Title	Modelling the incidence of decay development in 'B74' mangoes as a function of supply chain temperature
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Abstract

Models of changes in fruit quality during postharvest operations allow prediction of the shelf life of the product with respect to alterations of the postharvest conditions. Currently, most models for fruit quality focus on physiologically driven changes of the product (i.e. in firmness or colour) as the fruit undergoes ripening. For mango, one of the most significant modes of quality failure is visual unacceptability caused by an obvious infection on the skin of the fruit. This paper investigates the use of a simple model to predict the incidence of rots in a batch of 'B74' mangoes exposed to variable temperature scenarios. The model assumes that for any given population, at the time of harvest there will be variability in the time taken for a visible decay to appear on each fruit. This variability can be described as a Weibull distribution of accumulated heat units. The accumulated heat units are calculated from the temperature profiles of the fruit with a second order polynomial function. The model created from measurements of fruit stored at constant temperature predicted incidence of decay adequately for fruit stored under variable temperature scenarios (Mean Absolute Error = 5.4%). The approach adopted allows assessment of fruit at a higher temperature to be used to indicate remaining shelf life of fruit stored at lower temperatures.