

## **Phenotypic plasticity in relation to *Lotus tenuis* response to saline stress: the role of arbuscular mycorrhizal and rhizobial symbionts**

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We have tested the hypothesis that *Lotus glaber* displays a plastic root phenotypic response to soil salinity that may be influenced by mycorrhizal and rhizobial microorganisms. Uninoculated plants and plants colonised by *Glomus intraradices* or *Mesorhizobium loti* were exposed to either 150 or 0 mM NaCl. General plant growth and root architectural parameters (morphology and topology) were measured and phenotypic plasticity determined at the end of the salt treatment period. Two genotypes differing in their salt tolerance capacity were used in this study. We analyzed root morphology, the root external and internal link lengths and the topological trend (TT). Notwithstanding the absence of a link between TTs and variations in plant growth, it is possible to predict a dissimilar adaptation of plants with different TTs. Root colonisation by either symbiotic microorganism reduced the level of root phenotypic plasticity in the sensitive plant genotype. We conclude that root plasticity could be part of the general mechanism of *L. glaber* salt tolerance only in the case of non-symbiotic plants.