

# NEW POINSETTIA VARIETIES, SLOW-RELEASE

## FERTILIZERS = SUCCESS

W. Walter Scholtz III<sup>a</sup>

Poinsettia varieties recently introduced seem to require a different fertilization program than was needed on varieties such as "Indianapolis Red" or "Barbara Ecke Supreme". Fertilizer recommendations of 250 to 300 parts per million N and K at each watering have been made for the variety "Eckespoint C-1". In many instances the foliage still was not as green as desired. Osmocote, applied as a top dressing, was used in the 1969 N. C. State poinsettia studies to maintain the rich green foliage that is indicative of a satisfactory fertilizer program. Paul Ecke Poinsettias in 1968 suggested a slow release dry fertilizer (Osmocote 18-9-9, 2 teaspoons/6" pan) for Eckespoint hybrids. In 1969 the suggested rate had been increased to 3 to 4 heaping teaspoons per 6" pot.

Many flower growers have used Osmocote in their fertilizer programs for several years, and the product is well known in most segments of the floricultural industry. The material 3M Cap F is only in an early stage of research at this time. In this nutritional study on new poinsettia hybrids the slow-release fertilizers Osmocote 14-14-14 and 3M Cap F (25-0-0) were compared. A soluble fertilizer, 20-20-20, was used as a control. The fertilizer treatments were:

1. Osmocote 14-14-14 top dressing, plus a weekly application of 20-20-20 at 300 ppm.
2. 3M Cap F top dressing, plus a weekly application of 20-20-20 at 300 ppm.
3. A weekly application of 20-20-20 at 300 ppm.

<sup>a</sup>This study was conducted as an undergraduate research problem in the Department of Horticultural Science, N. C. State University, Raleigh. The author was a senior in the department, and is now employed at Scholtz Greenhouses, Charlotte, N. C. Roy A. Larson served as faculty advisor for the experiment.

The author is grateful to Paul Ecke Poinsettias, Encinitas, California for plant material; 3M Company, St. Paul, Minnesota for 3M Cap F; Sierra Chemical Company, Newark, California, for Osmocote; Robert B. Peters Company, Inc. for 20-20-20.

The slow release fertilizer top-dressings were applied a week after potting, at 1 tablespoon/6" pot. Dolomitic limestone (14 oz/2 cu. ft.) and superphosphate (7 ozs/2 cu. ft.) were incorporated in the medium at time of potting. The potting medium consisted of 2 parts sandy loam soil, 2 parts acid peat moss, and 1 part coarse sand, on a volume basis.

The poinsettia varieties used in the study were "Eckespoint D-1", "Eckespoint D-3" and "White Annette Hegg". The plants were received and planted on March 4, 1970. There were 3 cuttings/6" pot, and 4 pots of each variety in each fertilizer treatment. The plants were grown at a minimum night temperature of 65°.

The desired flowering date for these plants was in mid-May to coincide with the N. C. Commercial Flower Growers' short course. The plants were grown under long days from March 4 to March 9 and then placed under a 9-hour day length. This allowed 10 weeks for flowering.

### Results

The 3 varieties had the same response to the fertilizer treatments. The foliage was dark green in the Osmocote and 3M Cap F treatments, and much lighter in color when the soluble fertilizer was used alone. The plants were taller, and the leaves and bracts were larger, in the slow-release fertilizer treatments. These differences are shown in Tables 1 and 2.

Table 1. The influence of fertilizer treatments on height of 3 new poinsettia hybrids. The study was conducted from early March to mid-May, 1970

Variety	Fertilizer treatment <sup>a</sup>	Plant height in inches
"D-1"	Osmocote (14-14-14)	14.0
	3M Cap F (25-0-0)	13.5
	20-20-20	12.5
"D-3"	Osmocote (14-14-14)	13.5
	3M Cap F (25-0-0)	14.5
	20-20-20	12.5
"White Annette Hegg"	Osmocote (14-14-14)	14.0
	3M Cap F (25-0-0)	12.5
	20-20-20	10.0

<sup>a</sup> The slow release fertilizers were applied as top dressings at 1 tablespoon/6" pot. Supplemental fertilization was accomplished with weekly applications of 20-20-20 at 300 ppm.

There was very little height difference between the Osmocote and 3M Cap F treatments, for all 3 varieties. The average plant heights ranged from 12.5 to 14.5 inches, considered to be a suitable height for home use. Plants of the variety "White Annette Hegg" were most affected by the fertilizer treatments, as the control plants were only 10 inches tall.

Table 2. The influence of fertilizer treatments on the bract diameter of 3 new poinsettia hybrids.

Variety	Fertilizer treatment <sup>a</sup>	Bract diameter in inches
"D-1"	Osmocote (14-14-14)	18.0
	3M Cap F (25-0-0)	18.0
	20-20-20	16.5
"D-3"	Osmocote (14-14-14)	13.5
	3M Cap F (25-0-0)	13.5
	20-20-20	12.0
"White Annette Hegg"	Osmocote (14-14-14)	19.0
	3M Cap F (25-0-0)	18.0
	20-20-20	14.5

<sup>a</sup> The slow release fertilizers were applied as top dressings at 1 tablespoon/6" pot. Supplemental fertilization was accomplished with weekly applications of 20-20-20 at 300 ppm.

