

Type of Cutting Affects Initial Growth of Carnations

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Preceding bulletins (176, 177, and 178) have given results of exhaustive experiments to determine the effects of preharvest environmental factors on size and quality of cuttings and on their ultimate performance. Cuttings in most of these experiments were graded for uniformity, and all were top cuttings taken from stock plants. A final experiment is reported here in which growth comparisons were made between top and basal (heel) cuttings, and between top cuttings removed above different numbers of leaf pairs.

All cuttings under comparison were removed from stock plants, rooted and planted in replicated rows in a greenhouse bench during the summer growing period. These were grown until the most

advanced were near flowering. The plants were pulled, their roots removed and photographs made of a typical plant from each group.

In all the accompanying figures height of the plant in inches appears on the right. Under each plant in figure 1, a double number indicates the type of cutting removed from the stock plant. The first of the two numbers is the number of expanded leaf pairs on the cutting; the second number, the leaf pairs left on the stock plant shoot.

The first set of photos show that typical growth is slowest from basal or heel cuttings and from cuttings taken at any position that have only 3 expanded leaf pairs. Best growth was from cut-

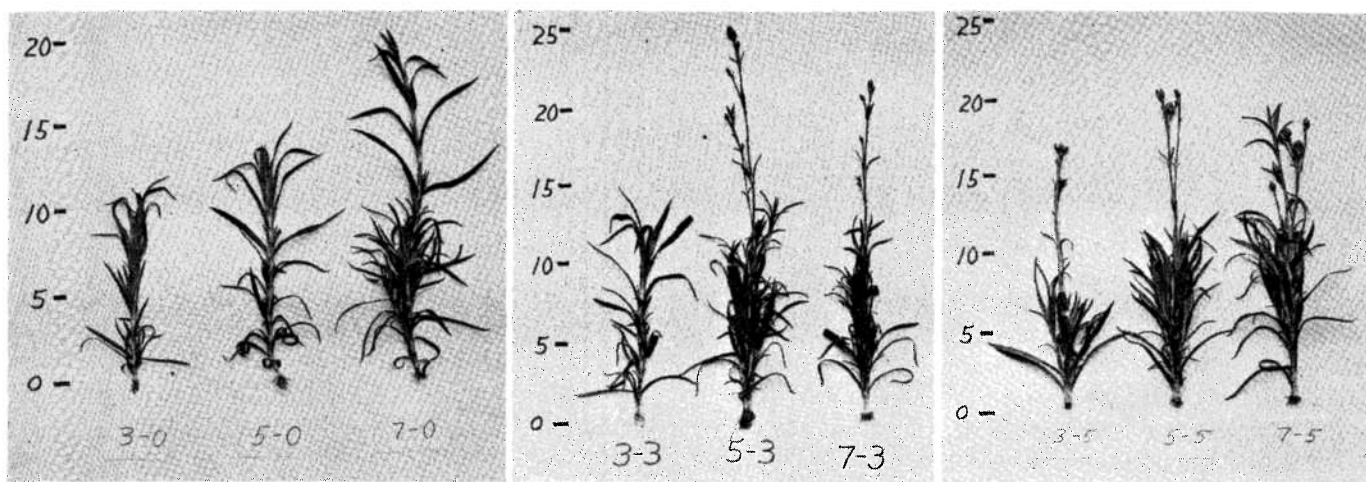


Fig. 1. Typical growth of 3, 5, and 7 leaf-pair cuttings removed from stock plants at the origin (left), and above 3 (center) and 5 pairs of leaves.

tings with 5 expanded leaf pairs taken above either 3 or 5 leaf pairs. Often as many as 3 or 4 of the lower nodes on basal cuttings do not produce laterals.

The letters B and T (Fig. 2) represent basal and top cuttings. The number following the letter indicates the expanded leaf pairs on the cutting at time of removal from the stock plant. Basal cuttings were removed in entirety; top cuttings were removed above 3 leaf pairs. Differences in growth from smaller cuttings are quite obvious. While height is about the same, lateral growth is much faster and better placed on the top cuttings.

The larger basal cuttings in figure 2 illustrate the common variations often seen in commercial lots of cuttings. Both basal cuttings have lower portions without laterals. B-9 has at least 4 blind nodes. While T-9 contained a flower bud when removed from the stock plant, it has branched low and lateral growth is well advanced.

Heel cuttings are less desirable and the cause of much variation in early growth. Their performance is much less predictable. Size of cutting and stage of initiation in larger cuttings are also important sources of growth variability.

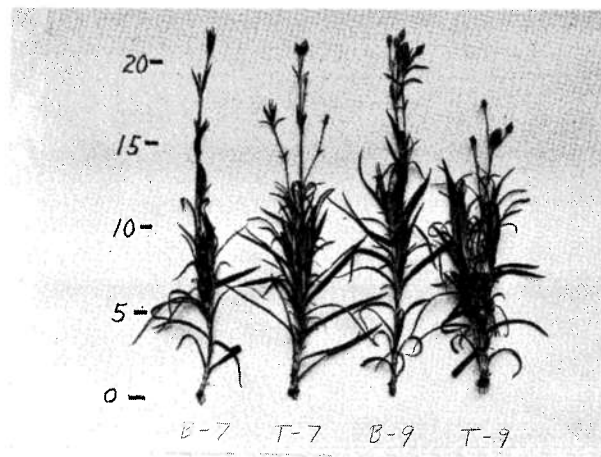


Fig. 2. Typical growth of basal (B) and top (T) cuttings containing from 3 to 9 pairs of expanded leaves when removed from stock plants. Top cuttings removed above 3 pairs of leaves.