

No-till soil can still be compacted

By TOM J. BECHMAN

ONE advantage no-tillers have championed for years is that they can get on no-till fields to combine without making ruts, long before neighbors in conventional tillage can run. Sometimes there's a day's difference after a heavy rain. As it turns out, that's a mixed blessing.

"Yes, you can run on no-till quicker without making ruts," says Gary Steinhardt, a Purdue University Extension soil scientist. "No-till fields have excellent load-bearing capacity. You would cut ruts or get stuck in a conventionally tilled field when you could go right on in no-till."

Steinhardt was one of the first Extension researchers to study soil compaction. His work dates back to the early 1980s. Unfortunately, soil compaction is not black and white. There are tendencies, however. Steinhardt's input may help you make better decisions.

Flip side

Just because you're not making ruts doesn't mean you're not doing damage, the soils specialist emphasizes. "That's the other side of the mixed blessing," he relates.

"You may think you're not doing damage, but you could be compacting surface layers," he explains. While no-till

Key Points

- You won't cut ruts in no-till soil due to its excellent load-bearing capacity.
- Driving over wet no-till soils, however, can still cause soil compaction.
- Consider controlling your traffic to limit the compaction of your soil.

soils will hold up machinery due to their excellent load-bearing capacity, they will still compact.

"In no-till, your advantage for crop growth is those top few inches," he continues. "So you need to be very careful about driving over them when it's wet. If you create soil compaction, you lose the advantages of better infiltration."

Good advice

Staying out of the field until the soil is totally dry may not be an option. It certainly wasn't in 2009. However, Steinhardt suggests being very careful and thinking through your options before you run on no-till soils "just because you can."

One suggestion is to rethink how you position grain carts. Even if they stay on top and don't cause ruts, they may still damage the upper soil profile. Running the cart through the field to catch the



RUTS GALORE: A wet fall in 2009 left some with no choice but to cut ruts while combining. However, no-tillers who didn't cut ruts may still have caused soil compaction if they drove over wet soils.

combine may not be worth the time saved if soils compact.

"The other thing you can do is to control traffic patterns during the entire season," Steinhardt says. "In long-term tillage plots at Purdue, if you don't run over the soil in no-till situations, the soil that never sees a wheel track is an excellent place to grow crops.

"Where the tires run, it will be compacted. But if you can run as much as possible in the same tracks throughout

the year, then you've got a great area for growing things."

The late Sam Parsons, a Purdue Extension ag engineer, experimented with designs for controlled traffic in the early 1980s. While it fit ridge-till systems well and fits fall strip-till today, it takes more planning in no-till. However, it can be accomplished if you think through wheel spacing, and if you're dedicated to keeping traffic in the same place each time, Steinhardt concludes.

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