

March 31, 2009 News of University of Minnesota Strip-Till Field Research Results

After a year of wild fluctuations, dry and wet, we have received a report from Andrew Scobbie, University of Minnesota Field Specialist, of some interesting results of 5 field sites in Minnesota. These strip-till comparisons all occurred under natural rainfed systems and fertilized according to soil testing procedures.

The table below demonstrates that strip-till hangs in there with the more tried and true conventional tillage systems of the last 75 years in Minnesota. The potentials really ring loud when one takes into account the less fuel consumption, labor, and time in the field. Yes that was not part of the study, however we would want to consider that as another point evaluate.

University of Minnesota - Strip-Till Comparison Trials 2008

Site: Morris

Tillage Practice:	Population	Residue Pct @planting	Stalk Lodging %	Stem Rot %	Harvest Moist %	Yield (bu/ac)
Ch/R/Spr cult	33540	26.5	N/A	N/A	27.2	120.8
Moldboard	33430	12.0	N/A	N/A	25.4	120.8
Strip-Till	35065	64.5	N/A	N/A	27.6	116.8

Site: Boyd

Tillage Practice:	Population	Residue Pct @planting	Stalk Lodging %	Stem Rot %	Harvest Moist %	Yield (bu/ac)
Ch/R/Spr cult	32280	40.1	N/A	N/A	18	153.2
Moldboard	32910	10.8	N/A	N/A	17.9	159.4
Strip-Till	33310	55.6	N/A	N/A	17.9	156.8

Site: Holloway

Tillage Practice:	Population	Residue Pct @planting	Stalk Lodging %	Stem Rot %	Harvest Moist %	Yield (bu/ac)
Ch/R/Spr cult	35500	31.8	N/A	N/A	20.7	139.3
Moldboard	34940	13.0	N/A	N/A	20.8	142.7
Strip-Till	35910	46.3	N/A	N/A	19.4	146.8

Site: Southwest Research Center

Tillage Practice:	Population	Residue Pct @planting	Stalk Lodging %	Stem Rot %	Harvest Moist %	Yield (bu/ac)
Ch/R/Spr cult	30690	34.8	46.3	2.5	16.1	132.1
Moldboard	30500	8.4	53.8	3	16	140.2
Strip-Till	31810	56.6	16.5	0.8	16.2	121.3

Site: Heron Lake

Tillage Practice:	Population	Residue Pct @planting	Stalk Lodging %	Stem Rot %	Harvest Moist %	Yield (bu/ac)
Ch/R/Spr cult	33125	26.8	13.9	4.4	17	196.6
Moldboard	32875	8.9	27.8	5.6	17.1	197.8
Strip-Till	33440	69.9	6	3.8	16.5	197.9

Note: Ch/R/Spr Cult – tillage treatment of chisel plow or disk rip or V-rip followed by field cultivator in the spring; Moldboard – moldboard plow; Strip-Till with Orthman 1tRIPr

Take home messages:

We would like to point out several items as you consider from the above information in the table what is it for me to consider? Yields do stand well in comparison to the common practices used for many years in Minnesota. To estimate what savings in fuel might be, consider moldboard plow and followup operations to prepare the seedbed is 8.0 to 11.5 gallons per acre (gpa) compared to 1.1 to 1.6 gpa with the strip-till implement. At \$2.65 /gallon fuel that is a savings of \$18.25 - \$27.55/acre. Even at the Southwest Research or Morris site that makes a difference.

The amount of time to strip-till versus the varying number of passes with chisel system or moldboard plow is a value very important in the spring window for tillage and planting or even during the fall after harvest. Another point for contemplation.

Looking at the two sites with data (Heron Lake and Southwest Research Center) the lodging information follows what we have observed in several other locations across the U.S. as to health of the plants later in the season and the substantial brace root systems in a top notch strip-till program. Stalk lodging is dramatically less as is in the stem rot issues.

As you look at the residue percent at planting time, folks watching their erosional issues can take heart that strip-tillage is offering a greater percentage of the ground still covered with previous crops aftermath. That is a good thing folks. Also, consider what is the potential with the carbon credit and trading issue with more crop residue. When there is less than 10% cover with residues, no opportunity to participate in the carbon trading is there? If one takes this the next step; 56% of the previous crop if corn at 155 bu/ac that would have been 7750lbs of residue left after the combine and 56% is remaining at planting when rains will come means there is 4340lbs/acre remaining. With a little over 2 tons/acre folks; that means something to reducing runoff and offering wind protection to the tiny plants in May.



I realize this is one year's worth of data. But this data is another example of what we see all across the northern tier States and many other locations. Strip-tillage is not always about yields, but savings in dollars of input, better stands as you can see the plant/emergence populations was very good in these 5 sites.

We at Orthman Manufacturing, Inc. believe strip-tillage is the sound conservation practice to provide you a way to reduce fuel costs, reduce your labor inputs, gain erosion protection, change the bottomline to a better figure for profits, offer the banker you work with another option to improve investment returns and value in your operating capital. Ask yourself what makes the difference in today's market and your balance sheet. Is it always just yield? Yes yield means there is a better trend to potentially make money, but what did it take to make that margin? Then there are the long term points; soil quality, soil tilth, water intake of the soils, able to plant when you go to the field when strip-tilled in the fall (if possible), less soil compaction, less erosion and more.

The good folks at University of Minnesota Extension Service are planning a field day at their Lamberton, MN research site for August 2009. This data and other data points the way that strip-tillage systems are a viable way to farm far into the future with a good outcome.

By: Michael Petersen, Orthman Agronomist – Lexington, Nebraska

