

## Controlled atmospheres to reduce postharvest damage in Blackberry (*Rubus* sp.)

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### Abstract

Blackberry is fruit of short post-harvest life. Post-harvest life is shortened even more by the presence of pathogens; for this reason it is necessary to evaluate alternatives to increase shelf-life with minimal perceptual, nutritional, sensorial or toxic-residue damage. Blackberries, inoculated and not inoculated, were exposed to 9 treatments (3 levels of atmospheric pressure and 3 intervals of refrigeration at 2°C). The variables measured were: pathogen identification, fruits with mycelium, ethanol and acetaldehyde (%), firmness, weight loss (%), external colour, anthocyanine concentration, phenylalanina amonialiase (PAL) and Poliphenol Oxidase (PPO) enzyme activity, the °Brix acidity relationship, acidity and ascorbic acid concentration. A completely random block design was used with three replications and the experimental unit was 200 g of fruit for each treatment. There were no significant effects of atmosphere control on pathogens with the exception of *Botrytis cinerea*. The level of ethanol increased significantly with the highest dosis of O<sub>2</sub> and CO<sub>2</sub>. Changes in firmness, weight loss, external colour, the °Brix:acidity relationship and ascorbic acid were acceptable as parameters for fruit quality only after two days at 2°C plus two days at environmental condition (26°C) in a controlled atmosphere treatments. Anthocyanin concentration, PAL and PPO activity were not affected by the treatments.

**Key words:** Blackberry, controlled atmosphere, *Botrytis cinerea*, post-harvest, quality.

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