

反坡水平阶对坡耕地径流和泥沙的调控作用

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Regulation effects of reverse-slope level terrace on the runoff and sediment yield in sloping farmland.

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摘要

基于天然降雨径流小区, 动态监测了澄江抚仙湖一级支流尖山河小流域坡耕地降雨-径流过程及水土流失量, 研究了反坡水平阶对云南红壤坡耕地水土流失的调控作用. 结果表明: 反坡水平阶对研究区地表径流调控率在49.5%~87.7%, 产沙调控率在56.7%~96.1%, 平均可削减地表径流65.3%、减少泥沙流失80.7%, 产流产沙调控作用显著, 且产沙调控作用更明显; 原状坡面和反坡水平阶处理中各参数的变异系数均依次为: 泥沙流失量>径流量>产径流降雨量. 与原状坡面相比, 反坡水平阶处理下径流量、泥沙量的相对偏离程度较小, 说明反坡水平阶对研究区坡耕地水土流失调控作用显著.

关键词: 反坡水平阶 坡耕地 径流 产沙

Abstract:

A dynamic monitoring on the rainfall-runoff process and the surface runoff and sediment yield in a sloping farmland was conducted at a natural rainfall runoff plot in the watershed of Jianshan River, the first tributary of Fuxian Lake, Chengjiang, aimed to study the regulation effects of reverse-slope level terrace on the runoff and sediment yield in red soil sloping farmlands of Yunnan. The regulation rates of runoff and sediment yield by the reverse-slope level terrace were 49.5%-87.7% and 56.7%-96.1%, averagely 65.3% and 80.7%, respectively, showing that the regulation effects of reverse-slope level terrace on the runoff and sediment yield, especially the latter in sloping farmland were prominent. The variation coefficients of the test parameters for undisturbed sloping farmland and reverse-slope level terrace were in the order of sediment yield > runoff > rainfall. Comparing with undisturbed sloping farmland, reverse-slope level terrace had smaller surface runoff and smaller relative deviation degree of sediment yield, demonstrating its remarkable effect in controlling runoff and sediment yield in sloping farmland.

Key words: reverse-slope level terrace sloping farmland runoff sediment yield

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