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Two-Year Culture of Carnations

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Last year we tried 5 different methods of preparation of carnation plants for the second year of production. One group of plants was cut continuously. Another group was pinched in June and July, thereby reducing the fall production. These two treatments produced the most flowers and the lowest average quality.

Two systems of thinning were tried. In one the plants were thinned by removing 3 of the original 7 plants in each row. Each plant was pruned to 2 or 3 of the strongest original breaks in still another treatment. These treatments improved quality over other methods. Production was in favor of pruning the individual plants.

A fifth method of handling was a complete cut-back of plants at a point about 10 inches above the soil line. This cut-back was done June 10 and took the plants out of production until Dec. 1. The average quality was almost as good as from the 2 thinning methods. The production was greater from December until May from this method, but the total production was reduced below that from other treatments.

Each treatment occupied 3 randomized plots comprising a total of 35 square feet of bench area. Production totals in Table 1 are for the treatments rather than the plots.

Table 1. Production and quality index of 2-year carnations handled in 5 different ways.

Treatment	Production			Q.I./a
	Total	After Dec. 1	Per ft ²	
Thin plants	1099	517	31.4	4.29
Thin breaks	1211	600	34.6	4.25
Continuous cutting	1358	576	38.5	4.19
Pinch June, July	1330	745	38.0	4.15
Cut back June 10	914	914	26.1	4.23

a/ Q.I. (Quality Index) is obtained by adding the splits x 2, shorts x 3, standards x 4 and fancies x 5. This total is then divided by the total production.

All treatments except the June cut-back produced a large percentage of their flowers before December 1. This summer and fall production decreased the average quality for the treatments, however all treatments produced more fancy and as many or more standard flowers than the June cut-back. Production by grade is shown in Table 2.

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Table 2. The quality of flowers produced by 5 treatments.

Treatment	Split	Short	Stand.	Fancy	Total
Thin plants	56	67	479	497	1099
Thin breaks	81	47	570	513	1211
Cont.					
cutting	55	103	731	469	1358
Pinch June,					
July	24	92	868	346	1330
June 10					
cut-back	25	45	536	308	914

Another point worthy of note is the distribution of production from the various methods of handling these carnation plants. Roughly 50 per cent of the production from all treatments except the June cut-back came before December 1. All of the production from the latter treatment came after December 1, with very heavy production in January, February and March. This heavy load during the winter caused considerable weakness and reduced the quality of the flowers. The largest December cut came from those plants which were pinched in June and July. Table 3 gives the distribution of production by periods.

Table 3. Production by periods from 5 methods of handling.

Treatment	June 11- Sept. 1-		Jan.	April 1-		Total	
	Aug. 31	Nov. 30		Dec. Feb. Mar.	May 9		
Thin plants	239	342	87	195	115	120	1098
Thin breaks	266	345	97	212	138	153	1211
Continuous							
cutting	356	426	93	195	151	137	1358
Pinch June,							
July	333	252	137	237	177	194	1330
Cut back							
June 10	0	0	115	358	237	194	914

DISCUSSION AND SUMMARY

No one of the 5 methods of handling carnation plants for 2-year production can be considered ideal. Results from all the treatments contribute to our meager fund of knowledge on this phase of carnation growing.

No attempt was made to precondition the plants for cutting back or thinning, but this is one of the most important points in 2-year culture of carnations. Flowers should be cut low during the spring to thin the growth and let in light. Removal of excess growth from the lower portion of plants will accomplish the same objective. This operation should be done in March and April. New growth originating from these cuts will be below the point of cut-back and will help to carry the plants through the summer. This early cutting will also spread the crop and improve the quality.

June 10 is too late to cut back Sim varieties and still make the Christmas market. May 20 to June 1 seems a better bet. The heavy cut from June 10 cut-back came January to March.

A combination of cut-back plus thinning the resulting breaks seems to offer the most promise of raising the quality of second-year carnations. Benches for carrying over should be determined early so they can be thinned and put into condition for cutting back.