

## **NON-TRADITIONAL STABLE ISOTOPE TECHNIQUES FOR VERIFYING THE DECLARED GEOGRAPHICAL ORIGIN OF WINE**

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Geographical origin assignment of food products often requires multi-element stable isotope analyses combined with the multi-elemental profiles and multivariate data evaluation. We introduced a new analytical approach consisting of a combination of elemental characteristics, Pb and Sr isotope information in terms of establish a new tool to differentiate geographical provenance of wine. This method has been successfully approved on high value Bordeaux Grand Cru wine the authentic wine and counterfeits made of this brand were recognized.

More than a hundred samples of Bordeaux wines, wines from Slovenia, USA and China were analysed in terms of specifying their geographical origin. Sr isotope composition of wines was found very specific in small regional scale, able to distinguish different chateaux in the Bordeaux region and Slovenia. In contrast, in large territorial dimension Pb isotopic trend is more distinctive due to global lead environmental extension - case of wines origin China and USA.

This work can contribute to the development of a more robust policy in the fight against faking and counterfeiting by establishing the new analytical methods. For correct interpretation of results a databank of authentic samples is required.