

Title Innovative non-destructive device for fruit quality assessment
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Abstract

Maturity at harvest greatly affects kiwifruit storage potential and quality at consumption: if fruits are picked too early, they undergo a precocious softening during storage, and do not reach full flavour and aroma when ripe. In *Actinidia deliciosa*, soluble solids content and dry matter has been proposed as maturity indexes. In *Actinidia chinensis*, the optimal harvest time is determined on the basis of flesh colour (Hue Angle= °H). In the last decade, non-destructive techniques, such as NIRs (Near Infrared Spectroscopy) have been used for evaluating kiwifruit quality. However, these devices require time consuming calibrations and they are used to measure the same parameters which are determined by traditional techniques (SSC; DM, °H). As a consequence, they do not give any added values as compared to the traditional methods to assess fruit quality. Recently, the University of Bologna patented innovative and simplified NIRs equipment (DA-Meter and Kiwi-Meter) which allows to define fruit maturity stage by means of an index based on the difference in absorbance between specific wavelengths (IDA). This index correlates with the main traditional parameters as well as with changes in flesh colour. In addition the availability of simple and portable instrument allow their use on the fruit attached to the trees to monitor the maturation and the ripening evolution, and determine the best cultural management practices (such as pruning, thinning, nutrition, etc) that allow to reduce the fruit ripening heterogeneity and simplify post-harvest management of the fruits. In the present work, results on different cultivars of *Actinidia deliciosa* and *Actinidia chinensis* are reported.