

## **MOLECULAR AND FUNCTIONAL CHARACTERIZATION OF MEMBERS OF THE ETHYLENE RESPONSIVE FACTORS FAMILY DURING THE GRAPEVINE BERRY RIPENING**

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There are compelling evidences of the role played by ethylene in the ripening process of the grapevine berry. An endogenous ethylene peak has been observed just before véraison time and treatments with exogenous ethylene were shown to influence the onset of ripening and of the related processes such as the anthocyanins accumulation.

We studied the gene expression of four grape ethylene responsive factors (ERFs) and one ethylene receptor, to characterize their role during berry ripening. Two ERF genes appeared to be transcribed in a berry-specific manner, one (VvERF1) being preferentially expressed in the skin and the pulp, the other (VvERF3) being highly expressed in the seed. Their transcriptional profiles along berry development were also quite different. The ERF1 transcript concentration increased upon véraison and remained high during ripening, whereas ERF3 transcript concentration decreased after véraison.

The study of the ERF1 profile in early and late cultivars confirmed the strict association between the onset of ripening and the induction of its transcription.

ERF transcription factors are known to regulate the transcription of their target genes by binding to the GCC box present in the promoter sequence.

Data of ERF1 trans-activation using a tobacco transient expression system to discriminate possible target genes, will also be presented.