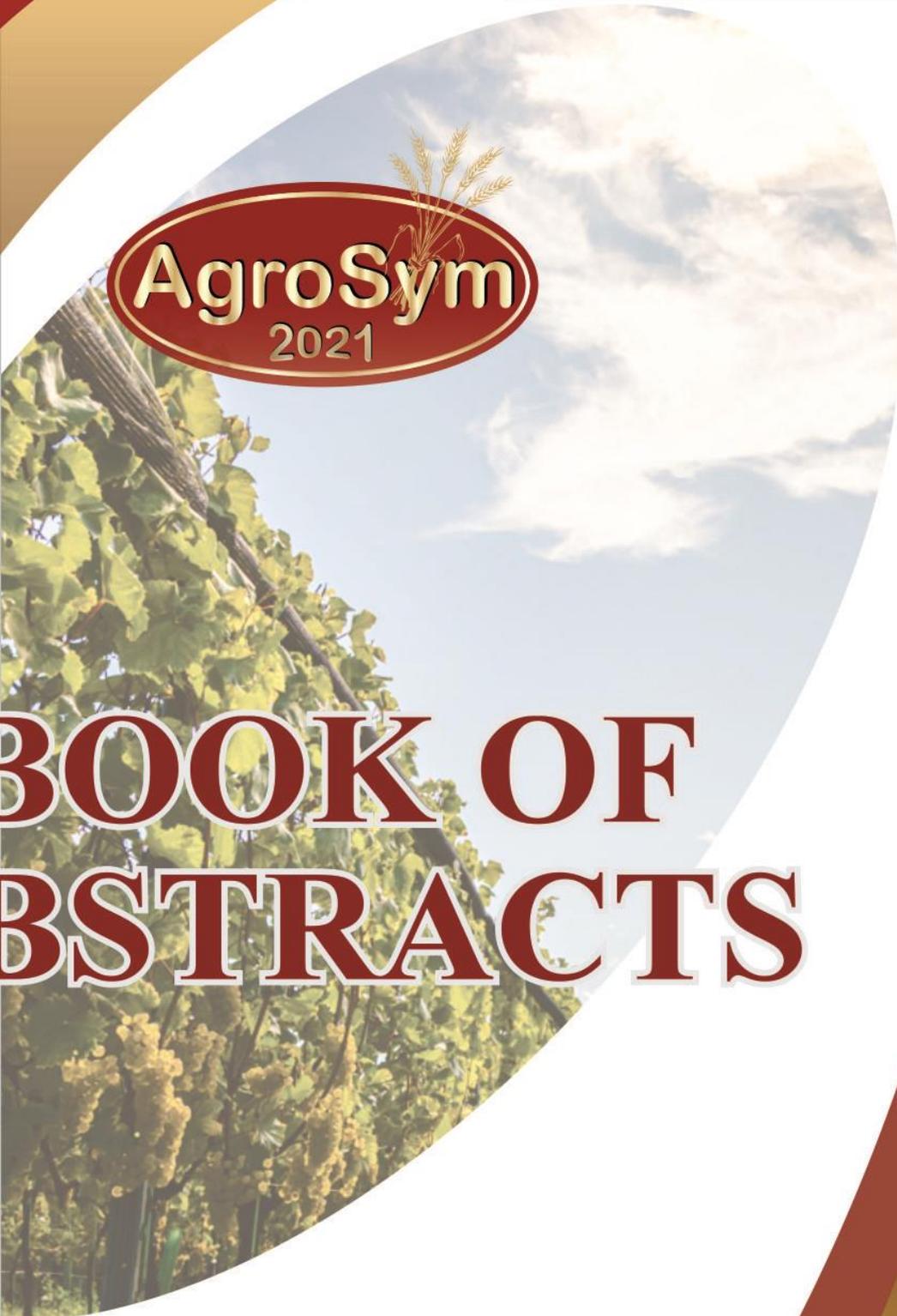




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BOOK OF ABSTRACTS

*XII International Scientific
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CHARACTERIZATION OF COLORED MAIZE SEED FRACTIONS USING FLUORESCENCE SPECTROSCOPY AND MULTIVARIATE ANALYSIS

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Abstract

In the present study, we used the Multivariate Curve Resolution-Alternating Least Squares (MCR-ALS) algorithm to analyse the excitation-emission matrices (EEM's) of various cultivars of colored maize (*Zea mays* L.) seeds and its fractions. The EEMs were recorded as a set, with the excitation ranging from 280 nm to 380 nm and the emission spectra ranging from 300 nm to 550 nm. The MCR-ALS analysis yielded two major fluorescence components for all of the analysed samples. Both position and shape of the component 1 (C1), varied among the samples. On the other hand, the position and shape were similar for the component 2 (C2). C1 could be used as a marker for discrimination of colored seeds and their fractions. The observed variations in C1 between the analysed seeds, based on the presence of their individual fluorophores, can be assigned to anthocyanins, proteins, and phenolics. In conclusion, the MCR-ALS analysis of the seed emission spectra have a great potential for the rapid and non-expensive characterization of various cultivars of colored seeds.

Keywords: *maize seed, fluorescence, Multivariate Curve Resolution-Alternating Least Squares.*