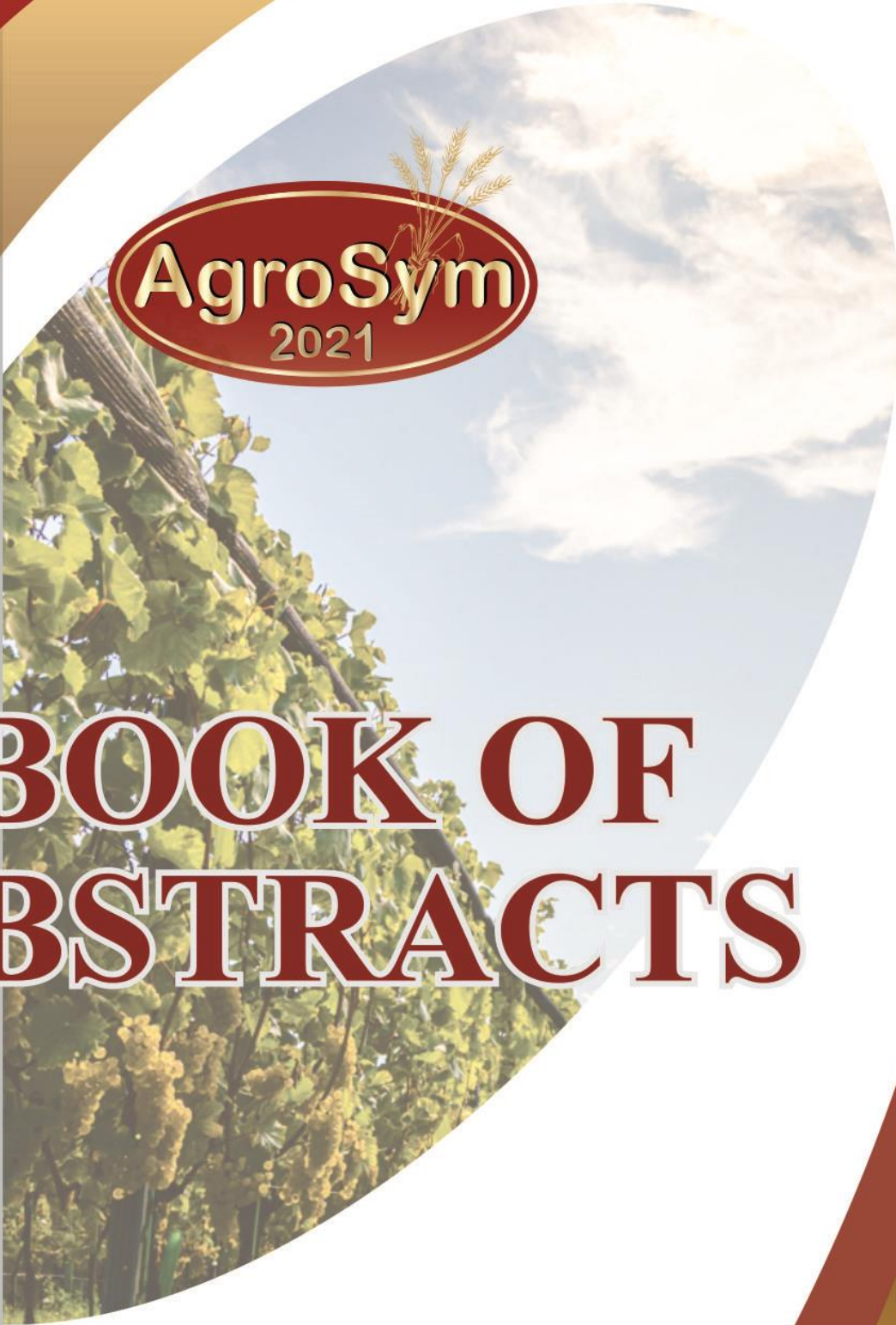




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2021



BOOK OF ABSTRACTS

*XII International Scientific
Agriculture Symposium
"AGROSYM 2021"
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EVALUATION OF KANAMYCIN AND CEFOTAXIME EFFECTS ON PROLIFERATION, MORPHOLOGY AND GERMINATION RATE OF SOMATIC EMBRYOS IN *CENTAURIUM ERYTHRAEA* RAFN

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Abstract

Centaurium erythraea Rafn is medically significant plant with a great potential in treating multiple gastrointestinal tract diseases. Although widely spread, *C. erythraea* is now listed as endangered species due to extensive exploitation, so there is a need to deepen knowledge of existing and develop new *in vitro* techniques for its mass propagation. Somatic embryogenesis (SE) is the most effective way for centaury *in vitro* regeneration. In addition to possessing great multiplication rate, regeneration via SE is also convenient for genetic transformation since somatic embryos offer genetically uniform starting material with less somaclonal variability. Furthermore, the ability of somatic embryos to undergo secondary SE, a process in which new somatic embryos are initiated from somatic embryos, makes them a suitable target tissue for transformation. We have recently established secondary SE in *C. erythraea* for the first time and our next step is to develop a transformation method using somatic embryos as starting material. Choice of the correct type and optimal concentration of decontamination and selection antibiotics is crucial in order to obtain a high germination rate and normal morphology of somatic embryos as a prerequisite for successful transformation. Therefore, we evaluated antibiotic sensitivity of untransformed somatic embryos, using different concentrations of cefotaxime and kanamycin as decontamination and selection antibiotics, respectively, and appropriate concentrations were determined. These conclusions were furthermore verified by visual observations of secondary somatic embryos number, their morphology as well as germination rate of embryos grown on media containing various antibiotics concentrations.

Keywords: *Centaurium erythraea*, secondary somatic embryogenesis, *Agrobacterium*-mediated transformation.