



# Colorado Flower Growers Association

IN COOPERATION WITH COLORADO A AND M COLLEGE

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## Carnations Can Be Cooled Too Much

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The widespread adoption of greenhouse cooling by the florist industry has outstripped research, especially on certain effects of cooling on plant growth.

Facilities for basic temperature research were constructed at Colorado A & M this past spring and summer. Four compartments of equal size and with equal light have been provided. Each compartment is approximately 15 feet wide and 17 feet long. This report deals with the preliminary experiment in three of these compartments.

Rooted cuttings of the variety Pink Sim were planted May 14 and pinched June 14. Cooling was also started on June 14. The three compartments were cooled in the following manner:

House A - Cooled with exhaust fan and evaporative pad with automatic temperature control set to cut fan on in the morning at 70°F and off in the evening at 70,

House B - Cooled the same as A except fan cut on and off at 60°F, and

House D - Cooled with exhaust fan only, control set to cut on and off at 70°.

Flowers were cut from August 20 to October 8. Stems were cut to the origin and graded by a combination of weight and stem length. The experiment was terminated

when the majority of flowers had been harvested from the earliest treatment. The following chart shows the effects of the three treatments on timing and grade of flowers.

House	Flowers Cut	Splits, etc. *	Short	Standard	Fancy
A	420	20 4.8%	3 .7%	165 39%	232 55%
B	247	13 5.3%	2 .8%	101 41%	131 53%
D	283	39 13.8%	29 10%	202 71%	13 4.5%

\*Includes some bullheaded and slabsided flowers.

House B which was set for the cooling to operate at 60 degrees and above required 3 to 6 hours more running time for the fan than did house A which was set to operate

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at 70°. These extra hours were during early morning and late evening. During most of the day these two houses were at the same temperature since both have the same fan capacity and pad area.

The results presented in the chart show:

- (a) the outstanding effects of cooling on growth and quality (A vs. D),
- (b) the delay that may be expected by under-

- cooling even though grade remains equal (A vs. B), and
- (c) the speed-up in growth and timing obtained by evaporative pad cooling when not overdone (A vs. D).

Future plans include a repeat of this experiment with high pressure mist added for comparison studies.

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