

Abstract:

The stage of fruit ripening is an important fruit quality parameter and the prediction of an optimal picking date is of economic importance as well for the fruit growers as for the fruit consumers. All methods generally used to determine maturity are destructive except, fruit colour and fruit size. Unfortunately these characteristics are not always good indicators for quality. Destructive methods like acidity, soluble solids content, firmness are reliable but labor-intensive. In the last decade non-destructive optical techniques such as chlorophyll fluorescence have been developed for the determination of fruit quality. Most portable fluorimeters used to assess apple fruit ripening and senescence are point-source chlorophyll fluorescence techniques (Song et al., 1997). A transportable fluorescence imaging system has been developed in our lab. The aim of this research is to evaluate the use of this imaging system to recognise quality and maturity of fruits sampled from trees subjected to different treatments which influence the fruit ripening process. Our results indicate clearly that the influence of these chemicals can be detected by fluorescence imaging before any visual differences can be observed.