

Optimization of headspace sampling using solid-phase microextraction (SPME) for volatile components in starfruit juice

ABSTRACT

Volatiles are important flavor compounds of fruit juices and beverages. In this study, a headspace Solid-phase microextraction (SPME) gas chromatography-mass spectrometry (GC-MS) was used to analyze volatile components in starfruit juices. Several experimental parameters (e.g. adsorption temperature, adsorption time and sample volume) were optimized to improve sampling efficiency in two aspects; maximum adsorption and selective adsorption of volatile components onto SPME fiber. The following conditions was found to be optimal for selectivity and sensitivity: adsorption temperature of 50°C for 30 min with a 65 μ m divinylbenzene/polydimethylsiloxane (DVB/PDMS) coated fiber with and sample volume of 15 g in a 30 ml vial. The proposed technique could be applied for the analysis volatile compounds that contribute to starfruit juices flavor in different cultivars and also their ripening stages.

Keyword: Optimization, SPME; Starfruit; Volatile compounds; GC-MS