An integrated methodology of viticultural zoning to evaluate terrains suitable for viticulture: the test area of Cesanese DOC (Latium, central Italy)

Andrea Bollati*a, Paola Molinaa, Francesca Cifellia, Anna Bruna Petrangeli, Maurizio Parottoa and Massimo Matteia

*Dipartimento di Scienze, Università degli Studi Roma Tre, L.go San Leonardo Murialdo 1, 00146 Rome, Italy; bCNR-IRSA (National Research Council – Water Research Institute), Via Salaria km 29, 00015 Monterotondo, Italy

(Received 7 February 2014; accepted 24 November 2014)

The increase in the world wine market has required continued improvements in viticultural zoning in both old and young production regions. The many proposed zoning methods vary according to the study area in which they are applied as well as to the perspective of the authors. Thus, there is little agreement on which factors (climate, landscape, geology, soil and human intervention) should be taken into account. The aim of this work is to provide a methodology to optimize and possibly increase the development of wine production regions, identifying the zones with different potential suitability. We coupled the computation of bioclimatic indices based on Géoviticulture Multicriteria Climatic Classification System with a GIS (geographic information system) analysis based on the integration of easily accessible geological, morphometric and geomorphological data, in addition to viticulture land use. The final result of this methodology is a suitability map distinguishing sectors of different suitability for wine production in a vine cropping area. We tested the methodology on the Cesanese DOC (Denomination of Origin Verificata) zone (Latium, central Italy). The resulting suitability map indicates that the areas more favourable for viticulture are only partially exploited, encouraging the possibility of increasing the production of high-quality wine in the Cesanese DOC area. This result underlines the applicability of our methodology in land-use planning and management.

Keywords: viticultural zoning; wine-growing suitability; bioclimatic indices; GIS; Cesanese DOC area

Introduction

The present progressive expansion of the global wine market is promoting investigation of the production of wine regions in countries with an old viticultural history as well as those with a young wine-growing tradition. Recently, many efforts have been made not only to generally improve wine production, but also to produce quality wine that could be competitive in national and international markets. Additionally, over the past few years, the geographical identity of wine has become an important aspect of the wine market because a growing number of costumers consider it synonymous with quality, sometimes considering more the prestige of a brand than its effective quality in terms of sensorial testing (e.g. Jackson, 2008). These needs of the expanding wine market encourage the development of viticultural zoning for both delimiting and

*Corresponding author. Email: andrea.bollati@uniroma3.it

© 2015 Taylor & Francis