

#### Abstract:

Subtropical fruits exported from South Africa to distant markets require storage at low temperature for long periods. Defects usually defined as chilling injury often result. Shipping at higher temperatures, however, at times accentuates the external symptoms, accelerates fruit ripening, and decreases shelf life. The role of water loss prevention, particularly fruit coatings, were investigated for mango and avocado. 'Heidi' mango was used, and stored at 11 °C for 15 days. 'Fuerte' and 'Pinkerton' avocado were stored at 2 °C, 5.5 °C and 8 °C, for 30 days. Micro-perforated polypropelene bags were included for avocado. Fruit mass loss was determined during storage and ripening at 20 °C, and the shelf life and appearance were evaluated. Light and environmental scanning electron microscopy (ESEM) of the fruit surface was conducted. The most severe "chilling injury" occurred where water loss was not controlled, suggesting the symptom is strongly influenced by dehydration. Fruit damage always started around stomata or lenticels. The correct balance between water loss prevention and fruit gas exchange is nevertheless required. ESEM showed the best wax formulations contained small holes. It is suggested that wax coatings should protect fruit from water loss but allow sufficient gas exchange during post storage ripening. Depending on fruit type and storage conditions, different formulations are required, and micro-perforated bags removed before ripening may in some cases be preferable to waxing.