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**ZEMUN POLJE**  
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**06 - 03 Poster**

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

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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.*