

Application of gas chromatography and liquid sampling mass spectrometry for analysis of essential oil from leaf, bark and pericarp of laurel from Montenegro

Received for publication, october, 1, 2012.
Accepted, November, 15, 2012

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Abstract.

Ten samples of essential oils from leaf, bark and pericarp of laurel, originating from Montenegro were analysed by gas chromatography (GC/FID and GC/MS) and liquid sampling mass spectrometry (LS/MS). Along to the clear chemical differentiation of oil samples from distinct parts of laurel determined by GC/FID and GC/MS, it was shown that similar and even better distinction of tested samples can be achieved by liquid sampling mass spectrometry (LS/MS), followed by strong statistical analysis. Since time required for LS/MS is significantly shorter than that needed to GC, LS/MS technique could be used as powerful screening tool wherever big number of volatile samples should be analysed.

Key words: LS/MS, laurel oil, differentiation, analysis.

Introduction

The essential oil of laurel [*Laurus nobilis* L. (Lauraceae)] belongs to the group of important spicy oils widely used in food industry (Burdock G.A., 2002). Main producers of oil obtained by steam distillation from leaves are Mediterranean countries, Russia and China. In Montenegro, the main area for collection of leaves of wild growing laurel is the south-east part of Adriatic coast, where, in practice, instead of leaves, young shoots, as well as other plant parts are used for distillation, affecting to the quality and usability of oil. Nevertheless to lack of internationally recognised specification for the oil of laurel, there are a lot of data, which could be used for this purpose (Burdock G.A., 2002; Lawrence B.M., 1999; Kovačević V., 1993; Flamini G. et al., 2002; Kilić A. et al, 2004). According to these, variations in the contents of selected oil constituents (usually 1,8-cineole, linalool and methyleugenol), are too high to define sharp chromatographic profile, needed for setting appropriate standard specification (Lawrence B.M., 1999; Kovačević V., 1993). From the other side, adoption of proposed limits for too many constituents (29) could significantly