

Effect of soil pH on postharvest pathological deterioration of sweet potato storage roots

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Abstract:

Sweet potato (*Ipomoea batatas* (L.) Lam.) is the world's seventh most important food crop but its potential to contribute to food security and income generation is limited in tropical developing countries by its short shelf-life. Environmental and cultural stresses during growth and storage are known to directly or indirectly predispose sweet potato storage roots to postharvest microbial infection. Research was conducted to determine the effect of storage temsoil pH on postharvest deterioration of sweet potato roots using two sweet potato cultivars, Yanshu 1 (CII' 440024) and KSP 20 (CIf 440170), and three soil pH levels, 4.6, 5.8 and 6.1 arranged in randomized complete block design with four replications. Preharvest experiments were conducted in a greenhouse followed by postharvest evaluations in the laboratory at the National Agricultural Research Laboratories (NARL), Nairobi. Nine-mm circular agar plugs, removed from the edge of actively growing two-day old culture of two postharvest pathogens of sweet potato, *Rhizopus oryzae* and *Botryodiplodia theobromae*. were used to inoculate the sweet potato roots. Pathological deterioration (PD) was estimated by measuring the diameter and depth of the developing internal lesion (extent of tissue degradation) on the storage roots, 24 hours after inoculation. Results showed that postharvest PD of the storage roots was not significantly ($P>0.05$) influenced by growing sweet potato in soil at the different pH levels. Growing sweet potato in soil at pH levels within the range for normal plant growth is unlikely to affect postharvest deterioration of the storage roots. Key words: *Ipomoea batatas*, *Botryodiplodia theobromae*, *Rhizopus oryzae*