

Title Non-destructive determination of post-harvest ripening of *Capsicum × annuum* 'Kárpia'
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Abstract

Our aims were the evaluation of quality change during postharvest ripening of *Capsicum × annuum* 'Kárpia' pepper by the use of non-destructive methods such as chlorophyll fluorescence image analysis, digital image analysis and texture analysis by acoustic impulse-response measurement. 65 fresh pepper fruit were stored at 10°C and 20°C unpacked and in LDPE packaging, respectively. Chlorophyll activity and chlorophyll content decreases with progressive ripening only in the fruit not the stalk, independently of the treatment, but the velocity of the changes was significantly different concerning storage temperature. Ripening induced chlorophyll degradation was the most effective in samples stored at 20°C, independently of packing method. The significant change in the green over red colour-ratio obtained from digital image analysis truly reflected the visible changes in surface colour due to postharvest maturation. Temperature effects on the decline in fruit stiffness became significant in non-packed samples after day 3. Concerning LDPE-packed samples, storage temperature significantly affected stiffness changes only after 6 d, resulting in better overall quality and longer shelf-life of cool-stored packed fruit. Stiffness of non-packed samples measured on day 2 and 3 (stored at 20°C and 10°C, respectively) was almost equal to that of LDPE-packed samples on day 7. Stiffness of LDPE-packed samples decreased less and slower than that of non-packed fruit, independently of storage temperature.