

THESIS ABSTRACT FOR THE DIPLOMA UNIT 7

Minerality in Wine: Fact, Fun or Fiction?

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Motivation for Choosing this Topic

During the course of undertaking the WSET Diploma, I often referred to wine journals and published tasting notes as part of my studies and exam preparation. During this process, I became more and more puzzled by the ever increasing appearance of the wine descriptor “Minerality”. There did not seem to be an official definition available or any apparent consistency of use. I could also not imagine how a piece of limestone would taste. I was fairly sure that rocks did not have taste or smell at all. Combining this with my somewhat dated knowledge of biochemistry, I became fairly suspicious of expressions such as “slate Minerality”, “the flavour of crushed rocks” and “limestone Minerality”. I was therefore very curious about the views of scientists on the subject and whether there was any form of consensus among wine experts, enthusiasts and critics on how and why wines could be “mineral” in some way.

Objective

The objective of my Thesis was to answer the question: **“Should we use the wine descriptor “Minerality” at all?”** This rather simple question is based on the assumption that a wine descriptor should describe a sensual property or characteristic of a wine with sufficient certainty so as to be a valid tool of communication. As the origin of “Minerality” is frequently attributed to the stony soils of a vineyard, the first part of my objective was to test the truth of this assumption by reference to the applicable science. The second part of my objective was to assess if there was really any consensus of meaning among wine experts and enthusiasts which would nevertheless support its use, regardless of the lack of scientific justification. Finally, based on these outcomes, to look at various factors which seem inextricably linked to Minerality, namely, “Terroir”, a link to quality, grape varieties and styles as well as regional influence and commercial factors.

Methodology

In order to set the scene, a broad internet and literature search was done regarding articles on Minerality in wine. The focus was to check popular opinion and frequency of use, as well as to determine the broad senses in which the word is used. This was done by reference to the three possible meanings: minerals (rocks and stones), minerals in the geological sense, and minerals (mineral ions) in the chemical sense.

The applicable science regarding Minerality was divided up into three main areas or branches to review: (i) geology and the newly created field of geomicrobiology (ii) plant biology and grape vine physiology; and (iii) wine chemistry and winemaking. The aim was to look for direct, or indirect, links between the composition of the vineyard soil and the aroma and taste

of Minerality. The main sources were standard text books as well as scientific research papers, articles published by universities and researchers, online journals and magazines.

In order to assess how the term Minerality is used, two Surveys were made:

- (i) The first survey consisted of 10 multiple choice questions which tested frequency of use, with links to type of Minerality, grape variety, sub-sets of descriptors, links to quality, terroir etc. It was placed in 8 internet wine forums, 2 each in the following countries, UK, Australia, Germany and the USA. The survey tool “SurveyMonkey was used. The period of the survey was 31 March to 25 May 2012. Some questions allowed one answer only, others allowed multiple answers.
- (ii) The second survey was made on the internet wine tasting note data base “Purple Pages” in the UK, testing Minerality trends in tasting notes, eg for frequency of use of the term, and links to wine type, geographical origin, quality and other factors.

Both survey methods allowed for a limited amount of cross-checking within answers to determine interrelated factors.

Content and Results of Surveys

In broad summary, the scientific literature review confirmed that rocks and stones have no taste and are not fractionally present in wine. The importance of the physical factors of soils were analysed, including at the microscopic level, which confirmed that it is silts, sand and clay which play an important role in wine quality as well as being the real source of mineral ions in wine. Secondly, there is no connection between the amount, type and concentration of minerals in the soil, and their corresponding values in the wine. It appears that mineral ions are in any event in such low concentrations in wine, possibly below the threshold of taste. Scientific opinion tends to support the possibility of a very indirect contribution of minerals to wine aroma and taste, but the pathways are complex and poorly understood. No single molecules have been discovered which could be called “Minerality, despite promising research concerning thiols, succinic acid and enzyme co-factors.

The surveys yielded two important trends (i) Minerality is predominantly a cool climate, white wine, old world phenomenon. There are definite links to quality perception, single vineyard source and terroir. Surprisingly, a large number of respondents to Survey One selected the aroma and flavour of rock types as meaning Minerality to them, despite the impossibility of this fact. In Survey Two, the term Minerality was used in direct proportion to wine group point scores, linking Minerality presence to increasing quality levels.

Conclusion:

Based on the above, it was concluded that Minerality should only be used with caution, particularly as it is commercially linked to quality, premium prices and product differentiation. It can be used in a “Stylistic” sense eg a synonym for a wine style (lean, austere, steely, not overly fruit driven). Its unqualified use, in the wine popular press and the internet, perpetuates an unjustified myth that wines taste of the stones in the vineyard.