

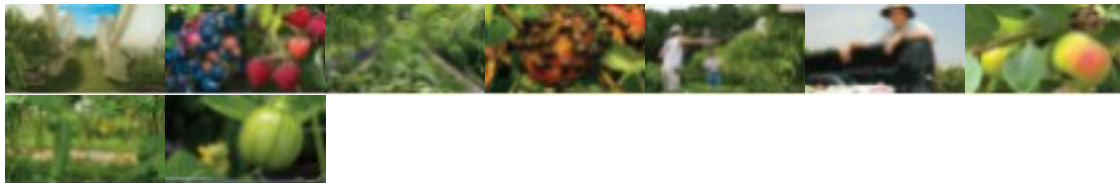
Piece of Eden

Aug. 26, 2008 | By Seth Teter | Photos by Michael Houghton



Plastic covered hoop structures, called high tunnels, create ideal growing conditions and provide another barrier against pests.

images



Polyculture turns to nature to bring big returns to small-scale farmers

Creeping along the branch, across the leaf and onto the delicate skin of an apple, a bug is destined to commit an unforgivable sin. Its testament: a brown scar chewed into the perfect fruit. "The Japanese have a word...what is it...wabi-sabi," said Ohio State

researcher Joe Kovach, referring to the line of thought that finds beauty in nature's imperfections.

Kovach doesn't expect farmers to tolerate blemishes on their produce, but he's not banishing bugs from his small farm plot at the Ohio Agricultural Research and Development Center in Wooster. Rather, he is putting nature to work as part of his plan to turn suburban sod into food-producing parcels that can generate \$90,000 on a single acre. It's a concept called polyculture, and it's gaining ground.

Kovach points to the end of cheap oil and the high cost to transport food. It only makes sense, he said, to turn unused city lots or oversized lawns into fruitful farms. And that brings him to the bugs. His model for these farms relies on "eco-mimicry," recreating the balance and biodiversity of nature. If bugs and plants can coexist in the wild, he asks, can't the same be true on farms?

How it works Kovach pinched a peach leaf and twisted, exposing a legged speck the color of a carrot. The flustered critter scuttled in the rush of midday light. "It's probably a predator. Look at how fast it's moving," he said as the bright dot hurdled tiny green veins. As a scientist, he's thrilled with the biological find. But as a farmer, he sees a little orange assassin and an important ally. Or maybe the bug is simply his enemy's enemy, part of the miniature militia that has moved in to rub out the real pests. It's this army of "beneficials," tiny predators and parasites, that holds back the bugs bent on destroying his crop.

It's no more than the everyday insect battles waged under nature's watch in untended fields and forests. But achieving a balance, Kovach calls it "ecosystem stability," takes a unique approach. His plot stands in stark contrast to the expansive corn, soybean and wheat fields that surround it.

Models of efficiency, larger crop fields are often cultivated by satellite-guided tractors and harvested with machines whose price

tags rival a CEO's salary. Such modern systems will help feed a hungry world, but Kovach's system takes a new tack toward the same goal. On little more than an acre, his mish-mash of bushes, trees and vines blends in with the unkempt tree line behind it.

Grass grows between the rows, black fabric smothers weeds and his harvesters are his hands. His initial investment - including plants, irrigation, raised beds and fencing - was \$25,000. "You see different plants, different heights, things flower at different times...genetic diversity...plants resistant to pests...plants resilient to pests..." he goes on. Walking between the rows, you could pick peaches with your right hand and blueberries with your left. That's until you suddenly come upon strawberries, then apples, then raspberries, then melons, then beans. "We're trying to figure out the best arrangement, the most economical and the most efficient," Kovach said. "It's organized, but it's not." The hodge-podge layout baffles bugs who prefer to eat their way down rows of their favorite fare. If pests are spending their energy looking for food, they can become too tired to make more pests. "That doesn't mean you do it without spraying (pesticides)," Kovach said. "But you don't saturate this area."

Pesticides are one of many "little hammers" to keep bugs in check and are typically the last resort. After all, the less he sprays, mows or cultivates, the more the natural balance is maintained. Like all farm systems, the design hinges heavily on economics. But, using a local farmers' market as a pricing gauge, Kovach says he's hitting his \$90,000 per acre goal. "I think people are clamoring for good, healthy food, and if it's local, you're going to get top dollar," he said.

For more information Contact Joe Kovach at 330-263-3846.