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Building, Refining Yields Promise For Strip-Tiller

Moving to dry-fertilizer application and tinkering with strip-till rigs and setups brings newfound flexibility for Illinois strip-tiller Mike Bland.

By Jack Zemlicka, Technology Editor

Mike Bland wasn't expecting higher corn yields when he switched to strip-till 6 years ago.

Having used conventional tillage and dabbling in ridge-till and no-till, the Bethany, Ill., farmer wanted a more economical approach to manage fertilizer application and improve efficiency overall on his 2,000-acre farm.

"We reached a point where we either needed bigger equipment, or we needed to farm the same amount of acres with the same equipment. That led us to strip-till," Bland says. "We managed to get a rig built, made our strips that first year and immediately found we could cover a lot more ground in less time compared to using a chisel plow."

Better Equipment

Bland started with a 16-row Progressive 6200 rig he shared with a neighbor — liking the fact he didn't need to invest $300,000 for a new four-wheel drive tractor to pull the machine. Once strips were built, they could be left alone until spring.

Sold on the early benefits of strip-till, Bland purchased his own 12-row Redball shank machine with row cleaners and mounted the bar on an Elk Creek caddy with a mounted Montag dry-fertilizer box.

He prefers to build strips in the fall, about 9 inches deep and 8 to 10 inches wide. Bland finds a 3-inch-high mound is ideal because it mellows out by spring and provides a 1-inch berm to plant in.

But through experience, Bland learned to be flexible both with the timing of strip-tilling and his equipment setup. After a late harvest in 2009, he was forced to strip-till in the spring and modified his unit to compensate for wetter conditions.

SOLD ON STRIP-TILL. After sharing a 16-row Progressive 6200 rig with a neighbor, Bethany, Ill., farmer Mike Bland purchased his own 12-row Redball unit and recently converted an old Thurston Mfg./Blu-Jet anhydrous bar to a second 12-row strip-till rig to cover more acres in less time building fall strips.

"We changed up the front coulter on the strip-till bar to wavy coulters so it wouldn't be as apt to sidewall compaction. Then we went to a mini mole knife so we weren't heaving as much dirt — since the soil is more mellow — but we still got a good churning action," Bland says. "I didn't want it too chunky and have air pockets down there.

"The ultimate solution would be to have a coulter machine in the spring, but that's pretty pricey to have around just for spring once in a while."

Bland is taking a more economical approach to expanding his fall strip-till system. Last winter, he converted a Thurston Mfg./Blu-Jet sidedress bar into a second 12-row strip-till unit.

DRYING OUT. Bland added a mounted Montag dry-fertilizer cart on his Blu-Jet strip-till rig for fall 2013 and will variable-rate a combination of potash and diammonium phosphate in the strip. Moving away from liquid fertilizer application in the fall has been more economical and efficient for Bland.

For years, he used the Blu-Jet rig solely for anhydrous application, but Bland wanted to cover more ground as he built fall strips in a shorter amount of time.

"We purchased the row units with spring-loaded shanks and row cleaners, then added all the parts to the bar and put it on an Elk Creek fertilizer caddy with a mounted Montag dry-fertilizer box," he says. "We had another tractor available and now, if we're under a time crunch, we can get out there build our strips more quickly. Plus, it will be nice to have a back-up unit if one breaks down."

With fall-built strips, Bland can concentrate on planting and building a good seedbed in the spring. His 24-row John Deere 1770 planter is equipped with hydraulic motors from Precision Planting, along with a 20/20 RowFlow variable-rate drive, row clutches and Martin fertilizer openers.

This year, he experimented with a variety of different closing wheels to determine the best fit for planting in his wetter clay soils.

"I outfitted my planter with several different brands and models to see if there was much of difference in my soil types," Bland says. "Some performed better than others closing the strip in our wet, clay soils — and that's where I must look at what I'm doing. I'm still not sure which is the right one."

Cutting Fertility Costs

As Bland continues to refine his equipment setup, he's also working to be more efficient with fertilizer application.

When he began strip-tilling with the 16-row Progressive unit, Bland applied liquid ammonium phosphate (10-34-0), but he hesitated to take the next step with liquid potassium products because they are both expensive and difficult to obtain in his area.

So when he purchased the Redball rig, he moved to dry-fertilizer application during the fall. He now variable-rates a combination of potash and diammonium phosphate (DAP) in the strip. Last year, the lowest rate of DAP applied was 100 pounds per acre, and the lowest rate of potash applied was 100 pounds per acre.

"Before, we were only applying phosphorus in the strip and we immediately saw an increase in our phosphorus uptake through our leaf samples," Bland says. "But our potassium had just kind of floundered, even though we were broadcast-applying the recommended rates.

"We didn't feel like we were getting a response there. That was one of the main reasons I went from liquid to dry, because with dry products you can mix and do whatever you want. They're very available and economical.

"This year, Bland noticed better potash uptake in their corn by placing it in the strip, and his ultimate goal is to cut fertilizer use on the farm by two-thirds of what normal broadcast rates would be.

With the planter, Bland applies 10 gallons per acre of 32%, 5 gallons per acre of 10-34-0 and 5 gallons per acre of ammonium thiosulfate in 2-by-2-inch placement. In furrow, he applies 4 gallons per acre of 4-21-4, a

nitrogen, phosphorus and potassium blend, with Agri-Solutions Ascend, a plant growth regulator.

While fertilizer is straight-rate applied with the planter, Bland variable-rates his sidedressing applications.

“We’re going a little bit off soil type, yield history and also if we had a lot of rain before sidedressing and there’s a possibility we lost some of the planter-applied nitrogen, or nitrogen that was applied in the previous fall,” he says. “We can go a little bit heavier with application and that leaves us a little bit of flexibility.

”Every 2 years, Bland pulls soil samples on every field that, among other things, indicate organic-matter levels and nutrient levels. While he hasn’t seen much of a difference in organic matter after 6 years of strip-tilling, he’s seen no declines and base saturations are getting a little bit better. Corn yields have also been more consistent.

WHEELS OF FORTUNE. This year, Bland experimented with a variety of different closing wheels on his 24-row John Deere planter to determine the best fit for planting in wetter clay soils. Some performed better than others closing the strip, but Bland says he’s still not sure which is the right one for his fields.

“In a normal year, we feel that 200 bushels per acre is pretty average and attainable,” Bland says. “We’re trying to get toward that 300-bushel magic mark. That’s the immediate goal — to be able to do that on a regular basis.”

Soybean Experiment

This year will be the first that Bland runs two strip-till units that are set up for dry-fertilizer application, and the move could open some doors to expand strip-tilled soybeans.

His first experience came 5 years ago when he intended to plant a strip-tilled field corn-on-corn, but decided to take a non-GMO contract to plant soybeans. He broadcast 120 to 180 pounds per acre of potash in the winter, and only applied 10-34-0 in the strip, but was pleasantly surprised by the end result.

“The owner we rented the field from said he had never raised 60-bushel soybeans there before, and that year we raised over 60 bushels,” Bland says. “That convinced me that it would work, and we didn’t even go into with much of a plan.

”Bland attributes the successful yield to a combination of the soil warming up a little faster that in no-till and having nutrients available in the strip. He hopes to continue experimenting with strip-tilled soybeans.

“If we can get the fertilizer efficiency to work for beans like it does for corn, we may do a lot more of that in the future,” he says. “Having two strip-till rigs will give us some other opportunities to experiment and improve.”

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