

RESPONSE OF 'HASS' AVOCADO TO METHYL BROMIDE FUMIGATION

Mary Lu Arpaia

Dept. of Botany and Plant Sciences University of California, Riverside

Laurie G. Houck, Preston L. Hartsell

USDA-ARS

Horticultural Crops Research Laboratory Fresno, CA

Postharvest quarantine treatments of methyl bromide fumigation (MB) or a combination of MB and cold storage are allowed for the Mediterranean Fruit Fly (*Ceratitidis capitata*) and other fruit flies. A study was undertaken to address the effect of MB on the fruit quality of 'Hass' avocados. Fruit were obtained from two growers at a commercial packinghouse three times during the 1991 season. Fruit were fumigated at 21C or 30 C within 24 hours after harvest or after 1 week of storage. Fruit were evaluated after 0, 1, 2 or 4 weeks of storage at 5 C. Fruit quality was determined by flesh firmness, days to ripe, ease of peeling, weight loss, external discoloration, flesh or vascular discoloration and the presence/absence of decay. There was considerable variability between grower lots, however fruit that were fumigated had higher levels of weight loss, vascular or flesh discoloration and decay after 4 weeks of storage. Fumigated fruit were also more difficult to peel after ripening. The timing of fumigation had little effect on fruit quality. Generally, fruit which were fumigated at 30 C had less damage. These results suggest that 'Hass' avocado could withstand MB as long as the fruit is marketed within 2 weeks of harvest.

We are continuing this study during 1992. Fruit from two grower lots will be obtained 4 times during the year from Ventura County from a commercial packinghouse. There are 3 major objectives for this year: 1) Does aeration time effect the response of 'Hass' to methyl bromide fumigation; 2) How does methyl bromide fumigation compare to a standard cold treatment for the Mediterranean Fruit Fly; and 3) What is the residual methyl bromide and inorganic bromine ion concentrations in the fruit after fumigation.