

Accepted Manuscript

$^{87}\text{Sr}/^{86}\text{Sr}$ isotopes in grapes of different cultivars: a geochemical tool for geographic traceability of agriculture products

Ines Tescione, Sara Marchionni, Martina Casalini, Nadia Vignozzi, Massimo Mattei, Sandro Conticelli

PII: S0308-8146(18)30516-8

DOI: <https://doi.org/10.1016/j.foodchem.2018.03.083>

Reference: FOCH 22626

To appear in: *Food Chemistry*

Received Date: 3 September 2017

Revised Date: 18 March 2018

Accepted Date: 19 March 2018



Please cite this article as: Tescione, I., Marchionni, S., Casalini, M., Vignozzi, N., Mattei, M., Conticelli, S., $^{87}\text{Sr}/^{86}\text{Sr}$ isotopes in grapes of different cultivars: a geochemical tool for geographic traceability of agriculture products, *Food Chemistry* (2018), doi: <https://doi.org/10.1016/j.foodchem.2018.03.083>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

$^{87}\text{Sr}/^{86}\text{Sr}$ isotopes in grapes of different cultivars: a geochemical tool for geographic traceability of agriculture products

Ines Tescione^{1,2*}, Sara Marchionni^{1,2*}, Martina Casalini², Nadia Vignozzi³, Massimo Mattei^{1, ✉}, and Sandro Conticelli^{2,4, ✉}

- ¹⁾ Dipartimento di Scienze, Università degli Studi di Roma TRE, Largo S. Leonardo Murialdo, 1, I-00146, Rome, Italy
- ²⁾ Dipartimento di Scienze della Terra, Università degli Studi di Firenze, Via G. La Pira, 4, I-50121, Florence, Italy
- ³⁾ Centro di ricerca Agricoltura e Ambiente, Consiglio per la ricerca in agricoltura e l'analisi dell'economia agraria, Via Lanciola, 12/A, I 50125, Florence, Italy
- ⁴⁾ Sede Secondaria di Firenze, Consiglio Nazionale delle Ricerche, Via G. La Pira, 4, I-50121, Florence, Italy

* Ines Tescione and Sara Marchionni contributed equally to the present paper

✉ corresponding author: sandro.conticelli@unifi.it

Highlights

- $^{87}\text{Sr}/^{86}\text{Sr}$ in fresh grapes from different genotype vines (cultivar)
- $^{87}\text{Sr}/^{86}\text{Sr}$ differences between white and red grapes and among harvest years
- $^{87}\text{Sr}/^{86}\text{Sr}$ in bioavailable fraction of soils, soils, and rocks beneath vineyards of production
- Geologic heritage in food stuff as a fingerprint for geographic traceability

Abstract

$^{87}\text{Sr}/^{86}\text{Sr}$ was determined on fresh red and white grapes, soils and rocks from three selected vineyards to verify the isotopic relationships between the fruit of the vine and geologic substrata of vineyards. $^{87}\text{Sr}/^{86}\text{Sr}$ were determined on sampled grapes of four different harvest years and different grape varieties, on bioavailable fraction of soils, on whole soils, and on bedrocks from the geo-pedological substratum of the vineyards. The vineyards chosen for the experimental works belong to an organic farming winery and thus cultivation procedures were strictly controlled.

Grapes were sampled during the harvests of four different but consecutive years with $^{87}\text{Sr}/^{86}\text{Sr}$ that does not change reflecting the values of the soil bioavailable fraction. No variations among grapes from different vine cultivars were observed. A strict isotope relationship with soil bioavailable fraction was observed. These findings demonstrate the reliability of $^{87}\text{Sr}/^{86}\text{Sr}$, even at a very small scale, for food products geographic origin assessment.

Download English Version:

<https://daneshyari.com/en/article/7585256>

Download Persian Version:

<https://daneshyari.com/article/7585256>

[Daneshyari.com](https://daneshyari.com)