

SUNSCREEN EFFECTS OF PURSHADE ON GRAPEVINE PHYSIOLOGY UNDER MEDITERRANEAN FIELD CONDITIONS

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Abstract

Purshade-based particle film may be used to mitigate the negative effect of heat stress on plant physiology and productivity. In this preliminary work developed in Port Wine Region PWR, the main goal was to compare the physiological performance of the cv. Touriga Nacional sprayed with Purshade. The vines were growing under two water availability (WA) regimes: non-irrigated (NI) and irrigated (I, 60% of the potential evapotranspiration). In this experiment were used methodologies that investigate the grapevine physiology behaviour and the yield components, The results of A, g_s , E and A/ g_s showed a significant interaction between WA and Purshade treatment: in general, the positive effect of Purshade was significant in NI vines, but not in I vines. In addition the reduction in A in NI vines without Purshade was associated with significant reduction of SPAD values (sensitive to chlorophyll content) and maximum quantum efficiency of photosystem II (estimated by F_v/F_m ratio). Relatively to yield components, the Purshade application was only beneficial in NI vines, especially in yield and Ravaz index. In conclusion, Purshade treatment can has a positive impact in viticulture areas and years where summer stress conditions are more severe.