

Soil -2014-45- Response to the reviewers

Analysis and definition of potential new areas for viticulture in the Azores (Portugal)

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Dear editor:

- 1) Thanks again for your pertinent suggestions and recommendations;
- 2) Please note that we have included a new co-autor (F. Fernandes) that have been working for this paper on GIS modeling and cartography;
- 3) Response to the second reviewer comments:

a) “The theme of this paper is interesting and aims to show the soil and climatic conditions for growing grapes in the Azores Islands. The authors calculate and interpolate the classical bioclimatic indices used in viticulture. These indices are calculated mainly with temperatures.

Many studies using this methodology have been made to different wine regions (...). However, bioclimatic indices are not sufficient to determine the favorable climatic conditions for viticulture especially for the island winegrowing. Other climatic factors are very important: What is the impact of the wind? What are the effects of sea breeze? What are the effects of precipitation? We know that on the islands, the spatial variability of wind, temperature, precipitation is very important. I think it is essential to analyze these factors to determine the optimal conditions for the cultivation of the vine...”

Response: We agree, but this work is intentionally focused on the adaptation of the traditional bioclimatic indices in order to permit a comparison with other wine regions worldwide, since nothing had been done until now for the particular situation of the Azores. However, and in order to better characterize the other relevant climatic factors mentioned by the referee, we had included in this version a more detailed characterization of the climatic conditions of the Island of the Azores.

b)

“And there is nothing about the data interpolation methods. Is multi-criteria methods? Does the spatial interpolation?:

Response: the modeling approach used in this work are not based on interpolations methods as it is referred in the “Data and methodology”. For the climate parameters and climatic descriptors we use the numerical finite difference methods for solving the differential equations of the CIELO model (as described on the text). This outputs are then crossed with soil and topographic maps by overlay methods inside GIS.

4) Response to the editor comments:

a) “I personally would also have some more information about soils. You mention a great variability, but no maps or tables are provided.”

Response: We definitively agree. A table (Table 1) with Pedological properties of the three soils representative of the potential new areas for viticulture in the Azores and the cartography (figure 3) of the major soil categories in the potential new areas for viticulture in the selected islands of the Azores are now included.