

RESPONSE OF GROUND BENCH CARNATIONS TO CONTROLLED-RELEASE FERTILIZERS

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SUMMARY

The total yield from 'Sim' carnation plants fertilized with judicious rates of controlled-release fertilizers was not significantly different from the yield where conventional dry fertilizers were used. However, there were significant differences in total flower yield among controlled-release fertilizer sources. The nitrogen application rate had no influence on total yield for a given fertilizer source. Supplementing a liquid fertilizer program with the three controlled-release fertilizers studied did not increase carnation flower yield.

Tests were conducted at Watsonville to determine the influence of top-dressed controlled-release fertilizers on the yield and nutritional levels of 'Sim' carnation varieties grown in ground benches. Two fertilizer management systems were evaluated: dry or controlled-release fertilizers as the complete program; and a liquid-feed fertilizer program supplemented with controlled-release fertilizers.

The controlled-release fertilizer used affected the yield and grade-out of 'Scania' carnations. However, the harvest did not differ significantly from that of the grower-practice control plants (table 1). Plants fed with Osmocote® 18-6-12 or isobutylidene diurea (IBDU) 31-0-0 yielded more

flowers than plants treated with urea formaldehyde (UF). Percentagewise, there was no significant difference between the flower grades yielded from a given fertilizer source regardless of the nitrogen rate applied. The number and percent of fancy grade flowers from IBDU-treated plants exceeded those obtained from plants treated with Osmocote®. Conversely, fewer standard and No. 2 grade flowers were obtained from plants fertilized with IBDU than from those that received Osmocote®.

Yield data from December 2, 1967, to April 11, 1970, showed that plants treated with Osmocote® and IBDU produced more blooms than plants that received UF but were not significantly different from the control plants. This indicates that more shoots were produced on the Osmocote®, IBDU, and control plants shortly after planting than were produced on UF-treated plants.

If these results are consistent for most carnation varieties, perhaps greater selectivity should be exercised when choosing fertilizer sources for "fast crop" or single crop production.

For more details consult the November 15, 1973, issue of *Florists' Review*.

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TABLE 1. Effect of Controlled-Release Fertilizer Material and Rate on 'Scania' Carnation Flower Yield When Compared to a Conventional Dry Feed Fertilizer Program—Shimamoto Nursery, Watsonville, California.

Grade	Total Harvest by Grade ¹						
	Control ²	Osmocote® 18-6-12 ²		Urea formaldehyde 38-0-0 ²		Isobutylidene diurea 31-0-0 ²	
Pounds nitrogen per 100 square feet:	—	2.7	5.4	2.7	5.4	2.7	5.4
Fancy	1,002.7ab	962.7a	955.0a	955.7a	1,011.0a	1,023.7b	1,045.3b
Standard	190.7ab	287.3a	275.0a	167.3b	172.0b	175.3b	206.7b
Number 2	71.7ab	92.0a	111.7a	70.7b	81.3b	76.7b	81.0b
Total harvest	1,265.0ab	1,342.0a	1,341.6a	1,193.6b	1,264.3b	1,280.6a	1,333.0a

¹Means of flowers harvested from three replications, each of which contained 96 plants.

²Means followed by same letter are not significantly different from each other.