

## FIELD EXPERIMENT HISTORY

**Title:** Tillage in Corn and Soybean Production Systems  
**Experiment:** 17Tillage Trial ID 2358 Year: 2002  
**Personnel:** J.G. Lauer, P.J. Flannery, and K.D. Kohn  
**Location:** Arlington, WI County: Columbia  
**Supported By:** HATCH

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### Site Information

**Field:** 396 **Previous Crop:** Soybean **Soil Type:** Plano  
**Soil Test:** Date: 11/1 /02 pH 6.0 OM (%) 2.4 P (ppm) 28 K (ppm) 106

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### Plot Management

**Tillage Operations:** See Factors

	<u>Analysis:</u>	<u>Rate lbs/A:</u>	<u>Date:</u>
<b>Fertilizer:</b>			
<b>Preplant :</b>	34-0-0	- 961 lbs/A CS - 814 lb:	N/A
<b>Starter :</b>	N/A	N/A	N/A
<b>Post plant :</b>	N/A	N/A	N/A
<b>Manure:</b>	N/A	N/A	N/A
<b>Herbicide:</b>	Roundup 1.5 qt/A 4/23 - All 2,4-D 1.0 pt/A - All Roundup 1.5 qt/A 6/12 - corn Roundup 1.5 qt/A 7/8-soybean	<b>Insecticide:</b> Force @ 5.0 lb/A	
<b>Irrigation:</b>	None	<b>Hybrid/Variety:</b> Dekalb DKC5073 Asgrow 2501RR	
<b>Planting Date:</b> C & S: 5/10/02		<b>Row Width:</b> 30"	
<b>Planting Method:</b> Kinze Inter-Row Planter		<b>Planting Depth:</b> 1.5"	
<b>Harvest Date:</b> C: 10/8 S: 10/16		<b>Harvest Method:</b> C: Kincaid Plot Combine S: Almaco Plot Combine	

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### Experimental Design

**Design:** RCB Split Plot **Replications:** 4  
**Plot Size Seeded:** 20' x 100' **Experiment Size:** 4.5A  
**Harvest Plot Size:** 5' x 100'

### **Factors/Treatments:**

#### Rotations

Continuous Corn  
Corn / Soybean  
Soybean / Corn

#### Tillage

CP = Fall chisel plow and spring soil finisher.  
T1 = Fall Zone Builder sub soiler and small ridger (offset east).  
T2 = Fall Zone Builder sub soiler (offset east).  
T3 = Fall coultter cart and small ridger.  
T4 = Spring chisel plow and spring soil finisher.  
NT = Spring 1-13 wave coultter with trash whippers.

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**Results: Tables C-57 and C-58.**

**Table C-57. Tillage in Corn and Soybean Production Systems - Corn.**

**Arlington, WI - 2002.**

Rotation	Tillage treatment	Residue cover	Yield	Moisture	Test weight	Lodged	Harvest population	Grower return
		%	bu/A	%	lbs/bu	%	plants/A	\$/A
	CP	12	157	22.3	53	1	29375	344
	NT	59	157	23.0	52	5	32875	342
	T1	37	162	22.4	53	3	30375	354
	T2	41	166	23.1	53	2	33875	363
	T3	51	170	23.3	53	1	32625	371
	T4	18	162	22.2	53	2	29250	353
CC		53	152	24.2	52	1	31417	333
SC		20	172	21.3	54	4	31375	377
CC	CP	18	155	22.5	53	1	31250	338
CC	NT	84	142	24.9	51	0	31500	310
CC	T1	57	148	24.2	51	2	29500	323
CC	T2	63	155	25.1	51	0	35250	338
CC	T3	68	158	25.4	52	1	32000	346
CC	T4	30	156	22.9	53	2	29000	341
SC	CP	7	160	22.0	54	2	27500	350
SC	NT	35	172	21.0	54	11	34250	375
SC	T1	17	177	20.7	55	4	31250	385
SC	T2	20	178	21.2	54	3	32500	388
SC	T3	34	181	21.1	54	1	33250	395
SC	T4	7	167	21.6	54	3	29500	365
Mean		36	162	22.7	53	2	31396	355
<b>Probability(%)</b>								
Rotation (R)		0.1	21.6	3.3	8.9	29.2	95.8	21.6
Tillage (T)		0.0	5.0	0.6	2.2	41.2	0.9	5.0
R x T		4.5	6.0	0.0	0.0	23.1	17.6	6.0
<b>LSD (0.10)</b>								
Rotation (R)		3	NS	0.9	1	NS	NS	NS
Tillage (T)		5	4	0.3	0	NS	1721	8
R x T		7	5	0.4	0	NS	NS	12
<b>CV(%)</b>								
		34	5	3	1	198	9	5

**Table C-58. Tillage in Corn and Soybean Production Systems - Soybean.  
Arlington, WI - 2002.**

Rotation	Tillage treatment	Residue cover	Yield	Moisture	Grower return
		%	bu/A	%	\$/A
CS	CP	24	47	12.7	250
CS	NT	81	50	12.8	269
CS	T1	56	51	12.8	270
CS	T2	51	51	12.8	271
CS	T3	70	50	12.8	267
CS	T4	22	50	12.8	267
Mean		50	50	12.8	266
<b><u>Probability(%)</u></b>					
Tillage (T)		0.0	16.6	94.5	16.7
<b><u>LSD (0.10)</u></b>					
Tillage (T)		11	NS	NS	NS
<b><u>CV(%)</u></b>					
		17	4	1	4