

Effect of mechanized (automotive or shaker) vs. hand harvest on postharvest fruit quality of blueberries (*Vaccinium corymbosum* L.)

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Abstract

This research was carried out during the 2010/11 growing season to establish the effect of different types and times of harvest on the quality of fresh blueberries. The 6 treatments consisted of 3 harvest types (hand, automotive or shaker) and two harvest times (morning: 9-11 am; afternoon: 3-5 pm). Ten-year-old 'Brigitta' and 'O'Neal' plants, from a commercial planting in Linares (35°52' South and 71°37' West) were used. Measurements were made of: harvest duration, weight of fruit picked, and proportion, in weight, of fruit in the categories: fresh, discarded, IQF (individual quick frozen) and pre-size. Firmness was measured at harvest, and after 60 d at 0°C plus 1 d at 18°C (60+1). Mechanical damage was measured after 60+3 d. Highest fruit firmness, independent of cultivar and harvest type, was for am pickings. Firmness for both measuring dates and cultivars was lowest for automotive; while in 'O'Neal', hand and shaker had equivalent firmness, in 'Brigitta' shaker-harvested-fruit had intermediate firmness. Mechanical damage was greater for fruit picked with automotive equipment, and also in am pickings. Fruit picked by hand and with shaker had similar mechanical damage in 'Brigitta', but not in 'O'Neal', where shaking caused greater damage. After fruit sorting, 'Brigitta' had a greater proportion of fruit suitable for the fresh market. Averaging both cultivars, the proportion of fruit for the fresh market was 71.9, 76, and 82.9%, for automotive, shaker and hand harvest, respectively. These results indicate a positive potential for harvesting with shakers, but its effects on different cultivars and the cost/benefit ratio need to be studied.