Bob Quinn, Quinn Farm and Ranch — Big Sandy, Montana

Summary of Operation

- *Organically grown wheat, including khorasan, durum, hard red winter and soft white, and buckwheat on 4,000 acres*
- *Barley, flax, lentils, alfalfa (for hay and green manure) and peas (for green manure)*
- *Processing and direct-marketing of organic grain*

Problem Addressed

Low commodity prices. When Bob Quinn took over the fourth-generation, 2,400-acre family farm near Big Sandy, Mont., in 1978, it was a conventional grain and cattle operation. Unstable commodity prices meant he would have to look for something different if he wanted to increase profits.

Background

Armed with enthusiasm and a Ph.D. in plant biochemistry from the University of California-Davis, Quinn began overhauling the family ranch. First, he established a wheat buying/brokering company in 1983 to increase his earnings through direct marketing. With a partner in California, Quinn began marketing the farm's high-quality, high-protein wheat to whole grain bakeries. When the demand was greater than what they could supply, Quinn began buying and marketing wheat from his neighbors.

As Quinn became more deeply involved in the grain aspect of his business, he decided to sell his cattle and rent out the 700 acres of pastureland. In 1985, Quinn built a flour mill 50 miles from the farm. He added a cleaning plant in 1992 to maintain complete control of quality and the timing of deliveries and sales.

"I started getting requests at my flour mill for organic grain, and I became interested in finding out if organic production methods would work in north central Montana," Quinn recalls. "I was always interested in growing my own fertilizer and reducing inputs such as herbicides and fertilizers."

In fall 1986, he plowed down 20 acres of alfalfa that had been free of chemical application for three years and planted organic winter wheat. The organic field was planted using seven-inch drill spacing instead of the usual 14-inch spacing. The wheat grew thicker and shaded the ground, forming a canopy that inhibited weed growth.

To see whether the alfalfa had fixed enough nitrogen for the winter wheat, Quinn tested the nitrogen level in the field. Then he planted an adjacent 20-acre field with conventional winter wheat and applied the same amount of nitrogen — using urea — to the new field as he had found in the alfalfa field.

The resulting crops were nearly identical in yield, 35 and 36 bushels, and levels of protein, 15.2 and 16.4. The positive results encouraged Quinn to move forward with alfalfa as a nitrogen source in an organic system. Within three years he had converted the whole farm to organic production and by 1993, he was totally certified organic.

Focal Point of Operation — Producing and marketing organic wheat

Quinn's rotational plan begins and ends with soil-building. He actually bases his cash crop choice on the level of nitrogen in that season's soil test.

"Here on the northern Great Plains, the fields are so big that it is impossible to spread compost or manures," he says.

Instead, Quinn uses green manure, and lots of it. He has experimented with clovers, medics, peas and alfalfa, with alfalfa proving the most consistent protein producer — and therefore the most marketable hay. Quinn uses a flexible five-year rotation, which offers him the ability to cut short the rotation and go back to alfalfa when needed to eliminate weeds or improve the soil. His land is roughly divided into five sections with a new rotation beginning each year.

Typically, Quinn plows down alfalfa and plants winter wheat on half the ground. The other half is planted the next spring with Egyptian khorasan wheat. In the second year of the rotation, Quinn tests the level of nitrogen to determine the next crop. If nitrogen is still very high, he plants spring wheat. If the nitrogen is intermediate, he plants durum wheat, and if the nitrogen is extremely low, he plants soft white wheat, barley or buckwheat. He often seeds lentils after winter wheat.

The third year, he plants buckwheat, barley or soft white wheat under-seeded with alfalfa. Alfalfa hay is harvested in the fourth year, and in the fifth year the alfalfa is worked into the soil for green manure. Quinn has multiple needs for alafalfa — diversifying his rotation, growing seed and harvesting hay — but his primary aim is to fix nitrogen.

The rotation and other organic production practices require a lot more management than most farms. In addition to monitoring the fields to determine which crops should be planted for optimum yield, he needs to identify problems far in advance. He regularly scouts the fields, looking for insects, disease and winter annual or perennial weeds — each of which he manages differently.

Philippe Van Os

Bob Quinn's five-year rotation disrupts insect, disease and weed cycles and builds soil quality – while producing a high-quality crop.

While rotations are critical to disrupt pests, disease and annual weed cycles, Quinn controls perennial weeds primarily with tillage, and he cultivates a few small patches occasionally with a small tractor. Those efforts seem to pay off. Quinn says weeds, insects and disease problems are generally less problematic than those faced by his neighbors who use purchased chemicals.

