

belt gave a low removal percentage of good fruit and also a low removal percentage of flattened fruit. With the trash belt inclined at 20° and the discharge belt running in the opposite direction from that of the trash belt, only 25% of the trash and 5% of the flattened fruit was separated out at the feed rate of 163 boxes/hr. At a feed rate of 96 boxes/hr and the same conditions as above, 47% of the trash and 8% of the flattened fruit were removed.

Conclusions

Results of these tests indicated that a belt-type trash eliminator could separate out more than 95% of the trash in the field and that a high percentage of the mechanically damaged fruit could also be removed. However, unwholesome fruit that are still round required hand grading before being loaded into the roadside trailers. The highest per-

centage of trash and flat fruit removal occurred with a 12° incline on the trash eliminator belt at a speed of 80 fpm when the material was entering in the same direction as the trash belt travel.

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ABG-3030: AN ABSCISSION CHEMICAL FOR PROCESSING ORANGES: BIOLOGICAL ACTIVITY

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Abstract. ABG-3030 is under development as an abscission agent on the major varieties of processing oranges. The results of these studies as influenced by environmental factors, formulation, application technology and fruit maturity are presented. The influence of these factors and their effect on mechanical harvesting of Hamlin, Pineapple and Valencia Oranges is reviewed.

The need for chemical loosening agents as aids to mechanical harvesting of processing oranges has been presented by others (1, 2). The Florida Citrus Commission's establishment of screening procedures demonstrates the interest that exists for a chemical abscission agent. Abbott Lab-

oratories has cooperated in the screening arrangements since the screens were established. This paper describes the development of an abscission agent ABG-3030 from its detection in the screen to the present.

The activity of ABG-3030 was first detected in January, 1971, by the screening technique utilized by Dr. Wilson (3). Additional testing during the remainder of the test season on the Valencia variety demonstrated the effectiveness of ABG-3030 as an abscission agent. Testing of ABG-3030 in the three seasons since have provided extensive data showing its usefulness for inducing abscission.

Biological Activity

Table 1 shows a summary of the activity obtained with the major processing varieties of round oranges. These results have been very consistent from season to season with the major variations in activity attributable to localized environmental factors. It is apparent that the early and midseason varieties are much more sensitive to the activity of ABG-3030 than is the Valencia variety. This is reflected in the concentration range required to reduce the pull force to 5.0 pounds or less. Fifty to 100 micrograms per milliliter (ppm) are re-

