

Fan Base of Miracle Grass Keeps Growing

Mike McDonald - January 08, 2010

Vetiver, a grass imported from India, has begun to sprout up all around Costa Rica. From stabilizing slopes in private yards, to preventing erosion in major public works projects, to helping clean polluted streams, the grass is being hailed as an environmentally friendly miracle worker (TT June 12).

Yorlenny Cruz is the Costa Rican coordinator for the International Vetiver Network, an international non-profit network that promotes the worldwide use of the Vetiver System (VS). She has worked with the grass for more than 10 years and has consulted with the Ministry of Public Works and Transport (MOPT), which is experimenting with using the grass along highways to guard against landslides. She also has been a consultant to the Costa Rican Electricity Institute (ICE), which has planted the grass near hydroelectric plants to prevent sedimentation of reservoirs.

The Tico Times recently talked with Cruz about the widely acclaimed plant and its applications.

TT: Can you explain briefly what is Vetiver?

YC: Vetiver is a very useful and practical plant that has many applications and has proved to be very environmentally friendly. The Vetiver System is low cost and it's a great eco-engineering tool. It helps solve soil erosion problems, and it also helps in soil pollution cleanup and slope stabilization.

What makes it such a strong guard against soil erosion?

Well, it grows in narrow hedgerows. The rows spread out rainfall runoff across the slope, and they act as a filter to trap sediment and create natural terraces that reduce the velocity of rainfall runoff. It grows thick, and its roots can grow up to 13 feet straight into the ground. There's a great National Geographic magazine article about Vetiver called "Grass Grows 13-Foot Roots of Steel" (http://news.nationalgeographic.com/news/2004/08/0831_040831_supergrass.html). It says that the roots essentially form a "wall of steel" that guard against erosion.

Other than forming a "wall of steel," what are some of the other uses and applications of the grass?

Well, it has a lot of agricultural uses. It improves soil and water conservation. Basically, it locks water in the soil and improves soil moisture content, which also helps with groundwater recharge and the recycling of essential soil nutrients. In the long run, this will increase crop yields and help rehabilitate wasted land. It also holds up critical infrastructure – such as canals, drains, roads and building sites – on the land.

In terms of pollution, it can prevent and treat contaminated water and land. It is able to tolerate high levels of nitrates, phosphates, heavy metals and even most agricultural chemicals, so it takes up the toxic materials and confines them to the affected area. It doesn't allow the contaminants to spread. It works well for urban landscaping, too. You can put it in traffic dividers and use it to mark walkways to help prevent urban erosion.

There has been a surge of interest in using grass for biofuel. Can Vetiver be used as a viable source of biofuel?

Yes. Studies show that Vetiver is actually a more efficient option than other biofuels, such as Jatropha. Vetiver has a biomass production potential of 100 to 120 tons per hectare. Other plant species have around 30 to 40 tons per hectare.

In that regard, it's also a great way to sequester carbon dioxide. Vetiver is what is known as a C4 plant. Less than 10 percent of the world's flora is C4. Its photosynthesis process is 50 times more efficient compared to other plants. So it's an excellent candidate for the production of carbon credits (to offset the production of greenhouse gasses) since you can produce over five kilograms per square meter, which is equivalent to 53 tons of CO2 per hectare. In fact, the CO2 sequestration rates that Vetiver has comply with the credits established by the Kyoto Protocol.

What kind of climate conditions does it need? Does it grow well in Costa Rica?

Costa Rica is a great and easy place to grow Vetiver because it tolerates extreme climatic and environmental variations – prolonged droughts, flooding, etc. It can deal with temperature extremes ranging from –14 degrees C to 55 degrees C (7 degrees F to 131 degrees F). Vetiver also displays a high level of tolerance to soil acidity, salinity and acid sulfate conditions. Also, its roots can penetrate compacted soil profiles like hardpan, blocky clay pan and rocky layers with weak spots, all common in tropical soils. This characteristic provides a good anchor for fill and topsoil. Its strength and vigor are really amazing.

Are there any negative traits to Vetiver? Is it an invasive plant?

Really, there is no negative aspect, and we learn more and more positives each time we plant it. Ironically, the only negative aspect I have found is its low cost. Vetiver is really cheap and people always say it "can't be good if it's cheap."

It's not an invasive plant, so people don't have to worry about it taking over their gardens or lawns. It doesn't produce seeds, and it does not have the traits to become a weed. It doesn't compete with crop plants, and it has no negative effects on yields.

It's also easy to remove if you don't want it anymore. But you shouldn't remove it with herbicides. There are manual techniques to do so without harming the environment.

What is the best way to maintain Vetiver? Does it need to be mowed often and does it require a lot of water?

It's a perennial, and it requires minimal maintenance. After six months, it should be cut back to 30 centimeters in height. This will assure better tilling and plant growth. It requires water only if you plant it during the dry season and then only for the first three months.

When is the best time to plant it?

The best time to plant is during the dry season while watering it, so that it will be well established for the next rainy season. If you can't water it, the best time to plant is during the beginning of the rain season.

Where can people buy Vetiver in Costa Rica, and how much will it cost them?

Our company is a cooperative called Abonos de Occidente RL, and we have the stock to satisfy any need. We have been working for 10 years with a local network of 15 small farmers in the area of San Ramón de Alajuela to whom we have offered free Vetiver seedlings, as well as all the accessories necessary to install in their own nurseries.

Nowadays, an important percentage of our sales come from these small farmers who are very motivated since placing their Vetiver on the market represents an important additional income for their families.

We sell Vetiver in two ways: Slips, which are \$0.25 each. These are immediately available in any quantity. Plants packed in soil in bamboo containers is the second way. They are \$1 each. Clients must place these orders three months in advance.

Its important to mention that we don't use plastic bags. We use all natural resources from our farm, like bamboo containers that are 100 percent biodegradable.

Cruz encourages those who have further questions about the grass to check out the International Vetiver Network at www.vetiver.org. You can e-mail Cruz at vetiver@mail.com or call her at 2447-8383 or 8991-9180.

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