

Utjecaj gnojidbe na prinos i komponente prinosa kukuruza

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Sažetak

Utjecaj gnojidbe i proizvodnih uvjeta na prinos i komponente prinosa kukuruza praćen je tijekom trogodišnjeg razdoblja (2002.-2004.) u pokusu postavljenom u Križevcima po slučajnom bloknom rasporedu u četiri ponavljanja. Gnojidbeni tretmani su bili: kontrola (bez gnojidbe) te rastuće količine gnojiva do najviše 240 kg N, 200 kg P i 200 kg K po ha. Berba je bila ručna, a komponente prinosa (masa, duljina i promjer klipa) su mjerene na 20 prosječnih biljaka.

Praćeno razdoblje bilo je toplije (15,4oC) i sušnije (515,0 mm oborina) od tridesetogodišnjeg prosjeka (14,1oC i 578,3 mm). Najtoplija (16,0oC) i najsušnija (358 mm) bila je 2003., dok su ostale dvije godine neznatno odstupale.

Dobiveni rezultati mjerenja pokazuju da su vremenske prilike u pojedinim godinama i gnojidba veoma značajno ($P < 0,0001$) utjecali na masu, duljinu i promjer klipa. Jednak utjecaj gnojidbe bio je i na prinos zrna, dok je utjecaj godine na ovo svojstvo bio manje značajan ($P < 0,05$). Najveća prosječna masa klipa (283,58 g) ostvarena je 2004. s gnojidbom s najvećim količinama hraniva, dok je 40% manja masa klipa (177,05 g) ostvarena na kontroli izrazito sušne 2003. Također je najveća prosječna duljina klipova (20,24 cm) kao i najveći promjer (4,99 cm) izmjeren 2004. na varijanti s 240 kg N, 200 kg P i 200 kg K. Na kontroli, kao najslabijoj, ostvareni su 25% lošiji rezultati. Najveći prosječni prinos ostvaren je na najbolje gnojenoj varijanti (12,81 t/ha), a najmanji na kontroli (7,91 t/ha).

Može se zaključiti da vremenske prilike i gnojidba značajno utječu na povećanje komponenti prinosa (mase, duljine i promjera klipa) i u konačnici na sam prinos.

Ključne riječi: kukuruz, gnojidba, prinos, komponente prinosa

Effect of fertilization on yield and yield components of maize

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Summary

The influence of fertilization and production conditions on the maize yield components was monitored in the course of three years (2002-2004) in the experimental trial organized in Križevci in a randomized block scheme with four repetitions. The quantity of fertilizer were increasing in fertilization treatments, from no fertilizer up to 240 kg N, 200 kg P and 200 kg K per ha. Harvesting was manual, and yield components (weight, length and diameter of cob) were measured for the 20 average plants.

The monitored period was warmer (15.4 °C) and drier (515.0 mm rainfall) of the thirty-year average (14.1 °C and 578.3 mm), with 2003 being the warmest (16.0 °C) and driest (358 mm) year, while the other two slightly departed from the average.

The results of the measurement show that the weather conditions of a particular year and the fertilization significantly influenced ($P < 0.0001$) weight, length and diameter of cob. Fertilization had the same effect on the grain yield, while it was less significantly impacted by the weather conditions of a particular year ($P < 0.05$). The highest average weight of the cob (283.58 g) was achieved in 2004 in trial fertilized with the greatest amount of nutrients, while 40% the minimum mass of the cob (177.05 g) was achieved in the control trial in the extremely dry year of 2003. The largest average cob length (20.24 cm) and the largest cob diameter (4.99 cm) were also measured in 2004 in trial treated with 240 kg N, 200 kg P and 200 kg K. The control trial, which was the weakest, had 25% weaker result. The largest average yield was achieved in the most fertilized variety (12.81 t / ha) and lowest in the control (7.91 t / ha).

It can be concluded that weather and fertilization significantly influence the increase of yield components (weight, length and diameter of the cob) and ultimately the yield itself.

Key words: maize, fertilization, yield, yield components