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Undercover farming; Simple structures let farmers extend or get a jump on growing seasons

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At a time when many farming tasks involve high-tech tools, some Ohio fruit and vegetable farmers are using simply built structures to grow profit.

Called high tunnels, the structures usually are metal frames covered in plastic. They are relatively inexpensive to build but can offer a big payoff. They lengthen the growing season, which often translates into increased income for farmers.

It also means that consumers can enjoy locally grown produce for longer periods than traditional production allows.

The high tunnels enclose the space around the crops, capturing and retaining heat from the sun beaming through the plastic-covered ceilings. In essence, they "create a microclimate," said Matt Kleinhenz, an Ohio State University Extension vegetable specialist.

On a bright, 50-degree October day, it can be 75 degrees inside a high tunnel, Kleinhenz said. "So your plants think it's spring."

Lisa Schacht, a Canal Winchester farmer who's using the tunnels to grow strawberries, is motivated by the prospect of getting a jump on competitors at harvest time. Because of the tunnels, she and her husband, David, expect to begin harvesting strawberries in early May. With normal strawberry production, they would begin harvesting around Memorial Day.

"I want a whole month of business before anyone else comes on the market," Lisa Schacht said.

She said the tunnels allow her farm to compete in a different way, instead of making business bigger.

The tunnels not only capture heat but also shield fruits and vegetables from wind and harsh conditions, such as frost. The crops also are protected from rain, relying instead on irrigation systems.

A high tunnel in a field could be mistaken for a greenhouse, because they are similar in appearance, said Brad Bergefurd, an OSU Extension horticulture specialist. But the tunnels typically aren't artificially heated and don't have electricity, two characteristics of greenhouses.

Bergefurd, who works in Piketon, in southern Ohio, said that the majority of the farmers using high tunnels in his region are Amish and Mennonite.

Kleinhenz estimates that there are a few hundred of the high tunnels in use in Ohio and said the structures are gaining popularity in the U.S. and the Midwest.

One reason for the increased use might be their low cost. The average tunnel is about 20 feet wide and 100 feet long, and materials to build it cost between \$2,500 and \$4,000, Kleinhenz said.

The tunnels can lengthen the beginning and the end of the growing season by 1 1/2 months, extending the season by a total of three months.

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It's possible to grow most vegetables and small fruits in the high tunnels, but some crops do better than others. Farmers also have to consider return on investment, which improves with high-value crops. Strawberries, tomatoes, raspberries and cut flowers meet all of those criteria, which make them good choices for tunnel production, Kleinhenz said.

A potential drawback to growing crops in tunnels is that farmers have to carefully manage the humidity within the structures, Kleinhenz said. Excessive humidity and heat can lead to disease development.

The Schachts began using high tunnels two years ago, so they could modify weather extremes to improve the quality and supply of strawberries, Lisa Schacht said. Growing strawberries allows them to extend their business into the spring, instead of selling products only in the fall. The Schachts farm 60 to 70 acres of land and raise 25 crops.

For now, their strawberries are planted in plastic mulch, sheltered by blanketlike covers that are anchored by bags of stones. The covers will be removed in March, and around the same time the high tunnel will be sheathed in plastic.

Schacht said with the high tunnels, the yield potential and appeal to customers is much higher than with traditional strawberry production.

Appealing to customers is an important point, Kleinhenz said.

If farmers want to foster greater consumption of locally grown products, the products have to be available, he said.

The tunnels "maintain the presence of local farmers in the marketplace for a longer time," which strengthens their position in a very competitive marketplace.

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