



Master's Thesis Title:

Comparison between mechanical and manual leaf removal on fruit quality at harvest.

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Abstract (max 300 words):

<p>Topic position and objectives: The experiment aimed to compare the different impacts of manual and mechanical cluster zone leaf removal practices on fruit quality of Pinot Grigio (Pinot Gris). Treatments were conducted at two timings: pre-bloom and after-bloom. Vine and cluster parameters were measured such as fruit set percentage, fruit basic chemistry, yield components, and vegetative growth.</p> <p>Methods: Pre-bloom manual leaf removal (six basal nodes, all leaf removed)-PB Man; Pre-bloom mechanical leaf removal-PB Mec; After-bloom manual leaf removal (six basal nodes, all leaf removed)-AB Man; After-bloom mechanical leaf removal-AB Mec; Control no leaf removal-C.</p> <p>Results: Fruit set reduction was achieved by leaf removal treatments, with higher extent by PB Man. Fruit quality has been enhanced by leaf removal conducted prior to bloom and mechanical leaf removal favored berries to reach higher uniformity at harvest. Yield was reduced by PB Mec. Cluster morphology was modified by leaf removal treatments, with heavier berry fresh weight, less berry number per cluster, and reduced cluster compactness which increased spray efficiency to control yield loss caused by bunch rot disease. Leaf removal before bloom (PB Man and PB Mec) triggered lateral compensation effect and canopy reached similar size to C after hedging.</p> <p>Main conclusions: Mechanical leaf removal turned out the time-efficient alternative to manual leaf removal and pre-bloom was proved the better timing to modify cluster morphology and increase fruit quality. However, in order to optimize mechanical leaf removal practice, further research is required to understand the interaction between timing and intensity of the operation.</p> <p>Keywords (5): pre-bloom leaf removal, mechanical leaf removal, cluster morphology, fruit quality</p>
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