



The influence of climate change on wine production - the case of the Touriga Nacional grape variety (Quinta dos Termos, Portugal)

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The regional and local climate, heavily influenced by global climate change, has strong implications for agriculture.

Wine production which has specific characteristics in terms of climate and soil is undoubtedly one of the economic activities strongly influenced by climate change.

Quinta dos Termos located in Beira Interior (Belmonte, Portugal) is the largest wine producer in the DOC Beira Interior region, producing premium to hiper premium wines of excellence, marketed at both national and international levels, and cultivates the vineyards according to the rules of Integrated Crop Management. Moreover, grapes are free from herbicides, pesticides or any other chemicals that can be harmful to the environment and health. These factors have contributed to the socio-economic development of the region, creating wealth, favoring employment and promoting tourism.

The quality of the wines produced by Quinta dos Termos result from its terroir, given its granite region, the sun exposure, the wind protection, the atmospheric humidity and temperature, the soil water content, the mineralogical/organic composition and soil porosity. These factors favor unique conditions for the cultivation of Touriga Nacional grape variety, which is recognized by its extremely complex color and aroma, which allows the production of wines with great balance and a good ageing potential. Touriga Nacional, a red grape variety of Portuguese origin with high qualitative excellence and reputation and much appreciated worldwide, is versatile to several types of soils and resistant to high thermal amplitudes. Nevertheless, the climatic changes that has been gradually verified, the type of crop management, and in particular the reputation of Touriga Nacional grape variety, may be compromised in the long term, given that these characteristics are strongly influenced by the climate and soil. Aware of that, Quinta dos Termos has been performing a monitoring of the vineyards in terms of pedological treatment, disease control and water stress.

With the present essay we intend to present the results achieved by the monitoring of the main influencing factors in grape production and therefore the quality of wines produced, over the years, by Quinta dos Termos.