



# Colorado Flower Growers Association

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## Soil Temperature Has Little Effect on Carnation Timing

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Carnation plants develop slowly during the winter and early spring when compared to other times of the year. Light and temperature conditions prevailing at that time are no doubt responsible for this slow growth. To investigate the part played by soil temperature in this slower development, White Sim carnations were grown at four soil temperatures for the first four months of their cycle.

Plots 40 inches square were separated with wooden dividers and glass wool insulation was placed between and on the bottoms of the compartments. Glass cloth was also used to cover the top of the soil after plants were set.

The temperature of one plot was that common in carnation greenhouses during this period of the year. It fluctuated from 55 to 59° F. Two plots were heated with electric cables to 60-65° F. and 65-70° F respectively. A fourth plot was refrigerated and maintained at a temperature of 45-50° F.

Rooted cuttings of White Sim were benched Jan. 10 and pinched Feb. 23. Approximately two breaks per plant were pinched on April 20. The temperature treatments were stopped May 1. The first flowers were cut the week following July 1. Although slight weekly differences in production occur in Table 1, there were no real differences in the timing of the production from these temperature treatments.

Table 1. The effect of four soil temperatures on the timing of White Sim.

| Soil temperature | Weekly periods beginning |        |         |         |         |        |         |         | Total |
|------------------|--------------------------|--------|---------|---------|---------|--------|---------|---------|-------|
|                  | July 1                   | July 8 | July 15 | July 22 | July 29 | Aug. 5 | Aug. 12 | Aug. 19 |       |
| 45-50°F          | 17                       | 32     | 24      | 15      | 12      | 13     | 3       | 3       | 119   |
| 55-59°F          | 31                       | 27     | 17      | 13      | 8       | 9      | 4       | 2       | 111   |
| 60-65°F          | 23                       | 35     | 18      | 11      | 10      | 4      | 3       | 4       | 108   |
| 65-70°F          | 23                       | 20     | 19      | 17      | 9       | 4      | 8       | 13      | 113   |

Records were not kept on the quality of flowers, but there were no apparent differences between treatments.

The amount of light and the air temperature influence the rate of development of carnation plants. The soil temperature, within the range of this experiment, is not a factor.

