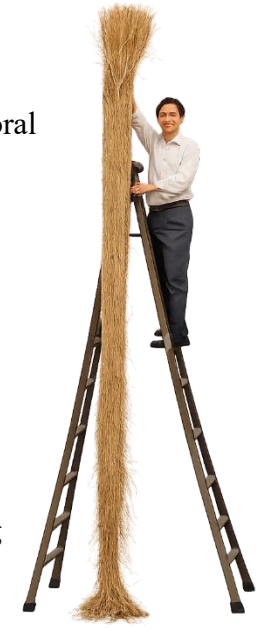
Vetiver: From Global Roots to Texas Proof

A Photograph That Changed My Understanding

My vetiver journey did not begin with a report or textbook, but with a photograph—and a person. Around 2005, Dr. Lam Duong conducted a controlled vetiver experiment in Vietnam that profoundly shaped how I came to understand this plant. A single vetiver plant was grown for eight months inside a three-meter-long wooden box with one transparent side. When the box was opened, the roots extended nearly 12 feet straight down—dense, vertical, and non-invasive.

That image captured, in one frame, why vetiver works: its ability to stabilize soil, move water vertically, and build ecological resilience beneath the surface. It communicated more clearly than pages of explanation ever could. Later, I removed background clutter from the photograph using AI—not to embellish it, but to preserve focus on the scientific reality it revealed.

Vietnam: Where Theory Became Proof



Dr. Lam Duong later joined US Citrus after completing his PhD and postdoctoral work at Alabama A&M University under Dr. Rao Mendreddy. But it was his Vietnam work that demonstrated vetiver as living proof rather than academic theory.

Seeing vetiver through Vietnam's slopes, soils, and agricultural constraints connected the dots for me. Here was a plant native to India, elevated through royal vision in Thailand, and validated through rigorous field experience in Vietnam. The science was visible. The results were undeniable. And the applications were practical.

At that point, vetiver stopped being "just a plant." It became a bridge—linking countries, disciplines, and a shared responsibility for land stewardship.

A Global Network of Practice

As our work at US Citrus expanded, I began to see vetiver not merely as a tool, but as a system—one sustained by people as much as by roots. That realization opened the door to a wider global community.

Through the Vetiver Network International, a USA-based organization carrying forward decades of research inspired by Thailand's royal initiatives, vetiver emerged not as a niche solution, but as part of a worldwide movement linking science, conservation, and lived field experience.

Returning to India: The Source

That global pathway naturally led back to India—the birthplace of vetiver—through The Vetiver Network India, guided by P. N. Subramanian (widely known as PNS). An IT professional who

returned to India after years in the United States, PNS is regarded globally as a vetiver guru. My interactions with him felt less like an introduction and more like a homecoming.

Through this India-based network, I met and interacted with Patanjali Jha and RACS Rao—practitioners deeply grounded in field application, farmer engagement, and landscape restoration. These were not abstract discussions. They were grounded conversations about rainfall, erosion, slopes, livelihoods, and how vetiver quietly solves problems that heavy infrastructure often cannot.

What became clear is that vetiver belongs to no single country or institution. It is sustained through shared stewardship—across India, Thailand, Vietnam, the United States, Africa, South America, and Australia—each contributing knowledge shaped by local landscapes and constraints.

Vetiver, in this sense, is a living network: of people, science, humility, and cooperation.

From Global Learning to Texas Proof

What we are doing in Texas is where global learning meets local proof.

At US Citrus, we integrated vetiver not as a paper experiment, but as a companion plant under real-world stress. We planted micro-budded citrus trees—only 6 to 8 inches tall, with stems barely 4 millimeters thick—directly alongside vetiver. These were young, vulnerable plants that most growers would normally protect with frequent irrigation.

Then came the 2024 Texas drought. South Texas experienced nearly 50 days above 100°F with limited rainfall. Critically, we did not irrigate beyond what nature provided. The citrus survived—and held.

What Changed Underground

The most important changes occurred beneath the surface. Around our greenhouses, vetiver fundamentally altered water behavior. Areas that once held standing water after rain events no longer did. Water moved vertically, drawn deep into the soil profile toward groundwater rather than spreading laterally and stagnating.

Vetiver quietly solved a drainage problem that engineered fixes—concrete, pipes, and channels—often struggle to address.

Unexpected Ecological Signals

Then came something unplanned. In greenhouse areas bordered by vetiver, snails virtually disappeared. Where vetiver was present, snail pressure dropped sharply due to changes in soil moisture, habitat structure, and microclimate. In nearby control areas without vetiver, snails remained a persistent problem. No chemicals. No bait. Just a plant altering its immediate environment.

When we extended this system into the field alongside Persian lime plantings, another benefit emerged. Vetiver functioned as a biological mulch—suppressing weeds, moderating soil moisture, and reducing competition without herbicides. The implications were immediate and practical, particularly for organic systems.

A System, Not an Add-On

Today, this approach has become our design for new citrus orchard planting. For every citrus tree, we plant two Vetiver slips as companion plants on either side. About two feet away from the citrus plant, we establish a series of vetiver slips along the row. As these plants grow, they supply continuous biological mulch, helping control weeds and protect the soil throughout the planting row. Over time, Vetiver clumps form a living shield that provides:

- Wind protection against prevailing South Texas winds
- Reduced insect pressure through habitat and microclimate modification
- Weed suppression without chemical inputs
- Improved soil structure and moisture dynamics
- Potential thermal buffering during sudden cold events

What began as a global lesson—from India to Thailand, Vietnam to the United States—has become a Texas-grown strategy rooted in observation, restraint, and respect for biology.

More Than Erosion Control

In Texas, vetiver is no longer just erosion control.

It is an infrastructure made of roots.
It is insurance without a policy.
And it reminds us that resilient systems are often built quietly, patiently, and out of sight.

What we are rediscovering in Texas is something older and quieter: that the most durable agricultural technologies are not always engineered above the ground, but cultivated carefully beneath it.

About the Author: Dr. Mani Skaria is the Founder, President, and CEO of US Citrus, a vertically integrated citrus nursery and orchard enterprise based in South Texas. He is also Professor Emeritus at Texas A&M University–Kingsville, where he served for many years in teaching, research, and extension. With decades of experience as a plant scientist, extension educator, and agricultural entrepreneur, Dr. Skaria's work bridges science and practice, focusing on sustainable horticulture, innovative propagation systems, and climate-resilient farming.