



Vinifera master thesis abstract (template 2013)

Thesis title: **Animal proteins used as fining agents and their influence on the anthocyanins' profile**

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Institution/company involved: **Instituto Superior de Agronomia**

Tribunal members (name/position):

- Jorge Ricardo da Silva, Professor UTL/ISA
- Antonio Morata, Professor, Universidade Politecnica de Madrid
- Olga Laureano, Investigador Coordenador, UTL/ISA
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Abstract (max 300 words)

The treatment of wine with fining agents is a common practice in the wine industry which aims to achieve wine's clarity and improves its stability along the time. The objective of this work was to examine the influence of various animal proteins used as fining agents on the anthocyanins' profile. For this experiment, two Portuguese varieties, Touriga Nacional and Trincadeira have been used in which two different concentrations have been applied for each fining product. The fining agents are commercial fining products widely used in the wine industry such as Egg Albumin, Isinglass, PVPP, Gelatin, Casesol. These proteins were added in the wines in order to perceive the effect of the adding protein and other fining agents on the wine's anthocyanidins final composition, since that these monomeric anthocyanins have an important function on the sensory characteristics of wines, such as colour. The clarification process lasted 7 days for each fining product. At the end of each clarification period, monomeric anthocyanin analysis was carried out by HPLC. By the analysis in the HPLC, we perceived that in general the biggest impact from all the fining agents is displayed to the acylated and coumarylated derivatives of the monomeric anthocyanins rather than the 3-glucoside antocyanidins. Having this as a fact and learning through the initial analysis that Touriga Nacional is richer in these two groups rather than in glucoside derivatives we are able to explain why Touriga Nacional was more affected in all the fining treatments compared to Trincadeira that is poorer in acylated derivatives and in general it was less influenced by the fining agents. Moreover, further analysis have been carried out in order to examine the influence of the fining agents on the concentration of pigments, the quantity of condensed tannins as well as on the chromatic characteristics of the wine after fining. For the quantity of condensed tannins after fining, the results have shown that all the fining agents promoted a reduction on the final quantity of tannins after the treatments whereas for the pigments and colour intensity the impact was notably lower compared with the tannins. Regarding the impact on the colour anthocyanins, Casesol promoted the greatest influence on their quantity. In addition, the general tendency indicates that the fining products in high concentrations provoke a bigger decrease on the amount of total anthocyanins compared with the small concentrations.

Keywords (5): fining agent, monomeric anthocyanins, tannins, wine, pigments, clarification

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