Analysis of volatile compounds from Malaysian durians (Durio zibethinus) using headspace SPME coupled to fast GC-MS.

ABSTRACT

Headspace solid phase microextraction (SPME) coupled to fast gas chromatography-mass spectrometry (GC-MS) was applied to analyze the volatile compounds of durian (Durio zibethinus) varieties D2, D24, and D101 from Malaysia. Sampling sensitivity was improved by evaluation of sample matrix, sampling size, headspace volume, salt addition and sampling duration. A total of 39 volatile compounds were identified including 22 esters, 9 sulphur-containing alkanes, 3 thioacetals, 2 thioesters, 2 thiolanes and 1 alcohol. The relative amount of volatiles estimated using 1 ppm internal standard (IS) revealed the differences in the volatile composition among varieties. Further classification and characterization of each durian variety was successfully conducted using principal component analysis (PCA).

Keyword: Durian, Durio zibethinus, Solid phase microextraction (SPME), Fast gas chromatography, Principal component analysis (PCA)