Selection Technique That Resulted in CSU Red Sim

Methods of vegetative selection have been under evaluation for many years at Colorado State University. As year around culture of carnations became an established practice, there was a need for varieties that would maintain flower size and vigor through the summer on older plants. Red colored varieties were particularly susceptible to loss of flower quality as plants aged and summer temperatures went above optimum.

To test the hypothesis that improved varieties adapted to these adverse conditions could be selected, 24 outstanding flowers were tagged on 2-year-old Red Gayety plants during August of 1961. These flowers had developed during the long days and higher temperatures of summer near the fan end of a greenhouse. A lateral branch was removed from each flower stem as soon as available, rooted and grown as a stock plant. Cuttings from each stock plant were planted in a producing bench and flowered for progeny tests in the spring of 1962. Of the 24 progenies, all but two were eliminated because of the production of malformed flowers at this time of the year.

The two outstanding selections from this progeny test were multiplied to large blocks and flowered the ensuing year under summer and winter conditions. Both selections continued to produce high quality flowers, however, the growth of young plants from one selection was less vigorous and the flower characteristics were slightly less desirable.

The one selection retained for multiplication and dissemination under the name CSU Red Sim is a superior variety under the conditions it has been grown to date. The high-crowned flower is large year around. Yield appears good. Vigor is excellent.

An added feature that may be an advantage in year around growing is the relative freedom from vegetative lateral branches on the flower stems during late winter and spring. These branches, when present, are often removed by cutting at a low level to reduce summer yield, especially on red varieties.

This investigation gives us more evidence that carnations can be selected that are adapted to specific conditions or requirements. There appears to be sufficient variability in the Sim varieties that almost any reasonable adaptation to an environment can be met.

The chances for meeting a specific requirement are poor if only one selection is made. If 24 selections are tested, the chances are good that at least one of the selections will meet the objectives.