MODIFYING EEFECT OF BIOCHAR BY MIXING IT WITH DIGESTATE

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Biochar is a carbonized organic matter formed by the pyrolysis process. This material contains a high percentage of carbon from the original biomass which provides an idea to design “a tool to reduce the impact of climate change“. The positive effect of biochar on the physical and chemical properties of soil has been demonstrated in many papers. However, the issue of the influence of carbonized matter on biological processes in soil is still unclear, and scientific results is often inconsistent. In our work, we wanted to modify the effect of biochar by adition of another organic fertilizer. We have chosen a digestate which, similarly as biochar, is a questionable fertilizer. Experiment was established using variants with biochar, digestate, and mixtures both of them. At the end of the experiment, the following parameters were measured: Production of aboveground and underground biomass, leaching of mineral nitrogen, nitrogen index, and colonization of roots by arbuscular fungi. The mixture of biochar and digestate showed higher biomass yields. On the other hand, the digestate reduced the biochar ability to absorb mineral nitrogen. The highest root colonization percentage was measured in the digestate and the lowest in the biochar variant. Our results show that the fertilizers interact with each other and the subject of further investigation should be to find a suitable ratio maintain the benefits of both fertilizers.

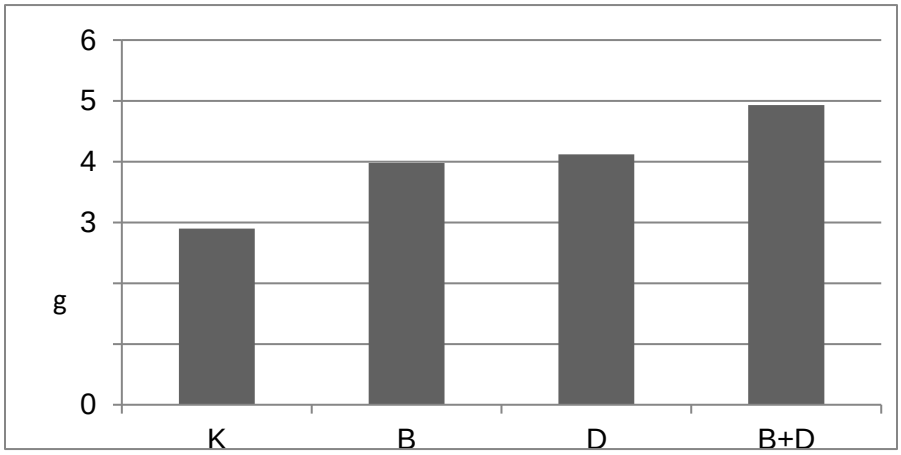

Figure 1 – Biomass production where: K (Control), B (Biochar), D (digestate), B+D (Biouhel + Digestate)

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