

Determination of aroma profile of anise seed (*Pimpinella anisum* L.) used in tsipouro production by an improved GC-MS analysis method

K. B. Petrotos¹, S. Leontopoulos¹, F. D. Lemona², I. D. Mpazigou²

¹Department of Biosystems Engineering, 41100 Nea Ktiria, Technological Educational Institute of Larissa, Larissa, Greece; ²Department of Plant Production, 41100 Nea Ktiria, Technological Educational Institute of Larissa, Larissa, Greece
petrotos@teilar.gr

Determination of aroma profile of Anise seed (*Pimpinella anisum* L.) used in tsipouro production by an improved GC-MS analysis method. ABSTRACT A new improved GC-MS method was developed and tested for the qualitative analysis of aniseed extracts obtained by using ethyl alcohol as extraction solvent. The use of an Agilent Gas Chromatographer model GC7890 coupled with an MS detector type 5795C and equipped with a long capillary column (100 m in length) improved the separation of the several aromatics contained in the plant material and provided a clear qualitative profile of the several aromatic compounds included in the plant material and extracted by the polar alcoholic extraction solvent. A total of 39 aromatic compounds were clearly identified from which only six (Cyclohexanol, 1-methyl-4-(1methylethyl)-acetate, Octadien-3-ol,3,7-dimethyl-, Estragole, trans-anethole, tau-cadinol , Benzaldehyde, 4-methoxy-) constituted the main aromatic profile while the rest were present at minor quantities including well known aromatic compounds like for example eugenol, eucalyptol, cubenol, alpha-caryophyllene, 3-Octanone etc). The analysis of several samples of anise seed extract, using the developed analytical protocol, provided a detailed and accurate qualitative profile for the aroma compounds contained in the seed mass and confirmed the absence of the hazardous cis-anethole in all analyzed samples, which is particularly important as the anise seed is extensively and in bulk used to provide flavor to alcoholic drinks like Greek traditional distillates tsipouro and ouzo.