

## FIELD EXPERIMENT HISTORY

**Title:** Tillage in Corn and Soybean Production Systems  
**Experiment:** 17Tillage **Trial ID:** 3272 **Year:** 2014  
**Personnel:** J. G. Lauer, T. H. Diallo, K. D. Kohn  
**Location:** Arlington, WI **County:** Columbia  
**Supported By:** HATCH

### Site Information

**Field:** 396 **Previous Crop:** Corn / Soybean **Soil Type:** Plano Silt Loam  
**Soil Test:** **Date:** 11/11/2014 **pH** 6.4 **OM (%)** 2.9 **P (ppm)** 19 **K (ppm)** 94

### Plot Management

**Tillage Operations:** See Factors

	<u>Analysis:</u>	<u>Rate lbs/A:</u>	<u>Date:</u>
<b>Fertilizer:</b>			
<b>Preplant :</b>	N/A	N/A	N/A
<b>Starter :</b>	N/A	N/A	N/A
<b>Post plant :</b>	28-0-0	CC:190 CS: 160	6/04/2014
<b>Manure:</b>	N/A	N/A	N/A
<b>Herbicide:</b>	C & S: Roundup Powermax 28 oz/A 5/9/14 Defy 16 oz/A 5/9/14 Roundup Powermax 28 oz/A 6/16/14 Roundup Powermax 28 oz/A 7/9/14	<b>Insecticide:</b> None	
		<b>Hybrid/Variety:</b> C: Dekalb DKC48-12 RIB(GENSS) S: Pioneer 92Y30	
<b>Irrigation:</b>	None		
<b>Planting Date:</b>	Corn: 5/29/14 Soybean: 6/5/14	<b>Row Width:</b> 30"	
<b>Planting Method:</b> JD1700 w/ RTK		<b>Planting Depth:</b> Corn: 1.5" Soybean: 1"	
<b>Target Plant Density:</b> 34000 - 40000 <b>Plants/Acre</b>		<b>Harvest Method:</b> C: MF 8XP plot combine S: Almaco plot combine	
<b>Harvest Date:</b> Corn: 11/03/14 Soybean: 10/28/14			
<b>Notes:</b>			

### Experimental Design

**Design:** RCB Split-plot **Replications:** 4  
**Plot Size Seeded:** 10' x 50' **Experiment Size:** 3.6 A  
**Harvest Plot Size:** 5' x 45.5'  
**Factors/Treatments:**

<u>Rotation</u>	<u>Tillage For All Rotations:</u>	<u>Plant density (plants/A):</u>
Continuous Corn	1) CP: Fall chisel plow +2 spring field cultivator	1) 34000
Corn / Soybean	2) T1: Fall Strip-Till, knife 9in., Full Berm	2) 40000
Soybean / Corn	3) T2: Fall Strip-Till, knife 9in., No Berm	
	4) T3: Fall Strip-Till, knife 6in., Full Berm	
	5) T4: Fall Strip-Till, knife, No Berm	
	6) NT: Spring 1-13 wave coulters	

**Results: Tables 1417-01 & 1417-02**

**Table:1417-01 .Tillage, Rotation and Date of Planting in Corn and Soybean  
Production Systems - Corn. Arlington, WI - 2014.**

Rotation	Tillage	Planting		Moisture %	Test weight lbs/bu	Lodged			Harvest density plants/A	Return \$3.67/bu \$/A
		Density plants/A	Yield bu/A			Total %	Root %	Stalk %		
CC			167	23.8	49.7	0.1	0.1	0.1	36542	548
SC			170	23.2	51.0	0.0	0.0	0.0	37521	559
	CP		166	22.7	50.8	0.2	0.0	0.2	36438	548
	NT		161	23.0	50.3	0.2	0.2	0.0	36438	529
	T1		170	23.8	51.2	0.0	0.0	0.0	37688	556
	T2		173	23.4	51.1	0.0	0.0	0.0	36938	567
	T3		172	24.2	49.7	0.0	0.0	0.0	37438	561
	T4		171	23.9	49.0	0.0	0.0	0.0	37250	559
		34000	168	23.4	50.9	0.1	0.0	0.1	34375	551
		40000	170	23.6	49.7	0.1	0.1	0.0	39688	555
CC	CP		163	23.3	50.2	0.3	0.0	0.3	36500	534
CC	NT		163	23.5	50.1	0.3	0.3	0.0	36000	534
CC	T1		169	24.2	49.3	0.0	0.0	0.0	37375	551
CC	T2		173	23.1	50.0	0.0	0.0	0.0	36375	569
CC	T3		169	24.4	49.6	0.0	0.0	0.0	36500	551
CC	T4		168	24.3	48.8	0.0	0.0	0.0	36500	549
SC	CP		170	22.2	51.4	0.0	0.0	0.0	36375	561
SC	NT		159	22.5	50.5	0.0	0.0	0.0	36875	524
SC	T1		171	23.3	53.1	0.0	0.0	0.0	38000	562
SC	T2		173	23.7	52.2	0.0	0.0	0.0	37500	566
SC	T3		175	24.0	49.7	0.0	0.0	0.0	38375	571
SC	T4		174	23.5	49.2	0.0	0.0	0.0	38000	570
CC		34000	168	23.9	49.8	0.1	0.0	0.1	33667	550
CC		40000	167	23.7	49.6	0.1	0.1	0.0	39417	546
SC		34000	168	22.9	52.1	0.0	0.0	0.0	35083	553
SC		40000	172	23.5	49.9	0.0	0.0	0.0	39958	565
	CP	34000	164	23.0	50.3	0.3	0.0	0.3	34750	538
	CP	40000	169	22.5	51.3	0.0	0.0	0.0	38125	557
	NT	34000	165	22.7	50.7	0.0	0.0	0.0	33875	543
	NT	40000	157	23.3	50.0	0.3	0.3	0.0	39000	515
	T1	34000	168	23.8	52.7	0.0	0.0	0.0	35125	549
	T1	40000	172	23.7	49.7	0.0	0.0	0.0	40250	563
	T2	34000	174	22.9	52.6	0.0	0.0	0.0	33750	571
	T2	40000	172	23.9	49.6	0.0	0.0	0.0	40125	564
	T3	34000	166	23.9	50.4	0.0	0.0	0.0	34125	543
	T3	40000	178	24.5	49.0	0.0	0.0	0.0	40750	579
	T4	34000	173	24.0	49.0	0.0	0.0	0.0	34625	565
	T4	40000	169	23.9	48.9	0.0	0.0	0.0	39875	554

