

# Holiday Cacti Growing Tips

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Much confusion exists in the nomenclature of holiday cacti. They are now placed in the genus Schlumbergera, formerly being known as Zygocactus or Epiphyllum. Two species of commercial importance exist within this genus: S. truncata, the Thanksgiving cactus and S. bridgesii, the Christmas cactus. Most plants grown commercially are actually S. truncata, but are mistakenly sold as Christmas cacti. The leaf margins of S. truncata bear 2 to 4 serrate projections at the upper edges of the leaf segments (phylloclades), shown in Figure 1. S. bridgesii has a more rounded leaf margin with scallops along the edges (Figure 2). S. truncata blooms naturally in mid to late November, thus the name Thanksgiving cactus; while S. bridgesii blooms naturally in mid December, thus the name Christmas cactus.

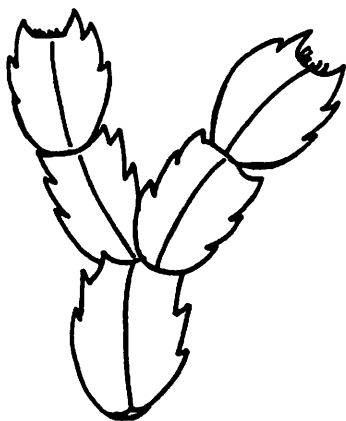


Fig. 1. Thanksgiving cactus, S. truncata, but usually mistakenly sold as the Christmas cactus.

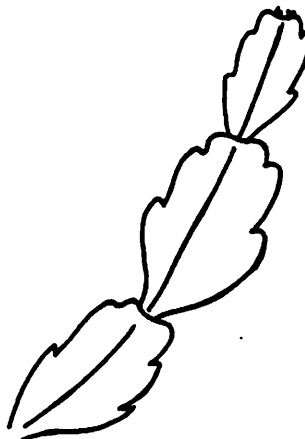


Fig. 2. Christmas cactus, S. bridgesii.

## Propagation

Propagation may commence immediately after blooming, as long as adequate bottom heat is applied. A temperature of 70°F is desirable. Cuttings composed of one to 3 phylloclades should be twisted off from the stock plants at the leaf joints. The cutting should begin rooting within 2 to 3 weeks at which time a light fertilization program may be started. Plants propagated in December, January and February can be finished in 4 or 4½" pots. Those propagated in March and April should be finished in 3 or 3½" pots.

## Vegetative Phase

Rooted cuttings can be received in March to May. A liner is usually composed of 2 rooted cuttings. These may be potted one to a 3" pot or 2 or 3 to a 4" pot, depending on cultivar and desired fullness. Six inch pots and hanging baskets should be made from 4" pots held over from the previous season. One 4" pot containing 2 plants can be shifted to a 6" pot, while three 4" pots can be used to plant a 10" hanging basket.

The potting medium should have a high percentage of organic matter, but should also be well drained. Commercial potting media with these traits are satisfactory. Because these plants are epiphytes native to the rain forests of South America, holiday cacti should be grown moist, but not overwatered. During the months of lower light intensity and cooler temperatures less frequent watering is necessary to prevent disease. Plants can be started pot to pot, but should be spread later to allow for good air circulation.

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Fertilization is generally light. A rate of 200-300 ppm N from 20-10-20 or 15-16-17 applied every 2 weeks has proven to be adequate. Osmocote applied at  $\frac{1}{2}$  the recommended rate may be used on larger pots. A supplement of  $\frac{1}{2}$  lb Fe Sequesterene 330 per 100 gallons water may be necessary 2 or 3 times during the growing season. Iron deficiency symptoms include cupping of new growth and marginal chlorosis. Fertilization should be discontinued 1 to 2 months prior to the start of flower bud initiation. After blooming, holiday cacti become dormant, which can be broken by warmer temperatures and long days. Until new growth is seen, fertilization should be sparse.

Plants should be grown under full sunlight during the fall, winter and early spring. Shading will be necessary during summer months. Removal of shade too early in the fall could result in burning. During vegetative stages 65-70°F nights are recommended. Temperatures should not go below 60°F at this time.

