Master's Thesis Summary

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Thesis Title: Impacts of natural yield variances on wine composition and sensory quality of *Vitis vinifera* cvs. Riesling and Cabernet franc

Committee Members:

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Summary

Problem, background and objectives:
It is commonly believed that low yield vines can produce high quality wines. The aim of this study is to investigate the effects of natural yield variances on wine composition and sensory quality of Riesling and Cabernet franc wines from different sub-appellations within Niagara Peninsula appellation.

Methods:
Yield/vine, number of clusters/vine and berry weight were recorded. pH, TA and ethanol content were measured. For red wines, color (hue and intensity), anthocyanin and total phenol concentrations were also determined. Sensory sorting tasks and descriptive analysis were performed to evaluate wine sensory quality.

Results:
For both cultivars, yield/vine and clusters/vine were demonstrably different between different yield categories. Higher yielding vines produced larger berries in one of five Riesling sites and in two of five Cabernet franc sites. Differences ($p<0.05$) were observed in TA, pH, ethanol, hue and anthocyanins. Among medium yielding wines, differences were observed in three aroma, two flavor and two mouthfeel attributes for Riesling, while differences were found in six aroma, six flavor and four mouthfeel attributes for Cabernet franc. Among low and high yielding wines, three aroma and one mouthfeel attributes were different for Riesling, while seven aroma, five flavor and five mouthfeel attributes were different for Cabernet franc. Wines made from different sub-appellations were observed to be associated with different sensory attributes.

Main conclusions:
Natural varying yield tended to have little to no influences on wine chemical composition for both cultivars. The sensory sorting task appeared to be a simple and effective discrimination method to identify the perceived differences between wines. Regarding sensory profiles, natural yield variances tended to have little to no effect on Riesling but more influence on Cabernet franc. Different sub-appellations had an impact on wine sensory profiles.

Keywords:
Yield, wine composition, sensory quality, Riesling, Cabernet franc

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