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Determination of α - and β - thujone in essential oils and infusions of *Artemisia absinthium* and *Salvia officinalis* of Greek flora

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The compounds α - and β - thujone are found in herbs, foods and drinks in various concentrations. According to various agencies, such as EMA, SCF, NTP, and studies have established limits for safe consumption of products containing α - and β - thujone mainly on herbs wormwood (*Artemisia absinthium*) and sage (*Salvia officinalis*). The existence of limits on the consumption of α - and β - thujone explained because of their neurotoxic action in humans. Therefore, it is important to determinate the concentrations of α - and β - thujone herbs of the Greek flora. In this study the receipt of essential oils was carried out with the technique of hydro-distillation with Clevenger apparatus. For the preparation of herbal infusions 2 g of plant were extracted with 200 mL of hot water. This was followed by extraction with diethyl ether for the receipt of volatile compounds. Then the qualitative and % quantitative determination of the constituents of the essential oils and the volatile constituents of the herbal infusions were carried out with gas chromatography combined with mass spectrometry (GC-MS). This was followed by the determination of α - and β -thujone in essential oils and herbal infusions of wormwood and sage with the construction of standard curves and the internal standard method. The results showed that in the case of wormwood the concentrations of α - and β -thujone were higher in essential oils of plants in South Greece compared with those of Central and North Greece. Also, in wormwood predominated β -thujone and Sage which was found to be dominated by α -thujone showed no systematic variation in relation to the geographical origin. Finally, there was a reduction in the concentrations of herbal infusions of α - and β -thujone in a cup (200 mL). Consumption of 3-6 herbal infusions of wormwood and 7-12 herbal infusions of sage does not exceed the safe limits.

Biography

Nefeli-Sofia D Sotiropoulou has completed her studies in Chemistry from University of Ioannina and Master's degree from Agricultural University of Athens. She is a PhD student at the Laboratory of Chemistry, Department of Food Science & Human Nutrition, School of Food, Biotechnology and Development at Agricultural University of Athens.

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