

عنوان مقاله:

Adaptive Strategies of Olive and Pistachio Seedlings Irrigated with Saline Water in Controlled Conditions

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نویسندگان:

S. Baccari - Faculty of Sciences of Sfax, Road of Soukra km ۴, Tunisia

A. Chelli-Chaabouni - National Institute of Agronomic Research of Tunisia, Hédi Karray Street, ۳۰۴۹, Tunisia

A. Chaari - Olive Tree Institute Sfax, PB ۱۰۸۷, ۳۰۱۸, Tunisia

خلاصه مقاله:

This study aimed to detect possible strategies used by olive (*Olea europaea*) and pistachio (*Pistacia vera*) species under saline conditions to be considered in early selection programs of salt-tolerant genotypes. One-year-old seedlings were irrigated alternatively with ½ Hoagland nutrient solution and distilled water added with ۰, ۷۵, or ۱۵۰ mM NaCl during ۳ months under controlled conditions. Growth, leaf toxicity symptoms, and shoot and root mineral compositions were assessed. Salt induced leaf injury and a significant decrease in growth of both species seedlings. The decrease in shoot elongation was more pronounced on pistachio seedlings, whereas leaf formation and plant fresh weight showed greater reduction on olive plants. Pistachio seedlings developed new axillary shoots and leaves at ۷۵ mM NaCl. The root fresh weight was significantly reduced by salinity in olive, but remained unaffected in pistachio. Both saline treatments induced leaf fall with more pronounced effect on olive plants. Olive salt tolerance may be associated to a better control of Na⁺ accumulation in the leaves and its ability to accumulate potassium in shoots in order to achieve osmotic adjustment. Pistachio seedlings seemed to better control Cl⁻ ion ascension from roots to shoots through salt ion dilution mechanism. The increase in root fresh weight of pistachio seedlings at both salt treatments and the higher ability of this species for uptake of calcium (involved in the regulation of stomata movement) seem to support this hypothesis.

کلمات کلیدی:

Olea europaea L, *Pistacia vera* L, Sodium chloride, Toxicity symptoms, water salinity

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