Foliar Feeding of Cuttings

David W . Cheever

Cuttings from the same lot used in temperature experiments (page 1) were stuck with 70° temperature treatment. The 70° treatment was used as the untreated control group with misting procedure, media, and weight measurements the same as described under Medium Temperature. Growth measurements were made both at lifting and after recovery trials. Recovery trials of the 2 experiments were also integrated.

Two complete nutrient solutions, donated by the NaChurs Plant Food Company, Marion, Ohio, were tested. The ratio of major elements and their concentrations were:

	N P K	Dilution for application:	Concentration applied: %
Treatment A	2-20-18	1:3 (tap water)	.5 - 5 - 4.5
Treatment B	10-20-10	1:3 (tap water)	2.5 - 5 - 2.5

The dilute liquid fertilizer was applied at dusk with a 2-gallon garden sprayer, using relatively high pressure with the finest adjustment. Mist was washed from the cuttings before application. Three applications were made at 2 day intervals, beginning when visible roots began to emerge from the cutting base. The first was made on February 7, 9 days after striking. Eight sample groups of cuttings were subjected to each treatment. During the spraying operation individual groups were enclosed with a plastic covered box, having an opening in the top. This protected adjacent groups not being treated. For experimental uniformity, tap water was sprayed on the control plots.

Results

Nutrient solutions applied to the foliage depressed both fresh and dry weight accumulation while rooting but had no effect on rooting score (Table 1). No difference in recovery rate was measured. Media had no effects.

Table 1. Effects of liquid foliar feeding at the end of the rooting period on rooting and top growth.

Treatment	Rooting Score[1]	Gain in fresh weight g[2]	Gain in dry weight g[2]	Recovery Gain in fresh weight g[3]
A. 2-20-18				
mix	76.3	11.4	2.11	127
perlite	83.5	11.8	1.59	130
mean	79.9	11.6	1.85	129
B. 10-20-10				
mix	86.8	14.2	1.98	142
perlite	84.3	19.0	2.56	115
mean	85.5	16.6	2.27	129
C. Control				
mix	80.8	17.0	2.78	122
perlite	91.0	24.4	3.14	127
mean	85.9	20.8	2.96	124
Media means				
mix	81.3	14.2	2.29	130
perlite	86.3	18.4	2.43	124

[1]Mean of 100 cuttings, 2 replicates of 2 subsamples.
[2]Mean of 4 subsamples of 10 cuttings.
[3]Mean of 3 replicates of 12 plants. Weight gained from rooted cuttings.

COLORADO FLOWER GROWERS ASSOCIATION, INC.
OFFICE OF EDITOR
W. D. Holley
Colorado State University
Fort Collins, Colorado 80521

FIRST CLASS

The present study confirms the general view of propagators that cuttings from healthy plants contain sufficient nutrients for adequate growth of new roots. Foliar application of nutrients has been reported beneficial if deficient conditions exist in the plant. The present depression of top growth of cuttings during the rooting phase is difficult to explain. Although applied to the foliage, there is little doubt that some residue was carried to the root zone with the mist. There are several reports of delays in root development on cuttings caused by nutrients either in the medium or applied to the foliage. However, researchers at Cornell University (Wott and Tukey) reported raising the levels of N, P, and K in cuttings through the use of a complete nutrient solution in the mist. If desirable, feeding of cuttings might better be accomplished by watering the medium with a nutrient solution after roots begin to develop. No effective response was obtained by supplemental feeding in this research.

Your editor,

W D Holley