

Title Maturity assessment of *Pyrus communis* L. cv. Rocha at harvest and along cold storage through chlorophyll a fluorescence and colour parameters

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Citation ISHS Acta Horticulturae 800:1053-1060. 2008.

Keywords colorimeter; fluorescence; fruit maturation; Rocha pear

Abstract

Chlorophyll (Chl) a fluorescence parameters were studied, in order to establish if they can be used as a tool to evaluate fruit maturation status in *Pyrus communis* L. cv. Rocha. Correlations were established with known colour parameters (Hue angle, H°, Colour Index, CI, and Chroma). Fruits were obtained from four harvest dates and during a cold storage period of up to 5 months. H° and CI gave very strong correlations ($0.86 < r^2 < 0.98$) with all the studied fluorescence parameters, except non-photochemical quenching (NPQ). The best ones were observed with the photochemical efficiency of photosystem II (Fv/Fm) and the maximal fluorescence (Fm). On the contrary, Chroma values did not correlate with fluorescence parameters. It is concluded that non-destructive Chl a fluorescence analysis is a reliable method to evaluate 'Rocha' pear colour (thus, maturation) evolution, with strong economical and accuracy advantages.