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Poster Communication Abstract – 2.30

LEAF HYDRAULIC CAPACITANCE IS KEY DETERMINANT OF GRAPEVINE DROUGHT CONTROL

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abscisic acid, embolism, stress avoidance, stress tolerance

The grapevine is used as model plant to understand plant strategies to avoid/tolerate water stress. Two *Vitis vinifera* L. varieties have been described to represent them. 'Grenache' points to stress avoidance, acting abscisic acid (ABA)-driven stomatal closure and maintaining high levels of leaf water potential during water stress (isohydric response). On the contrary, 'Syrah' does not strictly control stomatal closure upon drought and tolerates a water potential decrease through osmoregulation (anisohydric behavior). By following stress/recovery routines we found a strategic contribution of leaf hydraulic capacitance in isohydric leaves, that allows water retaining in leaves during drought. In isohydric plants, a rehydration after a water shortage period causes a transient decrease in leaf turgor, by restoring stomatal opening and following transpiration. On the contrary, rehydrated water droughted anisohydric plants recover leaf turgor and water potential through a hydraulic, non-hormonal control of stomatal behaviour.