

PROGRAM AREA: Field and Harvest Mechanization
PROJECT LEADER: J. M. Ogawa
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WORK IN PROGRESS: Identification of cause and control of postharvest decay of mechanically harvested prunes

OBJECTIVES:

Development of decay on prunes from the time of harvest to processing can be important in years when unusual amounts of brown rot occur in the field. There have been incidences in which over 25% of the fruits have started to decay before processing. The total picture of the decay pathogens involved has not been studied. Thus, commercial lots of fruits need to be evaluated for mold content and development. Comparative pathogenicity tests of the pathogens on healthy and bruised fruits are necessary as well as tests of the types of control measures which might prevent decay that develops on injured or uninjured fruit surfaces.

EXPERIMENTS COMPLETED:

Large-scale tests using bins of mechanically harvested fruits containing 500 to 900 pounds of fresh fruits were observed to assess types of decay pathogens and to evaluate the types of injury and their relationship to development of fruit rots. Fungicide sprays were applied in the field to control the molds usually responsible for fruit decay such as Monilinia fructicola and Rhizopus stolonifer. Evaluations of decay were made by simulated storage in the prune orchard before processing and other comparable samples of fruits were incubated under controlled temperature and humidity. Two such field tests were conducted in an orchard near Butte City and controlled tests made at Davis.

WORK PLANNED:

Because fungicide sprays of fruits prior to harvest did not provide the decay control desired, further studies on penetration of chemicals into fruits is anticipated. In addition, failure to control decay was related to extent of damage from bruising. Thus, more study is required on types of bruising and its effect on infection and development of the pathogens involved. Although dipping of fruits in fungicides may not be acceptable to the industry, such tests should be done to determine if control of decay is possible. If fungicide dips will control decay, then means for removal of chemical should be tested.

MAJOR ACCOMPLISHMENTS:

The decay complex on mechanically harvested prunes has been partially defined and data were obtained indicating that decay of fruits stored in bins was not controlled by fungicidal sprays prior to harvest. Other means of control of fruit decay are required particularly on mechanically harvested fruit that have suffered extensive bruising and other injury.

EVALUATION OF PROJECT:

Under certain conditions extensive decay can occur on mechanically harvested fruits before processing. Considering that dried fruits with defects including moldy fruits are processed for juice, the product may have off-flavors and could possibly contain mycotoxins that are detrimental to human health.