

**Title** Discrimination of mango fruit maturity by volatiles using the electronic nose and gas chromatography

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#### **Abstract**

Mango fruit (*Mangifera indica* L.), cv. 'Cogshall', 'Kent' and 'Keitt' were harvested at different maturities (61–115 d past flowering and 80–307 average g fresh weight for 'Cogshall') and at different sizes (364–1563 and 276–894 average g fresh weight for 'Keitt' and 'Kent', respectively). Immediately after harvest (green) or after 1 week of ripening at room temperature (ripe), fruit were homogenized or left intact and evaluated by electronic nose (enose) or by gas chromatography (GC) for aroma and other volatiles as well as for soluble solids and acids. Volatile data from the different harvest maturities and ripening stages were discriminated by using multivariate statistics (discriminant factor analysis). Both the enose and GC were able, in most cases, to separate fruit from different harvest maturities, especially for 'Cogshall' mangoes, at both the green and ripe stages as well as discriminate green from ripe fruit and fruit from the different varieties within a maturity stage. Solids and acids data indicated that later harvest maturities resulted in sweeter fruit and later-harvested fruit had a different volatile profile from earlier-harvested fruit. Mango fruit volatiles may be useful as maturity markers to determine optimal harvest maturity for mango fruit that results in full quality upon ripening.