



## Most Farmers in the Great Plains Don't Grow Fruits and Vegetables. The Pandemic is Changing That.

Amid massive tracts of wheat and corn destined for global markets, some farmers are planting cover crop mixes designed to be harvested by their communities.

BY DAPHNE MILLER    MAY 12, 2020



On a recent Thursday, a group of farmers from Oklahoma, Kansas, and Nebraska hosted a remote agriculture happy hour. There were a few dozen attendees, and nearly everyone was wearing a cowboy hat. In total, they farm more than 30,000 acres of cropland, most of it planted in soy, corn, or cotton destined for the global commodity market. The happy hour started with presentations about integrating livestock into cropping systems, but then things took a surprising turn: farmers began to discuss how they are feeding their families and communities.

“Normally, between me and the consumer there is a gigantic divide that is hard to cross, but now, people are hungry and I have to do something,” Tom Cannon, one of the farmers on the virtual happy hour, told me several days before the gathering. Cannon, who farms and ranches 10,000 acres near Blackwell, Oklahoma, was already feeling the squeeze from the trade wars with China when the pandemic hit.

The situation has disrupted many parts of the supply chain and left Cannon unable to move his products off the farm. He was inspired to respond after seeing long lines outside the local food pantry and bare shelves in the nearby Walmart, scenes now familiar across the country. “Even farmers are dependent on our fragile food system—and a lot of us are four days away from hunger,” said Cannon. As a result, he’s decided to start growing a variety of fruits and vegetables for local consumption, and he’s doing it in a most unusual way.

I met Cannon this past January at No-Till on the Plains, an annual gathering in Kansas for medium to large-scale farmers somewhere along the continuum of adopting ecological methods to protect soil health. Most have reduced or eliminated tilling on their farms in an effort to use fewer pesticides and chemical fertilizers. Many also use livestock and off-season cover crops to control weeds, enrich the soil with organic matter, retain moisture, and add nutrients for planting.

I attended the conference to speak about the public health effects of sustainable agriculture, a topic that has been a focus of my research and writing. But as I planned my remarks, I struggled with the message. On the one hand, most of the farmers at the meeting are doing a great deal more than their peers to safeguard public health by ensuring cleaner water and air, and by protecting wildlife and biodiversity.

And yet they primarily sell the same short list of crops that blanket most U.S. farmland: soy, corn, wheat, and cotton. These commodities are turned into a vast array of products with only a fraction fed directly to humans. (The bulk of corn and soy is fed to animals, and a great deal of what’s left gets turned into processed sweeteners and vegetable oils, hardly the mainstays of a healthy diet.)

In my talk, I did mention that the U.S. produces enough corn sweetener each year to supply us each with 60 pounds of the stuff, while we barely grow enough lettuce and carrots needed for a five-pound annual allotment. But I did not go so far as to suggest that the no-till crowd had an obligation to fix this imbalance. After all, these farmers were used to moving big equipment over sweeping plots of land, not to tending delicate rows of peas and squash.

But COVID-19 has the potential to change everything.

A chaos garden matures.

Tom Cannon, for one, is planting six acres of vegetables. He calls it a “chaos garden” and it’s essentially a cover crop, a crop that is planted in between cash crops. But while a standard cover crop may contain alfalfa, ryegrass, or sorghum that can be used for building soil organic matter or grazing, a chaos seed mixture might include peas, squash, radish, okra, melons, sweet corn, and other edible plants. In other words, it contains groceries.

It's the perfect way for a commodity farmer like Cannon to grow fruits and vegetables without changing farming practices. "I just load my drill [planter] with 50 plus species, and don't ever go back until it is time to harvest. Cannon plans to let community members pick their own produce. "After the people get everything they want, you turn out cattle onto the field." Whatever remains serves as "green manure" to fertilize the soil.

Cannon credits Jimmy Emmons, another no-till, regenerative farmer in the area, for popularizing chaos gardens in his region. Emmons, who farms in Leedey, Oklahoma, also happens to be a regional conservation coordinator for the USDA in the Southern Plains.

"Everyone thinks I am a nut because I am not afraid to try something new," Emmons explained recently over the phone. "The country is just full of corn and soybeans. Why would you want to grow more when there is such a surplus and revenue is so terrible? I just try to grow what people want."

Five springs ago, Emmons threw squash, edible beans, and a variety of brassica seeds in with his standard cover crop mixture and planted it on a couple of acres. The bounty was so impressive that chaos gardens are now a regular part of his annual planting schedule. Some of the produce goes to his own kitchen but most of it gets donated to local community groups—the food bank, youth groups, and churches—with the agreement that they do the harvesting. Emmons estimates that each acre of chaos generates 4,500 pounds of produce.

In addition to ease of planting, chaos gardens crowd out weeds, encourage beneficial insects, increase soil moisture retention, and more.

In addition to ease of planting, Emmons described other benefits of a chaos approach: The blanket of plants crowds out most unwanted species, including weeds; the cucumbers and squash and other flowering species attract beneficial insects that keep pests like "squash bugs" at bay; the dense foliage increases soil moisture retention and reduces the need to water; and the plants tend to mature at different rates, allowing for several months of a diverse bounty rather than a monocrop that gets harvested all at once.

And while the lack of rows might seem like a drawback to any farmer who is used to straight lines and harvesting one type of plant, Emmons sees this as a plus. "It is more of a hunt and pick. You gather as you go and you have to navigate through the cover," he said, describing the

sounds of delight that come from his fields, as children and adults discover a watermelon here, some okra there. Apparently, harvesting a chaos garden unleashes the inner forager in everyone.

