75 YEARS
1945 - 2020

Maize Research Institute
ZEMUN POLJE
Serbia, Belgrade
















International Conference

The Frontiers of Science and Technology in Crop Breeding and Production Conference

8 – 9 June, 2021
Belgrade, Serbia

BOOK OF ABSTRACTS

International Conference The Frontiers of Science and Technology in Crop Breeding and Production
June 8 - 9, 2021; Belgrade, Serbia

Publisher

Maize Research Institute, Zemun Polje
Slobodana Bajića 1, 11185 Belgrade - Zemun, Serbia

Editor in Chief

Dr. Vesna Kandić

Technical Editors

Dr. Vesna Kandić
Milena Šenk, MSc
Marko Mladenović, MSc

Circulation

60
Online on the website http://zpconference75.com

ISBN 978-86-80383-11-8

SCIENTIFIC COMMITTEE

ORGANIZING COMMITTEE

Dr. Vesna Kandić
President

Dr. Aleksandar Popović
Dr. Ana Obradović
Anika Kovinić, MSc
Dr. Danijela Ristić
Iva Savić, MSc
Dr. Jelena Vukadinović
Dr. Jovan Pavlov
Manja Božić, MSc
Dr. Marija Kostadinović
Dr. Marija Milivojević
Dr. Marijana Simić
Marko Mladenović, MSc
Dr. Milan Brankov
Dr. Milan Stevanović
Dr. Mile Sečanski
Milena Šenk, MSc
Dr. Milica Nikolić
Miloš Crevar, MSc
Dr. Natalija Kravić
Dr. Nikola Grčić
Olivera Đorđević Melnik, MSc
Dr. Snežana Gošić Dondo
Dr. Sofija Božinović
Dr. Tanja Petrović
Dr. Valentina Nikolić
Dr. Vesna Perić
Dr. Vojka Babić
Dr. Zoran Dumanović

06 - 03 Poster

ANTIOXIDANT ACTIVITY AND FLUORESCENCE OF COLORED MAIZE (*Zea mays* L.) SEEDS UNDER VARIOUS TEMPERATURE CONDITIONS

Dragana Bartolić*, Miloš Prokopijević, Branka Živanović, Ksenija Radotić

Institute for Multidisciplinary Research, University of Belgrade, Department of Life Sciences, Kneza Višeslava 1, Belgrade, Serbia

*Corresponding author e-mail address: dragana.bartolic@imsi.rs

The quality of cereal seeds could be altered by the different temperature conditions. In this study, the influence of temperature on the antioxidant activities and the fluorescence characteristics of various cultivars of colored maize (*Zea mays* L.) seeds were estimated. For that purpose, the seeds were exposed to different temperatures (25°C (Control), 45°C, and 90°C), for 60 minutes. The antioxidant activities of the various colored seeds have been determined using the DPPH (2,2-diphenyl-1-picrylhydrazyl) reagent. Our results showed that a rise in temperature caused an increase in the antioxidant activities in the yellow, light- and dark-red colored seeds. This was more pronounced in the dark-red colored seeds. However, no statistically significant differences were found in the antioxidant activities of the white-colored seeds at the different temperatures. The fluorescence analysis indicates differences in emission spectral parameters among the analyzed seed types and effect of various temperature conditions. Both methods have proven to be useful for monitoring changes caused by temperature treatment of the seeds but could also be applied for characterization and quality control of seeds after different types of treatments.

Key words: *antioxidant activity, fluorescence spectroscopy, maize (Zea mays* L.*) seeds, heating treatment, seed quality*.