



## Vinifera master thesis abstract (template 2013)

Thesis title: **Impact of early fruit-zone leaf removal on grapevine development and fruit quality in *Vitis vinifera* 'Merlot'**

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

### Tribunal members (name/position):

- Olga Laureano, Investigadora Coordinadora, UTL/ISA
- Michelle M. Moyer, Professor, Universidade Washington
- Vitorino Novello, Professor, Universidade de Turim
- Carlos Manuel Antunes Lopes, Professor Associado, UTL/ISA

Date & location of the oral examination:

**6-12-12 5:30 PM on Instituto Superior de Agronomia**

Confidential:  Yes  No

### Abstract (max 300 words)

The objective of this study was to determine the optimal timing of fruit-zone leaf removal for red wine grape cultivars, specifically *Vitis vinifera* 'Merlot', in the Yakima Valley, Washington using four different timings of fruit-zone leaf removal, (i) pre-bloom, (ii) full-bloom, (iii) 3 weeks post-bloom and (iv) no leaf removal (control). Fruit-zone leaf removal is a common canopy management technique, with increasing focus on early (pre-fruit set) timing. Little research exists on the impacts of early fruit-zone leaf removal in semiarid viticultural regions like the inland Pacific Northwest, USA.

Shoot growth after leaf removal in the pre-bloom treatment temporarily decreased relative to the no leaf removal treatment (control). The incidence of summer lateral shoot development within the fruit-zone indicates that only pre-bloom fruit-zone leaf removal recovered to control levels by véraison. Percent fruit set was lowest in the pre-bloom treatment. Sunburn, powdery mildew and Botrytis bunch rot did not develop to any significant level in any treatment. Though not statistically significant, fruit-zone leaf removal increased surface temperatures of clusters and compound buds.

The scope of this report does not provide adequate data for firm conclusions about the effects of early fruit-zone leaf removal on grapevine development and fruit quality. Outside of the summer lateral shoot data, the fruit-zone leaf removal treatments in this experiment were statistically similar to the no leaf removal treatment. However, trends in the data suggest fruit-zone leaf removal may impact vine vigor, fruit set, and fruit-zone microclimate providing ample cause for further research on this canopy management technique.

**Keywords (5):**

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