

The Effects of Thinning on Production and Grade

By W. D. Holley

The practice of removing some of the branches to limit the production load per plant is well established in chrysanthemum culture. This practice reduces the competition between branches, lessens crowding and results in a product of higher quality. The severity of pruning on chrysanthemums often varies with the market being supplied and the time of the year.

A count of the breaks or branches on most carnation plants will reveal that many of them actually never produce a flower. If plants are allowed to become too heavy with vegetative growths, many of the stems will be inferior and weak. Experiments were designed in 1954 to investigate possible uses for thinning in carnation growing.

On First-year Carnations

Rooted cuttings of White Sim were benched in steam sterilized soil on June 9, 1954, at a spacing of 6 x 8 inches. Nine 4-row plots were separated by buffer rows so that when thinning treatments were made later they could be randomized and replicated three times. Buffer plants were of a salmon sport of Pink Sim. The buffer row adjacent to any thinning treatment was thinned the same way. Plants in this test occupied a north bench in an east-west house.

The plants were pinched the first time on July 8. One branch per plant was pinched again on August 14 and on August 30. On October 6, the thinning treatments were set up as follows:

1. Thinned to 30 of the strongest stems per row of seven plants. Five stems were left on outside plants and four stems on inside plants.
2. Thinned to 37 stems per row with six stems on outside and five stems on inside plants.
3. No thinning. Number of stems were approximately 45 per row.

The weakest stems were removed at their origin in the thinning operation. Side breaks, where present on the remaining stems, were not removed but left for the second crop of flowers.

The first crop of flowers was cut to one or two side breaks which allowed a slightly heavier plant load on the second crop. Production was steady from late November to early May, when the records were terminated. Not all of the second crop had flowered at this time. Flowers were graded as cut into short and split, standard, and fancy categories, and an average grade (Q.I) calculated for each treatment.

Table 1. The effects of thinning on production and grade of White Sim carnations.

	Short & split	Standard	Fancy	Total	Quality index	Per cent fancy
Thinned to 30 per row	16	77	339	432	3.75	78.5
Thinned to 37 per row	21	112	363	496	3.69	73.2
No thinning	27	178	344	549	3.58	62.7

Quality index obtained by dividing the sum of short & split X 2, standard X 3 and fancy X 4 by the total production.

The most severe thinning produced the highest average quality and the largest percentage of fancy flowers. However, when total numbers are considered, there was little difference in number of fancy flowers produced by plants in the three treatments. Plants thinned to 37 per row produced 59 per cent and unthinned plants 131 per cent more standard grade flowers. Thinning, for the most part, removed breaks which would have grown into standard grade flowers.

Thinning on Second-year Carnations

One-year-old Pink Sim plants were pruned gradually from March to May of 1954. The resulting breaks were thinned on August 1, to 37 and 48 per row across a 42-inch bench. One set of plots was not thinned and carried an average of 60 breaks per row. These treatments were replicated three times along a 35-foot bench. The effects of this thinning on production and grade are shown in Table 2.

Table 2. The effects of thinning on production and grade of flowers from two-year Pink Sim.

	Short & split	Standard	Fancy	Total	Quality index	Per cent fancy
Thinned to 37 per row	40	179	345	564	3.54	61.2
Thinned to 48 per row	59	176	411	646	3.54	63.6
Not thinned 60 per row	66	249	441	756	3.50	58.3

Unthinned plants produced more total flowers, more fancy, and more standard grade blooms. The percentage of fancy flowers from each of the treatments was approximately the same, as was the quality index. Thinning to 48 stems per row reduced total yield 14 per cent and thinning to 37 per row reduced yield by 25 per cent.

Summary

The reduction of plant load by thinning increased the percentage of fancy blooms on first-year carnation plants but did not increase the total fancy blooms produced.

Thinning on second-year plants reduced yield in all grades.

Apology

Your editor failed to include a credit line to the Pennsylvania Flower Growers Bulletin 57 for the fine article on rose production costs which was reprinted in our bulletin 74. Our humblest apologies to Dr. John Seeley, editor of PFG bulletins.