

A-207

THE INFLUENCE OF ROOTSTOCK AND MINERAL NUTRITION ON ANTHRACNOSE DEVELOPMENT IN 'HASS' AVOCADO

J.M. Anderson^{1,2,3}, K.G. Pegg¹, S.L. Willingham¹, L.M. Coates¹, A.W. Cooke¹ y J.R. Dean¹

¹.Queensland Department of Primary Industries

² Cooperative Research Centre for Tropical Plant Protection

³University of Queensland. Plant Pathology Building, 80 Meiers Rd, Indooroopilly 4068, Qld, Australia. Email: Jay.Anderson@dpi.qld.gov.au

Anthracnose caused by the fungus *Colletotrichum gloeosporioides* is the most serious disease of 'Hass' avocado fruit grown in warm humid eastern Australia. Infection occurs on developing fruit in the field but disease symptoms do not appear until fruit ripening. Current management practices for anthracnose include tree hygiene, pre-and postharvest fungicides and optimisation of postharvest storage conditions (ripening temperature, controlled ripening). Although these practices reduce the disease, definitive control measures are not available and the disease still causes serious losses.

Our research over a number of seasons has shown that rootstock and mineral nutrition can have a significant impact on the susceptibility of 'Hass' avocado to anthracnose. 'Hass' fruit from trees grafted to a range of Guatemalan rootstocks ('Velvick', 'Anderson 8' and 'Anderson 10') had significantly less anthracnose than trees grafted to the Mexican rootstocks 'Duke 6' and 'P1'. Mineral nutrition also plays a vital role in disease development and there is a strong positive correlation between anthracnose severity and the nitrogen/calcium ratio in the skin of the fruit. Field experiments with nitrogen fertiliser have shown fruit that contain excessive nitrogen have significantly higher anthracnose severity regardless of rootstock race.

Our investigations have shown that an understanding of rootstock and mineral nutrition are an essential part of the integrated management of anthracnose in 'Hass' avocado.