

FIELD EXPERIMENT HISTORY

Title: Tillage in Corn and Soybean Production Systems
Experiment: 17Tillage **Trial ID:** 6257 **Year:** 2018
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:** 11/12/18 **pH** 6.9 **OM (%)** 3.7 **P (ppm)** 60 **K (ppm)** 186

Plot Management

Tillage Operations: See Factors

	<u>Analysis:</u>	<u>Product Rate lbs/A:</u>	<u>Date:</u>
Fertilizer:			
Preplant :	0-0-60	125 lb/A	4 /30/18
Starter :	9-23-31	160 lb/A	5/8/18
	0-0-62	140 lb/A	5/8/18
Post plant :	28-0-0	CC: 678	6/6/18
		CS: 571	6/6/18
Manure:	N/A	N/A	N/A

Herbicide: Medal II EC 24 oz/A 4/27/18
 Tomahawk 5 @ 22 oz/A 4/27/18
 Tomahawk 5 @ 22 oz/A 6/7/18

Hybrid/Variety: C: SS: Dekalb DKC55-84RIB
 S: RR: Syngenta NK Brand S20-T6

Irrigation: NO

Planting Date: C: 5/8/18
 S: 4/30/18

Row Width: 30"
Planting Depth: C: 1.5"
 S: 1"

Planting Method: JD1700 w RTK

Target Plant Density: 35000 **Plants/Acre**

Harvest Method: C: MF 8XP plot combine
 S: Almaco plot combine

Harvest Date: C: 10/23/18
 S: 10/16/18

Notes: T2 and T3 were similar as well as T4 and T5 in 2016

Experimental Design

Design: RCB Split-plot

Replications: 4

Plot Size Seeded: 10' x 50'

Experiment Size: 3.6 A

Harvest Plot Size: 5' x 46'

Factors/Treatments:

<u>Rotation</u>	<u>Tillage:</u>	<u>Fungicide:</u>
1) CC	1) Rotational tillage: NT with fertilizer surface broadcast (2016)	1) S1 - UTC
2) CS	2) T1: Strip-Till with fertilizer banded. Soybean planted to 15-inch rows.	2) S2 - 4 fl oz/a Priaxor
	3) T2: Strip-Till with fertilizer banded. Soybean planted to 30-inch rows.	in-furrow
	4) T3: Strip-Till with fertilizer surface broadcast. Soybean planted to 15-inch rows.	
	5) T4: Strip-Till with fertilizer surface broadcast. Soybean planted to 30-inch rows.	
	6) NT: Spring one 13-wave coulter with trash whippers on planter; with fertilizer surface broadcast	

