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Título Comunicación oral: Drought tolerance of varieties in semi-arid areas: could genetically related varieties behave better than Tempranillo itself?

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RESUMEN: Tempranillo is the most widely grown red grapevine variety in Spain, currently representing 42% of the total number of red varieties and 21% of the total vineyard area. Due to the economic importance that this variety represents in Spanish viticulture, in some areas where it is traditionally grown, there is a special concern about the viability of the future growing of this variety is being compromised by the climate change effects. On the other hand, two previously unknown varieties have recently been recovered in Castilla-La Mancha region, Benedicto and Moribel, which proved to be parental and descendant, respectively, of the Tempranillo variety. The present work assessed if these genetically related varieties could show a better agronomic response than Tempranillo itself, when grown under restrictive water conditions in a warm climate. Vines of Tempranillo, Benedicto and Moribel varieties grown in an experimental vineyard located in Tomelloso (Castilla-La Mancha, Spain) was monitored during two consecutive seasons. The vines were grown under two different water deficit regimes (dry and wet, respectively). The phenology of the varieties was noted, and at the time the grapes reached maturity, the yield per vine and berry weight were determined. In the must obtained by squeezed, total soluble solids, total acidity, pH, and $\delta^{13}\text{C}$, and in grape extracts total polyphenol index and anthocyanins were analyzed. Varietal aroma potential index was also determined in grapes. The results revealed that Benedicto and Moribel had higher yields and smaller berry size than Tempranillo, favoring quality. As for the physicochemical parameters of the musts, both total acidity and pH showed statistically higher and lower values, respectively, than those obtained in Tempranillo. Regarding $\delta^{13}\text{C}$, in both water treatments Tempranillo displayed higher stress levels than Benedicto and Moribel. The grape quality parameters were comparable in Moribel and Tempranillo, but lower than those of Benedicto. The results obtained suggest that when grown under restrictive water conditions, mainly Benedicto and to a minor extent Moribel behave better than Tempranillo. Therefore, in the near future, it is likely that the cultivation of these hitherto unknown varieties will increase in semi-arid areas, to detriment of Tempranillo.