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
of

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Determining the Strength Properties of the Dixired Peach Variety

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Abstract: Peaches, like other fruits, are susceptible to different kinds of damage during and after harvest. Such damage is a major cause of quality loss in fruit. In order to reduce these losses, it is necessary to know the strength properties of fruit. Some strength properties of "Dixired" peaches are investigated in this paper. Peaches were stored at 0 °C and 90% relative humidity for specified lengths of time. Impact treatment was applied by a pendulum impactor at four energy levels. Bruise volume was measured in the bruised peaches after impact, and bruise susceptibility was calculated from the linear regression line for bruise volume vs. absorbed energy. Strength properties (bio-rupture force, apparent modulus of elasticity and rupture stress) were determined by using a biological material test device. It was found that the peaches exhibited superior strength properties immediately after harvest, and that after 14 days in storage they softened rapidly. At harvest, it was calculated that peaches could be packed in corrugated boxes up to about 13 layers deep in a triangular arrangement and 16 layers deep in a rectangular arrangement without damage, while 28 days after storage they could be packed only 4 to 6 layers deep in the boxes. According to impact treatment, the fruit softened and became very susceptible to impact damage during periods exceeding 14 days.

Key Words: Peach, strength properties, duration of storage, critical number of layers

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