

Utjecaj gustoće usjeva i obrade na eroziju tla vodom

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Sažetak

Erozija tla vodom i vjetrom prati civilizaciju od njezina postanka. Antropogena erozija do sada je nepovratno uništila 430 milijuna hektara poljoprivrednog zemljišta ili oko 30 % ukupnih obradivih površina na planetu Zemlji. Samo u Hrvatskoj je preko 80 % obradivih površina izloženo eroziji različita intenziteta, a u brdsko brežuljkastim područjima erozija tla vodom je primarni problem gospodarenja tlom. Cilj je ovog rada istražiti utjecaj okopavinskih kultura rijetkog sklopa, kukuruza i soje te ozimih usjeva gustog sklopa, pšenice i uljane repice na eroziju tla vodom pri različitim načinima obrade tla i različitom porastu istraživanih usjeva. Istraživanja su provedena u zoni obronačnog pseudogleja na oraničnim površinama poduzeća „Poljodar Tim“ d.d., na parceli Freivogelov brijeg, u selu Blagorodovac, nedaleko Daruvara. Pokus je započeo 1995. godine sjetvom kukuruza. U istraživanjima je primijenjen uobičajen plodored za ovo područje: kukuruz - soja - ozima pšenica - uljana repica te mješoviti usjev ječam-soja. Navedeni plodored je bio ponovljen četiri puta. U svakoj godini istraživanja, bilježili su se iznosi erozije tla vodom svaki put nakon oborina koje su uzrokovale površinsko otjecanje. Količina oborina se pratila pomoću kišomjera na mjestu provedbe pokusa. Nakon analize rezultata od svake pojedine godine pokusa, utvrđena je pojačana erozija tla vodom pri uzgoju okopavinskih kultura, kukuruza i soje, odnosno godišnja erozija viša od tolerantne na kontrolnoj varijanti i obradi uz/niz nagib. Kod uzgoja ozimih usjeva gustog sklopa godišnja erozija prelazila je tolerantnu samo na kontrolnoj varijanti dok je na ostalim varijantama bila ispod tolerantne vrijednosti i nije značajna. Provedena 20-godišnja istraživanja ukazuju da eroziju tla vodom ne možemo u potpunosti zaustaviti. Odabirom optimalnog načina obrade i plodoreda eroziju možemo svesti u tolerantne okvire.

Ključne riječi: okopavine, ozimine, erozija vodom, obrada

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Influence of plant density and tillage on soil loss by water

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Abstract

Soil erosion by water is a great issue in all parts of world. Anthropogenic erosion until now irretrievably destroyed 430 million hectares of arable land, or about 30 % of the total arable land on the planet Earth. Here in Croatia, over 80 % of all cultivable area is under influence of variable intensity erosion, and in some parts of country (especially in hilly region) erosion is a primary problem in soil management. In this paper soil erosion by water was investigated on the results of experiment with five agricultural crops in the zone of Stagnosols on the arable land of firm „Poljodar Tim“ – agriculture, transport and services from Daruvar, on the plot of Freivogel’s hill, in the village of Blagorodovac, near Daruvar. This experiment began in year of 1995 by sowing maize. Crops included in crop rotation were in crop rotation: maize – soybean - winter wheat - oil seed rape and double crop barley-soybean, each of them repeated four times in crop rotation. Every time after rainfall, soil loss was measured and noted just like the amount of rainfall, which was measured by pluviometer in the experimental place. The aim of this project was to investigate the influence of row crops - maize and soybean and high density crops - winter wheat and oil rape seed on soil erosion by water in different tillage systems and plant density of investigation crops. After result analysis of every experimental year, increased soil loss were determined in growing row crops, maize and soybean. Respectively, yearly erosion rates were above tolerant erosion on the control plot and the plot with ploughing up/down the slope. Yearly erosion rates in growing high density crops were above tolerant erosion only on control plot, and in other plots erosion rates were well below the tolerant and were not significant. Conducted 20-year-old research suggests that soil erosion water can not completely stop. Choosing the optimal treatment method and crop rotation erosion can be reduced in the tolerant limits.

Key words: row crops, high density crops, soil erosion by water, tillage

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