

FIELD EXPERIMENT HISTORY

Title: Corn - Soybean Response to Tillage and Rotation
Experiment: 09CS **Trial ID:** 6166 **Year:** 2017
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>Analysis:</u>	<u>Rate lbs/A:</u>	<u>Date:</u>
Fiel cultivator			
Fertilizer:			
Preplant :	N/A	N/A	N/A
Starter :	N/A	N/A	N/A
Post plant :	28-0-0	CC: 678 CS: 571	6 /9 /17
Manure:	N/A	N/A	N/A
Herbicide: Medal II EC 24 oz/A 4/24/17		Insecticide: See Seed Treatments	
Durango DMA 22 oz/A 4/24/17		Hybrid: C: DKC52-68RIB	
2,4-D low vol 16 oz/A 4/24/17		S: NK S21-M7 Brand	
Durango DMA 22 oz/A 6/19/17			
Roundup WM 32 oz/A 6/27/17			
Irrigation: No		Row Width: 30"	
Planting Date: C: 5/8/17		Planting Depth: 1.5"	
S: 5/8/17			
Target Plant Density: Corn: 32500 Plants/A		Planting Method: JD 1700 with RTK	
Soybean: 150000 Plants/A			
Harvest Date: C: 10/23/17		Harvest Method: MF 8XP plot combine	
Notes: S: 10/20/17			

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: 2017 Treatments

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

Fungicide:

- 1) UTC
- 2) Prothioconazole (Proline @ 5.7 oz/A)
- 3) Picoxystrobin (Approach @ 6 oz/A)

Results: Table 1709-07 & 1709-08

**Table 1709-07. Corn/Soybean Rotation and Tillage Study - Corn.
Arlington, WI - 2017.**

Tillage	Rotation	Fungicide	Yield bu/A	Moisture %	Test weight lbs/bu	Lodged			Harvest density plants/A	AGI \$3.44/bu \$/A
						Total %	Stalk %	Root %		
Conv			263	23.5	53.7	0.2	0.1	0.1	32333	801
Notill			242	26.1	52.7	0.2	0.2	0.0	29539	726
	1C		276	25.1	53.1	0.1	0.1	0.0	31922	833
	2C		246	23.8	54.0	0.5	0.5	0.0	30855	749
	3C		237	24.9	53.6	0.1	0.0	0.1	30108	717
	4C		244	24.9	52.4	0.3	0.3	0.0	31458	738
	5C		250	24.9	52.7	0.3	0.3	0.0	31958	757
	C		265	24.8	53.6	0.0	0.0	0.0	29083	802
	CC		247	24.9	53.1	0.1	0.0	0.1	31169	748
		Picoxystrobin	250	24.7	53.3	0.3	0.2	0.1	31108	758
		Prothioconazole	259	24.9	53.1	0.1	0.1	0.0	30842	782
		UTC	248	24.8	53.2	0.3	0.2	0.1	30859	750
Conv	1C		281	24.1	52.9	0.0	0.0	0.0	32298	853
Conv	2C		258	22.9	54.4	0.2	0.2	0.0	31294	791
Conv	3C		249	23.1	54.5	0.3	0.0	0.3	32750	761
Conv	4C		257	24.0	52.9	0.2	0.2	0.0	31750	780
Conv	5C		250	22.9	53.7	0.5	0.5	0.0	32667	767
Conv	C		275	23.6	54.2	0.0	0.0	0.0	32250	839
Conv	CC		268	23.6	53.2	0.3	0.0	0.3	33324	817
Notill	1C		271	26.1	53.2	0.3	0.3	0.0	31546	813
Notill	2C		234	24.7	53.7	0.7	0.7	0.0	30417	707
Notill	3C		224	26.6	52.7	0.0	0.0	0.0	27465	672
Notill	4C		231	25.9	51.9	0.4	0.4	0.0	31167	695
Notill	5C		251	27.0	51.7	0.0	0.0	0.0	31250	747
Notill	C		255	26.1	53.0	0.0	0.0	0.0	25917	765
Notill	CC		227	26.3	53.1	0.0	0.0	0.0	29015	678
Conv		Picoxystrobin	262	23.3	54.1	0.3	0.2	0.1	32532	800
Conv		Prothioconazole	271	23.4	53.6	0.2	0.2	0.0	32806	826
Conv		UTC	255	23.7	53.4	0.1	0.0	0.1	31662	778
Notill		Picoxystrobin	238	26.0	52.5	0.2	0.2	0.0	29685	715
Notill		Prothioconazole	247	26.3	52.6	0.0	0.0	0.0	28877	739
Notill		UTC	240	25.9	53.1	0.4	0.4	0.0	30057	722
	1C	Picoxystrobin	286	24.1	53.5	0.0	0.0	0.0	31750	869
	1C	Prothioconazole	300	25.2	52.6	0.0	0.0	0.0	33641	904
	1C	UTC	242	26.0	53.2	0.4	0.4	0.0	30375	727
	2C	Picoxystrobin	238	24.3	54.2	0.4	0.4	0.0	31000	724
	2C	Prothioconazole	257	24.3	53.6	0.0	0.0	0.0	31625	780
	2C	UTC	242	22.8	54.3	1.1	1.1	0.0	29941	743
	3C	Picoxystrobin	227	25.3	53.5	0.4	0.0	0.4	29375	683
	3C	Prothioconazole	237	24.5	54.1	0.0	0.0	0.0	30500	718
	3C	UTC	247	24.7	53.2	0.0	0.0	0.0	30448	749

