

Interactive comment on “Experimental study using coir geotextiles in watershed management” by S. Vishnudas et al.

Anonymous Referee #3

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General Comments:

In this research project only the reduction of surface erosion in the embankment of a pond and not in flooded riverbanks was tested. For flooded riverbanks the coconut mesh is not a suitable method for erosion control.

In 1996–1997 our research group of the Institute of Soil Bioengineering and Landscape Construction measured in our test flume of Vienna River the erosion of riverbanks, either covered with coconut mesh or stabilized with soil bioengineering methods (brush mattress, willow fascine etc...) by artificial floods. The plot with coconut showed the highest erosion activity and during a natural high water situation (4 days with a water level of 3,50–4,70 m) the coconut mesh was washed out and destroyed already after the second day.

The paper gives the relevant scientific answer: a living and thick cover of embankments but also of soil-surfaces or slopes in general is a very effective measure against erosion activity caused by rainfall.

The paper does not present a very new idea.

Substantial conclusions are not reached.

The own original contribution is clearly indicated, but it is necessary to complete the test with other methods (mulch-seeding with hay and straw).

The title should be changed:

From “Experimental study using coir geotextiles in watershed management” to “Experimental study using coir geotextiles in embankments of a pond in India”

Specific Comments:

The quantity of soil erosion, the density of grasses, the uniformity of grasses can not be evaluated by “people’s response”! This is not a proper scientific method.

There are very well established measurement-methods:

- For erosion activity: collection of eroded material and measurement of the dry weight per m², measurement of the level difference on the soil-surface

- For density of grasses: the percentage of vegetation canopy measured by the frequency-frame (1 m × 1 m) or estimated by the method of BRAUN-BLANQUET (1964) or LONDO (1976: The decimal scale for relieves of permanent quadrats. Vegetatio 33, pag. 61–62.

- For uniformity of grasses: investigation of the floristic composition of the research plots (percentage of the species or percentage of the cover canopy of grasses and herbs)

6.3 Vegetation:

One cannot compare the length of different grown plants: *Axonopus compressus* planted as a singular tiller and on the other side natural grown of grasses and herbs (“weeds”). However, the more important parameter is the percentage of soil covering capacity.

6.4 Nutrient loss:

The nutrient loss depends on the velocity of the covering of the embankment, mulch-seeding methods show the same velocity as coir geotextiles with planted grasses.

Interactive comment on Hydrology and Earth System Sciences Discussions, 2, 2327, 2005.

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Interactive Discussion

Discussion Paper