To promote branching, plants can be pinched back to 2 segments early in June.

### Flowering Phase

In the past it was thought that allowing holiday cacti to dry practically to the point of wilting encouraged bud development. Now it is known that this practice can actually decrease the number of flower buds initiated. Flower bud initiation is brought about by short days or by low temperatures. Temperatures of 59-68°F and short daylengths of 12 hours or less are optimal conditions for flower initiation. However, plants will flower when given night temperatures of 55-59°F under any daylength, or when given short days under higher night temperatures, up to 75°F. Temperatures below 50°F prevent flower initiation. Twenty to 25 short days are adequate for flower initiation. After this period photoperiod has no effect on flower development. A 59°F night temperature with a higher day temperature 68-77°F during short days increases the number of flower buds on apical phylloclades. Flowering occurs 9-10 weeks after initiation at a night temperature of 59°.

A growth regulator, benzyl-adenine (BA), has been found to increase bud number up to 40%. This cytokinin is applied at the rate of 100 ppm 2 weeks after the start of flower bud initiation or when buds can first be seen. When 100 ppm

BA is sprayed during vegetative stages, the results are much more drastic. The number of new breaks can be increased by 150% (Figure 3). The result is a very strange looking plant with finger-like breaks. Application of BA to increase bud number and branching will no doubt be recommended in the future, if label clearance is obtained. Further research must be done to identify optimum concentrations and times of application.

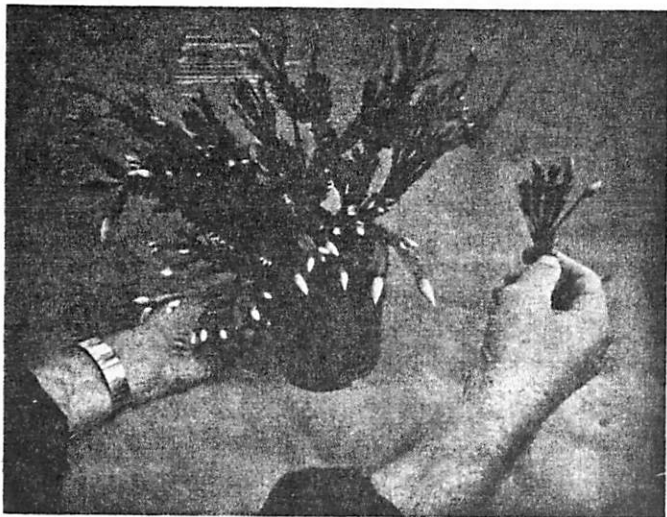


Fig. 3. Cactus (*S. truncata*) treated with benzyl-adenine. Plant photographed November 17, 1982.

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Flower drop (shattering) has long been a problem in the long distance transport and marketing of holiday cacti. It is thought to be brought about by stress that can be caused by drought, darkness, heat or cold and exposure to ethylene. Plants under stress tend to produce ethylene. It is also known that ethylene (even in low concentrations) in the atmosphere will cause flower drop. Silver thiosulfate (STS) has been shown to block this destructive action of ethylene. Experiments have indicated that a spray treatment of STS during the tight bud stage will prevent shattering in Thanksgiving cacti.

### STS Concentrate

Sodium thiosulfate comes in 2 forms. The amount used in making the concentrate varies, so read the label carefully.

	<u>Grams</u>	<u>Ounces</u>
either prismatic sodium thiosulfate	120	4½
<u>OR</u> anhydrous sodium thiosulfate	80	2-3/4

Dissolve material in 1 pint of deionized water.

silver nitrate	20	3/4
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Dissolve in a separate pint of deionized water.

Slowly pour the silver nitrate solution into the sodium thiosulfate solution, stirring rapidly. A browning of the solution may occur during mixing, but will not alter the effectiveness.

For use on Thanksgiving cacti, the solution should contain 2 fluid ounces of the concentrate per gallon of solution plus sticker/spreader. This spray reportedly prevents flower drop. It also is economical, costing less than 0.1 cent per plant at 1981 prices.

