

ชื่อเรื่อง

**Comparative Study of Hedgerow of Vetiver and Other Grasses with  
Mechanical Measures on Erosion Losses at 4% Runoff Plots**

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**Abstract**

Mechanical measures namely bunding (earthen embankment), terracing, trenching etc. used to stabilize high slopes have been found costly, area consuming and unstable structures need maintenance cost on agriculture lands up to 4 percent slope. Therefore, erosion control measures of conservation agronomy and grass barrier were tried on runoff plots (100x200 m) on 4 percent slope equipped with H flume, stage level recorder and Coshocton Silt Sampler. Three grasses namely, Khus grass (*Vetiveria zizanioides*) Bhabar grass (*Eulaliopsis binata*) and Guinea grass (*Panicum maximum*) were planted in 60 cm wide strips on contour at 100 cm vertical interval. The soil loss (52 t/ha) and runoff (45%) of rainfall from cultivated follow were reduced to 18 t/ha and 51 percent respectively by following contour cultivation of corn. There was further reduction in soil loss (10-12 t/ha) and runoff (40 percent) by adopting strip cropping, intercropping, zero tillage and bunding. Introduction of vegetative barriers (live bund) gave an average (7 years) soil loss 5-6 t/ha and runoff 33% of rainfall. The performance of bhabar grass was comparatively poor. Corn yield in most cases remained unaffected (23-24 q/ha) due to minor variations in erosion losses. Dry matter production was highest from guinea grass (1540 kg/ha). The yield of following rain fed wheat was visibly higher in the upper reaches up to 5 m. due to deposition of fertile sediment (40 t/ha) and better moisture regime. Thus grass barriers were more effective than other measures of conservation agronomy and engineering. There is a tendency to change the slope into Puerto Rican terraces due to grass barriers.