

EFFECTS OF GROWTH REGULATORS, HQC, AND SUGAR  
ON CUT ROSE VASE-LIFE<sup>1</sup>

Bruce Metzger

Freshly cut "Forever Yours" roses were hardened at 35° F. overnight and placed in various test solutions the following day. These included the growth regulators Alar, Cycocel, Quel, and SD 8339. Each was combined with sugar and/or 8-hydroxyquinoline citrate (HQC) and the vase-life compared to that obtained with a solution of only HQC + sugar.

Alar + sugar produces results much like HQC + sugar but at an enhanced level. It is known that HQC decreases the blockage of the water transporting tissue in rose stems and increases water uptake, stomatal closure, and respiration. Alar likely functions in a similar manner; however, since it is a growth regulator it probably affects respiration the most.

The addition of 5% sugar in any solution (HQC, Alar, Cycocel, etc.) resulted in the development of interveinal, dry chlorotic areas on the leaves within three hours after being placed in these solutions. This did not alter the keeping life but did detract from the flowers' appearance. This problem can be somewhat alleviated by maintaining higher humidity and by using smaller amounts of sugar. This leaf burn occurs most frequently during the winter and spring and is likely associated with the carbohydrate level in the flowers at the time of cutting.

A solution of Alar and sugar will provide longer vase-life than HQC and sugar. The recommended levels are 500 ppm Alar and 3-5% sugar. Other levels of Alar may also prove to be suitable in extending the vase-life of cut roses.