Effect of Endophytic Fungus, Piriformospora Indica, on Barley Resistance to Lead

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Abstract

By modifying plants at genetical, physiological and ecological levels, entophytic fungi as the most important soil microorganisms have a pronounced growth-promoting activity and also increase plant resistance to biotic and abiotic stresses. This research was undertaken to evaluate the potential of P. indica to increase barley (Hordeum vulgare L.) resistance to lead (pb). Therefore, a greenhouse experiment with two fungus treatments (non-inoculated and P. indica inoculated) and five levels of pb (0, 25, 50, 100 and 500 mg/kg) with three replications was conducted based on a factorial design. Measurement of shoot and root dry weight showed that the growth of P. indica-colonized plants at all levels of pb treatments was higher (P < 0.05) than that of the corresponding controls. Also, chlorophyll concentration of inoculated plants with P. indica was superior to non-inoculated plants. In addition, the results showed that in contrast to the plant shoot, lead concentration in the root of P. indica-colonized plants was higher than the non-inoculated controls.

Keyword: Piriformospora indica, Lead, Barley.

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