Title	Identification of lignin components of jicama roots and their relation to the browning of the cut surface
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Abstract

We have demonstrated that the browning of cut jicama is related to increased peroxidase activity and to lignin content, but information is lacking about the constituents of the lignins and their relation to color changes. The purpose of this research was to identify the monolignols in the lignin of jicama root and relate them to browning. Cylinder-shaped samples of jicama (1.8x4 cm) were stored at 20 °C with a flow of humidified air. Samples were taken from the outer tissue (0-1 mm) at different times to measure the color and composition of the lignins by means of oxidation of the insoluble residue in alcohol with nitrobenzene in an alkaline medium. The resulting aldehydes were separated and quantified using as HPLC, and each peak was analyzed by GC-MS. Vanillin was identified and quantified (formed from coniferyl alcohol, syringaldehyde, and p-hydroxybenzaldehyde: 4.1, 2.0y 1.1 mgg-1 FW respectively), indicating that jicama lignins are mainly composed of coniferyl and synapyl alcohols. During storage, the concentration of the three aldehydes increased (13.11, 8.85, 5.57 mgm-1 FW respectively) and this was related to changes in the chroma of the tissues (from 7.14 to 19.56). The increase in the content of lignin constituents was directly related to changes in the color of the cut jicama, indicating that lignification causes the browning of this tissue.