

SOME THOUGHTS ON SINGLE CROP CARNATION PRODUCTION

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The second place where a grower will have to put some thought and gain experience is in the selection of varieties. Sim varieties will not necessarily be the best for single crop production. Because of secondary branch competition (1), less freely branching varieties should be examined. Likewise, a variety's suitability to a particular season of the year should be considered.

Of major concern will be the application of two environmental factors useful in reducing production time. These are photoperiod and temperature. Recent work on photoperiod indicates that a long photoperiod can reduce the time from planting to bloom by at least 10 percent (2). From the standpoint of single crop production it is useful to know that unwanted secondary branching is also reduced.

For temperature, information reported in 1960 becomes most pertinent. It was found then, that carnations could be grown in a 60 F greenhouse until the flower bud was split on top and then finished at 50 F. This produced good quality flowers, with 20 percent longer stems in about 70 percent of the time required for production in a 50 F greenhouse.

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Whether or not single crop carnation production becomes economically sound in producing carnations is yet to be seen. There are, however, several reasons why the method may become important. For instance, a more even, high quality crop in less time is certain from plants pinched once, harvested, and then removed. Furthermore, timing for peak demands in quantity and for different colors should be much easier. Management of cutting practices and number of growing points per unit area should be much easier. Insect and disease problems should be much reduced. Fewer layers of wire support should be necessary. Harvesting costs should be much lower. Varieties better matched to the season can be used.

To realize the full potential of single cropping there are, I think, five areas where growers are going to have to become particularly knowledgeable. The first of these—efficient management of soil sterilization and replanting—is almost too obvious. Still, this is the major area where costs can increase considerably. Chrysanthemum growers have become particularly efficient in this management practice. Surely carnation growers can do as well.

(3). This has been of little value in continuous cropping but has great potential for single crop production.

The fifth thing requiring special thought is spacing; i.e., the number of shoots and plants per unit bench area. The questions that must be answered include:

How many shoots should be carried per plant?

There is no firm answer to this question because it may depend upon spacing of the plants. However, a partial answer can be supplied. For 25 varieties grown with 3.2 plants per square foot there was a considerable lag in harvest of later shoots when more than 4 (in rare instances 5) flowers were harvested per plant (4). Since sharp cutout will be important in single crop production probably three or four flowers per plant will give best results.

How many plants should be used per unit area?

There are several possible satisfactory answers. Supposing that the optimum number of shoots per plant is constant year round, then reasonable choices would seem to be:

Wider spacing of plants during seasons with low light flux with rapid growing procedures; i.e., trying to keep production time relatively constant and varying production per square foot.

Constant spacing with lower temperatures during seasons of low light flux; i.e., trying to produce an equal number of flowers per square foot but varying the time necessary for production.

Constant spacing and constant temperature with a variation in the variety selected. In general, varieties suitable for winter production take longer to produce a crop—also true for chrysanthemums.

Of these possibilities the second seems to me the poorest solution and the third the best—provided appropriate varieties are available. A special drawback to the first solution is that the bench is not completely used in the early stages of growth. This wastes much light at a critical time, economically speaking.

Single cropping incorporating many of these changes in production technique is now being investigated at the San Jose Station by Tom Byrne and Tony Kofranek. The results of their experiments will help California flower growers make the right decisions on management of single crop carnations.

Literature Cited

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