

## Polyphenol oxidase activity during ripening of pear fruit

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Enzymatic browning can be reduced through the regulation of the level of oxygen available for the oxidation reaction. Studies have been performed in order to find how oxygen in the atmosphere storage and stage of maturity of the fruit can be involved in the activity of the polyphenol oxidase (PPO) [1,2].

The objective of this study was the evaluation of the effects of controlled atmosphere (CA) storage on PPO activity and colour of 'Rocha' pear.

Polyphenol oxidase activity was determined by a continuous spectrophotometric method. Colour was evaluated by reflectance using the CIE-L\* a\* b\* scale. Fruits were stored under four controlled atmosphere CA conditions. Two atmospheres with 2% O<sub>2</sub> and 0.5% or 1.5% CO<sub>2</sub> and two other with 4% O<sub>2</sub> and the same levels of CO<sub>2</sub>. Pears stored in air (NA) were used as a control. PPO activity and colour parameters were measured after seven months of storage and at different stages of maturity. After three days of exposure to NA at room temperature, pears that had been stored in NA showed tendency to present higher PPO activity than fruits from any CA condition. The b\* parameter and chroma were also higher and hue value was lower, revealing a higher extent of browning. After six and seven days of exposure at room temperature all conditions produced a decrease in the PPO activity. The b\* value decreased for the CA conditions and increased for the control and hue and chroma followed the same tendency. The enzyme activity of the CA-stored samples conditions seemed to stabilise after this time.

**Acknowledgements:** This work was supported by the project PAMAF 6034 (INIA, Portugal). The second author acknowledges financial support from ALFA B.3 program and the Universidad de La Sabana, Bogotá, Colombia.

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[2] V. Lattanzio, A. Cardinali, S. Palmieri, *Ital. J. Food Sci.* 1 (1994) 303-323.