

Literature Cited

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THE EFFECT OF SEVERAL ADJUVANTS ON THE ABSCISSION ACTIVITY OF RELEASE® WITH 'VALENCIA' ORANGE^{1,2}

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Abstract. RELEASE® (formerly ABG-3030) has been shown to induce abscission of mature 'Valencia' fruit without injury to new growth, immature fruit, and leaves. Early studies indicated the need for an adjuvant and the commercial product X-77 SPREADER was found satisfactory.

In 1975, the anticipated action of RELEASE was greatly reduced during May and early June because of "retightening" or "regreening." Field studies were conducted evaluating various adjuvants on the activity of RELEASE. Pull force data, fruit removal by limb and air shakers were used to identify the more active adjuvants. FOMEX®, oil plus X-77, and TRONIC® appeared to increase the activity of RELEASE over X-77. Others such as TRITON B-1956®, REGULAID®, and BIOFILM® were not as effective as X-77.

In 1973, Wilson (3) first reported the abscission activity of ABG-3030 (now RELEASE®) on oranges for processing under Florida conditions. Kenney et al. (2) summarized the results of 3

¹The authors wish to acknowledge the technical assistance of Earl Rowland, R. E. Hoover, J. M. Bosworth, and E. R. Harben.

²Cooperative research of the Florida Department of Citrus and the University of Florida, IFAS, Agricultural Research and Education Center, Lake Alfred.

year's studies with RELEASE in 1974. RELEASE is an effective abscission agent for early and mid-season oranges (75-125 ppm) and late or 'Valencia' oranges (200-300 ppm). It has very low phytotoxicity and can be used safely on trees with blooms, new growth flush, and newly formed fruits (2, 3).

In May 1975, the U. S. Environmental Protection Agency approved limited use of RELEASE under Experimental Label to further define various methods of application and harvesting under field conditions. Because of the late approval date, all tests reported here are for the 'Valencia' orange (VA).

"Regreening" or "retightening" of VA has been a recognized potential abscission problem for some time (1). Its severity has been noted to vary from season to season (4), and no acceptable explanation of its cause has been made, although it is generally believed that it is due to changes of natural growth regulators within the tree which in turn is caused by resumption of growth in the spring. VA is an important cv. to Florida, and makes up approx 45% of the total round orange production. "Regreening" unfortunately coincides with the time of most active VA harvest. During the 1975 VA season, the condition was notably severe and seemed universally present in most groves throughout the citrus belt. The result, then, was reduced performance by RELEASE (and all other abscission agents) during the "re-tightening" period which prevented effective mechanical harvesting at the time most organizations desired to utilize it. Some additional loosening during this period can be obtained by increasing the concn of abscission chemicals, but this becomes expensive and may result in high residue levels at harvest.

