2nd International Electronic Conference on Agriculture

Part of the **1st International Online Conference on Agriculture - Advances in Agricultural Science and Technology** series

1–15 Nov 2023

Crop Production, Farm Animal Production, Crop Protection

IOCAG 2023

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Sessions

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S6. Artificial Intelligence for Advanced Analyses in Agriculture;

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Id	Title	Presentation Video	Presentation Pdf	Authors
sciforum-074769	**Application of bacterial inoculants in soils with increased Ni concentration for orchardgrass yield enhancement**	N/A	N/A	Aneta Buntić, Mila Pešić, Zoran Dinić, Olivera Stajković-Srbinović, Dušica Delić, Mira Milinković, Magdalena Knežević

Hide Abstract

In accordance with the increasingly intense problems worldwide related to soil pollution with (potentially) toxic trace elements (TE), the aim of this research was to determine the possibility of increasing the yield of orchardgrass in soils with an increased concentration of Ni using *Bacillus* inoculants. In addition, there is limited data on phytoremediation potential of orchardgrass as well as how *Bacillus* spp. affects the plant growth in these stressful conditions. Two *Bacillus* strains *Bacillus halotolerans* Vig3NK2 and *Bacillus megaterium* DzK1Bh were selected for orchardgrass seed inoculation in a pot experiment. Strain Vig3NK2 was isolated from the rhizosphere of *Medicago sativa* L. while strain DzK1Bh was isolated from root nodules of *Lotus corniculatus L*. Pot experiment was carried out in three replications and three treatments (Ø: control-without inoculation, T1: inoculation with Vig3NK2 and T2: inoculation with DzK1Bh). Plants were collected two times during season. In the first cutting, the yield increased by 10.81% in the treatment T1 and 8.10% in the treatment T2, compared to the control treatment. In the second cutting, the yield increased almost twice as compared to the first cutting for both treatments. Both applied inoculants induced the increase in orchardgrass yield in soils with an increased concentration of Ni. The strain DzK1Bh proved to be more successful under these stressful conditions and its application and effects in field experiments will be the object of the future research.