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Contrasting adaptation of xylem to dehydration in two *Vitis vinifera* L. sub-species

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Summary

Xylem hydraulic properties of agricultural crop species can be linked to their region of origin, but because crop systems are often irrigated to reach optimum quality and yield, key differences in drought resistance are not often considered. We investigated how hydraulic conductivity and xylem vulnerability to drought-induced cavitation of two grapevine cultivars correspond to their centers of domestication with 'Merlot' (*Vitis vinifera* subspecies occidentalis) having been domesticated in

Introduction

Understanding how plants cope with water shortage in natural and agricultural systems is important in the context of climate change and in anticipation of longer, more frequent, or more intense drought (Pachauri *et al.* 2014). The 2012-2014 drought in California was the worst in 1200 years (Griffin and Anchukaitis 2014) and illustrated the seriousness of water conservation and water-use efficiency in natural and agricultural systems (Howitt *et al.* 2014, Mann and Gleick 2015). Cultivated grapevine, *Vitis vinifera* L.