



## **MADRID98-COST915 CONFERENCE**

# **Physiological and Technological Aspects of Gaseous and Thermal Treatments of Fresh Fruit & Vegetables**



## **BOOK OF ABSTRACTS**

October 15-16, 1998

Dept. Plant Foods Science & Technology

Instituto del Frío - CSIC

Madrid, Spain

## ACCUMULATION OF 1,3- $\beta$ -GLUCANASE AND CHITINASE-LIKE PROTEIN BY HIGH LEVELS OF CO<sub>2</sub> IN CHERIMOYA FRUIT STORED AT CHILLING TEMPERATURE

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In previous works we confirmed the beneficial effects of pre-treatments of cherimoya (*Annona cherimola* Mill.) fruit with high (20%) CO<sub>2</sub> levels on delaying ripening process and preventing chilling damages. In this study we focus on the effect of 20% CO<sub>2</sub> plus 20% O<sub>2</sub> for 3 days on the production of some pathogenesis-related proteins (PR-proteins) in cherimoya fruit stored at low temperature. In immunoassays with anti-PR-Q and PR-2 protein sera, high CO<sub>2</sub> levels were found to provoke the coordinated accumulation of chitinase-like protein and 1,3- $\beta$ -glucanase. Chitinase activity was higher in treated than in untreated fruit. In demonstrating that PR-Q protein, which represent a class of acidic chitinases, and PR-2 protein with 1,3- $\beta$ -glucanase activity, are induced by high CO<sub>2</sub> levels, this study draws attention to an interesting new possibility. It is suggested, further, that the accumulation of these proteins in CO<sub>2</sub>-treated fruit may be part of a generalised defensive response associated with pH regulation.