DETECTION OF POTATO BRUISE WITH CATECHOL AND IT'S MANAGEMENT IMPLICATIONS

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INTRODUCTION

Potato bruising is a serious problem for the potato industry. In times of low potato prices, it is especially important for growers to fine-tune their management to reduce losses from bruise damage. Potato bruising costs the potato industry because of 1) increased storage loss to shrinkage and disease, 2) increased labor cost for trimming and inspecting, 3) increased cost of raw product through greater trim losses, 4) lowered quality of the final product, 5) increased incidence of disease in fresh market potatoes in transit and decreased shelf life, 6) reduced appeal of fresh potatoes to wholesale and retail customers, 7) reduced performance of seed potatoes because of increases in the physiological aging process. It has been estimated that potato bruising costs U.S. growers $125 million annually which comes to $8,330 per growers. (Kleinschmidt and Thornton, 1991). (Chase and Sylva, 1987).

METHODS

In order to demonstrate bruising problems and suggest management techniques for its reduction, the Elmore County extension educator conducted tests using the catechol method at farms in Elmore and eastern Owyhee County. Potatoes were sampled at the digger, at the digger following adjustment and in the cellar. Potatoes sampled in the cellar were from the same truck that the digger samples were taken from. Bruising can vary greatly from superficial skinning that causes little damage to server bruising extending into the tuber that greatly reduces tuber quality. A scale was developed to rate the severity of bruise damage. Samples were analyzed for bruise by the catechol method and bruise was scored by the following scale: very slight: one stroke of the peeler removes all visible damage, slight: two strokes of the peeler removes all visible damage, severe: more than two strokes of the peeler required to remove all visible damage. For detailed information on the catechol procedure, see University of Idaho Cooperative Extension Bulletin No. 725, Bruise-Free Potatoes. The catechol method provides rapid detection (<20 min) of bruises that break the skin but will not detect blackspot. Since the methods is rapid and can be done in the field, it allows the grower to monitor bruising during harvest and unloading operations so that adjustment can be made as needed.