International Journal of ChemTech Research
CODEN (USA): IJCRGG ISSN: 0974-4290
Vol.9, No.04 pp 377-389, 2016

Enhancing effect of enzymatically hydrolyzed soybean protein isolate on acceptability and aroma compounds in headspace of real beef soup sample

Hoda H. M. Fadel[1]*, Mohamed S. Taher[2], Shereen N. Lotfy[1], Khaled F. El-Massrey[1,3], Fatma Sh Abd El-Aleem[1]

[1]National Research Centre, Chemistry of flavour and aroma department .Dokki, Cairo, Egypt
[2]Applied Organic Chemistry, Faculty of Science, Al-Azhar University, Cairo, Egypt
[3]Faculty of Science, Chemistry Department, Aljouf University, Kingdom Saudi Arabia

Abstract: Evaluation of the enhancing effect of enzymatically hydrolyzed soybean protein isolate HSPI, as a potential source of glutamate, on the acceptability and headspace volatiles of real beef soup sample was carried out in comparison with monosodium glutamate MSG, the most widely used enhancer in meat products. Real beef soup samples were supplemented separately with MSG, HSPI and combination of them MSG+HSPI. The headspace volatiles and flavour palatability of each soup sample, S-MSG, S-HSPI and S-MSG+HSPI were compared with those of control sample SC (unsupplemented with enhancer). Among the 68 identified compounds only 34 were found in the aroma of SC sample. Sulfur containing compounds were quantitatively the predominant compounds. The results revealed that all investigated enhancers favoured the release of the thiol containing compounds, the most important volatile compounds in meat aroma. Disulfides and diketones showed the same behavior whereas lipid degradation products showed opposite trend. The results of sensory evaluation confirmed those of gas chromatography-mass spectrometry analysis of the aroma compounds in headspace of all beef soup samples. No significant differences (p>0.05) was found among the three samples S-MSG, S-HSPI and S-MSG+HSPI, however, the slight increase in degree of liking of the later sample may be attributed to its highest content of the most potent odourants of beef aroma.
Key words: meat flavour; glutamate; soybean protein isolate; monosodium glutamate MSG; sensory evaluation; enhancers.

Hoda H. M. Fadel *et al* /International Journal of ChemTech Research, 2016,9(4),pp 377-389.

*****