THE ROLE OF THE LANDSCAPE AS A COMPONENT OF THE TERROIR IN SPAIN (DO SOMONTANO, NE SPAIN)

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The components and methodology for characterization of the terroir in Spain have been described by Gómez-Miguel et *al*. (2003), Sotés et *al*. (2003), taking into account the full range of environmental factors (i.e: climate, vegetation, topography, soils, altitude, etc.), landscape variables (derived from photo-interpretation and a digital elevation model), and variables specific to the country's viticulture (i.e: size and distribution of the vineyards, varieties, phenology, productivity, quality, designation regulations, etc.). This paper describes the integration of the resulting database in a Geographic Information System (G.I.S.) that allows the spatial and statistical analysis of all variables; the parametric system of variable quantification; the selection of main endogenous and exogenous variables for terroir characterization; and the role of the variables that describe the landscape in the final results. The analysis has been carried out on over 1.8 million ha. This paper presents the results of a case study in the county "Somontano" that covers an expanse of 142,000 ha and includes 4,173 ha of vineyards. The observed distribution of vineyards in this county is correlated to the integrated landscape-terrain classification and productivity but does not depend on the total available area for cultivation. It is significant that a subset of geological formations that accounts for 45 percent of the total area sustains over 90 percent of the vineyards.

The results of the study have general implications for landscape-terrain classification in Spain and define a set of methodological guidelines. These guidelines refer to:

a) Definition of the set of variables that define the landscape: characterization of the lithological and morphological components; homogenization of lithological units; cartography of the geological formations; integration of a digital elevation model to derive altitude, orientation, exposure, and slope. The spatial scale should be at least 1:25.000.
b) Definition of the Homogeneous Land Units (HLU): The parameter characterization was carried out from the units which were previously defined from the data of the environmental analysis.
c) Experimental design: Selection of Homogeneous Land Units and characterization within the units.
d) Final zoning: Integration of the Homogeneous Land Unit with the plant (variety and rootstock) and the product (must and wine).