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Conservation of $^{87}Sr/^{86}Sr$ Isotopic Ratios in the Oenological Food Chain of "Red" Wines to Validate their Use as Geographic Tracer

Sara Marchionni[1], Eleonora Braschi [2], Simone Tommasini[1], Andrea Bollati[3], Francesca Cifelli[3], Nadia Mulinacci[4], Massimo Mattei[3], Sandro Conticelli[1]

[1] Dipartimento di Scienze della Terra, Università degli Studi di Firenze, Via Giorgio La Pira, 4, 50121 Firenze

[2] Dipartimento di Scienze, Università Roma Tre, Largo San Leonardo Murialdo, 1, 00146 Roma

[3] U.O.S. di Firenze, Istituto di Geoscienze e Georisorse, Consiglio Nazionale delle Ricerche, Via Giorgio La Pira, 4, 50121 Firenze

[4] Civico Museo Geopaleontologico Ardito Desio e Osservatorio astronomico, Piazza della Torre, 00030 Rocca di Cave (RM)

$^{87}Sr/^{86}Sr$ has been determined on wines and musts from different vintage years, grape juces, soils and rocks from selected vineyards of "Cesanese" wine area. Cesanese is a monocultivar wine from a region characterised by different geologic substrata, a key locality to test the influence of substratum rather wine-making procedure for the $^{87}Sr/^{86}Sr$ of wines. Experimental work has been performed on a time-period of several years to check possible seasonal variations. The data reveals that $^{87}Sr/^{86}Sr$ does not change through the oenological food chain remaining constant within the analytical errors during wine-making processes. No significant isotopic variations have been observed in musts and wines of different vintage years. These findings reinforce the hypothesis that the isotopic signature of wines is strongly related to the bioavailable fraction of the soil. The data corroborate the fact that Sr-isotopes of high-quality wines can be considered as a reliable tool for fingerprinting their geographic provenance.