Seasonal variations in fruit weight and soluble solids content of Mango (*Mangifera Indica* L.) grown in a heated greenhouse, and effective sampling strategies for these parameters

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Abstract

Mango fruits (>250g) grown in a heated greenhouse and collected during the harvest period of 2009-2011 were examined for changes in the fruit weight and soluble solids content. The results showed that interannual variation in the fruit weight was larger than the variation between individual samples. When analyzed by harvest time, both the fruit weight and soluble solids content increased as the harvest season progressed. The mean and coefficient of variation of the fruit weight and soluble solids content were similar for fruits harvested during the peak season (during which the plant produces the highest number of fruits per plant) and those collected over the entire harvest period, suggesting that sampling can be performed at a specific time-point during the harvest season. Estimating from a maximum coefficient of variation of 20% for fruits harvested during the peak season, with an error of 10% at a confidence level of 95%, a sample size of 16 fruits per plant collected during the peak season would provide accurate data comparable to those based on all samples collected from a plant.

Keywords: yearly change, investigation for peak of harvest time, sample size