Results: Tables 1817-01 & 1817-02

**Table:1817- 01 .Tillage in Corn and Soybean Production Systems - Corn
Arlington, WI - 2018.**

Rotation	Tillage	Fungicide	Yield bu/A	Moisture %	Test weight lbs/bu	Lodged			Harvest density plants/A	AGI \$.44/bu \$/A
						Total %	Stalk %	Root %		
CC			206	25.6	51.4	4.1	1.9	2.1	33583	621
SC			221	23.0	52.8	4.4	3.6	0.9	33563	677
	NT		209	23.9	52.6	5.6	3.1	2.6	34313	635
	RT		199	25.2	51.7	3.1	2.8	0.4	32313	601
	T1		217	23.8	52.1	4.5	3.1	1.4	34063	660
	T2		225	24.1	52.0	2.4	0.9	1.5	33688	684
	T3		220	24.7	52.2	4.6	2.8	1.8	33500	665
	T4		214	24.0	52.1	5.2	3.9	1.3	33563	652
		Priaxor	215	24.4	52.0	3.7	2.4	1.3	33500	652
		UTC	213	24.1	52.2	4.8	3.1	1.7	33646	646
CC	NT		201	25.1	51.9	2.6	0.7	1.9	33500	606
CC	RT		190	26.4	50.8	3.9	3.1	0.7	32750	570
CC	T1		211	25.3	51.2	4.0	1.5	2.5	34125	636
CC	T2		217	25.6	51.4	4.0	1.1	2.9	33750	651
CC	T3		215	25.4	51.8	5.5	2.2	3.2	33625	648
CC	T4		205	25.4	51.6	4.4	2.9	1.5	33750	616
SC	NT		216	22.7	53.4	8.7	5.4	3.3	35125	664
SC	RT		208	23.9	52.6	2.4	2.4	0.0	31875	631
SC	T1		222	22.2	53.1	5.1	4.7	0.3	34000	684
SC	T2		234	22.5	52.5	0.7	0.7	0.0	33625	717
SC	T3		224	24.0	52.7	3.7	3.3	0.4	33375	682
SC	T4		224	22.6	52.7	6.0	4.8	1.1	33375	688
CC		Priaxor	205	25.9	51.3	4.1	1.9	2.2	33083	616
CC		UTC	208	25.2	51.5	4.1	2.0	2.1	34083	626
SC		Priaxor	225	23.0	52.8	3.4	3.0	0.4	33917	689
SC		UTC	218	23.0	52.9	5.5	4.1	1.3	33208	666
	NT	Priaxor	206	24.1	52.3	3.2	2.1	1.1	35000	625
	NT	UTC	212	23.7	52.9	8.1	4.0	4.0	33625	645
	RT	Priaxor	200	25.4	51.7	1.6	1.2	0.4	31750	604
	RT	UTC	198	25.0	51.7	4.7	4.3	0.4	32875	597
	T1	Priaxor	221	23.5	52.3	3.9	2.1	1.8	33875	673
	T1	UTC	213	24.0	52.0	5.1	4.0	1.1	34250	646
	T2	Priaxor	226	24.3	51.6	2.5	1.4	1.1	33750	686
	T2	UTC	224	23.9	52.3	2.2	0.4	1.9	33625	682
	T3	Priaxor	223	25.1	52.1	5.2	2.6	2.5	32875	672
	T3	UTC	217	24.2	52.4	4.0	2.9	1.1	34125	658
	T4	Priaxor	216	24.2	52.3	6.0	5.2	0.8	33750	655
	T4	UTC	213	23.8	52.0	4.4	2.6	1.8	33375	648
CC	NT	Priaxor	200	25.1	51.6	2.3	0.0	2.3	33750	603
CC	NT	UTC	202	25.2	52.1	2.9	1.5	1.5	33250	609
CC	RT	Priaxor	185	26.9	50.8	3.1	2.4	0.8	31750	551
CC	RT	UTC	196	26.0	50.7	4.6	3.9	0.7	33750	588

continue

**Table:1817- 02 .Tillage, Rotation and Planting Density
in Corn and Soybean - Soybean . Arlington, WI - 2018.**

Tillage treatment	Fungicide	Yield bu/A	Moisture %	*AGI \$8.48/bu \$/A
NT		70	12.4	581
RT		67	12.2	552
T1		79	12.4	652
T2		73	12.4	600
T3		74	12.4	612
T4		71	12.4	585
	Priaxor	73	12.4	602
	UTC	72	12.4	592
NT	Priaxor	70	12.5	579
NT	UTC	71	12.4	582
RT	Priaxor	67	12.2	551
RT	UTC	67	12.2	552
T1	Priaxor	81	12.5	670
T1	UTC	77	12.4	635
T2	Priaxor	73	12.4	604
T2	UTC	72	12.3	597
T3	Priaxor	75	12.4	621
T3	UTC	73	12.5	604
T4	Priaxor	71	12.5	587
T4	UTC	71	12.4	583
Mean		72	12.4	597
Probability(%)				
Tillage (T)		0.0	2.2	0.0
Fungicide (F)		19.4	22.6	19.4
T x F		70.6	90.7	70.6
LSD(0.10)				
Tillage (T)		3	0.1	22
Fungicide (F)		NS	NS	NS
T x F		NS	NS	NS

*AGI - Adjusted Gross Income

In 2016, for Reps 1 and 3, T1/T2 was applied to T3/T4; and T3/T4 to T1/T2.