

## **ISHS Acta Horticulturae 800: X International Pear Symposium**

### **SUGAR VARIATION IN 'ROCHA' PEARS AND *PENICILLIUM EXPANSUM* REDUCTION BY *AUREOBASIDIUM PULLULANS***

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#### **Abstract:**

In an attempt to clarify the mode of action of the antagonist *Aureobasidium pullulans*, which is being investigated for its ability to control the postharvest infections of 'Rocha' pears by the pathogen *Penicillium expansum* and considering the possibility of competition for sugars, we studied the quantitative variation of fructose, sucrose, sorbitol and glucose in fruits at 3 harvest dates, cold stored (-0.5 to 0°C, 95% RH) and infected 1, 3 and 5 months after harvest. The application of the antagonist reduced the infections in 31 and 34% of the fruits inoculated with the pathogen 1 and 3 months, respectively, after harvest, while the infection performed on the 5<sup>th</sup> month showed only 20% reduction. The efficacy of the antagonist, expressed in the reduction of lesion diameters, reached values of 60, 64 and 63% in fruits infected 1, 3 and 5 months after harvest, respectively. From the 4 sugars analyzed only fructose was apparently reduced in fruits at the 3 infection dates. The application of *Aureobasidium pullulans* seems to oppose this reduction. Similar effects, although with lower values, can be detected in the other sugars but mainly in fruits infected 1 month after harvest. At this date, fruits from the commercial harvest (3<sup>rd</sup> harvest) with application of the pathogen showed a reduction of 22% in fructose, of 26% in sorbitol and of 29% in glucose. However, the application of the antagonist, prior to the inoculation of the pathogen, changed these values to 9.9 and 8.0%. The results obtained, so far, indicate the possibility of *Aureobasidium pullulans* controlling *Penicillium expansum* by conditioning its consumption of certain sugars, but this work requires further development.