

Title Effect of harvesting practices and pre-packing storage on lenticel discolouration of mangoes
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Abstract

Post-harvest discolouration of lenticels on mango fruit is a common problem and the incidence is affected by many pre- and post-harvest conditions. The contribution of various harvesting practices and pre-packing storage to lenticel discolouration on mango fruit was investigated. The effect of “drying off” of the soil before harvest, harvesting technique and storage of fruit prior to packing on lenticel discolouration of Tommy Atkins and Keitt were determined. “Drying off” of the soil to a moisture level of -50 and -70 kPa significantly reduced lenticel discolouration on Keitt and Tommy Atkins, respectively. Amount of latex, fruit skin and pulp moisture content as well as tree water potential also decreased with increasing soil dryness. The practice of harvesting fruit long-stem with immediate de-sapping for about 20 minutes proved to be good, compared to picking long-stem with de-sapping in the packhouse, and picking long-stem with de-sapping after 15, 30 or 45 minutes. Tommy Atkins and Keitt fruit were stored for 3, 9, 24 and 3, 6, 23 h, respectively, either in wooden bulk bins without paper, in bulk bins with paper on the inside and top and in bulk bins fitted with a fan for air exchange through the bins. With Tommy Atkins, storage in bulk bins with paper showed the least and bulk bins with ventilation the highest percentage of lenticel discolouration. Lenticel discolouration increased with increasing storage time in all treatments. With Keitt, fruit stored in bulk bins with and without paper caused the least lenticel discolouration. Immediate packing of fruit resulted in the highest percentage lenticel discolouration probably due to high fruit turgidity. In all treatments lenticel discolouration decreased at 6 h storage but increased again at 23 h. It appears that “drying off” of the soil to a level of at least -50 kPa and picking long-stem with immediate de-sapping are good harvesting practices with a positive effect on lenticel discolouration. Fruit turgidity and soil moisture during the harvesting season need to be considered when deciding to pack immediately or to store for a few hours before packing. Further research, however, is necessary in this regard.