appeared to decrease its activity somewhat. In general, surfactants which increase the activity of RELEASE may also increase leaf drop. This is particularly true of FOMEX, which can cause severe defoliation when used in excess of 2 qts/ 500 gal of spray solution (3).

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EVALUATION OF DS-27914 AS AN ABSCISSION CHEMICAL FOR PROCESSED ORANGES[1]

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Abstract. **Chlorothalonil (tetrachloroisophthalonitrile) was found to synergistically enhance the fruit loosening response of cycloheximide (CHI). DS-27914 (formulated CHI plus chlorothalonil) was evaluated as a fruit abscission chemical with 'Hamlin,' 'Parson Brown,' 'Jaffa' and 'Valencia' oranges during the 1974-1975 season. DS-27914 containing 10 ppm CHI plus 500 ppm chlorothalonil was as active as 20 ppm Acti-Aid in removing fruit from mechanically harvested 'Parson Brown' trees. Higher rates of DS-27914 (20 ppm CHI plus 1000 ppm chlorothalonil) were necessary to loosen 'Valencia' oranges. Optimum harvest time of DS-27914-treated fruit was 6-7 days after application. DS-27914 caused little injury to green fruit, flush or bloom in the field evaluations, although some mature leaf abscission was observed. Comparisons of DS-27914 with 5-chloro-3-methyl-4-nitro-1H-pyrazole (Release) and glyoxal dioxime (Pik-Off) showed that DS-27914 had fruit abscission activity similar to Release and that both chemicals were more active and less variable than was Pik-Off.**

Cycloheximide (CHI) was found to be an active citrus abscission chemical in 1968 (2). Subsequent research with CHI was conducted by the USDA at Orlando (3, 4), the Florida Department of Citrus at Lake Alfred (4, 9) and the Upjohn Company (1). These studies led to the registration of Acti-Aid (formulated CHI, trademark Upjohn Company) on oranges for processing. However, reports of inconsistent performance and undesirable side effects such as green fruit drop and flush and bloom damage on 'Valencia' oranges have limited its commercial use (10, 11).

Chlorothalonil (tetrachloroisophthalonitrile) was found to enhance the fruit abscission activity of CHI and reduce its adverse side effects on 'Valencia' oranges in a branch test evaluation program in April 1974 (12). DS-27914, the combination of CHI plus chlorothalonil, was evaluated in field trials during the 1974-1975 season. The purpose of the test program this season was to evaluate DS-27914 formulations, rates of application and abscission responses of different citrus cultivars. The fruit abscission activity of DS-27914 was compared with Acti-Aid. In addition, comparisons were made with Release (formulated 5-chloro-3-methyl-4-nitro-1H-pyrazole, trademark Abbott Laboratories) and Pik-Off (formulated glyoxal dioxime, trademark Ciba-Geigy Corp.) which have shown promise as harvest aids for oranges for processing in Florida (7, 8, 11).

Materials and Methods

All chemicals were applied with the same spray equipment (Ag Tech 5003 or DOC Ag Tech). Rates of application varied from 5 to 8 gallons/tree depending on tree size. Most of the trials were conducted in the Orange-Co of Florida

[1]The authors wish to acknowledge the technical assistance of Messrs. Earl Rowland, C. L. Johnson, Roxy Hoover, E. R. Harben, D. H. Wagner, and Dr. J. W. Whitney.