

THE LEADING EDGE

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Vertical Tillage and Its Benefits

Producers have been discovering that vertical tillage equipment provides a solution to a number of problems. Vertical tillage can help with residue control, compaction issues, and earlier planting—not to mention savings in time and money. With the creative solutions many producers are employing to reduce up-front equipment costs, vertical tillage tools offer a quick return on investment.

The new face of vertical tillage



Though VT coulters come in many varieties, they share a common

Vertical tillage (VT) tools continue to evolve to the point that the practice now appeals to both conventional and minimum-tillage producers. VT no longer applies to only deep tillage with straight shanks, which results in completely overturned soil. Manufacturers now make VT tools that penetrate, at most, the top three inches of soil. These offer the benefits of tilled soil while at the same time leaving a layer of residue

benefit: low soil disturbance.

to protect the soil from erosion. Most conservation-focused producers will find this lighter tillage application acceptable.

These "top only" VT tools are also known and marketed as vertical finishers. Many manufacturers refer to the blades on their VT tools as coulters, which vary in blade curvature and fluting. And some are making vertical tillage tools that are compatible with field cultivators, chisels, and fertilizer application shanks, giving producers the opportunity to multitask with existing equipment. Other beneficial attachments for vertical tillage tools may include rolling baskets to further fluff residue and smooth the seedbed.

A multiplicity of benefits

Vertical tillage tools are not a one-use investment. Producers considering VT would do well to look at the many solutions the practice can provide.



The residue sizing and disturbance provide a natural mechanism to improve insect and disease control.

Residue control

As more producers increase their percentage of corn on corn, fast-building residues are becoming a more prevalent problem. VT is one of the most cost-effective and practical ways to control residue.

VT tools can be used to cut and size residue in the fall. Most shallow, coulters-based VT tools have fairly low horsepower requirements and can be operated

at relatively fast speeds of 6 to 10 mph.

A quick pass at that speed in the fall provides more soil-to-residue contact and better breakdown over winter. VT anchors some residue in the soil, putting it in contact with active microbes. This contact speeds residue breakdown, a big benefit for those who plant Bt corn hybrids.

Other residue is chopped to a manageable size but left on the soil surface as an erosion-preventing cover. Properly spreading and sizing residue in the fall saves both the time and expense associated with extra tillage passes and keeps tools from clogging during spring planting. The VT attachments can even be used for very shallow incorporation of fertilizer and herbicides.

Soil compaction

A pass with a VT tool in the fall goes a long way toward eliminating yield-robbing soil compaction caused by combines, grain carts, and trucks. In the spring, many producers will run the VT implement again ahead of the planter, to aerate soil. This also helps bring soil to the top, providing good seed-to-soil contact.

Time crunch

In spring, VT tools incorporate manure and warm soils sooner. If temperatures are slow to warm, vertical tillage can offer just enough residue disruption and soil disturbance to facilitate soil warming and earlier planting dates.

**In some cases, a spring VT pass can move planting up seven to ten days. And such fields typically have better, more even emergence."
--Prairie Farmer, October 2010.**

VT is especially suited for fields that dry slowly in the spring, such as those with poor drainage or high clay content. But use caution—if fields are too wet, a tillage pass too early, even with light equipment, can cause unwanted compaction.

On the flip side, producers dealing with time crunch due to a late harvest will be more likely to complete a fall tillage using the shallow VT method.

Cost benefit analysis



According to John McGillicuddy, an eastern Iowa agronomic consultant, different VT machines can be set up and run differently, depending on a farm's goals.--[Prairie Farmer](#), November, 2010.

With so many benefits, why isn't everyone using VT? The answer lies in the high up-front cost of the equipment. To justify the investment, vertical tillage equipment has to solve enough problems to earn back the upfront costs.

Some producers have found a solution to the cost of equipment. Neil Skiles, who farms 800 acres of minimum-till corn on corn, retrofitted his field cultivator with Yetter 2982 Vertical Tillage Attachments.

Whereas a complete new vertical tillage system can cost up to \$50,000, Neil paid only \$8,000 to set up his Landoll Tilloll for vertical tillage. And it was easy—he bought the rolling coulters and replaced the 26 shovels on his Tilloll in a few hours. *i.*

"I didn't like the way field cultivators pack the ground which, if it's wet at all, makes it hard for corn to come up," says Neil. "Shallow vertical tillage is a better system. It makes a groove in the field and throws up enough dirt to seal in your corn when you come back with the planter."

Other producers looking to try this method will find an old chisel plow the perfect candidate to be modified to accept VT attachments. Putting an outdated tool back into the field with an updated purpose makes economic sense.

By retrofitting existing equipment, VT becomes a practice easily undertaken with minimal equipment expense. Along with the multiple benefits which lead to healthy crops and savings in time and money, VT is an option many producers should consider.

i. Josh Flint, "Retrofit kit saves a bundle on vertical tillage system," *Prairie Farmer*, Vol. 182, No. 10, October 2010, p. 7.

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