

In vitro effects of cadmium on ectomycorrhizal fungi growth

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High concentrations of heavy metals (HM) in soil have an adverse effect on micro-organisms and microbial processes. In soil ecosystems, ectomycorrhizal fungi (ECM) provide a direct link between soil and plant roots, and may play an important role in the regulation of HM availability and toxicity to plants [1]. Most studies show that ECM inhibit metal uptake by plants [2]. Other studies show that they increase HM tolerance [3,4,5]. In addition, it has been shown that the presence of ECM can directly protect the plant from HM toxicity by initially accumulating them in the cell wall of their mantle. This was demonstrated by Jones & Hutchinson (Ni and Cu) and by Denny & Wilkins and Colpaert & Van Assche (Zn) [6]. *In vitro*, cadmium effects on fungal growth vary [7,8,9] but indicate that fungi are sensitive to this metal. Furthermore, once a fungus is part of a symbiotic relationship, tolerance responses could be different [1,4,6,9]. We have made an *in vitro* study of HM tolerance of ECM collected from roots of alders and willows. We compared 17 days ECM growth (density) at different Cd concentrations (0; 1; 5; 10 mgCd/l) added to a liquid Melin Norkrans media. Selected strains will then be inoculated to alder and willow trees, with the aim of identifying the effects of ECM on HM tolerance in these species. We can then consider if selected mycorrhizal fungi can play a role as bioremediation promoters in polluted soils.

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