

Idaho farmers growing vegetables with geothermal energy

September 2 2010, By Bethann Stewart

Most people know about the geothermal system in Boise's Downtown and Warm Springs area. It's one of the oldest in the country.

But one group of local farmers uses geothermal water to enhance their growing season -- and folks enjoy the fruits of their efforts at one of the 40 local restaurants they supply.

Sweet Valley Organics north of Emmett, Idaho, is the only farm operation in the area that uses the naturally occurring hot water for growing vegetables, said partner Geoff Neyman.

But the geothermal greenhouse and outdoor [water pipes](#) are only one aspect of their commitment to sustainability, Neyman said.

The farmers also collect about 100 gallons of [cooking oil](#) a week from their contracted restaurants, which they use as biofuel in their tractor, Neyman said.

What is Sweet Valley Organics? Chris Florence decided to try farming after 12 years of cooking in restaurants.

"It was always a pipe dream of mine to grow heirloom tomatoes," he said.

He teamed up with Chance Morgan, who grew up in the Sweet Valley ranching cattle and growing hay, and had been laid off from his

construction job. They met Geoff Neyman last winter.

Neyman had been making biofuel with a partner in Eagle for about 3 years. After his partner moved to Europe, he joined Florence and Morgan, who also were interested in making biofuel.

"I've always done [organic farming](#) in my backyard, but doing it for production is really fun," he said.

The three partners hired two Nepalese farmers from a refugee program to help them.

They answered a few questions about how they do it.

How long have they been growing organic vegetables? Three years.

How do they use the geothermal water? In two ways: In water lines along the outdoor vegetable beds and under the greenhouse.

Where does the geothermal water come from? From a fault that runs along the base of Squaw Butte, Florence said.

"The neighbors use it for heating their home ... we catch their runoff," he said.

What's the water temperature? About 115 degrees, Neyman said.

How do they use the geothermal water on the outdoor beds? The geothermal water is not used for irrigation. They pump about 10 to 15 gallons of water per minute through the lines, which lie on the beds, Neyman said.

Cold frames built from recycled Lexan are installed on top of the beds,

with removable sections to control the heat, like mini greenhouses.

Neyman: "It was a pain. We had to pull them open in the morning and close them at night, but it allowed us to get our tomatoes going about a month early." They planted tomatoes the first week of April. And their tomatoes are popular.

Morgan: "We could've sold another 500 pounds when we made our deliveries on Tuesday, but we didn't have them." How do they use the geothermal water in the greenhouse? The water is pumped through about 4,000 feet of thin-wall PVC pipe, which is buried about 8 inches under the floor, Florence said.

"It's much more effective than heating the air," he said.

The ground is covered with a weed barrier, and this year's squash experiment was planted in containers.

They are able to control the flow of water to create different climate zones within the greenhouse, he said.

"We're able to produce in here when temperatures are in the 20s and teens," Florence said. "We'll see what happens this winter ... the snow should melt off it." This winter will be the first for the geothermal greenhouse, which was built from a kit to ensure it was strong enough for any snow load. It already has withstood winds of more than 80 mph, Florence said.

What are some of the challenges? Morgan: "The weather is the biggest thing. This year we had frost in June. We replanted some of the beds three times. Also, having the finances up front to do what we want, and pests." Florence: "People ask what we use as an alternative to pesticides, and I do this," he said, making a squishing gesture with his forefinger

and thumb.

What's the next project? Building a packing shed and a storage area, said Florence.

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