



Tillage Study - 2009 Corn / Soybean and Continuous Corn Rotations

Planted: May 20, 2009
Harvested: October 13, 2009
Soil Type: Uniontown Silt Loam/
 Ragsdale Silt Loam
Population: 32,500 seeds/A.
Rows: 30" rows

Previous Crop: Soybeans / Corn
Tillage: Fall Chisel / Field Cultivator
Herbicide: Pre: 1.5 qts. Harness Xtra
 1 qt. Atrazine
 Post: 32 oz. Cornerstone
Insecticide: 6 oz. Artic
Product Tested: BECK 5716A3

RAINFALL	
April	7.0 in.
May	5.9 in.
June	4.1 in.
July	7.2 in.
August	1.4 in.
Total	25.6 in.

Purpose: Due to the wide variety of tillage practices utilized by growers in the south, there have been numerous studies conducted at the Southern PFR farm over the past five years to help our customers determine which system might work best for their farm. This is the second year for the tillage study in its current format, which compares conventional tillage to both no-till and strip-tillage systems. These tillage practices were compared in both a corn/soybean and continuous corn rotation. A comparison between banded and broadcast fertilizer applications was also made in the corn rotations while the fertilizer comparison was only made in the conventional and strip-till portions of the soybean rotation.

CORN AFTER SOYBEANS

Fertilizer	Harvested Population	Test [†] Weight	Percent Moisture	Bushels [†] Per Acre
<u>NO-TILL</u>				
Broadcast 4-11-45	28,333	55.1	22.4	205.2
Banded Liquid	<u>30,000</u>	<u>55.0</u>	<u>22.0</u>	<u>214.1</u>
AVERAGE	29,167	55.1	22.2	209.7
<u>STRIP-TILL</u>				
Broadcast 4-11-45	27,000	55.3	21.9	211.8
Banded 4-11-45	<u>28,667</u>	<u>54.9</u>	<u>21.7</u>	<u>216.3</u>
AVERAGE	27,834	55.1	21.8	214.1
<u>CONVENTIONAL-TILL</u>				
Broadcast 4-11-45	31,000	55.2	21.6	213.9
Banded 4-11-45	<u>31,667</u>	<u>55.6</u>	<u>21.6</u>	<u>205.5</u>
AVERAGE	31,334	55.4	21.6	209.7

CONTINUOUS CORN

Fertilizer	Harvested Population	Test [†] Weight	Percent Moisture	Bushels [†] Per Acre
<u>NO-TILL</u>				
Broadcast 4-11-45	28,000	53.7	22.6	207.8
Banded Liquid	<u>30,000</u>	<u>52.9</u>	<u>21.6</u>	<u>206.4</u>
AVERAGE	29,000	53.3	22.1	207.1
<u>STRIP-TILL</u>				
Broadcast 4-11-45	31,000	53.5	21.1	205.6
Banded 4-11-45	<u>28,667</u>	<u>53.8</u>	<u>21.8</u>	<u>208.5</u>
AVERAGE	29,834	53.7	21.5	207.1
<u>CONVENTIONAL-TILL</u>				
Broadcast 4-11-45	30,667	54.6	21.6	207.3
Banded 4-11-45	<u>30,333</u>	<u>54.3</u>	<u>23.2</u>	<u>201.0</u>
AVERAGE	30,500	54.5	22.4	204.2

[†]Bushels per acre and test weight corrected to 15% moisture.



No-Till vs. Strip-Till vs. Conventional-Till Corn / Soybean and Continuous Corn Rotations – Continued

Planted: May 20, 2009
Harvested: September 29, 2009
Rows: 30" rows
Seeding Rate: 128,000 seeds/A.
Product Tested: BECK 399NR
Previous Crop: Corn

Tillage: Conventional: Chisel / Field Cultivator
(three times)
Herbicide: Pre: 32 oz. Cornerstone
(No-Till/Strip-Till) 4 oz. FirstRate
 Early Post: 25 oz. Cornerstone
 4 oz. Shadow
 Post: 32 oz. Cornerstone

RAINFALL	
April	6.96 in.
May	5.90 in.
June	4.08 in.
July	7.15 in.
August	1.43 in.
Total	25.52 in.

SOYBEANS AFTER CORN

Fertilizer	Harvested Population	Percent Moisture	Bushels [†] Per Acre
<u>NO-TILL</u>			
Broadcast 4-11-45	105,035	13.5	67.9
No-Fertilizer	<u>96,564</u>	<u>13.4</u>	<u>68.0</u>
AVERAGE	100,800	13.5	67.9
<u>STRIP-TILL</u>			
Broadcast 4-11-45	113,263	13.2	62.3
Banded 4-11-45	<u>103,098</u>	<u>13.1</u>	<u>63.9</u>
AVERAGE	108,181	13.2	63.1
<u>CONVENTIONAL-TILL</u>			
Broadcast 4-11-45	117,618	13.6	60.9
Banded 4-11-45	<u>116,893</u>	<u>13.7</u>	<u>67.8</u>
AVERAGE	117,256	13.7	64.3

[†]Bushels per acre corrected to 13% moisture.

Summary: Corn after Soybeans

Although strip-till provided the highest average yields in this portion of the study for 2009, it was promising to see no difference between the average yield of the no-till and conventional-till entries. Banding fertilizer provided higher yields in both the no-till and strip-till comparisons this year while broadcasting fertilizer provided the highest yield in the conventional-till comparison. The two year average shows less than a 3 Bu./A. variation between conventional-till and strip-till yields for this rotation while no-till yields are approximately 10% lower.

Continuous Corn

Both no-till and strip-till provided an average 2.9 Bu./A. advantage over conventional-till in this year's study. Broadcasting fertilizer continued to show an advantage to banding in the conventional-till comparison while there was little difference noted in the no-till and strip-till comparisons. The two year average shows less than a 3 Bu./A. variation between conventional-till and strip-till yields for this rotation while no-till yields are approximately 10% lower.

Soybeans after Corn

No-tilling soybeans into standing corn stalks provided the highest yields in this year's study. Banding fertilizer provided a yield advantage in both the strip-till and conventional-till comparisons. The two year average shows less than 1.5 Bu./A. variation in yields for all three tillage practices in soybeans.