

### Abstract:

Harvested fruit of feijoa (*Feijoa sellowiana*) are of mixed stages of maturity. To ascertain whether a non-destructive technique such as density grading could discriminate between fruit with different internal attributes, the density of 400 fruit (cv. 'Apollo') was recorded using fruit samples categorised as unripe, ripe and over-ripe. Density was subsequently correlated with physicochemical measurements and ripeness indices from dissected fruit. Fruit densities ranged between 920 and 990 kg m<sup>-3</sup>. No convincing relationships with density were observed with dry matter (DM) ( $r = 0.20$ ;  $P < 0.001$ ), soluble solids ( $r = 0.08$ ; not significant), or locule clearing ( $r = 0.32$ ;  $P < 0.001$ ), a ripeness index specific to feijoa. The highly variable nature of the density data was attributed to internal trapped air. From the density of the dry matter of feijoa fruit, mean (and standard deviation) 1587 (11) kg m<sup>-3</sup>, internal airspace was found to range between 6 and 15% of the volume of individual fruit. The likely cause for the presence of air is poor pollination. This eliminates 'Apollo' as a candidate for grading by density methods, but does not preclude the possibility that other feijoa cultivars may be better contenders.