

农学—应用研究

稻草编织物覆盖对坡耕地水土流失及玉米产量的影响

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摘要:

为了研究稻草编织物覆盖在坡耕地水土流失控制上的作用,笔者于2008—2010年在雨季对不同覆盖方式下径流小区径流量、侵蚀量进行监测,以及对玉米整个生长期各种生物性状及产量进行测定。结果表明:雨强越大,径流量越大,侵蚀量也越大;稻草编织物覆盖能有效地减少水土流失,稻草编织物覆盖的小区年均径流量为295.98 m3/hm2,侵蚀量为3.95 t/hm2,分别比无覆盖小区减少64.11%、94.01%;在中强度降雨下,稻草编织物覆盖对坡耕地蓄水保土的作用更为显著;稻草编织物覆盖对玉米生长有增产效应,2010年覆盖种植玉米理论产量为11.14 t/hm2,实际产量为10.42 t/hm2,比无覆盖种植分别增产47.5%、45.7%。说明坡耕地玉米稻草编织物覆盖能有效减轻水土流失、促进玉米生长发育,增加玉米产量的有效措施。

关键词: 作物产量

Effect of Straw Mat Mulch on Soil & Water Loss of Slope Arable Land and Seed Yield

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Abstract:

From 2008 to 2010, a field experiment was conducted to study the role of natural fiber textiles made of rice straw on soil and water conservation on sloping arable land by monitoring runoff, soil loss and biological traits and yield of maize. Results showed that rain events with stronger intensity produced more runoff and soil loss. The rice straw mat covering was more effective on water and soil conservation when rain fell with middle-intensity. The mean annual runoff and erosion rate were 295.98 m3/hm2 and 3.95 t/hm2 from the covered plot, which were reduced by 64.11% and 94.01% compared with non-covered plot, respectively. Besides, rice straw mat covering could improve maize growth and yield. In 2010, with covering the theoretical and actual yields of maize were 11.14 t/hm2 and 10.42 t/hm2 respectively, which were 47.5% and 45.7% higher than those without covering. Therefore, rice straw mat covering could control soil erosion and improve maize development, and was one of the sustainable practices.

Keywords: seed field

收稿日期 2011-03-28 修回日期 2011-04-18 网络版发布日期 2011-09-06

DOI:

基金项目:

云南农业大学与英国、比利时、泰国等国家欧美合作项目

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