

FIELD EXPERIMENT HISTORY

Title: Corn - Soybean Response to Tillage and Rotation
Experiment: 09CS **Trial ID:** 6061 **Year:** 2016
Personnel: Joe Lauer, Thierno Diallo, Kent Kohn,
Location: Arlington, WI **County:** Columbia
Supported By: HATCH

Site Information

Field: 334 **Previous Crop:** See factors **Soil Type:**
Soil Test Date: 11/1 /16 **pH** 5.8 **OM (%)** 3.2 **P (ppm)** 23 **K (ppm)** 200

Plot Management

<u>Tillage Operations:</u>	<u>Soil Finisher</u>	<u>Analysis:</u>	<u>Rate lbs/A:</u>	<u>Date:</u>
Fertilizer:	Preplant :	N/A	N/A	N/A
	Starter :	N/A	N/A	N/A
	Post plant :	28-0-0	CC: 190 CS: 160	6 /12/16
	Manure:	N/A	N/A	N/A
Herbicide:	Radar LV 16 oz/A 4/29/16 Durango DMA 22 oz/A 4/29/16 Medal II EC 24 oz/A 4/29/16 Durango DMA 22 oz/A 6/18/16		Insecticide:	See Seed Treatments
			Hybrid:	C: Pioneer P0157 AMX S: Syngenta S20T6
Irrigation:	No		Row Width:	30"
Planting Date:	C: 5/17/16 S: 5/5/16		Planting Depth:	1.5"
Target Plant Density:	Corn: 32500 Plants/A Soybean: 150000 Plants/A		Planting Method:	JD 1700 with RTK
Harvest Date:	C: 10/27/16 S: 10/18/16		Harvest Method:	MF 8XP plot combine

Notes:

Experimental Design

Design: RCB split-split-plot **Replications:** 4
Plot Size Seeded: MP: 30' x 70' **Experiment Size:** 2.7 A
Harvest Plot Size: 5' x 31'

Factors/Treatments:

Tillage

- 1) NT
- 2) CT

Rotation: 2016 Treatments

- 1) CCCCCSSSSS-4C
- 2) CCCCCSSSSS-3C
- 3) CCCCCSSSSS-2C
- 4) CCCCCSSSSS-1C
- 5) CCCCCSSSSS-5S
- 6) CCCCCSSSSS-4S
- 7) CCCCCSSSSS-3S
- 8) CCCCCSSSSS-2S
- 9) CCCCCSSSSS-1S
- 10) CCCCCSSSSS-5C
- 11) CC-1C
- 12) CS-1S
- 13) CS-1C
- 14) SS-1S

Results: Tables 1609-07 & 1609-08

**Table 1609-07. Corn/Soybean Rotation and Tillage Study - Corn.
Arlington, WI - 2016.**

Tillage	Rotation	Yield bu/A	Moisture %	Test weight lbs/bu	Lodged			Harvest density plants/A	AGI \$3.44/bu \$/A
					Total %	Stalk %	Root %		
Conv		233	22.6	53.6	0.1	0.1	0.1	28622	713
Notill		216	23.4	53.3	0.1	0.0	0.1	29843	661
	1C	244	21.9	53.7	0.3	0.1	0.2	29403	751
	2C	226	23.3	52.7	0.2	0.2	0.0	28279	691
	3C	205	23.5	53.3	0.0	0.0	0.0	28818	624
	4C	218	23.4	53.5	0.2	0.1	0.1	29649	666
	5C	223	23.7	53.3	0.1	0.0	0.1	29485	681
	C	238	22.6	53.8	0.0	0.0	0.0	30375	731
	CC	217	22.9	53.6	0.1	0.0	0.0	28618	666
Conv	1C	246	21.9	53.7	0.4	0.2	0.2	28572	757
Conv	2C	229	22.8	52.7	0.3	0.3	0.0	26721	703
Conv	3C	221	23.0	53.4	0.0	0.0	0.0	29157	676
Conv	4C	227	22.9	53.9	0.3	0.2	0.1	29274	696
Conv	5C	240	23.1	53.9	0.1	0.0	0.1	28759	734
Conv	C	245	22.4	54.3	0.0	0.0	0.0	30024	752
Conv	CC	220	22.5	53.8	0.0	0.0	0.0	27846	676
Notill	1C	242	21.9	53.8	0.2	0.1	0.2	30234	745
Notill	2C	223	23.8	52.8	0.0	0.0	0.0	29836	679
Notill	3C	188	24.0	53.3	0.1	0.1	0.0	28478	572
Notill	4C	209	23.9	53.1	0.2	0.1	0.1	30024	636
Notill	5C	207	24.3	52.8	0.2	0.0	0.2	30211	628
Notill	C	232	22.8	53.4	0.1	0.0	0.1	30726	709
Notill	CC	215	23.2	53.5	0.2	0.1	0.1	29391	656
Mean		225	23.0	53.4	0.1	0.1	0.1	29232	687
Probability(%)									
Tillage (T)		1.3	0.8	21.2	78.8	48.1	70.7	8.6	1.1
Rotation (R)		0.0	0.0	30.7	20.8	20.8	28.3	31.3	0.0
T x R		4.8	14.6	70.2	41.7	17.2	96.1	56.4	3.7
LSD(0.10)									
Tillage (T)		7	0.3	NS	NS	NS	NS	1139	22
Rotation (R)		10	0.4	NS	NS	NS	NS	NS	29
T x R		14	NS	NS	NS	NS	NS	NS	41

**Table 1609-08. Corn/Soybean Rotation and Tillage Study - Soybean.
Arlington, WI - 2016.**

Tillage	Rotation	Yield bu/A	Moisture %	AGI \$8.48/bu \$/A
Conv		59	13.6	487
Notill		60	13.3	493
	1S	71	13.4	582
	2S	63	13.4	517
	3S	52	13.2	431
	4S	57	13.6	472
	5S	55	13.4	451
	S	68	13.4	562
	SS	50	13.5	414
Conv	1S	71	13.6	585
Conv	2S	59	13.5	489
Conv	3S	53	13.4	439
Conv	4S	55	13.7	457
Conv	5S	53	13.5	437
Conv	S	66	13.5	541
Conv	SS	56	13.6	462
Notill	1S	70	13.2	579
Notill	2S	66	13.2	546
Notill	3S	51	13.1	424
Notill	4S	59	13.5	488
Notill	5S	56	13.3	465
Notill	S	71	13.2	583
Notill	SS	44	13.3	366
Mean		59	13.4	490
<u>Probability(%)</u>				
	Tillage (T)	54.7	0.3	52.3
	Rotation (R)	0.0	0.0	0.0
	T x R	0.0	77.8	0.0
<u>LSD(0.10)</u>				
	Tillage (T)	NS	0.1	NS
	Rotation (R)	3	0.1	26
	T x R	4	NS	36