

Liberty High students grow and sell poinsettias and ferns. These plants require similar growing conditions and thus are compatible for raising together in a greenhouse.



## Growing for the Holidays

### *Agriculture students in Tennessee gain experience raising and selling greenhouse poinsettias in soilless mix*

Article and Photos by Carolyn Tomlin

**I**n years past, the poinsettia was a little-known plant seen only in conservatories and botanical gardens. Decades of plant breeding have changed that. The plant with the showy red and green leaves is now a staple of holiday plant sales for high school agriculture programs across the United States.

At Liberty Technology Magnet High School in Jackson, Tenn., agriculture students grow a big crop of poinsettias and sell them during the holidays. "It's a long process from beginning to end," said Teresa Crouse, program director at Liberty.

Nine hundred tiny cuttings of the cultivar 'Freedom' are purchased from the Jolly Farmer Co. "This one has fewer problems and is very forgiving for students," Crouse said.

Liberty students got right to work raising poinsettias soon after school began in August. Two seedlings are placed in an 8-inch pot filled with Fafard Middleweight Mix #2B, a soilless growing mix composed of peat moss, perlite, vermiculite and aged pine bark.

"This is a critical period, as too much water will cause rot," Crouse said. "After a few weeks,

the stronger plants will be left and the weaker ones removed, leaving 450 plants to grow and sell before the holidays."

With about 100 students involved in the school's agriculture program, there are plenty of bodies available for watering and fertilizing duty.



Students use discarded wooden pallets and concrete blocks to build inexpensive platforms for growing and selling poinsettias.



Preventive maintenance is vital to the success of a greenhouse. All equipment and containers must be cleaned regularly to prevent insects and fungi from spreading.



Liberty's greenhouses are sprayed for insects and fungi during summer months to ensure a near pest-free environment when poinsettias from Jolly Plant Co. arrived soon after school began in August.

Two-thirds teaspoon of Marathon insecticide is added per 8-inch pot. The pesticide lasts for 3 to 4 months and is usually applied only once. Protective gloves are always used when handling chemicals.

### Challenges in the Greenhouse

Student growers learn about the requirements of hydroponic and greenhouse culture, Crouse said. Poinsettias are a tropical plant, so temperatures inside the greenhouse must be carefully monitored. Daytime temperatures should be 70 F; nighttime around 60 F. They also must be careful not to overwater, check daily for signs of insect and disease pests, and maintain correct spacing to avoid overcrowding on greenhouse tables.

"Last season, only 5 plants were lost from the 400 grown," Crouse said. And the high quality for her part, Crouse has learned to place her poinsettia order early to receive a larger discount and to have everything ready

to place in pots when the tiny plants arrive. She advises other teachers and students who may want to begin a school-based greenhouse plant program to start small and slowly increase the number of plants annually. Each year she orders an additional 100 plants.

### Crop Production

By using a plant growth regulator (PGRs), growers can control internode stretch. Without this chemical, plants grow too tall for sale or the stems become too weak to withstand the stress of transportation. Envi-



Liberty students check the 450 poinsettia plants for insects and wilted leaves each day. During high temperatures the plants are watered a small amount daily.

ronmental conditions, such as temperature, relative humidity and light intensities affect growth rate and potential internode stretch. Other factors affecting unwanted stretch include irrigation practices, spacing and crop scheduling.

Several PGRs brands used for poinsettias are A-Rest, B-Nine, Yokel, and Somatic. Be aware of each product's level of activity and its application requirements before applying. Determine which PGR to use by the stage of growth when the product is applied and the amount of growth control or level preferred.

During the developmental stage, the use of PGRs is limited. Throughout propagation, cuttings are treated with a growth retardant and are unlikely to stretch during this period. Active growth begins when roots establish themselves into the growing medium. Pinching removes new growth and is done if cuttings already have adequate node count. Internode spacing will not change, so applying PGR is not necessary. Exceptions include if the plants grow in a non-pinched form, premature lateral branching develops prior to pinching, or a greater node count is desired before pinching can occur. A spray of Cycocel at a low concentration (1000 ppm) can be applied if the above exceptions occur.

### To Market, To Market

Before each poinsettia leaves the greenhouse, the plant is placed in a foil container and tied with a large bow. Tips for keeping the plant healthy include placing them in a sunny window, watering when dry, cutting a hole in the foil wrapper and setting the plant in a saucer.

Liberty students also add an all-purpose household plant fertilizer, such as Schultz 10:5:10, to help maintain rich green foliage and promote new growth after the holidays. With good care the poinsettias may last for several months, even until frost is over, at which time the plant can be

cut back and placed in the garden.

Students produce a high-quality plant, and they have no trouble selling what they grow, Crouse said. Orders for poinsettias start coming in by October, and most are sold by Thanksgiving. Profit from plant sales covers the cost of equipment and supplies for the agriscience program, making it self-sufficient. Students learn business and marketing skills along with agriscience. "It's a win-win situation for students." 🌿

*Carolyn R. Tomlin writes for numerous educational publications from her home in Jackson, Tenn.*

### References & Resources

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- [www.ecke.com/html/tibs/tib\\_chemical\\_gr.html](http://www.ecke.com/html/tibs/tib_chemical_gr.html)
- [www.urbanext.uiuc.edu/poinsettia/faq.html](http://www.urbanext.uiuc.edu/poinsettia/faq.html)
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Pots are first filled with a soilless growing medium such as Fafard Middle-weight Mix #2B.



After pots are filled with soilless mix, students plant two poinsettia starts in each pot and add more mix to the correct level.



Liberty student T.J. Stewart checks the humidistat.



A student inserts a finger up to the knuckle to determine if a poinsettia plant has adequate moisture.