

Putthaporn Sangkham 2010: Investigation on Soil, Water and Nutrient Loss from Erosion Plot Using Rainfall Simulator at Mae Thang Subwatershed, Phrae Province. Master of Science (Watershed and Environmental Management), Major Field: Watershed and Environmental Management, Department of Conservation. Thesis Advisor: Assistant Professor Somnimit Pukngam, Ph.D. 97 pages.

Investigation on soil, water and nutrient loss from erosion plot using rainfall simulator at Mae Thang Subwatershed, Phrae province was carried out during April to October 2008. Completely randomized design experiment plot (CRD) was set up on slope 15 percent of area and divided to 5 different of growth stages, i.e., pre-planting stage, initial stage, vegetative stage, harvest stage and post-harvest stage with 3 replications in the simple plots size 1x4 m. The main objective of this research was to determine soil, water and nutrient loss from erosion plots.

The surface runoff and soil loss were measured throughout cropping period in each experimental plots namely bare soil plot, traditional maize plot, maize obstruct the slope in rows without ploughing plot, traditional soybean plot and soybean obstruct the slope in rows without ploughing plot. The surface runoff was 88.994, 48.489, 34.855, 46.467 and 169.744 m³ and soil loss was 25.900, 6.350, 3.825, 3.850 and 4.000 kg, respectively.

The nutrient loss measured throughout cropping period in each of the respectively aforementioned indicated that the nitrogen in surface runoff loss was 28,815.222, 9,491.675, 1,540.547, 2,363.310 and 11,499.937 g.N respectively. Nitrogen in sediment loss was 77.308, 22.828, 17.205, 15.315 and 14.915 g.N respectively. Phosphorus in surface runoff loss was 191.498, 143.319, 84.000, 85.967 and 390.22 g.P respectively. Phosphorus in sediment loss was 30.619, 7.709, 8.261, 5.083 and 6.171 g.P respectively. Potassium in surface runoff loss was 2,744.990, 174.379, 123.227, 2,341.398 and 5,526.104 g.K respectively. Potassium in sediment loss was 155.819, 50.616, 39.859, 38.565 and 42.926 g.K respectively.

Student's signature

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