Carnation Mulching Studies 1950-51

by W. D. Holley

Previous results obtained at Colorado A & M (Bulletin #9) indicated that mulching with selected materials increased the quality of carnation production. The most promising materials were peat, mixed hay, manure, and leafmold.

These four materials and cottonseed hulls were tested during the 1950-51 season against an unmulched treatment as a check. The six treatments were set up in a randomized block arrangement and replicated three times for a total of 18 plots.

Each plot was planted to three rows each of Frosted Patrician and White Patrician on June 21, 1950. The plants were extremely uniform since they were all propagated March 22 and pinched May 18. Approximately one inch of each mulching material was applied June 30, nine days after planting.

Second pinches, not to exceed one shoot per plant were made July 15 and August 1. An additional shoot per plant was pinched on White Pat only, August 15. The effect of this last pinch on White Pat can be seen in the accompanying table. It moved October production to the winter period, almost eliminated the short grade, decreased standards, and decreased the total production. By increasing the number of flowers cut from December to March, this late pinch also increased to some extent the number of splits.

Flowers were cut from October 1, 1950 to June 18, 1951. All blooms except splits were cleaned of side shoots and weighed individually. The weight groupings which make up the grades presented in the table are as follows:

15 grams and less --- Short
16-22 grams --------- Standard
23-29 grams --------- Fancy
30 grams and up ----- Special

The effect of these mulch treatments on quality of production is shown in the following table. Figures presented are the average for three replications of each treatment and variety. The average production for the 250 square feet of bench area for both varieties was 26.45 flowers per square foot.

The Effect of Mulches on Quality of Carnations

Mulch	Split		Short		Standard		Fancy		Special	
	FP	WP	FP	WP	FP	WP	FP	WP	FP	WP
CS Hulls	9.7	36.3	14.3	0	49.7	13.3	21.7	21.7	113.3**	111.0*
Manure	12.3	29.0	12.3	0.3	40.7	14.7	26.3	24.0	106.3*	103.7
Leafmold	9.3	33.7	8.3	0	47.7	8.3	27.3	21.3	105.3*	102.7
Peat	15.7	28.7	6.0	1.0	44.0	16.0	27.7	22.0	96.0	106.0
Hay	8.7	33.3	11.0	0.7	49.0	6.7	27.7	20.3	100.0	102.0
No Mulch	16.3	35.7	15.7	1.0	37.7	18.7	25.3	23.7	88.3	94.7

Minimum differences required for significance within grades

* at the .05 level - 14.5 blooms

** at the .01 level - 19.3 blooms

No significant increase in total production was accomplished by mulching.

The results of this study indicate that the primary value to be obtained from mulching carnations is in raising the quality of the blooms produced.

Cottonseed hulls were outstanding in that they gave a highly significant increase on White Pat. Cottonseed hulls also gave greatest total production on both varieties.

All mulch treatments were of some value in reducing the number of waterings required. They were also of value in raising the quality of blooms cut, even though some treatments did not give statistically significant increases. Actually, when the results were analyzed with both varieties in a treatment added together, the increase in quality was significant for all mulch treatments.

Mulches could increase the quality of carnations by, (1) causing a more even moisture supply, (2) promoting better soil structure and/or, (3) supplying food materials which are lacking in unmulched plants.

The value of a mulch in improving the physical condition of the soil, both during the growing of the crop and for incorporating into the soil after the crop is grown, should not be overlooked.