

Title Non destructive quality measurements on apples
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Abstract

Quality traits of apples such as flesh firmness, total soluble solids (TSS) and titratable acidity (TA) determine consumer's choice. The classical Magness-Taylor (MT) type of firmness tester or TSS determination using a refractometer are destructive and site specific methods. Thus, efforts are pursued to develop non destructive techniques to measure quality attributes of apples and/or other fruit. The NIR-Case instrument (SACMI, Imola, I) has recently become commercially available and can be used to measure quality traits of intact fruit. This instrument has to be calibrated based on measurements with reference methods on the same sample. The quality of apples stored up to ten months in regular and controlled atmosphere was monitored using both the NIR-Case instrument and reference methods. For firmness a correlation of 86% was found between NIR and MT-firmness measurements. Encouraging correlations were also obtained for TSS and TA. However, although performance of the NIR-Case instrument seems promising, an all-embracing evaluation of its reliance must include further assessment of effects among other parameters such as cultivar, origin and year.