

Poster №1: Irrigation and Soil Management Practices in Grapevines in Cyprus under the Threat of Climate Change-VITISMART

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The effect of irrigation and cultivation practices (tillage-semi tillage-no tillage) were examined in local (Xynisteri-Xyn.) and international (Chardonnay-Char.) white cultivars through VitiSmart project. In Char., yield was increased (almost doubled) with irrigation for both semi- and full-tillage, and this increase was related mainly to the increased fresh weight of each cluster. In contrast, Xyn. as a drought resistant cultivar, improved yield through tillage than no tillage, independently the irrigation practice. At veraison stage, Xyn. leaf stomatal conductance decreased in non-irrigated vines. No differences were found in leaf chlorophylls, total phenolics and antioxidants. At veraison stage, in contrast to the flowering stage, leaf N, K and P content increased with the irrigation practice, while Mg content was decreased. In Char., harvested grapes had increased TSS and decreased acidity in tillage (with or without irrigation) and the opposite trend was found in case of no tillage treatments. In Xyn. no main differences were found in grapes quality regarding the irrigation and/or cultivation practices indicating the well adapted scheme to semi-arid regions as Cyprus.

Poster №2: How Long Can Poikilohydric Vascular Plants Retain their Capacity of Resurrection and to What Extent?

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The primary metabolic activity of desiccation tolerant plants (DT) can revive after shorter (HDT) or longer (PDT) periods of air-dried desiccated state. Both strategies can be considered opportunistic against the water deficit in extreme habitats but the timescale of rehydration and desiccation events are basically determined by their recovery level. We try to compare the regeneration ability of different HDT and PDT plant species deriving from different habitats based on their physiological aspects after being in 4 or more years of air-dried state. For 5 days of rehydration we were following the changes of photosynthetically features (through measuring PN the net photosynthesis and Fv/Fm -the maximal quantum yield of PSII) and their morpho-anatomical characters. Differences e.g. in the quality of the regeneration of different Xerophyta species (PDT) are also observed in respiration-photosynthesis transition and the level of CO₂ assimilation values. In comparison with different habitats and periods in desiccation states, the whole recovery based on Fv/Fm values followed 48h and 72 h rehydration dependent on the species. We can also see the differences in time according to chloroplast reorganization levels. In the case of two Tanzanian species (*X.scabrida* and *X. spekei*) the chloroplast rebuilding processes is faster resulting in developed chloroplast form following 48 h rehydration than Madagascan one (*X. pectinata*) where it is expressed by 120h rehydration. Not only spending time in air-dried state but also local, climatic environmental differences may play an important role e.g. in the same genus belonging to the same DT strategy.