

**Inoculation with ectomycorrhizal fungi affects *Pinus pinaster* performance under cadmium exposure**

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**ABSTRACT**

Afforestation of contaminated sites can represent a valuable approach to restore degraded ecosystems. Studies on the response of woody species to heavy metal contamination in soil are scarce compared to crop species. Cadmium is one of the most toxic heavy metals and its hazardous effects are well known. The aim of this work was to evaluate *Pinus pinaster* performance on Cd contaminated soil (15 and 30 mg Cd kg<sup>-1</sup>) and determine whether inoculation with two ectomycorrhizal fungi, *Suillus bovinus* and *Rhizopogon roseolus* influenced such response. Regarding non-inoculated seedlings, Cd exposure led to a lower shoot biomass and metal accumulation on the root system was proportional to its concentration in the soil. Inoculation with *S. bovinus* was the most favorable treatment for *P. pinaster* development by enhancing shoot development up to 1.3-fold in contaminated soil. Inoculation with *R. roseolus* increased Cd concentration in the shoots with no significant effect in any of the biometric traits studied. Metal accumulation on the shoots and roots of *P. pinaster* seedlings was significantly affected by the interaction between mycorrhizal inoculation and the Cd concentration to which the seedlings were exposed. Results from this study show that inoculation with selected ECM fungi can influence the performance of *P. pinaster* under Cd exposure and that this biotechnological tool could be of great value for plant establishment in contaminated sites.

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