continue

Table 1709-07. Corn/Soybean Rotation and Tillage Study - Corn.

(continued)

Arlington, WI - 2017.

Tillage	Rotation	Fungicide	Yield bu/A	Moisture %	Test weight lbs/bu	Lodged			Harvest density plants/A	AGI \$3.44/bu \$/A
						Total %	Stalk %	Root %		
	4C	Picoxystrobin	239	24.2	51.9	0.7	0.7	0.0	31125	727
	4C	Prothioconazole	249	25.7	52.4	0.4	0.4	0.0	32625	748
	4C	UTC	244	25.0	52.9	0.0	0.0	0.0	30625	738
	5C	Picoxystrobin	248	23.8	53.6	0.4	0.4	0.0	31250	754
	5C	Prothioconazole	259	25.0	52.3	0.4	0.4	0.0	31750	781
	5C	UTC	245	25.9	52.3	0.0	0.0	0.0	32875	735
	C	Picoxystrobin	271	24.4	53.9	0.0	0.0	0.0	30250	822
	C	Prothioconazole	260	25.0	53.7	0.0	0.0	0.0	26500	786
	C	UTC	265	25.1	53.2	0.0	0.0	0.0	30500	799
	CC	Picoxystrobin	243	26.5	52.8	0.0	0.0	0.0	33008	727
	CC	Prothioconazole	250	24.4	53.0	0.0	0.0	0.0	29250	760
	CC	UTC	249	24.0	53.6	0.4	0.0	0.4	31250	757
Conv	1C	Picoxystrobin	301	23.3	53.4	0.0	0.0	0.0	32000	920
Conv	1C	Prothioconazole	305	24.1	53.0	0.0	0.0	0.0	32894	925
Conv	1C	UTC	237	25.1	52.5	0.0	0.0	0.0	32000	715
Conv	2C	Picoxystrobin	255	23.4	54.6	0.7	0.7	0.0	30750	780
Conv	2C	Prothioconazole	264	23.3	53.6	0.0	0.0	0.0	34000	807
Conv	2C	UTC	255	22.1	55.0	0.0	0.0	0.0	29132	785
Conv	3C	Picoxystrobin	245	23.4	54.7	0.9	0.0	0.9	33250	748
Conv	3C	Prothioconazole	242	22.1	55.5	0.0	0.0	0.0	32000	746
Conv	3C	UTC	259	23.9	53.2	0.0	0.0	0.0	33000	788
Conv	4C	Picoxystrobin	257	23.0	53.3	0.0	0.0	0.0	32250	788
Conv	4C	Prothioconazole	255	25.1	52.6	0.7	0.7	0.0	34000	769
Conv	4C	UTC	258	23.9	52.8	0.0	0.0	0.0	29000	785
Conv	5C	Picoxystrobin	242	21.7	55.3	0.8	0.8	0.0	33250	747
Conv	5C	Prothioconazole	264	22.7	53.5	0.8	0.8	0.0	33500	809
Conv	5C	UTC	245	24.2	52.5	0.0	0.0	0.0	31250	743
Conv	C	Picoxystrobin	271	23.3	55.0	0.0	0.0	0.0	33000	828
Conv	C	Prothioconazole	285	23.3	53.9	0.0	0.0	0.0	29500	869
Conv	C	UTC	270	24.3	53.7	0.0	0.0	0.0	34250	820
Conv	CC	Picoxystrobin	262	25.1	52.8	0.0	0.0	0.0	33222	792
Conv	CC	Prothioconazole	279	23.4	53.0	0.0	0.0	0.0	33750	853
Conv	CC	UTC	262	22.4	53.8	0.8	0.0	0.8	33000	806
Notill	1C	Picoxystrobin	271	25.0	53.6	0.0	0.0	0.0	31500	818
Notill	1C	Prothioconazole	294	26.4	52.2	0.0	0.0	0.0	34387	882
Notill	1C	UTC	247	26.9	53.9	0.8	0.8	0.0	28750	738
Notill	2C	Picoxystrobin	221	25.2	53.8	0.0	0.0	0.0	31250	668
Notill	2C	Prothioconazole	250	25.3	53.7	0.0	0.0	0.0	29250	752
Notill	2C	UTC	230	23.5	53.6	2.1	2.1	0.0	30750	701
Notill	3C	Picoxystrobin	208	27.3	52.2	0.0	0.0	0.0	25500	618
Notill	3C	Prothioconazole	231	26.9	52.6	0.0	0.0	0.0	29000	689
Notill	3C	UTC	234	25.6	53.2	0.0	0.0	0.0	27896	709
Notill	4C	Picoxystrobin	221	25.4	50.5	1.3	1.3	0.0	30000	666
Notill	4C	Prothioconazole	243	26.2	52.2	0.0	0.0	0.0	31250	728
Notill	4C	UTC	231	26.0	53.0	0.0	0.0	0.0	32250	692

