

## Section 24

# Streptocarpus

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Streptocarpus (*Streptocarpus x hybridus*) is a member of the Gesneriaceae family, the same family as African violets and Gloxinias (Figure 24-1). Current varieties are hybrid crosses that were first cultivated in the early 1800s in South Africa (Marston, 1964). Plants can be grown in pot sizes ranging from 4 to 6 inches wide as well as in 10-inch baskets (Figure 24-2). Streptocarpus can also be used as a bedding plant item and be planted outside after the danger of frost in shady conditions is over.

### Morphology

Streptocarpus are different from most other plants in that the leaves do not arise from a stem or a growing point (Marston, 1964). Instead, new leaves form from the upper bases of older leaves. Unlike other plants whose leaves stop growing once they are fully expanded, the leaves of streptocarpus continue to grow. The meristem or growing point of the leaf is found at the leaf stalk. This means that the tip of a streptocarpus leaf is older than the base of the leaf. Also interesting is that streptocarpus flowers develop from the leaf. In young plants, the flower originates from the upper portion of the midrib of a leaf.

### Propagation

Plants are produced from seed or from leaf cuttings.

**Seed.** Streptocarpus seeds are very small, with seed counts of 900,000 to 1.8 million seeds per ounce (Figure 24-3). Seeds germinate in 10 to 20 days with stage 1 temperatures of 68 to 72°F. Do not cover seed, since light improves seed germination. Stage 2 (after germination) temperatures are lowered to 65 to 70°F, and Stage 3 (growing on) temperatures are 60 to 65°F. Plants should be ready to transplant in 8 to 12 weeks.

**Vegetative.** Plants can be propagated from whole leaves or sections of leaves. These leaf cuttings will produce plantlets that will be separated and transplanted into individual pots. When you use a whole leaf cutting, it is important not to include tissue near the base of the leaf. If this region is included, then only roots and flowers will develop (Marston, 1964). With this method, stick a 3-inch-long leaf tip into the media approximately .5 inch deep. Several plantlets will develop from the base of the leaf.



Figure 24-1. Streptocarpus are colorful plants found in a variety of colors.

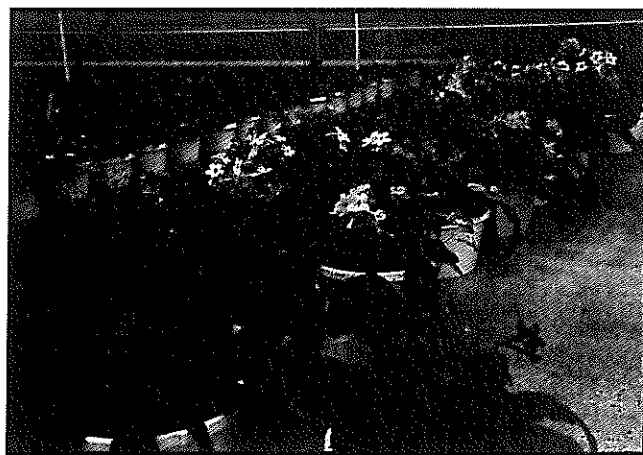


Figure 24-2. Streptocarpus can be grown in a variety of pot sizes.

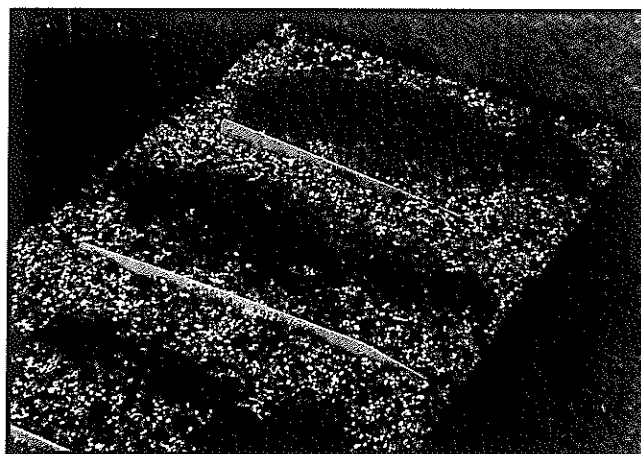


Figure 24-3. Streptocarpus seeds are very small. Seeds in this picture were sown in an open flat. Plug production is probably an easier method.

