



**7TH INTERNATIONAL SYMPOSIUM ON
AGRICULTURAL SCIENCES**



AGRORES
2018



BOOK OF ABSTRACTS



February 28 - March 2, 2018
Banja Luka, Republic of Srpska, Bosnia and Herzegovina

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7th International Symposium on Agricultural Sciences "AgroReS 2018"
February the 28th – March the 2nd, 2018; Banja Luka, 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

Gordana Rokvić

Technical Editors

Đorđe Savić, Đurađ Hajder

Circulation

100

CIP - Каталогизacija y публикацији
Народна и универзитетска библиотека
Републике Српске, Бања Лука

631(048.3)(0.034.2)

INTERNATIONAL Symposium on Agricultural Sciences (7 ;
Banja Luka ; 2018)

Book of Abstracts [Elektronski izvor] / 7th International
Symposium on Agricultural Sciences "AgroReS 2018",
February 28 - March 2, 2018, Banja Luka, Bosnia and
Herzegovina ; [organizer University of Banjaluka, Faculty of
Agriculture ; president Gordana Rokvić]. - Banja Luka :
Faculty of Agriculture = Poljoprivredni fakultet, 2018. - 1
elektronski optički disk (CD-ROM) : tekst ; 12 cm

Dostupno i na: <http://www.agrores.org>. - Nasl. sa nasl. ekrana.
- Na nasl. str.: AgroRes 2018. - Tiraž 100. - Registar.

ISBN 978-99938-93-45-5

1. University of Banjaluka, Faculty of Agriculture

COBISS.RS-ID 7238680

WEEDINESS OF MAIZE IN DIFFERENT CROP ROTATION

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Weed seeds in and on the soil are the primary cause of weed infestations in maize. Cropping system diversification through the use of longer rotations of dissimilar species can increase the range of stress and mortality factors that regulate weed population dynamics, and thus can be useful for maintaining effective weed control while reducing the burden of crop protection placed on herbicides. This paper deals with effect of continuous cropping, two-, three- and six crop rotation on the weediness of maize. A trial was settled on the experimental field of the Faculty of Agriculture, in 1992. The following cultivation systems have been observed: maize continuous cropping, maize-winter wheat rotation (two-), maize-soybean-winter wheat rotation (three-) and winter wheat-maize-soybean-spring barley+red clover-red clover-sunflower (six-crop rotation). The common conventional cropping practices specific for maize were applied in systems. Crops are grown in non-irrigation regime, on leached chernozem. Long-term effects of various cropping systems on weed infestation were observed by the one square meter area method in 2015. The 23-year continuous cropping was obviously a respectable period for making unambiguous and precise conclusions. Namely, the number of weed species, and especially the number of plants per weed species, has been increasing in maize continuous cropping over years, but the increasing tendency certainly depended on meteorological conditions in particular years. Maize continuous cropping was characterised by the highest number of weed species and plants per weed species with the dominance of perennial species, due to, first of all, great abundance of plants per species *Sorghum halepense* (L.) Pers and *Convolvulus arvensis* L. The highest number of plants per annual weed species in maize continuous cropping was recorded in species *Solanum nigrum* L., *Chenopodium album* L. and *Amaranthus retroflexus* L. Dominant species in crop rotations were the same as in maize continuous cropping, only the increased distribution of perennial species *Cirsium arvense* (L.) Scop. and *Agropyrum repens* (L.) Beauv. was observed in the six-crop rotation. Crop rotations, especially the three crop rotation, are more effective in suppressing the number of plants per weed species and decreasing fresh biomass of weeds than continuous cropping and the two- and six crop rotation are.

Keywords: crop rotation, continuous cropping, maize.