



Master's Thesis Title:

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Abstract (max 300 words):

Topic position and objectives:

Influence of method of production, different yeast and ageing duration of the German sparkling wine on foam and bubble behaviour and its characteristics

This study investigates the chemical and physiochemical parameters of different sparkling wines and whether or not it has an influence on the foaming and bubble properties in sparkling wines. For the analysis sixteen wines were selected with different grape varieties, different sparkling wines were included, with different method of production (Traditional, tank and transfer), different yeast used during the second fermentation and different ageing period (8 months to 36 months). One of the wines was alcohol free, which was also considered. The wines were analysed for carbon dioxide pressure (on closed bottles), followed by a Fourier Transform Infrared chemical analysis, surface tension, viscosity and sensory analysis for the texture (mouth feeling) was evaluated. The foam analysis was also conducted using a wine pourer, also followed by another round of sensory tasting.

The aim is analyse whether there is a difference in the foam properties and does it have any relation with its physiochemical properties of wine.

Methods:

Physiochemical properties were analysed by FTIR analysis, Viscosity and Surface tension analysis. The organoleptic analysis included GCMS analysis and sensory analysis. The image analysis was performed by a wine pourer, it was analysed through MATLAB software for foam and bubble analysis.

Results:

Many correlations were gathered using the above analysis. It was observed that foam quality depends on many factors one of them being the duration of ageing showed significance difference with foam parameters. Other parameters were significantly correlated with foam parameters. High levels of alcohol decrease the foamability.

Foam stability is negatively affected. Sugar level increases the bubble perception. Life time of foam decreases with increase in Malic acid. Malic acid lowers the foam stability therefore affecting the overall foam quality, as foam stability is essential for producing quality foam. Wine needs to be stabilized in terms of considering undergoing Malolactic fermentation and tartaric stabilization. Further understanding is required to investigate relationship of more variables that contribute towards foam and overall quality of sparkling wines.

Main conclusions:

There is significant difference between the samples ageing duration, 8 months against 24 months in terms of most of the foam parameters. Different correlation between the foam parameters and basic wine composition like tartaric acidity, malic acidity and lactic acidity that has an influence on the foam stability and thus affecting the overall all quality of sparkling wines. However in order to understand their concentration effect on the foam quality, further research need to be done in order to understand better, and the it will act as reference for the wine producers to consider what steps to take to improve the sparkling wine quality

Keywords (5): Sparkling wines, bubble, foam quality and Mousse