

CONSERVATION

IS THE

GOAL



Charles
RICE

When it comes to meeting their no-till and conservation goals, Charles Rice from Mapleton, Illinois, and Dave Kronlage from Dyersville, Iowa, have adopted the SMART-TILL.



Dave
KRONLAGE



For Rice, a committed conservationist, the SMART-TILL is an important tool in his operation.

He rotates corn with soybeans and uses no-till to keep the residue on the surface. Retaining the residue on the soil surface is a critical part of his conservation plans, yet he isn't willing to endure a poor plant stand that comes with high-residue systems.

"My goal is a good seedbed and getting every seed out of the ground at the same time," Rice said. "My SMART-TILL helps me reach that goal. It accomplishes everything I want to do including use as a finishing tool, and it helps me stay in compliance while getting good stands."

Although Kronlage wanted to be a no-tiller, heavier soils in Northeastern Iowa and spring weather patterns make

it a challenge for planting corn, and he can't incorporate manure or fertilizer. So he continued chiseling in the fall and running a finishing tool in the spring, until he discovered the SMART-TILL.

"When I run the SMART-TILL, more water infiltrates, and the soil dries faster, and I can incorporate manure. Our goal is to get cornstalks to break up and deteriorate quickly, and over time our soil already is becoming mellower," Kronlage said.

Rice wanted a tillage practice to process residue, break up compaction, and prepare a good seedbed while helping him remain true to his no-till values.

He became interested in aeration tillage after borrowing a drill caddy with rolling tines similar to those on the SMART-TILL. After running it over 80 acres, Rice said, "I was astonished by the small slots (divots) it left and how rough the field looked. But after a quick 1-inch rain, the water all percolated and there was no erosion, and I knew I was onto something."

Rice explained that the tines on his 15-foot SMART-TILL fracture the top 8 inches of soil, improving both aeration and infiltration. "You can help speed up the breakdown of residue by getting a little soil on it, but the SMART-TILL still leaves residue mostly on the soil surface to stop wind and water erosion," he said.

SMART-TILL Fits Multiple Systems

Rice and Kronlage have very specific uses for the SMART-TILL in their operations, including processing cornstalks, fluffing the soil, and incorporating manure and fertilizer. And Rice has several configurations of attachments that all connect to the rear of the basic SMART-TILL by 3-point hitch.

“With SMART-TILL’s 3-point hitch, I have the ability to hook up either the stalk chopper, rolling harrow, or rotary hoe and can change them relatively quickly with a forklift,” Rice said.



Processing cornstalks. One of the benefits of the SMART-TILL is cutting cornstalks into smaller pieces. Residue from today’s corn hybrids with the Bt trait decays much slower and can be an impediment to establishing the next crop. Rice likes to run the SMART-TILL with the rolling stalk chopper on cornstalks in fields going back to soybeans. The tines throw enough soil on the stalks to tie them down so they don’t blow, and contact with the soil helps speed up decay. In the spring, he seeds soybeans directly into the residue unless weather conditions have left the soil cool and wet, in which case he runs his SMART-TILL again with either the rolling harrow or rotary hoe.

“In the spring, if the field is damp, the rotary hoe is more forgiving of damp conditions than running the rotary harrow and won’t ball up with mud and residue,” Rice said.

He explained that running the SMART-TILL with the stalk chopper in the fall and again with a harrow in the spring creates seedbed conditions similar to chiseling once in the fall and cultivating once in the spring to cut and incorporate the residue. “The corn stand in those fields, planted into processed cornstalks, was perfect with even emergence, near perfect stand, and similar stalk girth. You couldn’t ask for more,” he said.

In Kronlage’s corn-after-corn rotation,

he runs the SMART-TILL twice, once in the fall and then again in the spring at a different angle. This kicks out root balls that can significantly impact seed placement and impede corn emergence.



Enhancing strip-till and optimizing seedbed conditions. Rice strip tills soybean stubble going back into corn and deep bands ammonia nitrogen, dry phosphorus, and potassium in 30-inch strips. In the spring, he runs his SMART-TILL with the rotary hoe attachment to fluff up the residue and stir the soil.

“I like to run the SMART-TILL 7 to 10 days before planting corn,” he said. “I fluff up the soil surface and break up any crusting. This leaves a seedbed that will warm and be friendly to the seed, so it will germinate and sprout.”

If the spring offers unfavorable weather conditions due to extended periods of rain or cold temperatures, Rice and Kronlage run their SMART-TILLS to get into the field sooner.

However, Rice cautions, “Don’t go out when it is muddy, but on the shady side of ‘iffy.’ Dig down 3 to 4 inches with a spade or potato fork, and get a clod of dirt and finger it. If your hands brush clean, it is ready to go.... If the field is ‘iffy’ run the SMART-TILL at a straighter angle to not throw up clods, and the tracking rotary hoe will break up and close the divots. This lets Mother Nature (wind and sun) do its thing, and you can come back in a few hours and plant and get good slot closure and no sidewall compaction. The shiny dampness on top of the dry surface will be gone.”



Manure management. Much of Kronlage’s fertility comes from hog

manure. He runs the SMART-TILL in the fall with the rotary harrow up to create slots for manure to pool into and improve infiltration. In the spring, he runs his SMART-TILL with the rotary harrow down to level and prepare a better seedbed.

Reducing SDS Risk

Sudden Death Syndrome (SDS) is an increasing problem for soybean producers, and its occurrence is associated with wet springs and saturated, compacted soils.

Kronlage runs the SMART-TILL in the fall or spring to break surface compaction and improve drainage and aeration. He runs the SMART-TILL again in the spring, waiting a day or two for the soil to dry. This greatly reduces his risk of getting SDS in soybeans. Any practice a grower can follow to improve drainage and aeration can reduce the risk of an early season SDS infection. Reducing the risk of SDS is one of the unheralded benefits of running the SMART-TILL in the spring before planting soybeans.

Appreciating the Benefits

A pass with a SMART-TILL helps process residue while alleviating any compaction and crusting in the upper profile and improving aeration and infiltration. For Kronlage, the SMART-TILL helps him handle residue and manure as a no-tiller. The SMART-TILL is an important part of Rice’s system because it allows him to maintain the residue on the surface, yet overcome some of the problems it can create when planting—keeping the soil too moist and cool in the spring. Ultimately it allows both producers to be good stewards of the land and environment while optimizing production.

To learn more about SMART-TILL, visit www.smart-till.com.



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