"It's a Better System Management-Wise"

So says Iowa farmer Ben Flathers about his ridge-till system, during interview with the Fluid Journal.

FJ: How long have you been mulch tilling?

For 27 years.

FJ: How did you get started?

We were in the business of selling fertilizer. Our business was growing faster than we could keep up. We were also farming 500 to 600 acres — trying to plow it, disk it and all of those conventional types of things. I went to a fertilizer meeting and sat beside a man who'd tried ridge-till farming on Missouri River bottom ground. Can't remember his name but he suggested I should think about trying it. So I spent the winter researching ridge planting and found the planter we're still using today.

FJ: You found advantages in ridge-till.

Yes, I've no-tilled and it's left wanting when compared to the ridge-till system. Ridge-till is a step above — takes better management.

FJ: Does the same comparison apply to conventional-till?

Oh, yes. In erosion control especially. You also get a lot better soil structure development over the years. Soils have better tilth, organic matter and absorb water better. For example, our organic matter when we switched ran from 1.5 to 2 percent on our best ground. With ridge-till, we've built it up to 4.5 to 5 percent organic matter and we're still improving.

FJ: You've concentrated on increasing organic matter in your soil. What have you done to increase soil productivity?

There's something we learned when we first started and we've never forgotten. With the ridge-till system, when you push residue into the center of the rows and add a little nitrogen

and sulfur to it, you've got a perfect mulch bed. Over a period of time, you get more organic matter built tip than you would with no-till where you leave it spread out on top of the ground. We move the residue to the middle, add a little nitrogen and sulfur and it becomes like a huge sponge and decays. You can't pour enough water on it to make it run off.

FJ: How do your yields compare with those of your neighbors?

As good, hopefully better. My wife and I entered the National Corn Grower's contest this year. She won second in the state.

FJ: What was her yield?

Averaged 191 bushels per acre.

FJ: What about moisture?

We used to think that we had a definite advantage only in the dry years. We've changed our minds on that. Last year, with too much moisture, the ridges didn't have wet feet. At harvesttime, the soil structure was such that we could go in when other operators couldn't.

FJ: Is most of the residue gone by harvesttime?

Yes. But the soil structure is different — granular instead of muddy.

FJ: How long did it take you to get the system stabilized?

We say it takes about five years before you really see it start to work. We used to think that over that period you might see a little yield reduction. Not anymore. Herbicides, improved equipment, fertilizers and placement have all changed that.

FJ: During the last 27 years you must have tried different methods of applying liquid fertilizers You must have had successes and failures. Explain how you evolved to your present use of liquid fertilizer.

For years we knifed in between the rows ahead of planting. We applied nitrogen and half our P and K. The rest of our P and K we applied as a starter. That worked well, but we decided to change to the spoke wheel. The benefits were several. We cut our power to 3 hp per wheel. We can run two days on a tank of fuel. And it helped stretch the season. We begin in the spring, applying liquid fertilizer into the side of the ridge about 8 inches from where the old row was. That's about two-thirds of the way down the side of the ridge. We run a coulter mounted on a Buffalo cultivator frame with wheels on it. The coulter runs ahead of the spoke wheel. The wheel running in the soft ridge will actually go in about two inches below the depth band on the wheel. That way, we're getting fertilizer nice and deep about five or six inches.

FJ: Describe your fertilizer program.

Last year, we applied 90 pounds of nitrogen through the wheel, along with phosphorus, potash. zinc and sulfur.

We broadcast another 50 pounds of nitrogen (18 gallons of 28-0-0) and five gallons of liquid ammonium thiosulfate plus a herbicide right behind the planter. We use nitrogen and sulfur to help residue decay.

FJ: How much liquid starter are you applying?

About five gallons per acre and getting good results. Our soils test high in P and K. For years, we used starter and then banded additional P and K. We probably never used more than 40 pounds of phosphorus per acre. Those soils have gone from hardly registering for P and K to medium or high-test levels.

FJ: Is maintenance a problem with your spoke wheels?

We stay on top of it, so we don't have problems. We'll cover about 600 acres a year before we put new seals and spacers in the wheels and rework the spokes.

FJ: What about timing of applications?

Here's what we do. We've got our machine fixed up with a guidance system. We guide off the ridges preplant so we're putting fertilizer in the ridge where we want it. We quit when planting time comes and plant corn. Then we start fertilizing again, using our guidance system but placing it a little closer to the row. We clean a 10-inch strip off the top of the ridge when we plant so when we come back later with fertilizer we place it through the spoke wheel right on the edge of the clean strip. The timing and efficiency are ideal. We call them super ridges.

FJ: Do you put sulfur and zinc in the ridge?

We apply about 30 gallons of nitrogen, mixed with about three gallons of thiosulfate.

FJ: Over the years, have you changed any practices concerning your ridges?

No. Same ridges. Same place.

FJ: Do you chop your stalks in the spring?

No, we made a rig with two rows of truck tires bolted together. We drag the tires through the fields in the wintertime when everything is frozen. The stalks shatter like glass. The tires stay on top of the ridges. It doesn't take a lot of power.

FJ: What is your weed control program?

We broadcast a grass herbicide at planting time with 28 percent and sulfur. We spray it on the soil, right behind the planter. With the nitrogen and good moisture in the soil, we've cut the rate of herbicide applied in half! For years we used Atrazine and oil. Now we're using Bucktril and Banvel, trying to get away from using so much Atrazine.

FJ: How would you advise a newcomer to conservation tillage?

Use starter and band your herbicides. Most ridge tillers have gone to banding herbicides with nitrogen and they use a starter fertilizer. If you band your herbicide, you may have to cultivate twice. So, you're out there cultivating fairly early the first time. You apply the balance of the nitrogen then. That works nicely for an average farmer, but these big operators, of course, would have to do something different.

FJ: Some producers are broadcasting. What would you advise?

Should've quit that 20 years ago! They should figure out a way to inject nutrients below the residue. It presents a problem, because most people wanting to fertilize no-till are not even out there with a cultivator. Which leads back to the ridge-till system. It's better management wise. The long-term effects are just like the experimental farm in Waseca, Minnesota. Gyles Randall has a study where he's worked with four tillage systems for 16 years ridge-till, no-till, conventional-till and chisel planting. Ridge-till has proven far and away better for weed control, fertilizer efficiency and water efficiency.

FJ: Could you apply more starter at planting?

Using a total liquid program, you can add some P and K with your nitrogen at sidedressing time. That's what we've done for years to apply more P and K. We limit our starter rate.

FJ: Is the art of management where it should be?

You have trouble convincing people that they shouldn't go out there and spread it as fast as they can — 200 acres a day. The problem is farming vast amounts of acres. To me, many operators could make a whole lot more money by backing up and downsizing their operations — do it more efficiently. Place the fertilizer where it should be. You can improve your management to a point where you can make so much more money on less acres. It's hard to convince some big operators because acres are all they see.

FJ: How do you respond to the guy who says, "Before you switch to no-till or ridge-till, you should build your P and K levels"?

You can go out there with small amounts of fertilizer and do great things if you apply it right and time it right.

FJ: What other excuses do you hear for not switching?

One of the big fallacies we run up against is that ridge-till produces more disease, insect and weed problems. That's not true. If anything, ridge-till has less of these problems. We usually don't have to cultivate for weed control. As far as I'm concerned, there are no excuses.