VETIVER SYSTEM FOR RIVER AND CANAL BANK STABILISATION

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Principles of the Vetiver System for River Bank Stabilisation

In flood erosion control and riverbank stabilisation the VS uses the deep and high tensile root system to reinforce the bank slopes and its dense and stiff stems to spread and reduce flow velocity.

- To stabilise the bank steep gradients, horizontal rows planted on approximate contour lines
- To reduce flow velocity of the strong current therefore preventing scouring from the strong flow, planting of cross rows is needed.
- For maximum effect, the cross rows are orientated at right angle to the flow direction.
- The spacing of both horizontal and cross rows varies with slope gradient and length, soil type, flow velocity and depth.
Strong current flattened the native grass but not vetiver on this waterway
Indoor flume test

Water level

Water trickles down

PC: Seth Dabney
In flume test a mature hedge can bank up water to 600 mm depth
STREAMBANK STABILISATION IN AUSTRALIA
Severe erosion on the abutment of the Coolumboola Creek bridge near Miles

12/13/17
Vetiver planting following repair of bank.
Cross rows are most effective when planted right angle to flow direction
One month after planting

![Image of a river and green plants one month after planting]
Six month after planting
There were several big flows during the first summer and no damages were noted. This abutment is now well protected by these mature vetiver.
18 months after planting
Five years after planting
Dam spillway protection
Six months after planting
Eight months after planting
Mekong Delta Vietnam: Protecting bank against wave erosion
Six months after planting
Assam, India: Doria Bridge approach, Note: grid pattern
Two months after planting
Two years after planting
Australia - Badly eroded drainage channel on acidic sulfate
Malaysia: An outstanding success, several floods did not damage this river

Horizontal rows

Cross rows

Diti Hengchaovanich
South Africa: A very well layout provided complete protection against erosion