

Title Volatile metabolic profiling to detect and discriminate diseases of mango fruit
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Abstract

Volatile metabolites from headspace gas of mango cultivars Tommy Atkins and Keitt, wounded and inoculated with two pathogens, *Colletotrichum gloeosporioides* and *Lasiodyplodia theobromae* or non-inoculated controls were profiled using a GC/MS to develop a technology to discriminate diseases. Several disease discriminatory compounds were identified and classified into three groups: (i) compounds unique to only one treatment; (ii) compounds common to two or more treatments but not to all; and (iii) compounds common to all treatments but with varying in their abundance. 1-pentanol and boronic acid ethyl were detected in only *Lasiodyplodia* -inoculated mangoes while thujol was observed only in *Colletotrichum* -inoculated mangoes. Models based on significant mass ions classified up to 100% of the diseases/inoculations. The disease discriminatory compounds and discriminant analysis models developed here could be used in the early detection of postharvest diseases of mango fruit, after validation under commercial conditions.