

Greenhouses water local pastures

By EVERETT BRAZIL III

HYDROPONICS greenhouses aren't a common sight on the Texas plains, a region more suited to livestock production than vegetable production, but Eatonville, N.J.-based Village Farms International, has operated greenhouses in West Texas for 20 years in Marfa and Fort Davis. The company has found a way to give back to the local community, supplying ranchers with irrigation water discharged out of the greenhouses.

Surprisingly, it's the nature of the operation that has made Village Farms so successful in Texas.

"We chose hydroponics because it's a very efficient means of growing [vegetables]. It also has a high level of food safety standards, and contributes to the idea of efficiency," says Helen Aquino, marketing manager for Village Farms.

Breaking with tradition

Water usage separates hydroponics production from traditional production methods, including greenhouses. The plants receive nutrients from the water through an extensive gutter system, where they are rooted in alternative environmentally friendly materials, including coconut fiber, as opposed to traditional soil mediums. The water eventually breaks down the fibers to the point they are unusable, but it is recy-



Key Points

- Greenhouse irrigation water goes on to serve grazing cattle.
- Nutrients in "spent" hydroponics water are roughly what is applied to a lawn.
- More growers searching for ways to dispose of the greenhouse wastewater.

clable and can easily be used as compost and mulch.

The water is recirculated multiple

times before the nutrients are depleted, resulting in substantial savings in irrigation. "We recycle the water up to four times, and 100% of the water is reaching the plants. There's no waste, because we don't have to worry about evaporation," Aquino says. "Because the water is recycled, we use 86% less water than field-grown [vegetables]."

The water is eventually depleted of its nutrients and discharged from the system daily, replaced by fresh water, which poses a problem for Village Farms: What to do with the discharged water, especially water with nutrients like nitrogen that could potentially contaminate the environment, especially groundwater?

"We saw this as a potential long-term problem. We had looked at different wastewater disposal options, and it turns out that the best use for the water was for local ranches," says Mike Bledsoe, vice president of science and regulatory affairs for Village Farms.

"The water has a full array of nutrients. It's the same chemicals you put on your grass, but slightly less," Bledsoe says.

To ensure the nutrients would pose no threat to the environment, the company turned to the Texas Department of Agriculture and the Texas Commission

of Environmental Quality to find the maximum nutrient levels, footing the bill for the irrigation systems. They partnered with a local rancher, Jim Espy, to manage the two 145-foot systems on their Marfa property, which included grazing rights for his livestock and the use of the fertile grass for hay production. Espy also manages the 160-foot system they installed on his private Fort Davis property.

A win-win for all

The partnership has been a big benefit for Espy. For one, he receives a "free" source of irrigation water that increases soil nutrients and native grasses on his pasture. But Village Farms has also benefited from the partnership through environmental sustainability, while boosting the agricultural economy that has kept Marfa and Fort Davis thriving for generations.

"The cattle industry has been a mainstay here for many years. Cattle graze on land adjacent to the greenhouses, but they only benefit in the spring when there's rain. They have to be supplemented with feeds," Aquino says.

"It's a good business practice because we could leave it in the pond to evaporate or put it in the ground around the greenhouse."

The company may have set a new precedent in the hydroponics industry, as more growers are searching for new ways to dispose of the greenhouse wastewater. But those companies only increase the numbers of ranches and communities that could benefit from the water, especially as irrigation becomes increasingly difficult across the United States.

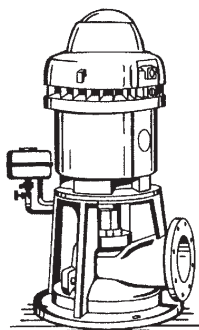
"In Florida, agricultural grazing requires 6 acres per head [of cattle]. Out here, it requires 100 acres per head, except where it's irrigated. People would love to jump on the process, because we're supplying them with water year-round," Bledsoe says.

"Anywhere we choose to expand we will develop relationships with local growers as part of the development process."

Brazil writes from Clermont, Fla.

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