

European Congress on Biotechnology

Abstract Book 2026

28 June – 1 July 2026



Table of contents

Oral presentations	1
Stream: Innovations for healthy living.....	2
Stream: Solutions for a sustainable planet	33
Stream: Manufacturing with microbes.....	66
Stream: Feeding the planet	100
Poster presentations.....	131
Stream: Innovations for healthy living.....	132
Stream: Sustainable food and feed alternatives.....	171
Stream: Manufacturing with microbes.....	197
Stream: Feeding the planet	311
Index of authors	332

OSSP-004

Rhizobial inoculation for potentially toxic elements phytostabilization by alfalfa plants

Pešić M¹, Mrvić V¹, Sikirić B¹, Andjelković S², Milinković M¹, Buzurović U¹, Stajković-Srbinović O¹

¹Institute of Soil Science, Belgrade, Serbia

²Institute for Forage Crops Kruševac, Kruševac, Serbia

Alfalfa is one of the most valuable forage crops. Due to its deep root system, tolerance to potentially toxic elements (PTE) and beneficial effects on the soil quality, it is considered as candidate in phytoremediation processes. Inoculation with beneficial bacteria is one of the strategies for enhancing growth and stress resistance of plants in contaminated soils. In this study, the effects of inoculation with different rhizobial strains on the uptake and translocation of PTE in alfalfa grown in the soil containing elevated concentrations of nickel (195 mg/kg), lead (130 mg/kg) and chromium (127.8 mg/kg) were evaluated. Pot experiment was conducted during two years and thirteen different rhizobial strains and two uninoculated controls (unfertilized or fertilized with mineral N) were tested. In both years of the experiment, the content of accumulated Ni, Pb and Cr was several times higher in the roots compared to the shoots of all treatments. Rhizobial treatments affected the contents of Ni, Cr and Pb mainly in the roots, while to the lower extent in the shoots. In the first year, some inoculants decreased while others increased Cr, Ni and Pb contents in the alfalfa roots. In the second year, inoculation mostly decreased Cr content in the alfalfa roots, while Ni and Pb content were either decreased (218, G-nov, 217, 252, L3Si, L4 and 4148s), or increased by inoculation (224, 4193cs, GPD2, Melxx and 10-2BM). In conclusion, some of the rhizobial strains showed potential for use in phytostabilization of Ni, Cr and Pb with alfalfa plants.

Acknowledgments: This research was supported by the Science Fund of the Republic of Serbia, Grant No. 7015, Utilizing rhizobia to reduce the risk of heavy metal accumulation in alfalfa: Nickel (Ni) case study—RhizoDETOX and by the Ministry of Science, Technological Development and Innovations of the Republic of Serbia, contract No. 451-03-33/2026-03/200011 and 451-03-33/2026-03/200217.