In Oklahoma, Emmons was involved in Farm to Food Bank, which was started as a partnership between USDA-NRCS, the Oklahoma Conservation Commission, and the Oklahoma Association of Conservation Districts (OACD). According to Sarah Blaney, executive director of OACD, the group helps farmers plant these alternative cover crops, identify potential volunteers to glean produce (for example, in one county, they work with the local 4-H group), identify where the produce can be donated, and then delivers it.

“It takes a lot of community organizing and education through the districts to achieve the ultimate goal of getting fresh produce where it is needed in the local community,” says Blaney.

While these gardens may appear haphazard, looks are deceiving.

“I don't really like the term chaos garden,” said Keith Berns, co-owner of Green Cover Seed in Bladen, Nebraska. Berns collaborated with Emmons to design the first chaos seed mixes, and contends that this is a carefully planned intercropping system that was first developed centuries ago by Indigenous farmers across the Americas. Originating in Mesoamerica, this system traveled northward to the Mandan, Iroquois, and other groups who used the produce for food and trade.

The seed mix, which includes combinations of legumes (beans and peas), nightshades (okra, tomatoes, and eggplants), cucurbits (squash and cucumbers), brassicas (radishes and turnips), and herbs, grains, and corn offers a perfect balance of nutrients for humans, livestock, and the soil and is still a central feature of many smaller farms in the global South. It also ensures self-sufficiency and protects the farmer from the vagaries of the markets. In recognition of its lineage, Berns renamed his mix “The Milpa,” borrowing the word for “cultivated field” from the Nahuatl language spoken in central Mexico, where polycultural systems have been used for at least 3,000 years.

Since he started selling the Milpa mix, Berns has offered farmers an acre's worth of free seed (valued at \$100), provided the harvest goes to a food bank or another public food distribution service. “We donate the seed, the farmer donates the ground, and the community donates the labor to glean,” he explained.

Raegan Cannon seeding a pasture with a no-till drill.

Over the past three years, the Milpa mix has been slowly gaining popularity, but this spring the number of orders suddenly doubled, and Berns has sent more than 20,000 pounds of the mix to 400 farmers across the country. He's unsure how much of the growth to attribute to COVID-19, but he noted that 40 percent of the seed was part of his "first acre" donation program and he assumes the rest was planted as a cash crop. Some farmers, according to Berns, are selling the vegetables using the U-pick system, as well as at road stands, farmers' markets, and local grocery stores.

Tom Cannon hopes to donate the food from one acre of his chaos gardens and sell the rest direct to consumers. He is working with his daughter Raegan on a long-term plan to grow 20-30 acres of chaos mix in a corn maze. “With some word of mouth, I expect that I’ll be swamped with customers in no time,” he said. Cannon will give his customers the option of foraging in the maze or simply driving up to the barn to collect their produce. But he worries that many of his new customers won’t know how to use the fresh produce.

“The pandemic is terrible. The good side is that it’s driving people to do something different.” “Even though I live in a place that’s just about as country as you can get, people don’t know how to prepare and preserve their own food,” he said. To address this, Cannon plans to offer cooking lessons, either in person or online, to “show people what to do with a squash.”

Keith Berns is also thinking big. There are currently 200 million acres planted with corn, soy, and wheat in the U.S. If every commodity farmer chose to dedicate 1 percent of their land to a Milpa garden, it could result in 2 million acres—providing a 50 percent increase in national vegetable production and distributing it more evenly throughout the country. Farming regions across the U.S. may be growing plenty of crops, but rural communities have long had limited access to nutrient-rich fresh food.

Jimmy and Ginger Emmons standing in their chaos garden.

Berns now has enough Milpa seeds to plant on 500 acres. But he thinks that a “1 percent for Milpa” nationwide food security initiative is achievable, citing conservation programs like Ducks Unlimited, Trout Unlimited, and Pheasants Forever—public-private collaborations of farmers, ranchers, and naturalists that work together to conserve wildlife habitat—as models. He believes that such a program could quickly gain traction if it offered incentives to farmers. These might include exempting Milpa acres from property taxes, publicizing the farm’s efforts, raising funds for local chapters, and underwriting the cost of the seed.



The effort could run into some red tape if it were scaled up. For example, federal agriculture policy makes it hard for commodity farmers to start growing vegetables on land that is enrolled in the USDA's crop insurance program. However the program does allow cover crops—and chaos gardens could easily fit under that category.

Despite these obstacles, Berns feels now is the time to push it forward. “Even if we couldn't get government agencies to pay for it, we can at least get them to say it's okay,” he says. Jimmy Emmons agrees, and within in his role at the USDA he's advocating for more opportunities for commodity growers to integrate edible crops. “The [pandemic] is terrible,” he said. “The good side is that it's driving people to do something different.”

“For years, I was trying to grow bigger. Now the challenge is to grow smaller and more local.”

At the happy hour, the consensus among the farmers was that it's time for change: Most of them had started out self-identifying as no-till farmers, but then had adopted the mantle of “regenerative” or “regenerative no-till” as they added practices to improve their soil. But the conversation that I was hearing suggested that, once again, their identity was evolving to include a social mission. Mirroring the efforts of the Milpa farmers in Mexico, Guatemala, and elsewhere, many of these farmers now see their land as a way to preserve self-sufficiency while feeding farm families, neighbors, and building community.

“It is not a regenerative mindset if I'm not directly providing food for other people,” said Berns. “There is something very gratifying for us as farmers to remake that connection. To know that you are directly nourishing another.”

Tom Cannon agreed. “For years, I was trying to grow bigger,” he said. “Now the challenge is to grow smaller and more local.”

*This article was updated to reflect the fact that Berns currently has enough Milpa seed to cover 500 acres.*

*Top photo credit: Kirby Smith, field representative for Congressman Frank Lucas, picks squash for Farm to Food Bank project in Leedey, Oklahoma. Courtesy of the Oklahoma Association of Conservation Districts.*



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