### Troubles

The main diseases that attack Thanksgiving and Christmas cacti are caused by Phytophthora and Pythium. These pathogens cause basal stem rot and root rot. These diseases can be controlled with proper watering practices and the use of Subdue or Truban drenches. A leaf spot thought to be caused by Fusarium has also become a problem. This also can be controlled by proper watering practices and the use of a Benlate spray. Insects are seldom a problem. In any case, avoid the use of Diazinon, as phytotoxicity can occur. Caterpillars can be controlled with Dipel sprayings.

### Scheduling

December-April	Propagation
March-May	Potting
Early June	Pinch
August 15	Stop fertilization, but continue watering as usual.
Mid September	SD begin - lower temp.
Mid November-Mid December	Flowering

References used in the preparation of this article are listed below:

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## Care tag information

### Thanksgiving Cactus Schlumbergera truncata

Your Thanksgiving cactus should be placed in bright, indirect light. Soil should be kept moist to the touch, but not soggy. Fertilize with 1/2 recommended rate of your regular house plant fertilizer one time per month April-August. Plants do well in a sheltered location outdoors when night temperatures are above 55°F.

To rebloom your Thanksgiving cactus be sure that the plant is in darkness 12 hours a night or that it is receiving temperatures of 55-59°F during the night. Begin this treatment 9-10 weeks before the desired bloom date.



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Editor's note: The author was an employee at May-Mak Plant Farms, Raleigh, and much of Amy's knowledge of holiday cacti was attained as a grower there. Amy spoke on holiday cacti at the 1982 Bedding Plant Day in Raleigh, and there was much interest in the topic. Eulis and Irene May are gratefully acknowledged by the author.

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## Re-cycling Holiday Cactus, Joe Love Style

Roy Larson

One of the most frequently asked questions we get as floriculturists at universities is "How do I get my flowering pot plant to bloom again?". We get that question from people who have received poinsettias, cyclamen, begonias, Easter lilies, hydrangeas, Holiday cactus, and almost any other flowering pot plant. Many times we have to be somewhat pessimistic as we give the concerned

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individual a realistic reply. The percentage of people who can get a poinsettia to bloom again probably is less than 5, and the cyclamen percentage would be closer to 0. We can be much more encouraging with some other plants, and the holiday cactus surely would be one of them.

Amy Dosser has given advice to growers in another article in this issue. Information for the customer also is included. Joe Love walked past my office door just when I was reading Amy's article and he was carrying the cactus shown in the photograph. It was a Thanksgiving cactus and it was November 23, two days before Thanksgiving, so you can see that Joe's timing was excellent. The plant was not one Joe had just obtained from a grower or florist or mass market outlet. It had been growing on the window sill in his office, where it had been in bloom in 1981. Joe's office is on the north side of Kilgore Hall, with windows taking up much of the wall space on the north side. We never can predict what our office temperatures will be --- the air conditioning system functions beautifully in the winter months and the heating system works very well in the summer. Night temperatures in the Fall months probably would be in the mid to high 60's. Stray lights did not shine on Joe's plant at night but he did not put it in a secluded spot. He watered it regularly. Joe did a watering study on holiday cactus 2 or 3 years ago and his results showed him that withholding water had no beneficial effects on flower initiation or development. He fertilized the cactus once a month.



It would have been difficult to produce a cactus with more uniform bud set than was displayed on Joe's plant, under office conditions.

Joe Love with S. truncata 2 days before Thanksgiving Day.

A secretary in another office which is illuminated at night by an entrance light to Kilgore Hall cannot get her cactus to flower for the holidays unless she moves it out of the light each evening, for about 3 weeks. Temperatures in the 2 offices would be very similar.

In 1964 G. M. Fosler at the University of Illinois revised Circular 801, entitled "Flowering Gift Plants. Their care and how to rebloom them." It is an outstanding and very valuable publication, but unfortunately it also is out-of-print. I have heard they do plan to publish another edition, and I will advise our readers when it is available.