
3. Suggested final spacing is 28 x 28 cm (11 x 11 inches) for plants in 10 cm (4 inch) pots and 36 x 36 cm (14 x 14 inches) for 15-17 cm (6 - 6 1/2 inch) pots.

D. Support

1. None

E. Pinching

1. None

F. Disbudding

1. None

G. Growth Regulators

1. B-Nine controls size and improves plant quality.
2. One to three applications of B-Nine at 2,500 ppm is recommended.
3. The first treatment should be applied one week after potting.

VI. Problems

A. Insects

1. The most damaging insect is the broad mite. The leaves and growing pints turn yellow and distorted, and flower buds fail to open.
2. Thrips may cause damage by attacking the growing tips.

B. Diseases

1. The disease causing the most damage is *Botrytis*. Grey lesion at the soil line or branch bases caused opening and decay of the plant tissues. Excess fertilizer, too much water or water left on the leaves overnight facilitates botrytis attacks.
2. The soil-borne pathogens *Pythium* and *Phytophthora* can also cause damage to exacum.

C. Other

1. Lack of flowering in the winter is often caused by excess nitrogen.
2. Pesticide applications during the later part of production may cause damage to the flowers.
3. High concentrations of B-Nine will cause leaf burn.

VII. Harvesting, Handling, Marketing

1. The plants should be placed close to a window or artificial light source to insure opening of flower buds.
2. Low light conditions will cause flower colors to fade.

VIII. Scheduling

Growing Time for Cultural Segment	Cultural Procedure	Temperature
	Sow seeds	22-24°C (72-75°F)
4-7 weeks	↓	
	Transplant to 10 cm pots	day: 22-25°C (72-77°F) night: 16-18°C (60-65°F)
12-14 weeks	↓	
	Flowering	