

Abstract

Softening of 25 genotypes of kiwifruit, representing 14 species and three families of the genus *Actinidia*, was characterized during ripening at 20 °C. Small-diameter flat-tipped probes (2.5 mm and 2.0 mm diameter) were used to measure firmness of whole fruit and individual tissue zones in order to ensure that even small-fruited species would be represented in the study. Softening was modelled according to Boltzman function or a simple exponential decay model as appropriate. For three of the genotypes, *Actinidia chinensis* 'Hort16A', *A. arguta* 'Hortgem Tahi' and *A. chrysantha* fruit that were immature, mature, or over-mature were ripened. While maturity had an impact on the lag before initiation of softening, once fruit had started to soften the curves were relatively consistent. Softening of tissue zones including the outer pericarp, inner pericarp and core, generally followed the same pattern as that found during whole-fruit firmness measurements. The exceptions were genotypes in the species *A. chinensis*, *A. glaucophylla* and *A. rufa* in which the core failed to soften or softened at a slower rate than other tissue zones. The study found that the spectrum of softening behaviour was broader than occurs in current commercial cultivars. In particular, fruit from some small-fruited genotypes tended to remain relatively firm even towards the end of the ripening process.