

Prilagodba agrotehnike uzgoja kukuruza klimatskim promjenama

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Sažetak

Primjena konzervacijskih sustava tla učinkovit je način u sprečavanju degradacije tla i prilagodbe biljne proizvodnje klimatskim promjenama uz osiguravanje produktivnosti i stabilnosti prinosa. Cilj istraživanja provedenog 2021. godine na pseugleju u Čačincima (17.86336 E, Lat. 45.61316 N) bio je utvrditi utjecaj konzervacijske obrade, gnojidbe i kondicioniranja tla na prinos i komponente prinosa kukuruza s glavnim tretmanom obrada tla: ST (konvencionalna s oranjem), CTD-konzervacijska duboka (rahljenje s 30 % biljnih ostataka) i CTS-konzervacijska plitka (uz 50 % biljnih ostataka) s podtretmanom kalcizacije i pod-podtretmanom gnojidbe. Tretmani gnojidbe bili su: FR (prema preporuci, NPK 170:150:225), FD (50 % od preporuke), GFR (prema preporuci + GeO₂ – biofiziološki aktivator tla), GFD (50 % od preporuke + GeO₂). Obrada tla i gnojidba u prosjeku su statistički značajno utjecale na prinos, hektolitarsku masu i masu 1000 zrna. Najveći prosječni prinos (8,60 t ha⁻¹), masa 1000 zrna (121,80 g) i hektolitar (70,15 kg hl⁻¹) ostvareni su na ST tretmanu. Veći prinosi u prosjeku su zabilježeni su na svim kalciziranim tretmanima, a na tretmanu GFR ostvaren je najveći prinos kukuruza (9,75 t ha⁻¹). Na tretmanima CTD i CTS najveća masa 1000 zrna u prosjeku je ostvarena na tretmanu GFR, a najveća hektolitarska masa zabilježena je na ST tretmanu uz kalcizaciju i gnojidbu GFD. U ovom istraživanju kondicioniranje tla rezultiralo je povećanjem prinosa i komponenti prinosa kukuruza.

Ključne riječi: klimatske promjene, *Zea mays* L, konzervacijska obrada tla, prinos, komponente prinosa

Zahvala: Ovaj je rad financirala Hrvatska zaklada za znanost projektom “Procjena konzervacijske obrade tla kao napredne metode uzgoja usjeva i prevencije degradacije tla – ACTIVEsoil” (IP-2020-02-2647)

Adaptation of maize cultivation techniques to climate change

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Summary

The implementation of conservation soil tillage systems is an effective way to prevent soil degradation and adapt crop production to climate change while ensuring productivity and yield stability. The aim of the research conducted in 2021 on stagnosol in Čačinci (17.86336 E, Lat. 45.61316 N) was to determine the impact of conservation tillage, fertilization and soil conditioning on yield and yield components of maize with the main treatment tillage: ST (conventional with plowing), CTD-conservation deep (loosening with 30% of crop residues on the surface) and CTS-conservation shallow (tillage with 50% of crop residues), sub-treatment of liming and sub-subtreatment of fertilization. Fertilization treatments were: FR (according to the recommendation, NPK 170:150:225), FD (50% of the recommendation), GFR (according to the recommendation + GeO₂ - biophysiological soil activator), GFD (50% of recommendation + GeO₂). Tillage and fertilization on average had a statistically significant effect on yield, hectoliter weight and 1000 grain weight. The highest average yields (8.60 t ha⁻¹), mass of 1000 grains (121.80 g) and hectoliters mass (70.15 kg hl⁻¹) were achieved on the ST treatment. Higher yields were recorded on average in all liming treatments, and the highest yield of maize was achieved on the GFR treatment (9.75 t ha⁻¹). In the CTD and CTS treatments, the highest mass of 1000 grains were achieved on average in the GFR treatment, and the highest hectoliter mass was recorded in the ST treatment with GFD fertilization and liming. In this study, soil conditioning resulted in an increase in yield and yield components of maize.

Key words: climate change, *Zea mays* L, conservation tillage, yield, yield components

Acknowledgments: This work has been fully supported by Croatian Science Foundation under the project “Assessment of conservation soil tillage as advanced methods for crop production and prevention of soil degradation – ACTIVEsoil (IP-2020-02-2647)