

**Title** Study of the Early Events Leading to Cassava Root Postharvest Deterioration  
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#### **Abstract**

Cassava (*Manihot esculenta* Crantz) roots, the fourth most important food crop of the world, is the major carbohydrate source for more than 600 million people in Africa, parts of Latin America, Oceania, and Asia. Besides being a rich source of starch (~80% of root), the root is also rich in vitamin C, some carotenoids, calcium, and potassium. Upon harvest, roots begin a process of physiological decay within 24–36 h called postharvest physiological deterioration or PPD. The early events leading to PPD are not known. Research to date concerning the study of PPD has mostly focused on the signaling events several hours after harvest. Upon examination of physiological and biochemical changes occurring 3 or 4 h after cassava root detachment, changes in the nature and type of volatile compounds emitted, secondary metabolites accumulated, and changes in the expression of key genes in reactive oxygen species (ROS) turnover were observed along with a correspondent increase in tissue cytoplasmic singlet oxygen presence using radical-specific fluorescent imaging of tissue samples. It is likely that these findings have significant implications to help us understand and assist in dissection of the early events leading to the postharvest deterioration of cassava root.

<http://www.springerlink.com/content/6204800483j68104/fulltext.pdf>