

PLANTING DATES, TIMING, AND PRODUCTION OF MINIATURE CARNATIONS

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While the production of miniature carnations has increased rapidly in recent years, our basic cultural information about miniatures has not kept pace. Since the market for miniature carnations is less holiday oriented than that of standard carnations, cultural practices which favor a strong, constant supply of flowers should be investigated. An experiment was conducted in the past year at Colorado State University to determine how planting dates affect cropping of miniature carnations. Planting date is a cultural practice over which the grower has great control and which can be used to space out production of miniature carnations and insure a steady supply.

Materials and Methods

Three varieties, 'Silvery Pink', 'Exquisite', and 'Corona' were planted in each of four quonset-type greenhouses on May 15, June 15, and July 15, 1977. The four greenhouse covers were three-year-old fiberglass, eleven-year-old fiberglass, single-layer polyethylene (poly), and double-layer poly.

Cuttings were planted at four per square foot in soil ground beds measuring 3½ feet by 40 feet. One bed in each house was divided into thirds with each third containing three planting dates each with the three varieties.

Temperatures in each house were the same. Each house was cooled during the day at 70°F with a pad and fan system and

heated to 60°F by Modine unit heaters and convection tubes. During the winter, night temperatures in each house were maintained at 52°F.

Carbon dioxide levels were held near 650 ppm during the day when no ventilation occurred. All the beds were watered manually with a nutrient solution described by Hanan in CFGA Bulletin 343.

Plants were given a single pinch four weeks after planting. Pinching was done by breaking out enough terminal growth to leave six nodes per plant. Crops were cut below the second vegetative node. Stems were cut three times per week when at least one flower per stem was fully open. Numbers of stems cut from each plot were noted and compiled weekly from August 28, 1977, through the week of August 27, 1978.

Results

Figures 1 and 2 show the production of 'Exquisite' miniatures planted on three different dates under three-year-old fiberglass and double-layer poly. Under three-year-old fiberglass, plants from the May 15 planting bloomed September 18 and again in late April. June 15 plants bloomed November 13 and late April, and July 15 plants bloomed January 8 and in early May. Under double-poly, May 15 plants bloomed September 25 and in early May. June 15 plants bloomed November 6 and early May, and July 15 plants bloomed January 22 and late June. First crops from the three planting dates peaked six to ten weeks apart, but the second crops were much closer together. Production remained high throughout the summer.

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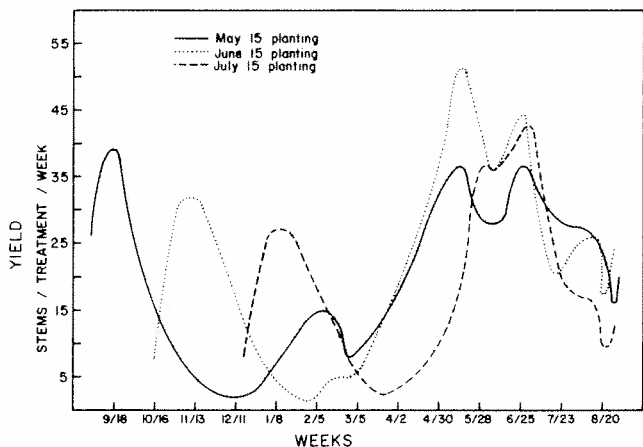


Figure 1. Relative weekly yield of 'Exquisite' miniature carnations planted May 15, June 15, and July 15, 1977 under three-year-old fiberglass. Plants were given a single pinch four weeks after planting.

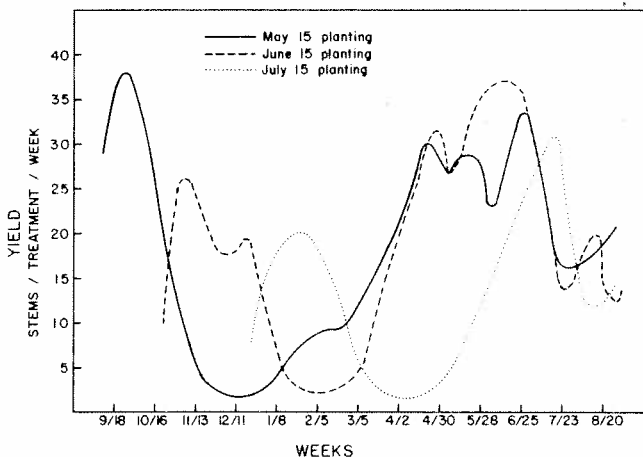


Figure 2. Relative weekly yield of 'Exquisite' miniature carnations planted May 15, June 15, and July 15, 1977 under double-layer polyethylene. Plants were given a single pinch four weeks after planting.

In the fall, 'Silvery Pink' was one to two weeks earlier than 'Exquisite', while 'Corona' was four to five weeks later. The second crop of 'Corona' was only one to four weeks later

than 'Silvery Pink' and 'Exquisite'. Second crops of 'Exquisite' and 'Silvery Pink' peaked together.

One-year production from May 15 and June 15 plantings was essentially the same for the three varieties (Table 1). However, production from a July 15 planting was always lower than either May or June plantings. Production was higher under three-year-old fiberglass than under double-layer poly.

Table 1: Stems per square foot of three miniature carnation varieties planted May 15, June 15, and July 15, 1977, under three-year-old fiberglass and double-layer polyethylene. Production was computed for 52 weeks following planting.

Three-year-old Fiberglass

Planting Date	'Silvery Pink'	'Exquisite'	'Corona'
May 15	48	40	27
June 15	54	41	30
July 15	44	37	26

Double-layer Poly

Planting Date	'Silvery Pink'	'Exquisite'	'Corona'
May 15	43	38	25
June 15	44	37	24
July 15	41	26	22

Discussion

There does not appear to be much difference between a May 15 and June 15 planting. Production is approximately the same, however, the timing of the first crop is very different. A July 15 planting gives lower production and a delayed spring crop, probably because of the shortday, low-light conditions of winter when the crop develops. Overall, sequential plantings do appear to even out miniature carnation production, especially in the fall and winter months.

Timing is slower and production lower under double-poly than under three-year-old fiberglass. A double-poly house is tighter than a fiberglass house, and reduced light from condensate inside the poly house could account for the delay and reduction in production.