

PREDICTING POINSETTIA HEIGHT

by John G. Seeley, Cornell University

Growers are interested in predicting poinsettia height. The following discussion is based on information reported by Harry Tayama of Ohio State University (2), Ralph Freeman of Suffolk County Cooperative Extension (1), as well as measurements in Chemung and Erie Counties in the 1979 season.

Tayama had reported that if a grower measured the branches of some representative *pinched* plants 4 weeks after the start of short days, and if no growth regulator is applied after that time, those particular branches would double in length; this would not be a doubling of plant height. He suggested that if the doubling would result in plants that would be too tall at sale time, then the grower should make an additional Cycocel application. The measurements would probably be made about October 25-28.

In the 1978 season, Freeman pinched poinsettia plants on September 11, measured the length of the uppermost break on October 23 (4 weeks after the start of the short day treatment) and again on December 4. He reported that with plants *not* treated with Cycocel, the shoot length increase was 65% (not the 100% reported by Tayama) and on Cycocel-treated plants (one application of 1:40 rate), the shoot increase was 44%.

A *sincere thank-you* goes to Cooperative Extension Agents John H. Potter of Chemung County and Walter Nelson of Erie County for obtaining and submitting additional information in the 1979 season.

In Table 1, Part A are the data for 4 growers in Erie County, each with a different retardant treatment on pinched Annette Dark Red Hegg. The length of uppermost branches was measured October 20, which would be 3-4 weeks after start of natural short days and again on November 27 which would be 7 weeks later, as plants were approaching sale time. Note that with growers 1, 3 and 4 the increases in length of the upper branches were from 70 to 77%, with the greatest elongation by plants given only 1 application of Cycocel at 1:80. The plants with 1 application at 1:70 or 2 applications at 1:80 increased in length 73 and 70%, respectively.

For Grower 2, who used 3 applications of 1:60 Cycocel, the increase in length of the branches was only 33%.

To put the above data in perspective in relation to *total plant height*, I assumed 5.5 inches from the edge of the pot to the height of the pinch. From the data in Table 1, Part B, one sees that the calculated *total* plant height increased about 37% for Growers 1, 3, and 4 but only 18% for Grower 2 who gave 3 applications of Cycocel at 1:60.

In Table 2 are presented data from a Chemung County grower who applied 3 sprays of Cycocel at 1:80 to *pinched* Mikkelsen Improved Rochford and 3 sprays to plants *not pinched*.

The data for Group 1, Part A, show that the average increase in length of the uppermost shoots was 84% which was greater than Growers 1, 3, and 4 in Erie County, and considerably greater than Grower 2 who also used 3 Cycocel sprays but at 1:60 rather than 1:80, and probably on different dates than for the Chemung County grower.

The data in Part B show that plant height measured from the edge of the pot to the top of the plant increased an average of 63% between the time of pinch on September 5 and the final measurement on November 27. These data cannot be compared with those of Erie County because in the latter case the data were calculated from an October 20th measurement and an *assumed* height before the pinch. Also there was a difference in cultivars and last year in my measurement of the uppermost branch on November 17 and December 13, Annette Hegg Supreme increased 34% and Improved Rochford increased 22%, even though grown with the same cultural treatments.

(continued on page 5)

Table 1. Erie County—Annette Hegg Dark Red pinched

A. Measured Length of Uppermost Branch						
†	§	Retardant treatment	Length of uppermost branches (inches)		Increase in length	
			10/20	11/27	Actual (inches)	Approx. %
1	5	Cycocel, 1:70 with 4 t. B-9/gallon on 10/5	5.8	10.1	4.3	74
2	7	3 applications of Cycocel, 1:60	6.6	8.8	2.2	33
3	7	1 application of Cycocel, 1:80 on 10/13	5.1	9.0	3.9	77
4	7	Application of Cycocel, 1:80, on 9/10 and 10/1	6.3	10.7	4.4	70

† Grower	§ No. of plants	B. Calculated Height of Plant from Edge of Pot to Top of Plant Assuming 5.5 inches below the pinch.*			
Grower		Height pot to top (inches)		Increase in height	
		10/20	11/27	Actual (inches)	Approx. %
1		11.3	15.6	4.3	38
2		12.1	14.3	2.2	18
3		10.6	14.5	3.9	37
4		11.8	16.2	4.4	37

*Height below the pinch was about 4-7 inches.

