

Title            The effects of ReTain(R) (AVG) on the postharvest storage life of plums, peaches, nectarines, apples and bananas.

Author         Jobling, J., Morris, S. C. and Rath, A. C.

Citation        Australian postharvest horticulture conference, Brisbane, Australia, 1-3 October, 2003; 132-133

#### **Abstract**

ReTain plant growth regulator is a commercial formulation of aminoethoxyvinylglycine (AVG). AVG is known to competitively inhibit the activity of the enzyme ACC (1-aminocyclopropanecarboxylate) synthase which is the rate limiting enzyme in the ethylene biosynthesis pathway. By inhibiting the activity of ACC synthase, ethylene mediated ripening processes can be delayed. The postharvest benefits of inhibiting ethylene biosynthesis with AVG were studied for Tegan Blue plums, O'Henry and Desert Red peaches, Arctic Snow nectarines, Pink Lady apples and Cavendish bananas. In these studies AVG inhibited ethylene production and slowed ethylene-mediated ripening processes, particularly the loss of flesh firmness in Tegan Blue plums and Pink Lady apples. Postharvest dipping of bananas with Retain slowed the colour development of mature green bananas. However, the treated fruits also developed chilling injury symptoms during storage at 13 deg C. The storage temperature was the lower limit for safe storage under normal conditions. It was possible that the fruit's sensitivity to chilling could have been slightly shifted as a result of the AVG treatment. AVG may have blocked the wound response and so mild chilling injury was not repaired causing visible symptoms to develop at 13 deg C.