The preferred method of vegetative propagation is to cut out and discard the mid-vein and to stick the cut ends of the leaf into the media (Figure 24-4). It is important to remove the mid-veins; if they are included, the number of plantlets that will form from the leaf will be reduced. Keep the media moist and at 70°F. Mist is not desirable for propagation, but do not allow the plants to become dry. Plantlets will emerge after eight weeks and will be ready to harvest three to four weeks later. Plantlets are rooted at 70°F and are ready to transplant seven to eight weeks later. It has been reported that plants used to produce leaves for propagation should be kept under short days for optimal plantlet production. Leaves taken from plants grown under nine-hour days produced 32 percent more plantlets than plants grown under 15-hour days.

### Production

One plant per pot should be sufficient for pot sizes up to 6 inches. Larger sized baskets (8 to 10 inches in diameter) require two to three plants. To avoid *Botrytis* after transplanting, plants should be kept at a spacing where leaves do not touch. Grow plants at 65 to 70°F for two to three weeks. Afterward, keep day temperatures less than 80°F and night temperatures at 60 to 65°F. It is important to give plants adequate light, keeping light levels less than 4,200 footcandles but above 500 footcandles. Optimal light levels for flowering are 1,000 to 3,000 footcandles. Light levels above 3,000 footcandles could damage the leaves. While streptocarpus is reported to be day-neutral, longer daylength may improve flowering. In one study, plants grown under long days (15 hours) produced 54 percent more flowers than those grown under nine-hour daylengths. Saleable plants should be ready 12 to 16 weeks after transplanting.

### Nutrition

Leaf length has been found to be a function of nitrogen concentration. Plants grown under nitrogen-deficient conditions will have reduced leaf size. The tissue nitrogen concentrations should be maintained at 2.5 percent to 2.9 percent. Media test values should be maintained around 100 to 125 ppm nitrogen. Fertilizer concentrations in the irrigation water ranging from 100 to 200 ppm N, from a variety of fertilizer sources (i.e. 15-0-15, 20-10-20, 20-20-20, 15-16-17), have been shown to maintain media nutrient concentrations in the desired range.

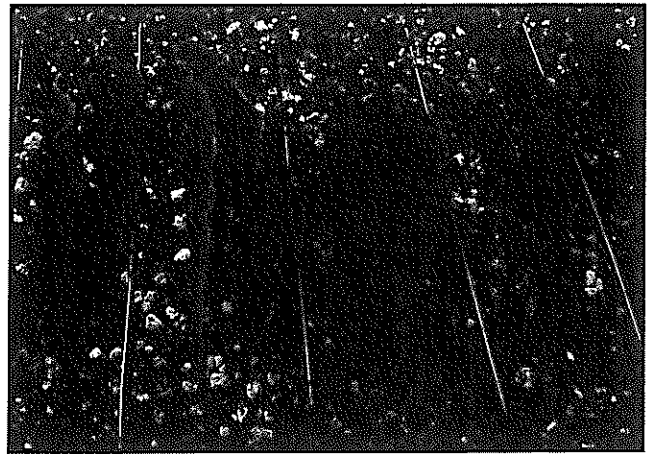


Figure 24-4. Streptocarpus leaves are placed cut side down after removing the mid-vein. Plantlets arise from the soil line.

### Growth Regulators

The application of gibberellic acid at rates of 100 ppm is reported to increase the length of the peduncle (flower stalk), increase the number of flowers, and decrease the time to flower. Gibberellic acid in the form of GA<sub>4+7</sub> should be applied 30 days after transplanting, but before buds are larger than 3 mm. GA<sub>3</sub> has also been applied to streptocarpus at a rate of 300 ppm and was reported to increase peduncle length. GA<sub>3</sub> made the leaves more elongated and upright and less brittle. Unfortunately, there are no gibberellin compounds which have streptocarpus on the label.

### Diseases and Insects

Streptocarpus plants are very susceptible to aphids that can be found feeding on the flower stems. Cyclamen mites cause distortion and/or curling. Thrips can attack the flowers, and whiteflies can be found on the undersides of the leaves. The crowns of the streptocarpus may be attacked by *Botrytis*. Root rots caused by *Pythium* or *Phytophthora* can infect streptocarpus, especially if plants are kept too wet.

### Postharvest Life

Silver thiosulfate (STS) applied one to four weeks prior to shipping is reported to reduce flower drop after shipping. High concentrations (>1.0 mm) or applications made within 24 hours of shipping could damage the foliage and/or flower. STS applications of 0.5 mm applied at least one week prior to shipping should be a safe way to reduce flower drop if this has been a problem in the past.

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