

## Weinakademiker Thesis Proposal Form

Candidate Name: \_\_\_\_\_

Date of Submission of Proposal: 5 MARCH 2012

### STRUCTURE OF THE OUTLINE PROPOSAL

**PROPOSED TITLE:**

*MINERALITY IN WINE, FACT, FUN OR FICTION?*

**OBJECTIVE OF THE THESIS:**

*SEE ATTACHMENT*

**STRUCTURE:**

(please use blank paper)

*SEE ATTACHMENT*

**PROPOSED SOURCES:**

*SEE ATTACHMENT*

I declare that I will write the thesis independently and will clearly reference all sources and information used. Furthermore I agree that the Weinakademie Österreich is allowed to use my thesis for educational purposes.

place/date: 5 MARCH 2012 signature: \_\_\_\_\_

## ATTACHMENT TO THESIS PROPOSAL FORM

### OBJECTIVE OF THE THESIS

The objective of this thesis is to explore the many facets of the wine descriptor: "Minerality". Is it a concept which is uniformly understood by the wine industry and the wine drinking consumer, and if not, should this descriptor be used at all? In answering this question, a broad review will be undertaken of the scientific literature, published opinions of wine experts and journalists as well as original research - as indicated in the Structure section below.

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### STRUCTURE OF THE THESIS

#### Section 1 - Introduction

- Introduction - the various popular definitions of the wine descriptor; "Minerality"; the historic, literal, metaphorical and stylistic versions.
- Against the background of ever increasing use of the term, outline the controversy: the literal connection to soil, "Terroir/gôut de Terroir" against the scientific rebuttal that such a connection cannot exist.
- Outline of the complexity of the subject, as it can be interpreted literally by reference to geology, plant physiology, chemistry, and wine science. Highlight its use as a code word, in the linguistic sense, is it a synonym for a wine style, a sense of place/Terroir, a quality indicator? How does it impact in a commercial sense, a driver for higher prices or a valid tool for consumer choice in terms of expectations of aroma and taste.
- The objective of the thesis will be stated: Should this descriptor be used at all?

#### Section 2 - The geological perspective

- Geologically speaking – what is a mineral?
- Contrast with the biochemical sense of "mineral ions" in plant nutrition.
- Look at the famous soil Terroirs, analyze any possible connection to grape vine nutrition, versus the importance of drainage & soil water retention on ultimate wine quality.

#### Section 3 – Grape vine physiology

- How grape vine roots take up minerals from the soil.
- The role of soil microbes and fungi and their symbiotic relationship with the vine.
- The mineral ions and trace elements which are present in the vine and grape.
- Summary of the role of minerals and trace elements in grape vine nutrition.
- Do mineral ions affect gene expressions/ flavour compound production.

#### Section 4 – Mineral and wine chemistry/technology

- Do minerals have their own flavour?
- How might mineral ions contribute to wine taste, either through free ions, mineral salts in wine, or bound to other flavour compounds.

- Do minerals affect yeast metabolism and contribute to flavour produced during fermentation.
- Can minerals be detected through the sense of smell? Refer to how the sense of smell – versus taste functions, the concept of “vapour pressure” of chemicals and minerals.
- The role of sulfur compounds in wine taste and aroma – is “minerality” a man made phenomena?
- Is there a connection to wine acidity?

## Section 5 – The perception of Minerality in Wine

Undertake a sample analysis of the Purple Pages on line tasting note data base (4601 TNs use the word Minerality) against grape type, region of production, quality assessment and price.

Perform a mini wine consumer survey in Stuttgart via a Questionnaire of wine shop customers, to test understanding of the word Minerality (Mineralität) and connections to terroir, quality perceptions, style and price expectations.

Results of both will be added as Table Attachments and an analysis done.

From a review of the literature, journals and internet sources and the original research undertaken, give the arguments in favour of/and against the continued use of the term Minerality. Discussion on its utility as a linguistic term, the dangers of misconceptions and controversy.

## Conclusion

Summary of the facts and research findings and answers to the questions posed.

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## SOURCES

*NOTE: As this is a fairly technical subject, the author will, to some extent, draw on (old) understanding and experience gained in the late 1970s as a very young Biochemistry student and practical work experience in a laboratory.*

Sources :

- a. Purple Pages online tasting note data base
- b. Questionnaire: Formulated to test wine consumer perceptions
- c. Main Literature (plus wine magazines, internet sources and online journals):

Dr Jamie Goode – the Science of Wine,

David Bird – Understanding Wine Technology

Barry C. Smith – Questions of Taste, The Philosophy of Wine

J.E. Wilson – Terroir: the role of Geology, Climate and Culture;