

Influence of water loss on mechanical properties of stored blueberries

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Abstract

Moisture loss is considered a main cause of blueberry softening during postharvest storage. However, the causal relationship between softening and water loss has only previously been described by force to 1 mm compression. This study was performed to identify suitable instrumental tests that allow the separation of blueberries with different water loss values during storage. Mechanical properties were measured by double compression (Texture Profile Analysis) and puncture test. Variability on blueberry mechanical properties was created by regulating storage humidity and consequently water loss. As water loss increases during storage, hardness slope (slope of a straight line drawn between the trigger force of 0.06 N and the force at 15 % strain) obtained by the compression test reduces, and the displacement at berry skin break obtained by puncture test, increases. Therefore, these parameters can be potentially used to quantify mechanical changes in stored blueberries.