

DISBUD CARNATION SHOOTS AS A FUNCTION OF LIGHT FLUX AND SEEDLING BEHAVIOR

Harry C. Kohl, Professor, and Dan L. Rundle, Graduate Student, Department of Environmental Horticulture, Davis

At present, the authors are trying to breed commercial, single-flowered carnations that need no disbudding because no secondary flow-

ering stems are present. In the first stage of the investigation, during the winter of 1970-71, it was found that three varieties--

'Helios,' 'Susan,' and 'Virginia Hercules'--typically had disbud shoots in fewer than half of the top six pairs of leaves.

Since the work was done in the relatively low-light winter period, it was important to know if the situation would be the same in the high-light, spring and early summer period. Sixty 'Helios' plants were grown at normal greenhouse light intensity during the spring of 1971 while 60 were grown under cheese-cloth shade, which reduced the light by 40 percent.

The results were conclusive (table 1). The plants that received full light had a distinctly greater number of disbud shoots. It is also worth noting that the number of vegetative shoots below the disbud zone of the top six nodes var-

ied similarly (table 2). The finding that light flux influences the number of disbud shoots must, of course, be taken into account when indexing seedlings for this characteristic.

Likewise, and most unfortunately, it is difficult to assess seedlings for disbud shoots on the first flush of bloom. Most of the seedlings selected on the basis of having a considerable number of flowering shoots on the first flush of bloom, with a low number of disbud shoots, have a much higher number of shoots that need disbudding when grown as a pinched crop from cuttings.

We hope these findings will be helpful to those interested in problems of bud break and disbud control.

TABLE 1. The Number of 'Helios' Carnation Plants With Disbud Shoots When Grown at Full Greenhouse Light Intensity and at 60 Percent of Full Intensity During Late Spring and Early Summer.

Disbud Shoots Per Plant	Number of Plants	
	Full light	60% light
0	11	49
1	20	11
2	18	
3	10	
4	1	
5		
6		

TABLE 2. The Number of 'Helios' Carnation Plants With Vegetative Shoots When Grown at Full Greenhouse Light Intensity and 60 Percent of Full Intensity During Late Spring and Early Summer.

Vegetative Shoots Per Plant	Number of Plants	
	Full light	60% light
0	0	41
1	3	8
2	8	5
3	9	4
4 or more	40	2