

# Holiday Cacti Production Tips.

Richard J. McAvoy

Assistant Professor and Extension Specialist  
Greenhouse Crops.

Flowering cacti produced for holiday sales include cultivars from the species *Schlumbergera truncata*, the Thanksgiving cactus, the hybrid cross *Schlumbergera x buckleyi* (*S. russelliana* x *S. truncata*), the true Christmas cactus, and the species *Rhipsalidopsis gaetneri*, the Easter cactus. The Thanksgiving cactus (*S. truncata*) is the species most often forced for Christmas season sale (November to December) and is often referred to by the generic common name 'Christmas cactus'.

In nature, holiday cacti are tropical epiphytes from the mountainous regions of Brazil. Epiphytes grow anchored on other plants, usually trees, and obtain water from rain and nutrients from the organic litter that collects in crevices of the trees on which they grow. Epiphytes require different cultural practices than many of the terrestrial plant species grown in the greenhouse. This is especially true with respect to water and fertilizer management. More on this later.

Thanksgiving, Christmas and Easter cacti can be distinguished from each other by the shape of their phylloclades or flattened, green stem segments. The Thanksgiving cactus (*S. truncata*) has tooth shaped projections on the phylloclade margins, the Christmas cactus (*Schlumbergera x buckleyi*) has lobed shaped phylloclade margins and the Easter cactus (*Rhipsalidopsis gaetneri*) has even margins which lack teeth, lobes or notches. The remainder of this article will address Thanksgiving and Christmas cactus production practices.

Thanksgiving and Christmas cacti are propagated from single phylloclade segments. Stem segments are rooted between December and March for Christmas holiday season sale the following year. To produce larger plants, propagate in December. Smaller plants can be rooted later. Maintain a temperature of 70°F in the propagating medium and use a well-drained medium. Good drainage is extremely important for

propagating as well as for holiday forcing. During propagation, long days are required to maintain vegetative growth. A four (4)-hour night interruption with an incandescent light source (10 foot candles) will do.

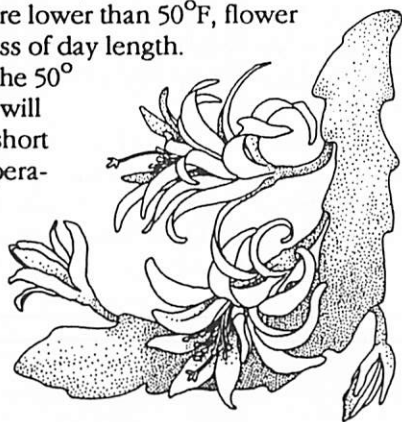
Cuttings can be rooted directly into the production containers or rooted and then transplanted into 3 1/2- or 4-inch pots. Use three to four cuttings per pot, more in larger containers. Continue night lighting until early April to maintain vegetative growth. Best vegetative development will occur at 65° to 68°F night temperature. Use a well-drained medium such as a peat-lite mix with 40% perlite with a pH of 5.5 to 6.5. **Holiday cacti are light feeders**, fertilize once per week during the vegetative growth phase with 200 ppm N from a 20-10-20.

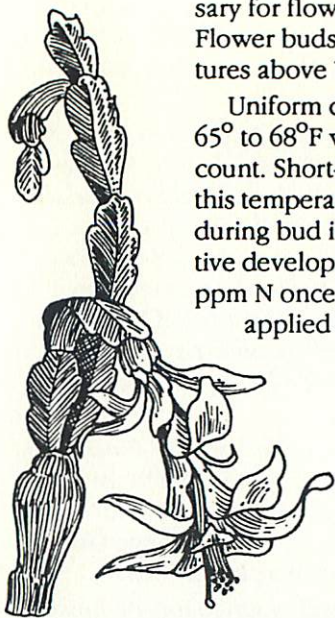
Repeated pinching is required to force branching. Pinch back to one phylloclade following transplant in March. In June, pinch again to two to three phylloclades. Continue to maintain 68°F to maximize branching. 6-Benzyladenine (BA) can be applied at a rate of 100 ppm to increase branching.

Commercially available cultivars will begin to initiate flower buds, under natural light conditions, during early September to October. Flowering will occur in November for some cultivars or as late as January for others (see Table 1). The timing of flower initiation can be controlled with temperature and photoperiod. Once flower buds initiate and are visible, the rate of flower development can be controlled with temperature.

Christmas and Thanksgiving cactus response to photoperiod (long or short days) will depend on temperature. When night temperatures are lower than 50°F, flower buds will not form regardless of day length.

When temperatures are in the 50° to 59°F range, flower buds will form under both long and short day conditions. When temperatures are between 60° and 70°F, short days (less than 11 hours) are necessary for flower bud formation to occur. Flower buds do not initiate at night temperatures above 75°F.





