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ELEMENTAL PROFILE OF NON-COMMERCIAL WINES IN CHANGING TRADITIONAL RURAL REGIONS FROM EASTERN EUROPE

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Abstract

Traditional winemaking for non-commercial use is at the heart of rural households in traditional cultural landscapes where the bioclimatic conditions allow wine production. As these wines are typically not assessed for their elemental content, their consumers could be exposed to various contaminants. Our goals were the followings: (i) to understand the elemental composition of non-commercial traditional wines from three cultural regions of Eastern Europe (Romania) and (ii) to find the main chemical factors which contribute to the differentiation of the wines produced in these regions. Our assessment was based on 62 homemade white and red wines. We used the ICP-OES technique to analyze 21 elements. We found that the wines contained low levels of elemental pollutants. The differentiation of the wines by geographic regions using multivariate pattern recognition analysis was efficient based on magnesium (Mg), strontium (Sr), iron (Fe). Our study shows that the non-commercial wines from the traditional cultural landscapes such as those from Eastern Europe are of good quality with regard to the metallic components. Monitoring these wines will reveal important changes in the quality of these wines as the rural landscapes undergo massive social-ecological changes.

Key words: elemental analysis, geographical origin, multivariate statistics, non-commercial wines, traditional cultural landscape

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