Title Effects of maleic hydrazide, ethephon and paclobutrazol as preharvest spray on yam tuber dormancy

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Abstract

The pronounced tuber dormancy of yam of about 2-4 months determines the potential storage life of the tubers and the availability of planting materials for the next cropping period. This study determined the effects of maleic hydrazide (MH, 3.3 kg active ingredient/hectare), 500 ppm ethephon using the commercial formulation Ethrel, and 500 ppm paclobutrazol (PB) which were sprayed to runoff one month before harvest on tuber sprouting of purple yam cv. 'Kinampay' during postharvest storage at ambient (23-31^{o}C, 65-92% RH). Unsprayed plants served as control. MH and PB did not affect tuber yield while ethephon reduced yield due to the production of small-sized tubers. Tuber sprouting started after 6 weeks of ambient storage. MH delayed tuber sprouting by at least 2 weeks and slowed growth of the sprouts. Ethephon and PB had no marked effect. Respiration rate increased during sprout formation and was lower in MH treatment while ethylene production did not correlate with tuber sprouting. Losses in weight, water and dry matter increased with storage but at a lower magnitude in MH-treated tubers. Starch content increased after one month of storage and leveled off up to the 5th and last month while sugar content decreased with storage. α-amylase activity was lowest in MH-treated tubers implying its important role in tuber dormancy and sprouting.