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Poster Abstract - E.13

PEACH (*PRUNUS PERSICA* L.) ENDOPOLYGALACTURONASE AND FRUIT SOFTENING: A PRELIMINARY IMMUNOLOCALIZATION STUDY IN MELTING-FLESH AND NON-MELTING-FLESH FRUITS

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During ripening, fleshy fruits pass through textural changes that cause loss of tissue firmness and subsequent softening. This process is the consequence of cell walls dismantling, mediated by different enzymes that catalyse pectins modification and disassembly. Of these, endopolygalacturonases (endo-PGs) are hydrolytic enzymes that catalyze the cleavage of galacturonide linkages resulting in disassembling of such polymers in the cell walls. In order to study the softening process in peach, the role of these proteins, which perform their activity only once they reach the cell wall, has been investigated during fruit ripening, by producing specific antibodies for endo-PG immunolocalization. Melting-flesh and non-melting-flesh peaches have been used as experimental material.

It is known that in peach, fruits of melting varieties show two phases of softening: a slow decline in firmness early in ripening and a rapid and dramatic softening ("melting") late in ripening. During this second phase there is an increase in activity of specific endo-PGs, associated with an apparent flesh softening. In non-melting-flesh fruits the final melting phase of softening is absent, therefore no significant endo-PG activity is present, and fruits remain relatively firm when fully ripe. Our preliminary experiments performed by 2D-PAGE and immunoblotting showed the great ability of the newly produced antibodies to specifically recognise, only in melting fruits, at least four different fruit endo-PG isoforms. Detected proteins were localized by the same antibodies in both cytoplasm and cell wall.