

## FIELD EXPERIMENT HISTORY

**Title:** Tillage in Corn and Soybean Production Systems  
**Experiment:** 17Tillage **Trial ID:** 6422 **Year:** 2019  
**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>
<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: 678 CS: 571	6/26/19 6/26/19
<b>Manure:</b>	N/A	N/A	N/A
<b>Herbicide:</b>	Medal II EC 24 oz/A 5/3/19 Tomahawk 5 @ 28 oz/A 5/3/19 2,4-D Low Vol 4 @ 16 oz/A 5/3/19 Tomahawk 5 @ 32 oz/A 6/29/19		<b>Hybrid/Variety:</b> C: SS:Jung 52SS507RIB S: RR: Asgrow AG20X9
<b>Irrigation:</b> NO		<b>Row Width:</b> 30"	
<b>Planting Date:</b> C: 5/23/19 S: 6/3/19		<b>Planting Depth:</b> C: 1.5" S: 1"	
<b>Planting Method:</b> JD1700 w RTK		<b>Harvest Method:</b> C: MF 8XP plot combine S: Almaco plot combine	
<b>Target Plant Density:</b> 35000 <b>Plants/Acre</b>		<b>Harvest Date:</b> C: 11/5/19 S: 11/24/19	
<b>Notes:</b> 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>Density:</u>
1) CC	1) Rotational tillage: NT with fertilizer surface broadcast (2016)	1) S1 - 35000
2) CS	2) T1: Strip-Till with fertilizer banded. Soybean planted to 15-inch rows.	2) S2 - 45000
	3) T2: Strip-Till with fertilizer banded. Soybean planted to 30-inch rows.	
	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 1917-01 & 1917-02**

**Table:1917- 01 .Tillage in Corn and Soybean Production Systems - Corn  
Arlington, WI - 2019.**

Rotation	Tillage	Fungicide	Yield bu/A	Moisture %	Test weight lbs/bu	Lodged			Harvest density plants/A	AGI \$.44/bu \$/A
						Total %	Stalk %	Root %		
CC			182	31.7	49.0	0.8	0.7	0.1	36521	542
CS			198	27.9	49.2	0.3	0.2	0.1	37229	607
	NT		192	29.6	49.4	0.7	0.7	0.0	37313	581
	RT		175	31.6	48.5	0.4	0.4	0.0	36438	522
	T1		192	29.5	49.0	0.5	0.3	0.2	36438	583
	T2		198	28.7	49.5	0.5	0.0	0.5	37125	604
	T3		194	29.9	49.0	1.0	1.0	0.0	37188	587
	T4		188	29.7	49.3	0.2	0.2	0.0	36750	570
		35000	188	29.8	49.1	0.3	0.3	0.1	33063	568
		45000	192	29.8	49.1	0.7	0.6	0.2	40688	582
CC	NT		180	31.5	49.1	1.3	1.3	0.0	37500	538
CC	RT		166	33.7	48.4	0.4	0.4	0.0	34375	488
CC	T1		189	31.0	49.0	0.7	0.3	0.4	36250	568
CC	T2		196	30.3	49.6	0.3	0.0	0.3	37250	590
CC	T3		183	32.0	48.9	2.0	2.0	0.0	37125	545
CC	T4		175	31.6	48.9	0.0	0.0	0.0	36625	523
CS	NT		203	27.6	49.6	0.0	0.0	0.0	37125	624
CS	RT		184	29.4	48.5	0.3	0.3	0.0	38500	556
CS	T1		195	27.9	49.1	0.3	0.3	0.0	36625	598
CS	T2		201	27.0	49.4	0.6	0.0	0.6	37000	618
CS	T3		205	27.8	49.2	0.0	0.0	0.0	37250	629
CS	T4		201	27.8	49.6	0.3	0.3	0.0	36875	616
CC		35000	184	31.5	49.1	0.7	0.5	0.1	32625	550
CC		45000	179	31.9	48.8	0.9	0.8	0.1	40417	535
CS		35000	191	28.1	49.1	0.0	0.0	0.0	33500	586
CS		45000	205	27.8	49.4	0.5	0.3	0.2	40958	628
	NT	35000	192	29.8	49.1	0.7	0.7	0.0	33125	580
	NT	45000	192	29.3	49.6	0.6	0.6	0.0	41500	582
	RT	35000	172	31.1	48.3	0.4	0.4	0.0	31625	515
	RT	45000	178	32.0	48.6	0.3	0.3	0.0	41250	530
	T1	35000	190	29.5	48.9	0.4	0.0	0.4	33750	575
	T1	45000	195	29.4	49.2	0.6	0.6	0.0	39125	592
	T2	35000	196	28.6	49.8	0.0	0.0	0.0	33125	598
	T2	45000	200	28.7	49.1	0.9	0.0	0.9	41125	610
	T3	35000	196	30.1	49.4	0.4	0.4	0.0	34375	593
	T3	45000	192	29.7	48.6	1.6	1.6	0.0	40000	582
	T4	35000	180	29.7	49.1	0.0	0.0	0.0	32375	546
	T4	45000	196	29.7	49.4	0.3	0.3	0.0	41125	594
CC	NT	35000	180	31.7	49.0	1.5	1.5	0.0	33500	537
CC	NT	45000	180	31.4	49.3	1.2	1.2	0.0	41500	539
CC	RT	35000	165	33.2	48.2	0.9	0.9	0.0	28250	487
CC	RT	45000	167	34.3	48.6	0.0	0.0	0.0	40500	489

continue



**Table:1917- 02 .Tillage, Rotation and Planting Density  
in Corn and Soybean - Soybean . Arlington, WI - 2019**

Tillage treatment	Yield bu/A	Moisture %	*AGI \$8.21/bu \$/A
NT	54	16.7	426
RT	51	16.7	402
T1	54	16.6	424
T2	58	16.8	457
T3	58	17.0	455
T4	55	16.9	434
Mean	55	16.8	433
<b>Probability(%)</b>			
Tillage (T)	16.5	0.1	16.9
<b>LSD(0.10)</b>			
Tillage (T)	NS	0.1	NS

\*AGI - Adjusted Gross Income