

***Interactive comment on “Influence of  
hydropedology on viticulture and oenology of  
Sangiovese vine in the Chianti area (Central Italy)”  
by E. A. C. Costantini et al.***

**Anonymous Referee #1**

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General comments: The paper is clearly written and presents an interesting investigation on the interaction of soil water availability, vineyard hillslope position and quality of wine. The description of material and methods is sufficient and precise. Results on soil properties and wine quality are given in well structured tables and figures. Many of the conclusions derived from the data obtained are justified, only results derived from statistical analysis should be discussed more critically: In cases of  $r^2$  below 0.7 the correlation may be significant, but cannot be seen as a strong correlation. Therefore conclusions obtained from a weak correlation in particular in combination with assumed causality should be very carefully discussed (see also special remarks).

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Special remarks (p=page, l=line): p.1199, l.3: ... by water supply. p.1201, l.25: ... sub-surface lateral flow ... p.1202, l.13: Do you have any hint that other factors might limit root growth? Is the maximal root depth reached by the plants uniformly distributed, or are there indications of strong differences between the soils? p.1204, l.21-23: This calculation might lead to an underestimation of porosity, as in field saturated soils often considerable amounts of air might be entrapped. p.1209, l.7-22: Why is the loss of ferrihydrite in the S position of vineyard 1 not due to increased temperatures at the higher and dryer position? Can it really be related only to drainage? p.1209, l.22 p.1210, l.24 p.1211, l.6 :  $r^2=0.496$  or  $=0.37$  or  $0.42$  indicate rather weak correlations. Therefore temperature might only have a very weak influence on discoloration, as well as TSW on grape cluster weight and TSW on wine quality in vineyard 1. Please discuss this, keeping in mind that these correlations are only statistically derived relations which might be caused by other maybe unnoticed effects. p:1211 l.5: Probably you mean the evaluation of wine quality? or quantity??

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