



The DeVault farm backyard has two production high tunnels. The largest one is uncovered because it is still under construction. All photos by George DeVault

## Farming On The Edge

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This March, the ground covered by the thin plastic skin of our high tunnels seemed like it had been magically moved to Georgia.

We would have been nearly wiped out by the lousy weather this season without our high tunnels. True, they couldn't replace the sun during a May and June that were cloudier and rainier than Seattle. But the high tunnels did protect our early tomatoes, peppers, basil, and flowers from pounding rains, high winds, cold snaps, and deer that get hungrier and bolder every year as more house farms spring up on the edges of farm country.

Let the neighbor try to sell his flagpole lots for six-figure price tags. As far as we're concerned, the "highest and best use" for farmland in an area of rising land values and real estate taxes is to build more high tunnels (and start more producer-only farmers' markets).

We have three high tunnels. Each is 96 feet long. Widths are 14, 21, and 30 feet. Together, they total only 6,240 square feet under cover. That's barely one-seventh of an acre. Subtract the amount of space necessary for walkways, and usable growing space shrinks to maybe 5,000 square feet.

But when cropped intensively (year-round, if you want) and planted only to high-value crops, that sliver of ground earns about \$1 per square foot. Not just once or twice per season, but three or more times a year. Compare that to traditional field crops and you're looking at the cash equivalent of hundreds of acres of some grains and other commodities.

High tunnels make sense economically. Our first high tunnel, a quonset-style hoop-house, cost about \$1,000 in 1995. It more than paid for itself — twice — the very first season.

When the monsoons came early this summer, four inches of running water drowned our snap

beans and annual flowers in the field. Inside our high tunnels, the crops were nice and dry. They were so dry, in fact, that while it was raining outside, we were watering inside. (We use garden hoses, drip irrigation, mini-sprinklers, and overhead sprinklers, as needed.)

Don't let the name "high tunnel" throw you. That's just the

latest name for something that has been with us for more than half a century. Earlier generations called them cold-frames, fieldhouses, hoop-houses, or just plastic greenhouses.

High tunnels are not a new or experimental technology. Building and managing one is not rocket science, either.

The late Emery Myers Emmert, a professor of horticulture at the University of Kentucky, built his first plastic-covered greenhouse in 1949. It was the granddaddy of today's high tunnels. Emmert pioneered unheated winter production in high tunnels using an inner layer of plastic held about one foot above the soil by wire hoops. His ideas caught on quickly in Asia and Europe, but that's another story.

By the mid-1960s in North America, plastic covered greenhouses had been researched in more than 16 states and at least one Canadian province.

"Greenhouses covered with plastic film can be used to grow any crops that are currently grown in glass greenhouses," University of Illinois Extension reported in 1965 in a booklet titled "Plastic Greenhouses" (Circular 905). "Because of low cost, plastic greenhouses have distinct advantages for seasonal use such as the growing of spring bedding plants or summer flower crops.



Think a high tunnel can't hold the weight of snow? Think again — and it can be warm enough inside for crops to grow during cold season, too. This was a heavy April coating.

The structure can remain unheated and unused during the severe winter months."

That seems a terrible waste of space to us. So, when we're not at least overwintering crops in our high tunnels, which is rare, we use them to store machinery, supplies, dry firewood, or even graze chickens. The chickens eat up all of the bugs hiding out there.

We bought our two larger high tunnels from Ed Person of Ledge-wood Farm in Moultonboro, NH., after seeing his structures in use

on other farms around the state. Person began bending pipe in 1967 when his old wooden greenhouses needed replacement.

"Our search for a high quality frame at a reasonable price was not successful. The decision was made to purchase a few pieces of equipment, apply some Yankee ingenuity, and construct our own frames," Person explained in his greenhouse brochure. "The idea worked out well and we built a

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