

水蚀条件下硝酸铵施用对黄绵土氮素流失的影响

Nitrogen Loss of Loess Soil as Affected by NH_4NO_3 Applying in Process of Water Erosion

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中文摘要:

研究表明不同坡度谷子地, 高N处理小区径流中铵态氮、硝态氮和有效氮浓度平均为1.06、0.76和1.82mg/kg, 低N分别为0.64、1.29和1.93mg/kg; 高氮处理土壤铵态氮、硝态氮和有效氮平均流失量分别达到17.90、12.93和30.84kg/(km²·a), 低N流失量为11.90、23.86和35.77kg/(km²·a)。高氮处理小区泥沙中有机质和全氮浓度平均为5.21和0.536g/kg, 而低氮处理分别为4.94和0.481g/kg; 高氮和低氮处理土壤有机质流失量分别为5702和5743kg/(km²·a), 土壤全氮流失量为498和559kg/(km²·a)。

英文摘要:

The millets fertilizing NH_4NO_3 with high N(NH_4NO_3 500 kg/hm²) and low N(NH_4NO_3 250 kg/hm²), are planted in the slope lands with 10°, 20°, 25° and 30° slope gradient. The research results were as follows: The mean concentrations of $\text{NH}_4^+\text{-N}$, $\text{NO}_3^-\text{-N}$ and $\text{NH}_4^+\text{+NO}_3^-$ in runoff were 1.06, 0.76, and 1.82 mg/kg in high N treatment (HNT), and 0.64, 1.29, 1.93 mg/kg in low N treatment (LNT) respectively. The loss amounts of them in runoff were 17.90, 12.93, and 30.84 kg/(km²·a) in HNT, and 11.90, 23.86, 35.77 kg/(km²·a) in LNT separately. The concentrations of organic matter and total N in sediment were 5.21 and 0.536 g/kg in HNT, 4.94 and 0.481 g/kg in LNT separately. Accordingly, the loss amounts of them in sediment were 5702, 5743 kg/(km²·a) in HNT, and 498, 559 kg/(km²·a) in LNT respectively.

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