Abstract

Since the aroma is one of the essential factors for evaluating fruit quality, a headspace–solid-phase microextraction and gas chromatography–mass spectrometry method for the identification and quantification of the aroma volatile constituents in melon fruits has been developed. Two different varieties of *Cucumis melo* L., reticulatus and inodorus, have been analyzed and 66 volatile compounds have been identified and quantified; among these, the impact aroma compounds are included too. The volatile compounds have been identified by linear retention index, mass spectra, standard injection, and reference data; the quantification has been carried out by the standard addition technique. The method proposed showed good linearity within the concentration range tested; the precision, CV was <15% for all the components identified, and the limits of quantification was very low for most of the components, for example, 1.7 ng/g for ethyl octanoate and 1.5 ng/g for limonene. The results emphasized each fruit variety could be distinguished by a different qualitative and quantitative volatile fraction composition; as example, reticulatus samples were characterized by a high amount of esters (192.8 μg/Kg), which were present as traces in inodorus. Sensory analysis was performed on the samples and quantitative volatile and sensory data were correlated using multivariate analysis. The developed method allowed us to obtain reliable quantitative data of the melon volatile constituents which are necessary for the fruit quality evaluation since the aroma contribution of a particular substance is assessed by knowledge of the ratio between its amount and odor threshold level.

http://www.springerlink.com/content/61525lx445505j50/fulltext.pdf