

Deep Ripping: Other Observations

by the Editors

TECHNIQUE

Kent Stones, farming between Cawker City, KS and the Nebraska border, had his eye on no-till beginning in the mid-1990s. To set the stage for no-till, he deep ripped almost all his acres in '95 and '96 before going 100% no-till in '97. Stones comments, "Back then, there was lots of talk about ripping—in those days, it was stressed that you needed to prepare for no-till by addressing compaction layers, incorporating lime, and so forth. And to some extent, we were still coping with a bad harvest in '93 with combine rutting, et cetera, so we were still making corrections from that debacle."

Since then, Stones has continued to add many different tracts to his operation, converting them all to no-till, but without any deep ripping. Has he seen a difference?—"No. Some fields are not measuring up to our expectations, but some of those

are fields that were ripped. My conclusion is that long-term there was no advantage to ripping. But there is a definite advantage to longer-term no-till. There's a huge difference between no-till 10 years versus new to no-till."

Stones further reports: "2007 produced our highest ever milo yields. There was about a 25-bu/a advantage to long-term no-till. The continuous no-till just gets better and better. And it was observably better than fully tilled or skip-a-till in our neighborhood—there was enough visual difference that many people noted it, and are asking questions."

In another observation, Stones comments that he doesn't think no-till 'matures' in 20 years, as has been stated by some. Stones has a field that was converted from CRP ten years ago, going directly into no-till production, so it has 20 years without tillage: "That field gets better every year. And it was horrible land before going into CRP—badly eroded, poor farming practices, you name it."

Digging Yourself Deeper

From a completely different region, Pat Sheridan conveys his experiences with old lakebed soils in the Saginaw Valley of Michigan, near Lake Huron. These soils typically have high pH and high clay (but with scattered sandbars), and very low organic matter (0.5%) prior to no-till. In the '70s, the Sheridans went from moldboard plowing to chiseling to address a compaction layer: "[But] instead of compaction at 8 inches, we moved the problem deeper by

a few inches with the chisel. By the early '80s, we thought we could do some good by getting below the layer formed by the chisel. We were trying to run a v-ripper at 14 – 16 inches [deep]. Really boiling the soil, and we had some dry falls to get over lots of ground. Then we had 26 inches of rain in September of 1986. With that much rain, we just had soup down to the compaction layer [wherever tillage had been done]. We left some fields unharvested. . . . As we're very slow learners, we still went out on the frost that fall trying to repair all the messes we had with some aggressive tillage."

Sheridan: "With deep tillage, followed by wet harvests, we were driving compaction deeper all the time. We were chasing our tails trying to use deep tillage to repair problems that were ultimately caused by deep tillage."



Photo by Josh Lloyd.

Natural ripping on Josh Lloyd's farm in north-central Kansas. This piece of lath went nearly three feet down in this crack without being forced.

“By the early '90s, we had experienced a couple of wet falls and springs that proved to us that this deep tillage stuff had to stop. We were chasing our tails trying to repair problems that were ultimately caused by deep tillage, followed by wet harvests, which meant we were driving compaction deeper all the time. Sometimes, the effects of deep tillage didn't show up for a couple of years, but just as soon as we got wet, we sunk. Now the problem became how to fix compaction caused by ripping—we were setting the tillage tool down deeper all the time. . . . We have a lot of fields that are tilled at 30 to 40 feet apart, yet all this ripping to fix compaction was resulting in worse drainage. We were originally trying to improve drainage [by ripping]. Like I said, we're slow learners.”

In '91, Sheridans dropped sugar beets from their rotation, keeping only dry beans, soybeans, wheat, and corn. They also went entirely to no-till, with the exception of some ripping of sandbars after 5 years of no-till. Counter-intuitively, Sheridan reports that none of their high-clay soils responded to experimental ripping, although some of the sandier soils did respond to one-time ripping. “Contrary to popular opinion, [in the case of these sandy soils] we liked to run the ripper when there was moisture in the soil. All we were trying to do was get a path or a slot for the roots to get through any compacted layers. Once that happens, the decaying roots should keep everything opened up.”

Sheridan counsels that farmers should rent a ripper, lest they be tempted to continue using it. “In this area, a ripper is one of those things that a conventional-till farmer who wants to convert to no-till could benefit from using. No sense in starting out with a compaction problem. But I don't see a need for it after a couple of years of no-till,

regardless of soil types. At least the ones I'm familiar with. There are enough cover crop options available that I really question why I'd need to run any iron on my farm to alleviate compaction. There are too many good things that come with a cover like oilseed radish that'll do everything a ripper will, plus more.”

Skeptical Minds

Josh Lloyd of Clay Center, KS, another longtime no-tiller, wonders why anyone would want to attempt to alleviate compaction with a tillage tool when the region's soils will naturally develop cracks 4 feet deep when dry (see photo). Lloyd explains, “I didn't have to force the piece of lath into the ground. The pictures were taken the first day of wheat harvest last year ['06] and then I went in a few days later and drilled milo.”

Sheridan: “All this ripping to fix compaction was resulting in worse drainage.”

Greg Scott, a soil scientist with NRCS in Oklahoma, gives this advice to producers: “If you insist on ripping, the soil must be dry enough to carry a shattering wave through the soil. Meaning that if you see chunks of rubber peeling off the tractor tires, the soil is about at the right moisture to rip. And of course, ripping must not work because you will need to do it again next year, and the year after that”



Photo by Pat Sheridan.

Pat Sheridan's oilseed radish. Nearly all of Sheridan's cover crops are seeded aerially into grain crops as they are maturing. Sheridan: “A cover like oilseed radish will do everything a ripper will, plus more.”

Practical Aspects

Randy Lanie adds another set of observations. Lanie farms in north-central Oklahoma (Manchester to Nash), and was the cover story of the March/April '07 issue of *Leading Edge*. Like Stones, Lanie deep ripped quite a bit of land in the '97 – '98 timeframe, just prior to going 100% no-till. Lanie comments: “I really couldn't see a benefit comparing what I did rip versus what I didn't rip. And all of this land has a lot of plowing history. The gumbo-type soils were often plowed too wet, and I was as bad as anybody about tilling wet soils.”

Since then, Lanie has roughly tripled his cropland acres, but none of the added land has been ripped. “On the land I've taken over, it usually just needs a few years of no-till to get it productive.” This is in an area where it was standard procedure that every acre be plowed every year, in unforgiving red clay with organic matter commonly below 1%. Lanie offers further cautions: “Ripping is a very expensive operation. And it's very difficult to find ideal conditions for ripping—it's just not practical. My recommendation is your no-till system will take care of the plow pan, and the problem will be pretty well solved in five years.” 🌱