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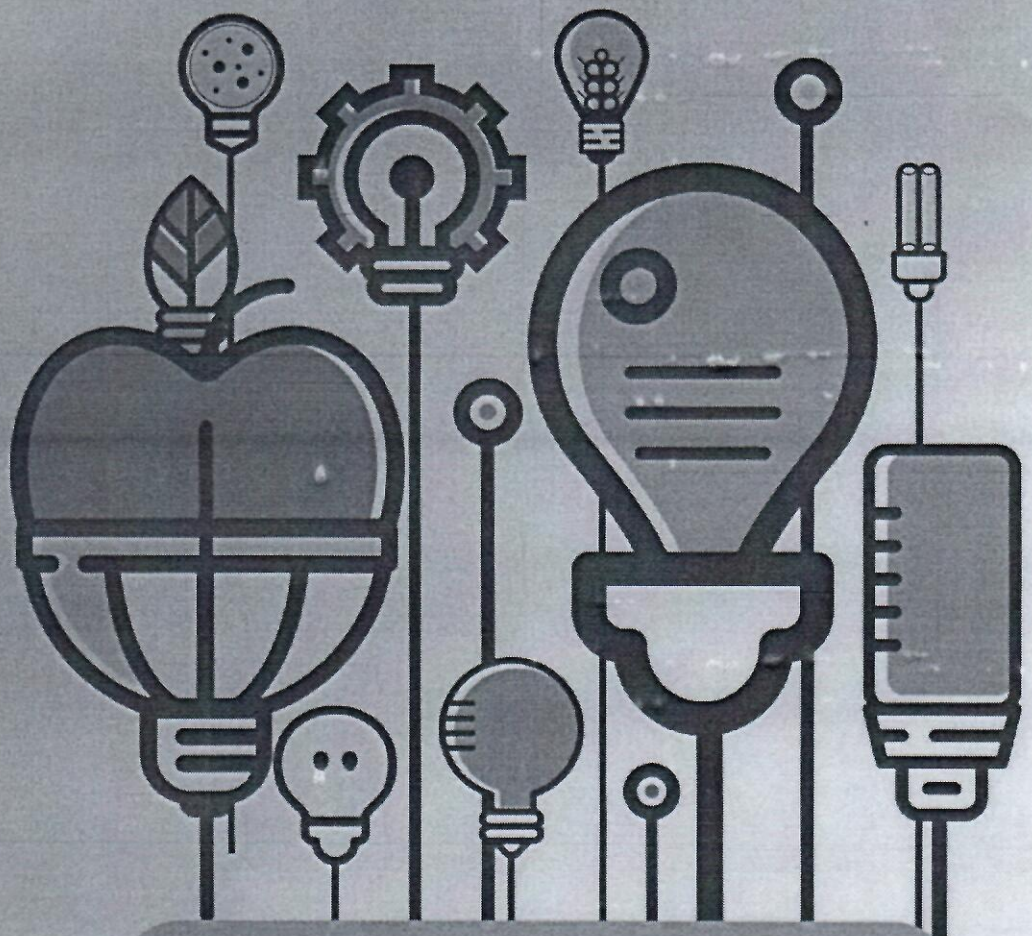

ABSTRACT BOOK

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BIOMETRIC ANALYSES OF YIELD AND QUALITY OF WHEAT (*Triticum aestivum* L.) IN DIFFERENT ENVIRONMENTS

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The objectives of this study were: 1) to investigate the effects of genotype, environment, and their interactions on the oil content, protein content and grain yield in 25 varieties of winter wheat, 2) to estimate the correlations among these traits in different environments, and 3) to evaluate the effect of different climatic variables and their interactions with wheat genotypes for the examined traits. The field experiments were performed on three different experimental sites in Serbia during 2009/10 and 2010/11. Classical Rushkovsky method was used to determine oil content from wheat bran, while protein content was determined by the ICC 105/2 method. The average values for all environments showed negative correlation between protein content and grain yield (r = -0.739**) in three out of six environments, while significant positive correlation between oil content and grain yield (r = 0.441*) was found in only one. The partial least square regression (PLSR) model was used for modelling genotype by environment variance components with a set of climatic variables. The PLSR triplots for protein content, oil content and grain yield explained 31.9%, 32.6%, and 30.4%, respectively. Cvs. Renesansa and Zvezdana were identified as genotypes with high average values for all traits (protein content over 14%, oil content over 4%, and grain yield over 7 t/ha), while cvs. Bankuty 1205 and Banatka were identified as potential sources of high protein content. The identified genotypes can serve as parents in wheat breeding for higher oil and protein contents combined with high yield.

Keywords: *G×E interaction, climatic variables, oil, proteins, yield, wheat*

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