

Title Pre-harvest treatment with aminoethoxyvinylglycine influences fruit ripening and post-storage quality of benzothiadiazole-treated rockmelon (*Cucumis melo* L.)

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Citation Horticulture, Environment, and Biotechnology, 51(4) p. 288-294, 2010.

Keywords Avg; Disease resistance; Fruit ripening; Soluble solid content

Abstract

ReTain is a commercial product containing the plant growth regulator aminoethoxyvinylglycine (AVG). This compound is known to competitively inhibit ethylene production. Benzothiadiazole (BTH) is an activator of systemic acquired resistance used for triggering induced resistance in plants. The pre-harvest foliar application of ReTain alone or BTH and ReTain, 2 weeks before anticipated harvesting time, delayed the median harvest day by 5.5 days. Melons harvested from plots were treated with ReTain or combined with BTH had lower rates of ethylene production at harvest and after cold storage than melons harvested from BTH-treated and control plants. ReTain-treated fruit had about 1% higher soluble solid concentrations (SSC) than control fruit. Indicators of delayed fruit maturity were greener rind and firmer flesh. In addition, the effect of ReTain or the combination of ReTain and BTH on the tolerance to postharvest rot was investigated. The results suggest that application of combined ReTain and BTH has major benefits as a harvest management tool for rockmelon production by allowing growers to regulate fruit ripening, improve fruit quality and reduce postharvest rot severity.