Title Research on the interaction CO_2/ACC oxidase in pear fruit tissue

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Abstract

Pear is a climacteric fruit in which ripening is regulated by the plant hormone ethylene. High levels of carbon dioxide are currently used to inhibit ethylene biosynthesis and/or action and in consequence to retard the fruit ripening. The mechanism of the CO_2 action is still not fully understood. However, it has become apparent that ACC oxidase, the last key enzyme in the ethylene biosynthesis pathway, could be a target for CO_2. The aim of this research is to advance in the knowledge of the complex interaction CO_2/ACC oxidase in pear fruit. This work, carried out on 'Blanquilla' pear, reveals that the response of in vivo ACC oxidase activity to CO_2 is modulated among other factors by the pH and ripening stage of the tissue. The results also indicate that ACC oxidase seems not to be the primary action site of CO_2 in the inhibition of the autocatalytic ethylene production.