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Poster №9: Kaolin and Salicylic Acid Alleviate Summer Stress Effects on Rainfed Olive Orchards through Distinct Physiological and Biochemical Processes

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In a changing world, the search for new agronomic practices that help crops to maintain and/or increase yields and quality is a continuous challenge. Olive trees cultivated under rainfed conditions were sprayed with 5% kaolin (KL) and 100 µM salicylic acid (SA) during two consecutive years in the beginning of the summer season. Exogenous KL enhanced relative water content (RWC), stomatal conductance (gs) net photosynthesis (A) and IAA immunodetection, and decreased leaf sclerophylly, secondary metabolites and non-structural carbohydrates accumulation, ABA signal and DNA methylation, contributing to higher growth and yield. The plants treated with SA showed an enhancement in RWC, gs, A, soluble proteins, IAA, ABA and DNA methylation immunodetection and leaf P and Mg concentrations during the summer, leading to higher yield. Thus, KL and SA alleviated some of the negative effects induced by summer stress in olive tree performance, allowing a faster restauration of the physiological functions during the stress relief and leading to higher yields.

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Poster №10: Short-Term Mechanisms to Overcome Drought in Grafted Peppers

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In the context of climatic change, designing plants able to overcome drought is an essential goal. Grafting is an environment-friendly technique to improve water stress tolerance, using “robust” rootstocks. Pepper is a species sensitive, so it is crucial searching tolerant rootstocks. The objective of this study was to evaluate the short-term effects of drought (24h after PEG 5%) on pepper plants grafted using a tolerant rootstock (A25). Plants treatments used were A (scion), A/A (grafted onto itself) and A/A25 (grafted onto A25). After 24 h photosynthesis, water and osmotic potential, nitrate reductase, lipid peroxidation and total radical scavenging were evaluated. A/A25 tolerated better water stress treatment, because could maintain water relations and obtained the less decrease in enzymes capable of reducing reactive species. In conclusion, grafting onto a tolerant rootstock can decrease the negative impact of drought easing the productivity.