

Hydroponic farming viable option in desert

By JEFF POPE

The arid Mojave Desert with its low-nutrient soil and extreme temperatures could produce enough food to sustain the local population using a water-based farming method.

It might sound crazy, but horticulture experts say it is possible with hydroponic greenhouses.

Deborah Walliser has researched the use of hydroponics in the most extreme climates for Northern Arizona University and the University of Arizona and in arid climates for NASA. She now runs consulting business Solustech Inc. and owns a commercial greenhouse venture in Parker, Ariz., with Vicksburg Indoor Produce.



Walliser

The three-year-old pilot project produces tomato and lettuce harvests twice a week, making it economically viable in an environment in which temperatures range from 18 to 120 degrees, Walliser said. The annual harvest from the 3,600-square-foot greenhouse fetches \$150,000 for those two items.

"It would take 5 acres to produce that in traditional soil farming," she said. "It takes less to produce more."

Hydroponic gardening is the cultivation of plants without soil. A variety of media are used including rockwool, vermiculite and coconut husks, but the most common is water. Hydroponics knowledge is ancient but there is a resurgence of interest for hobbyists and commercial growers. Home gardeners can

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Hydroponic method actually uses less water and land

use hydroponics to grow vegetables year-round and in small spaces.

The University of Nevada Cooperative Extension soon will start a hydroponic greenhouse in the valley, said Bob Morris, a horticulturist with the Cooperative Extension in Silverado.

"The idea is the type of food available will be better quality and more sustainable," he said.

Hydroponic farming uses a fraction of the water, land, fertilizer and labor of soil farming, Walliser said. Nutrient-rich, sanitized water and oxygen are pumped to the roots through an automated system. Rather than use pesticides, VIP employs species of insects that feed on pests harmful to the crops. And there are no weeds to remove.

The VIP greenhouse has between 11,000 and 12,000 tomato plants per acre versus 36,000 plants in traditional soil farming. Yet, the greenhouse plants produce 500,000 pounds annually in semi-weekly harvests. Vines in a field yield one harvest and about 50 pounds per year, Walliser said.

The greenhouse also produced 150 to 180 pounds of cucumbers per week.

"Hydroponic farming is just a more concentrated approach," she said. "The bottom line is you get more production per acre than you'd get in soil."

Buying local produce can bring a premium price, Walliser said. Her greenhouse produced tomatoes for Arizona-based Bashas' supermarket.

kets for \$2.25 per pound. The store manager told her they pay 80 cents per pound through their regular supplier.

"I said I can't compete with that but we sold out within hours," she said. "It was just marketed as local produce. The demand was such that we could have charged more."

Hydroponic farming will serve a niche market for the foreseeable future, Morris said. There are still many in the field who believe food grown in soil tastes better.

"It's a philosophical difference more than anything else," he said. "There's room for both types of production."

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