GENETIC VARIATION AMONG *GLOMERELLA CINGULATA* ISOLATES FROM DIFFERENT LAURACEAE HOSTS

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Four populations of *Glomerella cingulata*, 20 isolates each, were sampled from avocado (*Persea americana*) fruit from orchards throughout New Zealand and from Queensland, Australia, and from leaves of *Beilschmeidia tawa* and *Beilschmeidia taraire* in Hawke's Bay and the Waitakere Ranges, respectively. Among 80 isolates, 44 different colony morphologies were identified, with only three of these occurring in more than one of the four populations. The population from *B. taraire* showed less variation in colony morphology than did the other populations, with a Shannon and Weaver information statistic H' of 0.47, compared with 0.71 to 0.93. More of the diversity occurred within the populations (64%) than between them (36%). Sequence analysis of the ITS region using maximum-parsimony identified two clades among the isolates, with all isolates from the native New Zealand trees clustering in one clade and all avocado isolates in the other. Some variation was detected within the clades, although all isolates from *B. taraire* had identical sequences. This study indicates that *G. cingulata* populations from avocado and native trees may represent genetically isolated populations that have evolved separately. To identify geographic origin of fungal populations from avocado a different DNA sequence with more variation is required.

EFFECT OF POSTHARVEST DIPS ON APPLE SURFACE MICROFLORA AND *DASINEURA MALI* REMOVAL

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The effectiveness of six pre-washing and nine post-washing dips on loosening apple leaf curling midge (ALCM) cocoons and reducing fruit surface microflora, respectively, was examined. In the laboratory, fungal populations were significantly reduced (12-17 cfu/cm²) after 10-min dips in medium or high concentration Nylate® (5 ppm or 10 ppm free Cl₂) or SteriMax™ (0.08%) compared with controls (53-67 cfu/cm²). An ethanol dip (1 min, 50%) significantly reduced fungal and yeast populations compared with all other treatments. Dips in low concentration controlled-release chlorine products (10 min) and in sodium hypochlorite (1 min, 100 ppm free Cl₂) did not affect fungal populations significantly. The same products, except ethanol which was replaced by an anti-foam solution (0.75%), were tested on ALCM cocoons, but none loosened cocoons effectively compared with the control. In a packhouse, a 6-min post-washing dip in high concentration Nylate® (7.5 ppm free Cl₂) significantly reduced fungal (25 cfu/cm²) and yeast (1.2×10^3 cfu/cm²) populations compared with washed and unwashed apples (274 fungal cfu/cm² and 2.3×10^4 yeast cfu/cm²). Both laboratory and packhouse studies indicated that post-washing dips can lower the apple surface microflora, which may reduce storage rot incidence. However, the pre-washing dips did not appear to loosen ALCM cocoons.