



The *New* American Farmer

Dick and Sharon Thompson & family

Boone, Iowa

Summary of Operation

- *Diversified grain rotation including corn, soybeans, oats and hay on 300 acres*
- *75 head of beef cattle*
- *75 hogs in a farrow-to-finish operation*

Problem Addressed

Discontent with agri-chemicals. For much of his early farming career, Dick Thompson relied on synthetic pesticides and fertilizer to produce high yields. “We were high-input farmers from 1958 through 1967 and purchased everything the salesman had to sell,” Thompson recalls. Thompson was building his farm when the standards dictated that enough was never enough.

But he and his wife, Sharon, weren’t happy. They worked hard, and at times it seemed too much. Despite the constant toil, the animals did not gain well, and the Thompsons felt generally dissatisfied. “Our approach to farming did not seem to be working,” Dick Thompson says. “The work was all bunched up, the animals were sick, and we never seemed to be able to get all the farm work done.”

Background

In 1968, the Thompsons changed to a more balanced farming system. Thompson was one of the first farmers in his area to reduce purchased chemicals, and thus raised eyebrows in his community. “Our withdrawal from chemical inputs did not speak to our neighbors,” he says. “Most of our financially stressed farmers perceived the change to be too extreme, too much too fast.”

While Dick Thompson is clearly first and foremost a farmer, one might argue that he has all of the qualifications of a topnotch researcher. Since 1986, he has experimented with new rotations and new ways to build the soil. Much of his work is with the well-respected Practical Farmers of Iowa, (PFI), which he helped found in 1985 to spread the word about what he and other innovators were doing.

A group of like-minded growers, PFI has taken a broad approach to sustainable production and marketing of agricultural goods. Of about 600 members, 25 to 30 “cooperators” have conducted randomized and replicated experiments.

Every year, PFI strives to demonstrate sound practices at well-attended field days. Member researchers also keep detailed records for system analysis. With funding from a nonprofit sustainable agriculture organization to cover printing costs, Thompson went a step further and produced a thick annual report jammed with specifics ranging from the “how-to” to the “why” for his annual field days.

Focal Point of Operation — Rotation and diversification

Thompson developed a five-year rotation that includes corn, beans, corn, oats and hay. He grows the row crops on four- to eight-inch ridges. This “ridge-till” method leaves the soil undisturbed from harvest to planting. Right after harvest, Thompson drills a cover crop of rye onto the tops of the ridges. At

planting, Thompson slices the tops off the ridges, killing the cover crop and removing weeds from the row. His planter throws rye, loose soil and weeds between the rows, helping suppress weed growth there, as well. Before planting oats and alfalfa, Thompson disks along the ridges.

The system does a good job on weed control. Although their farm is not certified organic, Thompson only has applied herbicides once in the last 20 years and has never used an insecticide since he switched to a longer crop rotation. The Thompsons credit all the parts of their system with helping with weed management. Ridge-till minimizes soil disturbance and the associated weed flush before planting; a diverse rotation allows oats and hay to knock back the weeds that build up in a monocrop environment; and cover crops also suppress weeds and boost water infiltration. Rotary hoeing and cultivation usually can control the remaining weeds.

Dick and Sharon's son, Rex, also makes a living from the Thompson farm. Rex Thompson and his family raise 75 sows in a farrow-to-finish hog operation, while Dick manages 75 head of beef cattle. Rather than breaking livestock life cycles into components, the Thompsons raise all of their animals from birth to slaughter. After slaughter, they market their meat as "all-natural," meaning it contains no antibiotics or hormones. Sharon sells freezer beef and pork to nearby residents, and markets the remaining animals to a natural food distributor.

"We try to buy wholesale and sell retail to eliminate so many of the middle margins," Thompson says. "We set the price at the farm, and see a premium from the other markets."

Thompson recycles manure from their animals and biosolids from the nearby city of

Boone onto the crop fields, boosting fertility and eliminating the need for purchased fertilizer. He manures the field after a year of hay, from which he gets three cuttings, then turns it under to knock back weed seeds. "We have enough fertility built back into the soil for the next two years of corn and beans," he says.

Thompson has found that diversifying his product has helped the farm by lessening his economic risk. "At my age, I shouldn't be in the bank borrowing money every year to put a crop in the ground," he says, noting that most Iowa crop farmers no longer raise livestock. "The real key to less risk is a diversified rotation, and you need animals for that."

Economics and Profitability

Thompson carefully measures his input costs as well as his return against those of conventional farmers in the area and has seen real benefits to his system. Looking at a 16-year average, Thompson says, his neighbors lose about \$42 per acre — before taking government payments into account. By contrast, he generates a profit of \$114 per acre. The Thompsons have not received government subsidies for years, yet their diverse farm still supports two families without off-farm employment and without organic premiums.

