

The Vetiver System – A Unique and Wide Ranging System of Environmental Improvement.

I have been asked to write a regular feature on different and aspects of the Vetiver System for the use of vetiver grass as a bio-engineering tool. Knowing that most of the subscribers to this newsletter are soils scientists and engineers, I acknowledge from the outset that most of you know more about soils and its conservation than I do. I also acknowledge that there are a lot of different applications, both “hard” and “soft”, for conserving soil. Having said this I am not ashamed to promote Vetiver Systems applications for soil conservation and stabilization, because it is indeed a proven application using a unique plant – *Vetiveria zizanioides* – **vetiver grass**. It is also a system that is low cost, simple and very effective.

What makes vetiver grass so interesting is that it has a range of remarkable properties that is rarely found in just a single species. The grass can be applied to a very wide range of applications relating to soil and water conservation. In this first article I will take try and summarize some of these properties and applications, as a basis for more detailed citations of applications in later editions of the newsletter.

The cultivated variety of *Vetiveria zizanioides*, with its center of origin in southern India, has hydrophytic characteristics, but thrives under upland non-wetland conditions. The very basis of the Vetiver System is that when vetiver grass is planted as a hedgerow across a slope, it forms a very dense barrier that slows down and spreads rainfall runoff. Pretty simple!! Then combine this with a very deep and strong root system (average tensile strength of 75 Mpa), a wide range of pH tolerance from about pH3 to pH 11, a high tolerance to most heavy metals, an ability to remove from soil and water large quantities of excess nitrates, phosphates and farm chemicals, and an attribute of sterility and non-invasiveness, we have a plant that, with some modifications to its application, can be used for soil and water conservation, engineered construction site stabilization, pollution control (constructed wetlands), and most other uses where soil and water come together. This should be exciting news to those who have to find solutions for improving degrading and polluted soils and water supplies and maintenance of earth based structures.

There is a comprehensive source of information about the Vetiver System and vetiver grass at <http://www.vetiver.org>. I also draw your attention to a very recent paper: Vetiver System for Erosion and Sediment Control by P.V.N. Truong and R. Loch that can be found at: http://www.vetiver.org/AUS_Sediment.pdf. Their paper provides an excellent background to this article. If readers have questions or comments please feel free to use the Vetiver Network Discussion Board, <http://www.vetiver.org/discus> -- you should receive a quick response and perhaps further the debate about this remarkable plant.

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