Bract diameter on "White Annette Hegg" was affected by the fertilizer treatment. The differences were not as pronounced with "D-1" and "D-3". The "D-3" bracts were considerably smaller than "D-1" or "White Annette Hegg" at time of measurement, but this was most likely due to delayed flowering on "D-3".

The evaluation of the 3 new hybrids might be of interest.

"D-1": The cyathia were visible 5 weeks after the start of short days, and the plants were in full flower 4 weeks later. The bract color was an intense red. Red bracts were evident 7 nodes down from the inflorescence. Representative plants are shown in Fig. 1A.

"D-3": Cyathia were visible 5 weeks after the start of short days, but 5 weeks were required for further flower development. The bracts were an intense red in mid-May, and 10 days later many of the bracts were reddish-black. Representative plants are shown in Fig. 1B.

"White Annette Hegg": The cyathia were visible in 4 weeks, and the plants were in full flower 5 weeks later. The bract color was greenish-white. Long bract petioles resulted in drooping bracts, and the plants always looked wilted. Representative plants are shown in Fig. 1C.

It was unfortunate that "Eckespoint C-1" or other well known varieties were not used for comparative purposes. March to May culture is somewhat reversed from October to December culture. Nevertheless, it was apparent that excellent plants were produced with the slow release fertilizers plus a weekly application of a soluble fertilizer at 300 ppm N, P and K.

## Summary and Conclusions

1. Osmocote (14-14-14) or 3M Cap F (25-0-0), applied at 1 tablespoon/6" pot, resulted in high quality plants when a supplemental fertilization with 20-20-20 (300 ppm) was applied once a week. Only one top dressing was required during the study (March 4 to May 21, or 11 weeks).
2. Plants of all 3 varieties were salable, and received favorable comment by many people in attendance at the N. C. Commercial Flower Growers' Short Course held in Raleigh.
3. Flower bud initiation occurred most rapidly on "White Annette Hegg" plants, while initiation occurred simultaneously on "D-1" and "D-3". The varieties "D-1" and "White Annette Hegg" were in full flower 9 weeks after the start of short days, while "D-3" flowered 1 week later.

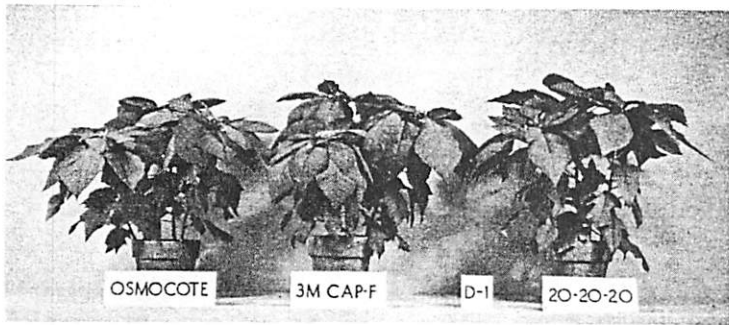


Fig. 1A  
"Eckespoint D-1"

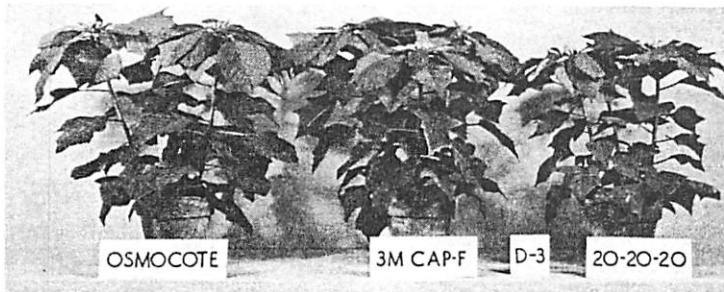


Fig. 1B  
"Eckespoint D-3"

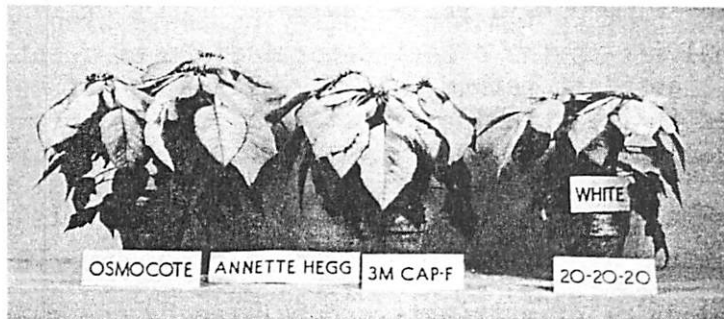


Fig. 1C  
"White Annette Hegg"

Fig. 1. Poinsettia hybrids fertilized with Osmocote, 3M Cap F and 20-20-20. The plants were potted March 4, short days were started March 9, and the photographs were taken May 21, 1970.