

Controlling postharvest physiological deterioration and surface browning in cassava (*Manihot esculenta* Crantz) roots with hot water treatment

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Abstract

Cassava is a staple food of almost one billion people in the developing world and is a raw material for various industrial products. A primary constraint in production and utilization is the very short shelf life of the fresh roots of 1-3 d due to rapid postharvest physiological deterioration (PPD) and cut surface browning. This study determined the effects of hot water dip (HWD) in controlling PPD in whole or unpeeled roots and both PPD and surface browning in peeled roots of cassava cultivar 'Golden Yellow'. Unheated roots served as control. Recommended modified atmosphere packaging (MAP) was included as combination treatment. Storage was done at ambient (25-33°C, 65-88% relative humidity). HWD reduced PPD especially when combined with MAP. It was more remarkable in reducing surface browning of peeled roots whereas MAP had no effect. HWD at 54-56°C for 10 min was the more promising treatment for PPD control while HWD at 57-59°C for 10 min for surface browning control. MAP with or without HWD markedly reduced weight loss of both unpeeled and peeled roots. Hydrocyanic acid (HCN) content was low; it increased in response to 54-56°C HWD.