

GRAPE TRANSCRIPTOME ANALYSIS IN RESPONSE TO DIFFERENT SOILS AND ROOTSTOCKS

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Grapevine is an ancient culture that constitutes one of the most economically important fruit species worldwide. The production can be qualitatively and quantitatively different depending where the plant are located. Soil conditions and rootstocks are two of the main causes that can influence quality and wine production. In this work was analyzed the transcriptome responses to different soils and two different rootstocks.

The grapes (Pinot noir, clone 115) were grown in three different soils: sand, turf and vineyard soil from Asti. The plants were grafted with two different rootstock: 101/14, a weak rootstock and 1103 Paulsen, a vigorous one that enhances the growing rate. The plants were grafted on February 2005 and rooted in three different soil on May 2006. In September 2006 for each sample three biological replicates were collected. The same sampling was repeated in 2007.

The leaves mRNA of all the thirty-six replicates (18 for each year) were extracted, checked the quality and afterward c-RNA were synthesized in order to hybridize the *Vitis vinifera* GeneChip® array Affymetrix *Vitis vinifera* GeneChip®.

The poster will present preliminary data on genes and pathways up or down regulated in the samples grown under different grafting and soil conditions. The results from the hybridations of leaf samples collected in 2006 show that the different water availability in Asti soil than turf soil is sensed by grape. Several drought stress-related genes are up-regulated in Asti soil grown plants. Among them there were the most part of the genes coding for the enzymes involved in the phenylpropanoid and flavonoid pathways.