"My neighbors are seeing a per-acre loss," he says. "Integrating alternative practices — using all the residues and every corn stalk, making the most of everything, and working in tighter rotations, we're getting a positive \$114 gain to the acre. That's a \$156 difference." In the last four years, that difference



Jerry DeWitt

Dick Thompson began cutting his reliance on agri-chemicals in the 1960s.

has reached as high as \$205 more per acre.

Having oats and hay in the mix decreases the weed management by about \$25 an acre in herbicide expenses. Manuring reduces their need for commercial fertilizer by another \$25 an acre per year.

Thompson has taught himself how to repair farm equipment, a valuable skill that has saved him more than one crop. Having "simple" equipment rather than larger machines with computer components enables him to fix machines, saving him about \$69 an hour in mechanic costs.

Environmental Benefits

A diversified crop and livestock system is environmentally sound as well as profitable, Thompson says. His diverse rotation helps break up insect cycles. Adding manure puts organic matter into the soil, which in turn helps with erosion. Area conservationists have measured a sharp decrease in erosion on Thompson's farm compared to others in the area; on conventional farms, erosion can carry away 10 to 11 tons of soil per acre. On Thompson's farm, those numbers drop to 2 to 4 tons.

Better air quality is another example of how the pieces work together for a more environmentally friendly farming system, Thompson says. In most concentrated livestock production systems, little oxygen enters the waste system, and the manure is broken down anaerobically, releasing strong, objectionable odors. Thompson's livestock system, however, encourages aerobic decomposition of the manure. He provides his animals with bedding (cornstalks or bean straw), that absorbs the liquid portion of the manure and allows air to enter the system. When manure decomposes aerobically, it still releases odors, but most people perceive a more earthy, less objectionable smell. Moreover, the pigs enjoy rooting in and sleeping on the bedding.

Putting manure on the soil adds organic nitrogen, as well as phosphorus and potassium. When combined with a crop rotation that includes alfalfa and soybeans, Thompson's use of manure means he has no need for purchased nitrates or ammonium for fertility. Manuring also adds organic matter, which helps build soil stability and increase infiltration. "The organic nitrogen is a slower release so it doesn't get into the ground water like commercial fertilizer can," he says.

Thompson's organic matter stands at around 6 percent, about double the average for con-

ventional farms in his area. Moreover, Thompson's "keep it covered" rotation combined with ridge till helps to minimize weeds and insect pests. Most conventional tillage excites weeds, but by planting in last year's ridge, Thompson barely disturbs the soil and thus controls weeds without using herbicides.

"There's something about controlling early weeds that makes for fewer problems with them later in the cycle," he says.

Community and Quality of Life Benefits

The Thompsons sell to specialized markets that often pay a premium for their meat, but that's not the only advantage to using alternative approaches. "We sell some to people putting meat into their freezers," he says. "This gives us the opportunity to show we are raising these animals in a more humane way. We talk about our entire system and why it's better for them and the land."

The livestock they do not direct market to consumers finds its way into premium markets as "natural" meat products. Aside from the extra income, these markets also provide feedback. "We know how our pork chops taste in the restaurants in California," Thompson says. "It's great to have a close networking relationship with the people who produce and the people who consume."

The Thompsons have hosted an astonishing 9,000 visitors to their farm during field days and other tours. Dick Thompson calls such experiences "a two-way street" because they pick up ideas from others. The same principle applies at PFI, where members plan "show-and-tell" sessions for their peers.

When the Thompsons first began exploring new rotations, they ran about 200 experiments on the farm. Each year, they publish the results of that experimentation. "The new ideas we share came by inspiration and perspiration. We find ourselves asking more

questions each day and hope we are asking the right ones," they write in their 1999 farm report. "We would like you to consider adapting these ideas to your situation, rather than outright adopting them."

Transition Advice

Thompson stresses first having a plan to diversify and then making the most of what's available on the farm. Farmers should look to take advantage of every opportunity, especially adding animals to a crop mix. Patience may be a virtue, but it's also an imperative to planning and making changes to alternative production systems.

"That's one of the big things to stress to people thinking of changing to a more diversified and sustainable system; you have to think long term," he says. Transitions from conventionally produced grains to crops tendered into more specialized and responsive marketing systems could take three to five years.

The Future

From running hundreds of research experiments, the Thompsons have downscaled to just a few, partly because they have solved many of their problems. They will continue to farm in ways that advance an alternative system that not only makes money, but also takes better care of the earth and each other.

"I'm not looking to buy out my neighbor," Thompson says. "There's room for all of us. We really don't have to get bigger or get out."

■ *John Flaim*

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Editor's note: This profile, originally published in 2001, was updated in 2004.