

Agricultural Development and Advisory Service

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CONTRACT REPORT

C87/0360 (1987/88)
Pot Chrysanthemums:
Shoot Length Trial
for
Horticultural Development Council

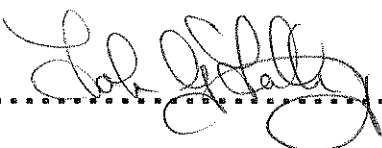
COMMERCIAL IN CONFIDENCE

PRINCIPAL WORKERS

S R Ellis Bsc Hons. Hort. (author of report)

AUTHENTICATION

I declare that this work was done under my supervision according to the procedures described herein and that this report represents a true and accurate record of the results obtained.


.....

J G Farthing

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Date.....13/10/88.....

Report authorised by:..........

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POT CHRYSANTHAMUMS: SHOOT LENGTH TRIAL 1987/88

Summary

In report C87/0360 (1986/87) the effects of cutting type were investigated. The most important factor affecting growth was found to be the length of shoot on the mother plant from which cuttings were taken. The most uniform pots were produced when five similar cuttings were stuck into a pot, especially when all were taken from short shoots.

This trial aims to confirm the results obtained in 1986/87.

Materials and Methods

Treatments

- 1 Length of shoot on mother plant A: Long: 7-8 leaves left behind
B: Short: 2 leaves left behind

- 2 Combinations within a pot:
5A + 0B
4A + 1B
5B + 0A
4B + 1A

- 3 Sticking dates:
Week 49
Week 3
Week 5

Statistical design

Three replicates of each treatment at each sticking, each replicate plot consisting of eight pots.

Culture details

Stock plants: beds of chrysanthemum Purple Princess Anne were grown following standard commercial practice. Cuttings of approximately 40 mm length were taken from A, long shoots on mother plants leaving 7-8 leaves behind or B, short shoots leaving 2 leaves behind.

Before despatch to Lee Valley EHS the cuttings were treated with hormone root powder as is commercial practice.

Culture: subsequent culture followed standard commercial practice as in report. Complete crop diaries appear in Appendix I *to the Report*

Recording

A single recording was made when the majority of plants on the bench had reached normal marketing stage. The height of each individual plant in a pot and the stage of opening of the most advanced flower on each plant (after Cockshull 1972) was recorded on a scale of 1-8, 1 = bud tightly closed and 8 = flower fully open.

The standard deviations of the height and stage of flowering within each pot were calculated. This is a measure of the variability within a pot. A large standard deviation indicates a high level of variability.

Summary diary

Crop Week	Date stuck	Short days	Pinching	Recorded
49	4 Dec	22 Dec	8 Jan	17 Mar
3	14 Jan	29 Jan	12 Feb	11 Apr
5	2 Feb	17 Feb	29 Feb	18 Apr

Results

Effects of shoot length on growth and development of chrysanthemum

	5 short	4 short 1 long	5 long	4 long 1 short	LSD
Mean height (mm)	173	171	188	176	4.824
Standard deviation of height	15.1	16.5	14.9	16.0	-
Mean flower stage (1-8)	6.87	6.79	7.03	6.92	-
Standard deviation of flower stage	0.64	0.76	0.63	0.67	-

The statistical analysis can only be described as disappointing in the levels of significance achieved. The only significant effect observed was that of increased mean height of the cuttings from long shoots. There were no significant differences between mean flower stage or variability in flowering or of height. There were, however, trends observable in the data which matched observations at the time. In the case of both variability in height and flowering, the pots containing mixed cutting types were least uniform. Those containing all or mostly cuttings from long shoots were the tallest and most advanced.

Discussion

Observations: At open days growers were asked to pick out the most uniform and advanced pots without being informed of the treatments. Most were readily able to identify the pots containing five long shoots as being those which were most advanced, those containing five short shoots the least advanced. Pots containing mixed shoot lengths were equally readily identified because of the greater variability, especially in stage of flower development.

Again, the plants grown from the cuttings taken from long shoots were the most advanced in flowering. These effects can be explained by premature budding on long shoots caused by the shoots reaching the natural long day leaf number at which flowering will occur regardless of daylength.

Conclusions

Even in the absence of statistically significant results the trial demonstrated clearly, at least to the growers viewing the plots, the importance of careful stock bed management to ensure that cuttings are taken from shoots of a consistent length.

Future work

It is not anticipated that any future work will be required.

Appendix I - Crop Diary

Operation	Dates		
	Crop 1 Week 49	Crop 2 Week 3	Crop 3 Week 5
Sticking, Purple Anne covered with polythene	4.12.87	14. 1.88	2. 2.88
Alar applied at 0.75 g/litre	7.12.87	18. 1.88	5. 2.88
Polythene removed	16.12.87	24. 1.88	12. 2.88
Alar applied at 3 g/litre	14.12.87	25. 1.88	13. 2.88
Plants half spaced to 200 mm x 200 mm, feeding commenced	22.12.87	29. 1.88	17. 2.88
Pinching	8. 1.88	12. 2.88	29. 2.88
Plants now at full spacing (300 mm x 300 mm)	8.1.88	18. 2.88	8. 3.88
Alar applied at 4.5 g/litre	23. 1.88	22. 2.88	10. 3.88*
Alar applied at 3 g/litre	1. 2.88**	29. 2.88	22. 3.88
Disbudding	23. 2.88	18. 3.88	8. 4.88
Recording, all plots	16. 3.88	11. 4.88	22. 4.88

* Alar applied at 4.5 g/litre

** Alar applied at 3 g/litre