

Morphology of the Avocado Phylloplane as Related to Microbial Colonization

Lise Korsten, Gina M. Sanders, and Jan Kotze

Department of Microbiology and Plant Pathology, University of Pretoria, Pretoria 0002, Republic of South Africa

Abstract. In this investigation the avocado (*Persea americana* Mill.) phylloplane was examined microscopically as the initial phase of a biological control program. Morphological features such as topography, wax formation and number of trichomes and stomata which could play a role in microbial attachment and colonization, was studied and compared between the economically important avocado cultivars in South Africa. The adaxial leaf surface is less water repellent due to its flatter corrugation and absence of wax rodlets. The abaxial leaf surface of 'Fuerte' is more water repellent than that of 'Hass', 'Edranol', or 'Ryan', due to its higher degree of corrugation and greater number of wax rodlets protruding from the surface. The latter also provides protective niches for microbial colonization. No major differences were observed between cultivars when comparing their adaxial surfaces which had plate-like wax coverings. Thus, the avocado phylloplane provides an ideal surface for microbial colonization on the abaxial surface, but not on the adaxial surface.