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Uniform day and night temperatures of 65° to 68°F will produce the highest bud count. Short-day conditions are necessary at this temperature range. Reduce fertilization during bud initiation to discourage vegetative development. For example, use 200 ppm N once every two weeks. **Note:** BA applied (100 ppm) during bud initiation can be used to increase bud count. BA is marketed commercially under the trade name "Pro-shear" (E. C. Geiger).

Flower bud initiation will only occur on mature phylloclades, and plants must have a minimum of four mature phylloclades in

order to flower. Therefore, immature phylloclades should be removed prior to the onset of flower initiation. Also remove mature phylloclades which detract from the overall shape or appearance of the plant at this time. This process is called "leveling." Level plants by twisting off unwanted phylloclades. Do not cut or tear off, or the bud initials will be damaged.

Phylloclades which are removed can be used to propagate next year's crop. Store the cuttings in the dark at 40° to 45°F. Phylloclades can also be stored at higher temperatures (50° to 55°F) in the light, for up to six weeks, if high humidity conditions are maintained.

Once flower buds are visible (1/8- to 1/4-inch long), temperatures can be lowered to slow development or increased to accelerate development. At 50°F, bud development can be held in check without bud abortion. Long-day conditions can be used to delay flower bud initiation if a later sales period is targeted. For example, growers can delay flower initiation of earlier flowering cultivars (see Table 1) by using four to six weeks of photoperiod lighting (at 68°F) starting in early September. This will promote vegetative growth and prevent flower bud initiation.

Once flower initiation is desired, pull black cloth to maintain an eight-hour photoperiod (day length). In mid- to late-October, natural day lengths will suffice. Optimum flower bud initiation will occur in response to six weeks of short days (Note that some buds will initiate following four weeks of short days, but the number will be significantly less than desired). After flower buds have initiated, day length will not affect bud development.

**Table 1. Relative flowering period under natural day-lengths for selected commercial cultivars.**

Cultivar	Flower color	Plant height
<i>Flowers Early to Mid-Nov. Under Natural Light Conditions</i>		
Christmas Charm	Magenta Purple	5 inches
Christmas Fantasy	Peach Pink	6-7 inches
Dark Red Marie	Scarlet Red	6-7 inches
Eva	Lavender	5-6 inches
Lavender Doll	Light Lavender	6-7 inches
Rocket	Magenta Purple	6-7 inches
Starbrite	Crimson Red	4-5 inches
Thor-Britta	White	5 inches
Twilight Tangerine	Deep Orange	5 inches
White Christmas	White	6-7 inches
<i>Flowers Mid- to Late November Under Natural Light Conditions</i>		
Barbara	Magenta Purple	5 inches
Bridgeport	White	5 inches
Christmas Flame	Yellow Bronze	5 inches
Frida	Salmon Orange	7-8 inches
Gold Charm	Pale Yellow	6-7 inches
Illona	Salmon Orange	6-7 inches
Kris Kringle	Crimson red	4-5 inches
Lavender doll II	Deep Lavender	4-5 inches
Linda	Scarlet red	5-6 inches
Red Radiance	Crimson Red	4-5 inches
<i>Flowers Early to Mid-December Under Natural Light Conditions</i>		
Dark Sonja	Deep Lavender	7-8 inches
<i>Flowers Late December Under Natural Light Conditions</i>		
Christmas Magic II	Purple Red	4-5 inches
<i>Flowers Late January Under Natural Light Conditions</i>		
Sch. x buckleyi	Cherry Red	9-10 inches

Trials were conducted at the University of Massachusetts (Boyle, 1991).

Market plants when buds show color. Individual blossoms will last for six to nine days and plants will flower over a four-to six-week period.

Holiday cacti are susceptible to attack by a number of stem and root rot organisms including *Pythium*, *Phytophthora*, *Fusarium* and *Rhizoctonia*. Use a well-drained potting medium, avoid overwatering and apply fungicides to control these pathogens.

Fungus gnats represent the most common insect problem on holiday cactus. Cultural control methods (i.e. careful watering, controlling algae and slime) in conjunction with pesticides should be used to control fungus gnats. Diazinon will injure Christmas cacti and should not be used.

There are a number of advertized sources of plant material including: B.L. Cobia, Inc. (Phone 407-656-7060, FAX 407-656-7208), Feaster Hort. Corp. (Phone 813-729-4900, FAX 813-723-2432), Sunlet Nursery, Inc. (Phone 619-728-9028, FAX 619-728-1076), Warfield's Nursery (214-856-6912) and Baker Greenhouses, Inc. (1113 Herkimer Rd, Utica, NY 13502).

#### **References:**

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