Table 2. Chemung County—Mikkelsen Improved Rochford in 6" mum pots. Height measured from top of pot to top of plant. Cycocel spray of 1:80 concentration. Data are average of 10 plants, all in one establishment.

GROUP 1. PINCHED 9/5—Cycocel spray 8/20, 8/31, 9/28				
A. Measured length of uppermost branch				
	Length of uppermost branch (inches)		Increase in length	
	10/16	11/27	Actual (inches)	Approx. %
Average of 10 branches	4.9	9.0	4.1	84

B. Measured height from edge of pot to top of plant				
	Height, pot to top of plant (inches)		Increase in height	
	9/5	11/27	Actual (inches)	Approx. %
Average of 10 plants	7.2	11.7	4.5	63

GROUP 2. NO PINCH—"STRAIGHT UP"—Cycocel spray 9/7, 9/17, 10/16				
	Height (inches)		Increase in height	
	10/16	11/27	Actual (inches)	Approx. %
Average of 10 plants	8.9	12.3	3.4	38

The data for Group 2 in Table 2 show that with unpinched Improved Rochford, the height increase between October 16 and November 27 was only 3.4 inches or 38.4%. The last Cycocel application was given on the date of the first measurement which was about 2-3 weeks after start of short days.



Conclusions

The major conclusion would be that one can expect various results depending on the number of treatments, the concentration, and timing of Cycocel treatments, and it is difficult to compare results from different growers because of lack of uniformity in the growth regulator treatments, as well as differences in other cultural conditions. A simple mathematical formula is not available.

One can arrive at some other conclusions, however:

1. The shoot length increases of *treated plants* of growers 1, 3 and 4 in Erie County and the grower in Chemung County were 70 to 84% and therefore greater than the 65% increase of *untreated plants* of Freeman, and very much greater than the 44% for *treated plants* of Freeman.
2. The shoot length increase of Erie County grower 2 was considerably less than for the other 4 growers. This may have been due to the use of 3 applications of Cycocel at 1:60, the timing of the applications, or other cultural factors.
3. All plants in the 1979 season had been given Cycocel treatments, so it is not possible to compare the results with those of Tayama. The only direct comparison that can be made is that Freeman's untreated shoots in the 1978 season increased 65% as compared to the 100% of Tayama.
4. *Unpinched plants* can be retarded in height by *proper Cycocel applications*.
5. Growers need to keep records of the timing of their various cultural practices, especially the dates of application and concentration of growth retardants in relation to time of propagation, time of pinch, start of short days, temperature and cultural factors as well as cultivar so they can develop information for their own guidance in subsequent seasons.

Articles Cited

1. Freeman, R. F. 1979. Review of research—Predicting the height of poinsettias. Long Island Horticulture News. July. p. 7.
2. Tayama, H. K. 1978. Quality poinsettias—Tips on how to improve them. Florida Ornamental Growers Association Newsletter #2, May.

Gortzig on Leave; Good Serves As Acting Dept. Chairman

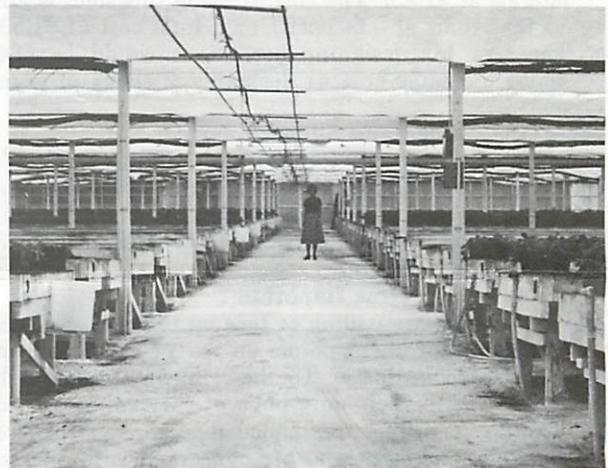


George Good

every crop production and landscape horticulture. He is well known among extension audiences throughout the State.

While on leave, Gortzig will undertake several studies concerning the Department's long-range program. As a part of this effort, he will visit a number of other universities to observe their horticulture programs and will visit major horticultural production areas and firms. He will be located in Ithaca for several months this fall but will travel during the winter and spring months.

Professor James W. Boodley is serving as College Floriculture Industry Program Leader during Gortzig's absence. The Program Leader is responsible for coordinating the floriculture extension program throughout the State. He works closely with College faculty and Cooperative Extension field staff in these efforts.



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