continue

**Table:1417-01 .Tillage, Rotation and Date of Planting in Corn and Soybean**  
(continued) **Production Systems - Corn. Arlington, WI - 2014.**

Rotation	Tillage	Planting		Moisture %	Test weight lbs/bu	Lodged			Harvest density plants/A	Return \$3.67/bu \$/A
		Density plants/A	Yield bu/A			Total %	Root %	Stalk %		
CC	CP	34000	164	23.5	49.9	0.7	0.0	0.7	33750	539
CC	CP	40000	161	23.1	50.5	0.0	0.0	0.0	39250	529
CC	NT	34000	165	23.5	50.5	0.0	0.0	0.0	33250	540
CC	NT	40000	161	23.5	49.8	0.7	0.7	0.0	38750	528
CC	T1	34000	167	24.5	49.6	0.0	0.0	0.0	34750	544
CC	T1	40000	171	24.0	49.0	0.0	0.0	0.0	40000	558
CC	T2	34000	176	22.9	50.4	0.0	0.0	0.0	32750	579
CC	T2	40000	171	23.4	49.6	0.0	0.0	0.0	40000	560
CC	T3	34000	165	24.6	49.8	0.0	0.0	0.0	33250	539
CC	T3	40000	172	24.2	49.4	0.0	0.0	0.0	39750	562
CC	T4	34000	171	24.3	48.6	0.0	0.0	0.0	34250	560
CC	T4	40000	165	24.3	49.0	0.0	0.0	0.0	38750	538
SC	CP	34000	163	22.4	50.8	0.0	0.0	0.0	35750	537
SC	CP	40000	177	21.9	52.1	0.0	0.0	0.0	37000	586
SC	NT	34000	165	21.9	50.9	0.0	0.0	0.0	34500	546
SC	NT	40000	153	23.1	50.2	0.0	0.0	0.0	39250	501
SC	T1	34000	169	23.1	55.9	0.0	0.0	0.0	35500	554
SC	T1	40000	173	23.4	50.4	0.0	0.0	0.0	40500	569
SC	T2	34000	171	22.9	54.8	0.0	0.0	0.0	34750	563
SC	T2	40000	174	24.4	49.6	0.0	0.0	0.0	40250	568
SC	T3	34000	166	23.1	50.9	0.0	0.0	0.0	35000	546
SC	T3	40000	183	24.9	48.5	0.0	0.0	0.0	41750	596
SC	T4	34000	174	23.6	49.4	0.0	0.0	0.0	35000	570
SC	T4	40000	174	23.4	48.9	0.0	0.0	0.0	41000	570
Mean			169	23.5	50.3	0.1	0.0	0.0	37031	553
<b>Probability (%)</b>										
Rotation (R)			57.0	42.0	13.4	39.2	39.3	39.3	10.6	47.2
Tillage (T)			7.1	11.2	34.4	50.8	43.8	43.8	43.8	12.0
Plant Density (PD)			55.4	39.7	7.8	96.8	32.4	32.4	0.0	63.2
R x T			75.6	66.9	58.0	50.8	43.8	43.8	81.2	71.7
R x PD			25.0	19.8	15.4	96.8	32.4	32.4	31.3	32.6
T x PD			25.3	71.3	44.2	27.8	42.9	42.9	31.8	23.6
R x T x PD			74.3	87.9	77.6	27.8	42.9	42.9	50.2	69.7
<b>LSD (0.10)</b>										
Rotation (R)			NS	NS	NS	NS	NS	NS	NS	NS
Tillage (T)			7	NS	NS	NS	NS	NS	NS	NS
Plant Density (PD)			4	NS	1.1	NS	NS	NS	722	NS
R x T			11	NS	NS	NS	NS	NS	NS	NS
R x PD			8	NS	NS	NS	NS	NS	NS	NS
T x PD			10	NS	NS	NS	NS	NS	NS	NS
R x T x PD			15	NS	NS	NS	NS	NS	NS	NS

**Table:1417-02 .Tillage, Rotation and Planting Density in Corn and Soybean  
Arlington, WI - 2014.**

Tillage treatment	Yield bu/A	Moisture %	Return \$10.50/bu \$/A
CP	53	11.6	544
NT	55	11.7	560
T1	55	11.8	562
T2	55	11.6	565
T3	55	11.6	565
T4	56	11.7	577
Mean	55	11.7	562
<b><u>Probability(%)</u></b>			
Tillage (T)	50.0	76.3	50.0
<b><u>LSD(0.10)</u></b>			
Tillage (T)	NS	NS	NS