

## What I've Learned About the Economics of Reduced Tillage

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Gill Farms has 1600 tillable acres, sweet corn is the main crop with 100 acres mixed vegetables, 150 grain corn, 1350 sweet corn. In spring of 2008 a 12 row Unverferth model 130 zone builder was purchased. 1200 acres were planted in 2008 using the zone-builder. We transitioned to zone tillage for cost savings, benefits to soil and yield increase.

### Conventional Tillage

The way we did our conventional tillage for our spring planting soil preparation on 1500 acres of corn was to use three tractors and three 5 bottom plows. The three tractors and plows will do 20 acres each, a total of 60 acres a day. The fuel usage for each would be 75 gallons a day, a total of 225gal/day. The cost of fuel at \$4.50/gal times the 225gallons would give you a cost of \$1012.50/day. For 1500 acres at 60 acres a day it would take 25 days and a total of \$25,312.50 worth of fuel for plowing. The labor involved 3 men working a 10 hour day at \$11.00/hr, for 25 days. The cost of labor to plow would be \$8,250.00. The total cost to plow using the machinery (\$25,312.50) and labor (\$8,250.00) is \$33,562.50.

The disking took 1 tractor and disk to do 100 acres/day/double cut and use 100 gallons of fuel a day at cost of \$450.00/day. The acres disked totaled 3000 acres. The total fuel cost for the 3000 acres at \$4.50/gallon comes to \$13,500.00. The labor for this involved 1 man working a 10 hour day at \$13.00/hr for 30 days at a total cost of \$3,900.00. The total cost to disk using the machinery (\$13,500.00) and labor (\$3,900.00) is \$17,400.00.

To roller harrow took 1 tractor and roller harrow to do 50 acres/day and 35 gallons of fuel a day at a cost of \$157.50/day. It would do 300 acres in 6 days using 210 gallons of fuel totaling \$945.00. The labor involved 1 man working a 5 hour day at \$11.00/hr for a total of \$330.00. The total cost to roller harrow using the machinery (\$945.00) and labor (\$330.00) is \$1,275.00.

The total cost for spring planting soil preparation using the conventional tillage by adding the three totals would be plowing (\$33,562.50), disking (\$17,400.00) and roller harrowing (\$1,275.00) is \$52,237.50.

The fall soil preparation in the conventional method used a tractor and disk to disk in stubble. It would do 80 acres/day and use 80 gallons of fuel a day at cost of \$360.00/day.

This would take 18.75 days to do 1500 acres and use 1500 gallons total at a cost of \$6,750.00.

The labor involved 1 man working a 10 hour day at \$13.00/hr for 18.75 days for a cost of \$2,437.50. The total cost to disk using the machinery (\$6,750.00) and labor (\$2,437.50) is \$9,187.50.

The v-ripping involved 3 tractors to do 30 acres/day using 80 gallons of fuel a day for each. Three tractors used a total of 240gal/day at a cost of \$4.50/gal for a total cost of \$1,080.00/day. It took 16.67 days times the \$1,080.00/day gives you a total cost of fuel of \$18,003.60. The labor involved 3 men working a 10 hour day at \$11.00/hr for 16.67 days. The cost of labor to v-rip would be \$5,501.10. The total cost to v-rip using the machinery (\$18,003.60) and labor (\$5,501.10) is \$23,504.70.

The total cost for the fall soil preparation using the conventional method by adding the two totals of disking (\$9,187.50) and v-ripping (\$23,504.70) is \$32,692.20.

The cost for using conventional tillage of soil preparation in spring was (\$52,237.50) and for fall was (\$32,692.20) making the overall cost a total of \$84,929.70.

### **Zone Tillage**

Using the zone tillage method of soil preparation before spring planting on the 1500 acres, we would use 1 tractor and disk that would do 100 acres/day for 15 days. It used 100 gallons of fuel a day for a total of 1500 gallons at a cost of \$6,750.00. The labor involved 1 man working a 10 hour day at \$13.00/hr for 15 days for a cost of \$1,950.00. The total cost for disking using the machinery (\$6,750.00) and labor (\$1,950.00) is \$8,700.00.

The zone tilling involved 1 tractor that would do 50 acres/day for 30 days. It used 40 gallons of fuel a day for a total of 1200 gallons at a cost of \$5,400.00. The labor involved 1 man working a 5 hour day at \$11.00/hr for 30 days for a cost of \$1,650.00. The cost for tilling using the machinery (\$5,400.00) and labor (\$1,650.00) is \$7,050.00.

The cost for the spring planting soil preparation using the zone tillage method by adding the disking (\$8,700.00) and zone tilling (\$7,050.00) totals \$15,750.00.

The fall soil preparation in the zone tillage method used a tractor and disk to disk in stuble and a cover crop. The tractor had to go over the 1500 acres twice and it did 80 acres/day for 37.5 days. It used 80 gallons of fuel a day for a total 3,000 gallons at a cost of \$13,500.00. The labor involved 1 man working a 10 hour day at \$13.00/hr for 37.5 days for a cost of \$4,875.00. The total cost for the fall soil preparation by adding the machinery (\$13,500.00) and the labor (\$4,875.00) is \$18,375.00.

The overall cost for using the zone tillage method by adding the spring planting soil preparation (\$15,750.00) and the fall soil preparation (\$18,375.00) is \$34,125.00.

Looking at the cost of the zone tillage (\$34,125.00) compared to the conventional tillage (\$84,929.70), a savings of \$50,804.70 is realized by the use of the zone tillage method.