

Effect of PGPB Inoculation, Addition of Biochar and Mineral N Fertilization on Mycorrhizal Colonization

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Abstract : Strong anthropogenic impact has uncontrolled consequences on the nature of the soil. Hence, up-to-date sustainable methods of soil state improvement are essential. Investigators provide the evidence that biochar can positively effects physical, chemical and biological soil properties and the abundance of mycorrhizal fungi which are in the focus of this study. The main aim of the present investigation is to demonstrate the effect of two types of plant growth promoting bacteria (PGPB) inoculums along with the beech wood biochar and mineral N additives on mycorrhizal colonization. Experiment has been set up in laboratory conditions with containers filled with arable soil from the protection zone of the main water source 'Brezova nad Svitavou'. *Lactuca sativa* (lettuce) has been selected as a model plant. Based on the obtained data, it can be concluded that mycorrhizal colonization increased as the result of combined influence of biochar and PGPB inoculums amendment. In addition, correlation analyses showed that the numbers of main groups of cultivated bacteria were dependent on the degree of mycorrhizal colonization.

Keywords : Arbuscular mycorrhiza, biochar, PGPB inoculum, soil microorganisms

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