

ชื่อเรื่อง

The Effect of Vetiver, Ruzi and Verano Stylo on Water Runoff and Loss of Applied Nitrogen, Phosphorus and Potassium on Sandy Soil

ชื่อผู้วิจัย

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Abstract

Soil erosion and water runoff often occurred in the undulated landform of Thai northeastern sandy soils. This Study was conducted to determine the effect of vetiver grass (*Vetiveria zizanioides* Nash), Ruzi grass (*Brachiaria ruziziensis*) and verano stylo (*Stylosanthes hamata* cv. Verano) on water runoff and the loss of applied N, P, K, fertilizers on sandy soil. Randomized complete block design was used with 4 replications and 5 treatments: bare land receiving 100 kg. N, P, K/ha in the absence and presence of plant which was either vetiver or ruzi or verano stylo. A plot of 1x5 m. in size was constructed on a land with 3% slope by fencing the area with galvanized sheet of 60 cm. width which half of the sheet was buried in the soil. The plot runoff was collected in two receiver tanks of 80 cm. in diameter and 100 cm. depth and measured manually. The amount of N, P, K in the water were determined. The results showed that all three plants were indifferently effective in reducing the plot runoff by 52-67%. The effectiveness of vetiver depends on the width of the growing plant strip or its age. A strip of first year grown vetiver with 5 m. width was as effective as that of the two year grown one with 1.5 m. width. However, the first year grown vetiver with 1.5 m. width was ineffective in reducing the plot runoff.

About fifty percent decrease in the loss of applied N and P with the plot runoff was found in the presence of plants as compared to the bare land. However, loss of the applied K among treatments were not different.