

## ABSTRACT

The comprehensive flavour characterisation and volatile compounds of raw *L. edodes*, hot water blanching (HB) sample and microwave blanching (MB) sample were comparatively analysed by electronic nose technology and headspace solid-phase micro-extraction combined with gas chromatography-mass spectrometry (HS-SPME-GC-MS). Results indicated that volatile components in *L. edodes* markedly changed after HB and MB. Volatile compounds of raw *L. edodes* consisted mainly ketones, sulphide and alcohols, and 3-octanone, as well as 1-octen-3-one, were the major compounds. The content of ketones and sulphides in blanched samples markedly decreased, while the relative content of aldehydes, hydrocarbons and esters increased, which became the major volatile compounds of treatment samples. In addition, the percentage contents of esters, alcohols and sulphides in MB samples were significantly ( $P < 0.05$ ) higher than that in HB samples, especially 1-octen-3-ol, which contributes more to mushroom flavour. Therefore, MB is a better pretreatment method of *L. edodes* processing and cooking according to the results of experiment.

**Keywords:** Blanching, electronic nose, HS-SPME-GC-MS, *Lentinula edodes*, volatile compounds.