

# Crop

## Strip till has potential

By Cindy Snyder, Ag Weekly correspondent  
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WENDELL, Idaho -- Increasing profitability on a farm these days comes down to two approaches: reduce input costs or increase yields. Strip tillage may offer southern Idaho corn growers an opportunity to put both approaches to work simultaneously.

Strip till is gaining acceptance in the Midwest as well as eastern Colorado, western Kansas and the Texas Panhandle. There is even some strip tillage being used in the Columbia Basin. But the practice hasn't gained a toehold amongst silage corn growers in the Magic Valley.

That may be about to change. One equipment manufacturer has brought its strip till implement to the Wendell area to see how it handles triticale stubble. Triticale's massive root system has proved too tough for other conservation tillage implements.

Dave Sass, agronomist with Pioneer International in Jerome, is excited about the potential of strip tillage in southern Idaho. Traditional silage corn growers are disking twice, then planting and dammer diking fields after harvesting the triticale in the spring. Strip tillage -- where a shank cuts through the root mass to open a narrow seed bed -- eliminates the two disk passes and, except for growers using lots of lagoon water, the need to dammer dike. Growers can even pull a planter behind the implement making planting a one-pass operation.

While fewer trips across the field should translate into fuel savings, Sass sees another benefit -- getting the corn crop in the ground faster.

Delaying planting by even just a few days can cost growers in terms of yield. In the Magic Valley, producers can expect to lose a half bushel of potential yield each day planting is delayed past May 10. After May 20, the yield loss jumps to a bushel a day and after May 31 the loss is 1.5 bushel per day.

"This lets the crop get planted a few days earlier," Sass said. "That should increase corn yields."

Compaction is a problem corn growers face. Every ton of force that runs over wet soil can drive compaction down an inch. That means an 18-wheeler filled with silage can drive the compaction 8 to 10-1/2 inches deep, said Mike Petersen, precision tillage agronomist for Orthman Agricultural. The central Nebraska manufacturer has been building strip till equipment for six years.

While corn roots can grow up to 80 inches deep, the roots are essentially lazy and stop growing once a compacted layer is reached. If that layer is 10 inches below the soil surface, growers have a real problem in late summer.

"When you're just farming the top 10 inches of soil on these coarse soils, you can't put enough (irrigation) water on," Sass said, "especially in late July and early August."

Petersen said six years of replicated trials in eastern Colorado have shown that using strip tillage versus the conventional preplant tillage regime of chiseling once, disking twice and then finishing the field improved water infiltration by 2.5 to 5 times. Getting both water and roots farther into the soil have bumped corn yields from 202 bu. per acre in 2000 to 278 bu. per acre in 2005.

To determine where the compacted soil layer in a field is, Petersen recommends digging a hole 18 to 24 inches deep and then sticking a pocket knife into the soil profile at 1-inch intervals. Where the knife encounters resistance is where corn roots will cease to grow.

And growers shouldn't forget to check where the compacted layer is in each field.

Petersen has seen growers check one field and then work 2,500 acres assuming the compacted layer is at the same depth. It's not. And growers can waste a lot of fuel pulling a strip till implement at 12 inches if the compacted layer is at 8.5 inches instead.

To get through compacted soil in the Magic Valley, many growers have been using sub soilers. One problem with a sub soiler, Petersen said, is that the soil tends to boil ahead of the shank and then tumble, which can leave clods and dry pockets. And growers still have to do another one or two tillage passes to prepare the field for planting after a sub soiler is used.

With strip tillage, the soil is parted into a narrow seed bed. That prevents clods from forming and saves soil moisture, while breaking up the compacted layer below.

"We want to get plants with roots that can withstand drought and other stresses," Petersen said.