Abstract:

Non destructive technique, i.e. near infrared spectroscopy (NIRs) and electronic nose (e-nose) were recently used to assess fruit quality. These approaches also allow to determine quality traits on a high number or even on all the harvested fruits, to determine different parameters with the same measurement and, as a consequence, to increase the number of useful data. Examples of defining fruit quality and ripening stages of two fruit specie (apple and kiwifruit) in pre- and post-harvest situations with NIRs and e-nose are here reported. NIRs technique provided good estimation of both the parameters normally determined with standard destructive technique as soluble solids, flesh firmness and acidity as well as starch and sucrose, fructose and glucose normally determined gas chromatographically. The R2 values ranging from 0.79 up to 0.96 for the two species and quality parameters considered, obtained with the statistical analyses (multiple linear regression) confirm the accuracy of the data obtained with the NIRs. The combined used of NIRs and e-nose techniques improve the accuracy of the obtained results.