Vinifera master thesis abstract

Thesis title: The effect of row orientation and leaf removal on vegetative and qualitative parameters of *Vitis vinifera* L. cv. Sauvignon Blanc

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Abstract (max 300 words)

Topic position & objectives: Cluster microclimate is a key element in vineyard management. It may vary greatly as a result of canopy manipulation, row orientations and also between clusters located at the same row but on different sides of the canopy. The aim of this work was to study the influence of different traditional leaf removal treatments on Sauvignon Blanc in the hot climate of Sicily in two row orientation, with relation to the change in the cluster micro climate and berry composition.
Methods: In the present work leaf removal in the cluster zone at pea size was done on one side and on two sides of the canopy on east-west and north-south row orientation (i.e. leaf removal from north, leaf removal from south, leaf removal from north and south, leaf removal from east, leaf removal from west, leaf removal from east and west). In each row orientation, an additional treatment of shoot thinning was done and all treatments were compared to control vines (the common winery practice of no canopy manipulation). During the experiment cluster micro climate was evaluated by temperature and light measurements. Ten days prior harvest and on harvest day clusters were evaluated in quality and quantity parameters, all data was collected separately for clusters facing different directions. In addition at harvest the percentage of damaged clusters and the total number of clusters in each treatment was calculated. Data was than analyzed between clusters in the different treatments facing the same direction and between clusters facing different direction in the same treatment.
Results: The main implication of canopy treatments was altering the light in the cluster zone with little effect regarding temperature. Differences in the morning light were related to north south row orientation with significant differences between treatments in clusters facing east and differences between east to west at the same treatments. Although no microclimate differences were observed between treatments in clusters facing west, it was found that in these clusters leaf removal from the east side reduce their weight and the gluconic acid concentration. However in most examined parameters, north- south orientation rows were characterized as more homogenous between the sides of the same vine canopy.
Main conclusions: The study demonstrates that the cluster facing direction has a higher influence on microclimate quality and quantity than the examined canopy manipulations. Leaf removal treatment influence was observed mainly by increasing the influence of the cluster location.

Keywords (5): leaf removal, Sauvignon Blanc, microclimate

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