X INTERNATIONAL SYMPOSIUM ON AGRICULTURAL SCIENCES

BOOK OF ABSTRACTS

BOOK OF ABSTRACTS

X INTERNATIONAL SYMPOSIUM ON AGRICULTURAL SCIENCES

27-29, May, 2021
Trebinje
Bosnia and Herzegovina

BOOK OF ABSTRACTS

X International Symposium on Agricultural Sciences "AgroReS 2021"
27-29, May, 2021; 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

Željko Vaško

Technical Editors

Biljana Kelečević
Danijela Kuruzović

Edition

Electronic edition

P1_06

Effects of different growing systems on the grain yield of winter wheat

Željko Dolijanović[1], Svetlana Roljević Nikolić[2], Nemanja Gršić[1], Snežana Oljača[1], Milena Simić[3], Zoran Jovović[4]

[1] *University of Belgrade, Faculty of Agriculture, Serbia*
[2] *Instute of Economics in Agricuture, Serbia*
[3] *Maize Research Institute, Serbia*
[4] *Biotechnical Faculty, Montenegro*

Corresponding author: Željko Dolijanović, dolijan@agrif.bg.ac.rs

Abstract

The examination of the effects of different growing systems on the grain yield of winter wheat was conducted at the research and study field "Radmilovac" of Faculty of Agriculture (44º45’ N, 20º35’ E Serbia, 130 m above mean see level). Investigations was conducted in 2016/17 and 2017/18 year on the luvic chernozem soil type, in completely randomized blocks with three repetitions. Conventional growing system (CGS) was aimed to achieve high grain yields and included ploughing using a mouldboard plough at 25 cm and pre-sowing tillage using a disc harrow and a harrow, basic fertilization in autumn with 600 kg ha^{-1} NPK (15:15:15) and top dressing in spring with high N dose (120 kg ha^{-1} N). In intergrated growing system (IGS), based on low inputs, tillage was performed using a chisel plough at 25 cm with ≥30% of maize crop residues retaining on the soil surface and the pre-sowing tillage using a disc harrow and a harrow, basic fertilization in autumn with 600 kg ha^{-1} NPK (15:15:15) and top dressing in spring with 60 kg ha^{-1} N. In both growing systems grew two common winter wheat cultivars (*Triticum aestivum* ssp. *vulgare*) Ilina and Zvezdana. Statistical analysis confirmed that year, growing system and genotype have a significantly greater impact on wheat productivity than their interactions. More favorable meteorological conditions in the first year led to obtaining statistically significantly higher grain yields in both growing systems (7,840 and 6,450 kg ha^{-1}). A higher yield per unit area (7,470 kg ha^{-1}) was found in the conventional compared to the integrated growing system (6,150 kg ha^{-1}). In both growing systems, the Ilina variety had higher yields compared to the Zvezdana variety. An integrated cultivation system on heavier soils has less positive effects than on soils with more favorable characteristics, especially in the short term.

Key words: growing system, winter wheat, grain yield, fertilizing