"There are some really troublesome weeds that have almost disappeared for us," he says. "We still have some weeds, but they're manageable. They're not destroying large sections of the crop. And that was a big surprise when we first started out."

Organic production requires other laborious tasks. Quinn needs to clean the combines between each crop and scour his harvest bins frequently because he grows such a variety of crops and needs to separate them to meet customer needs.

"We have many more crops than what are normally grown, so that takes a lot more time," he says.

All of the grain is sold through Montana Flour and Grain Mill. Two-thirds of the farm's production goes to Europe, including most of the khorasan wheat (marketed under the brand name Kamut), all of the buckwheat and lentils, and some of the red winter and spring wheat. Quinn travels annually to two food shows in North America and two in Europe to promote the Kamut brand wheat and the Montana Flour and Grain Mill. He also makes personal visits to his biggest customers.

Economics and Profitability

Quinn receives premium prices, which average about 50 percent more than conventional prices, for his grain. Even with the organic certification, however, Quinn needs to raise top-quality products to receive the premium price. Premium prices are only part of the financial benefits.

"Just in the last 10 years, we haven't had to have an operating note on our farm," he says, referring to beginning-of-the-season farm loans. "That's an enormous savings."

Quinn doubts he would run a conventional operation without seasonal loans because of the enormous input costs each spring, which would later have to be paid off with crop sales in the fall. "We've tried to reduce the cost and amount of input on our farm and increase the value of the output," Quinn says, "so the bottom line is significantly better."

During the 1990s, he added a full-time partner and 1,600 new acres to the farm.

Environmental Benefits

Quinn's well-managed rotation disrupts insect, disease and weed cycles and builds soil quality — while producing a high-quality organic crop.

Quinn focuses on feeding and increasing the nutritional value of the soil rather than the conventional approach of feeding the plants. He addresses the root causes of disease and plant problems, rather than waiting and treating the symptoms that show up in the fields. Quinn believes his efforts reap an environmental benefit, resulting in more fertile soil with less water and wind erosion, as well as a financial benefit.

"After four or five years, both water and wind erosion have declined and the quality of the soil has improved," he says.

Quinn's focus on soil improvement both protects a fragile resource and provides the basis for his impressive farm output, he says. Most of the reason behind the prolific use of fertilizers in conventional operations, he says, is because early farmers "wore out" the soil, moved west, then hit the Pacific and had nowhere else to go.

"I don't look at organic farming as a return to old methods before chemical use, because a lot of the old methods weren't sustainable either," Quinn says. "What we're really trying to do is focus on understanding the whole system and have a rotation that provides weed and pest management and quality crop production."

Community and Quality of Life Benefits

"Organic farming has certainly been more fun and more profitable than conventional farming," says Quinn. "It's made me a better farmer because I'm forced to really study and learn what's going on with my fields, my crops, and weeds and diseases."

Quinn also enjoys the marketing end of the business. His unusual Kamut wheat crop takes him to myriad food shows in Germany, Italy, France and Belgium. In North America, he travels throughout the entire United States and several provinces in Canada.

"I've had to learn about the different qualities of wheat, what all the wheat varieties are used for and how to help my customers solve their problems," he says.

Transition Advice

Quinn encourages farmers currently using conventional methods of crop management to consider moving to an organic system. He suggests a gradual conversion, starting out with about 10 to 20 percent of the cropland, and continuing to convert the land at that rate. Although farmers may see a reduction in yields at first, Quinn is convinced that soil-building covers like alfalfa boost fertility enough that Montanans can make the switch without suffering.

The Future

Quinn plans to continue experimenting with different rotations to find which best suit his soil and crops. He is testing shorter rotations, one based on growing peas as a green manure every other year, alternating with a grain crop. The second rotation is based on one year of clover, followed by two grain crops, and then back to a year of clover or peas. Thus far, Quinn has found that using peas as a green manure conserves moisture better and may be a good alfalfa substitute during dry years.

Quinn believes he can be successful with the shorter rotations because the ground has been built up with past crops of alfalfa and there is an abundance of nitrogen in the soil. For Quinn, experimenting with the crops is the most enjoyable part of farming.

"My specialty and my first love is growing plants," Quinn says. "I studied to be a plant scientist and since I have come home, my whole farm is my laboratory."

■ *Mary Friesen*

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Editor's note: In 2003, Bob Quinn rented his grain acreage to his partner so he could devote more time to marketing alternative grains. He accepted a full-time position with The Kamut Co. Previously, "I was farming all summer and traveling all winter, but that marketing work was edging into the spring and fall," he said.