



**XI INTERNATIONAL SYMPOSIUM OF  
AGRICULTURAL SCIENCES**

**BOOK OF ABSTRACTS**

**BOOK OF ABSTRACTS**



**XI INTERNATIONAL  
SYMPOSIUM OF  
AGRICULTURAL SCIENCES**

**26-28, May, 2022  
Trebinje  
Bosnia and Herzegovina**

BOOK OF ABSTRACTS



XI International Symposium of Agricultural Sciences "AgroReS 2022"  
26-28. May, 2022; Trebinje, Bosnia and Herzegovina

*Publisher*

University of Banja Luka  
Faculty of Agriculture  
University City  
Bulevar vojvode Petra Bojovića 1A  
78000 Banja Luka, Republic of Srpska, B&H

*Editor in Chief*

Branimir Nježić

*Technical Editors*

Biljana Kelečević  
Danijela Kuruzović

*Edition*

Electronic edition

CIP - Каталогизација у публикацији  
Народна и универзитетска библиотека  
Републике Српске, Бања Лука

631(048.3)(0.034.2)

INTERNATIONAL Symposium on Agricultural Sciences (11 ; Trebinje ; 2022)  
Book of Abstracts [Elektronski izvor] / XI International Symposium on Agricultural Sciences "AgroReS 2022", 26-28, May,, 2022, Trebinje, Bosnia and Herzegovina ; [organizer University of Banjaluka, Faculty of Agriculture ; **editor in chief Branimir Nježić**]. - Onlajn izd. - **Ел. зборник**. - Banja Luka : Faculty of Agriculture = Poljoprivredni fakultet, 2022. - **илустр.**

**Системски захтејеви:** Нису наведени. - Наћин pristupa (URL): <https://agrores.net/>. - **Ел. публикација у PDF формату опсега 253.** - **Насл. са насл. екрана.** - **Опис извора дана 23.05.2022.**

ISBN 978-99938-93-81-3

COBISS.RS-ID 136209665

PI\_05

## **The influence of fertilization on soil compaction and maize yield**

Milan Biberdžić<sup>1</sup>, Saša Barać<sup>2</sup>, Dragana Lalević<sup>2</sup>, Aleksandar Đikić<sup>2</sup>, Jelena Stojiljković<sup>3</sup>

<sup>1</sup> *University in Prishtina, Faculty of Agriculture, Serbia*

<sup>2</sup> *University in Prishtina, Faculty of Agriculture Lesak, Serbia*

<sup>3</sup> *Agricultural Professional and Extension Service, Serbia*

*Corresponding author: Milan Biberdžić, milan.biberdzic@pr.ac.rs*

### **Abstract**

Compacted soil causes weaker growth of the root system, weaker microbial activity, slowing down the absorption of water and nutrients, thus slowing down the growth of plants. Breeding plants on such soils result in reduced yields and increased production costs. This study was aimed to determine the impact of manure and mineral fertilizers on soil compaction and maize yield. The experiment was performed on the territory of the municipality of Leskovac on Smonitza soil type. The experiment included four variants of fertilization with organic and mineral fertilizers. Compaction was measured after sowing and after maize harvest, by penetrometer Eijkelkamp hardware, version 6.0, software version 6.03. The application of manure in combination with mineral fertilizers significantly reduced soil compaction. The highest compaction was recorded at a depth of 40-50 cm, after which it stagnated and slightly decreased to a depth of 80 cm. The average compaction measured after harvest was 24.10% higher than that measured after sowing. The soil moisture content was higher on plots with manure and mineral fertilizers than on non-fertilized plots. Maize yield was significantly higher in variants where manure was used together with mineral fertilizers compared to variants with the only use of mineral fertilizers and variants without fertilizers. Variants with the lowest soil compaction achieved the highest yields. The recommendation to maize producers is to apply more organic matter on heavy and compacted soils, primarily manure, but also mineral fertilizers, to have high and stable yields.

*Key words:* soil compaction, manure, mineral fertilizers, moisture, yield