Usporedba konvencionalne i ekološke proizvodnje kukuruza i soje

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Sažetak

Zbog negativnog utjecaja na tlo i okoliš pristup gnojidbi velikim količinama mineralnih gnojiva mora se mijenjati. U Križevcima je postavljen pokus s ciljem da se utvrdi utjecaj različite gnojidbe na kukuruz (2008.) i soju (2009.).

Pokus je postavljen po slučajnom bloknom rasporedu u četiri ponavljanja s deset tretmana: kontrola (bez gnojidbe), mineralna gnojidba, kompostirani goveđi i konjski gnoj, te separat svinjske gnojovke u dvije razine (10 i 5 t/ha) i kompostirani pileći gnoj (6 i 3 t/ha). Soja je gnojena samo mineralnihm gnojivima, a utjecaj organske gnojidbe promatran je kroz produženo djelovanje. Na kukuruzu su praćeni: prinos, masa, duljina i promjer klipa, a kod soje: prinos, broj mahuna i broj zrna po biljci, te masa 1000 zrna.

Mineralna gnojiva su kod kukuruza postigla, statistički opravdano, uz $P<0.05$, najviše vrijednosti svih promatranih parametara (prinos: 17,68 t/ha; masa klipa: 257,84 g; duljina klipa: 17,69 cm; promjer klipa: 5,06 cm), a najniže vrijednosti su postignute s 5 t/ha komposta goveđeg gnoja (10,37 t/ha; 156,83 g; 13,82 cm; 4,45 cm). Razlike između ostalih tretmana nisu bile statistički opravdane. Kod soje nije bilo statistički značajnih razlika u prinosu i broju mahuna po stabljici (3,63 t/ha i 21,62), dok su najveći broj zrna po stabljici dale više doze pilećeg i svinjskog gnoja (50,39 i 47,44), a najmanji mineralna gnojidba (32,80). Najveću masu 1000 zrna je, uz $P<0,05$, dala mineralna gnojidba (199,7 g), a razlika među ostalim tretmanima nije bilo.

Zaključujemo da se mineralnom gnojidbom kukuruza ostvaruju bolji rezultati, ali kod soje, kao druge kulture u plodoredu, organska gnojidba daje iste vrijednosti, a bolja je za tlo i okoliš.

Ključne riječi: kukuruz, soja, organska gnojidba, mineralna gnojidba, prinos

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Comparison of conventional and organic production of corn and soybean

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Abstract

Because of negative impacts on soil and environmental, approach to fertilization with large quantities of mineral fertilizers must be changed. In Križevci was set experiment aimed to determine the effect of different fertilization types types on corn (2008) and soybeans (2009).

The experiment experiment was organized in organized in a randomized block design with four replications of ten treatments: control (no fertilizer), mineral fertilization, compost beef, horse and pig separated manure in two levels (10 and 5 t / ha) and chicken composted manure (6 and 3 t / ha). Soy was was fertilized only with mineral fertilizers, and the influence of organic fertilization was observed through a prolonged effect. Yield, weight, length and diameter of the piston were observed for corn, and yield, number of pods and number of seeds per plant and 1000 grain weight for soybean.

For corn, the highest values of all observed parameters (yield: 17.68 t / ha; weight of the piston: 257.84 g; length of the piston: 17.69 cm diameter of the piston: 5.06 cm) were, statistically justified $P < 0.05$, achieved by application of mineral fertilizers while the lowest values were achieved with 5 t / ha composted cattle manure (10.37 t / ha, 156.83 g, 13.82 cm, 4.45 cm). Differences between other treatments were not statistically significant. In soybean there were no statistically significant differences in yield and number of pods per stem (3.63 t / ha and 21.62), while the largest number of grains per stalk was achieved with higher doses of chicken and pig manure (50.39 and 47.44) and the smallest with mineral fertilization (32.80). The highest 1000 seed weight, $P<0.05$, was achieved with mineral fertilization (199.7 g), and there were no differences among other treatments.

We conclude that mineral fertilization of corn achieves better results, but for soybean, as the second crop in rotation, the same values are achieved by organic fertilization, which is better for the soil and environment.

Key words: corn, soy, organic fertilization, mineral fertilization, yield

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