

Abstract:

Controlled ripening or conditioning of peaches and nectarines is an increasingly important component of the Australian stonefruit industry. This process involves monitoring fruit firmness during a postharvest conditioning period at 20 °C. This destructive monitoring currently uses a penetrometer (7.9 mm tip) and must be done at regular intervals during the ripening process. This is not only time consuming but also costly. Two commercial nondestructive measures of fruit firmness (Acoustic firmness sensor and the Sinclair iQ™ system) were assessed as an alternative to the manual penetrometer for the determination of fruit firmness in two peach and two nectarine cultivars. The results revealed large variations in firmness among the fruit of each cultivar as measured by all instruments. We modeled fruit softening data from the Sinclair iQ™ system and destructive penetrometer to predict when the fruit were ready for retail distribution. This model needs to be further evaluated and refined, but its commercial application would be a significant benefit for the peach and nectarine fruit conditioning programs. This would save labour costs and reduce the amount of fruit required for destructive testing.