continue

**Table 1709-08. Corn/Soybean Rotation and Tillage Study - Soybean.
Arlington, WI - 2017.**

Tillage	Rotation	Fungicide	Yield bu/A	Moisture %	AGI \$8.48/bu \$/A
Conv			62.4	11.8	515
Notill			63.7	11.6	526
	1S		71.0	11.7	586
	2S		66.0	11.3	544
	3S		62.5	11.9	515
	4S		59.3	10.9	489
	5S		62.3	12.0	514
	S		63.3	11.9	522
	SS		57.0	11.9	470
		Picoxystrobin	63.5	11.6	524
		Prothioconazole	64.1	11.6	528
		UTC	61.6	11.8	508
Conv	1S		69.2	11.8	570
Conv	2S		64.7	11.4	534
Conv	3S		62.2	12.0	512
Conv	4S		59.5	10.9	491
Conv	5S		60.2	12.1	497
Conv	S		63.2	11.9	522
Conv	SS		57.7	12.3	476
Notill	1S		72.9	11.6	602
Notill	2S		67.3	11.3	555
Notill	3S		62.9	11.8	518
Notill	4S		59.1	10.9	488
Notill	5S		64.3	11.9	531
Notill	S		63.3	11.9	522
Notill	SS		56.3	11.6	464
Conv		Picoxystrobin	62.9	11.8	519
Conv		Prothioconazole	63.6	11.7	525
Conv		UTC	60.6	11.8	500
Notill		Picoxystrobin	64.1	11.5	529
Notill		Prothioconazole	64.5	11.5	532
Notill		UTC	62.6	11.7	516
	1S	Picoxystrobin	71.3	12.0	588
	1S	Prothioconazole	70.8	11.4	584
	1S	UTC	71.1	11.8	586
	2S	Picoxystrobin	65.1	11.5	537
	2S	Prothioconazole	68.0	11.1	561
	2S	UTC	64.8	11.4	535
	3S	Picoxystrobin	62.2	11.8	513
	3S	Prothioconazole	63.7	12.0	525
	3S	UTC	61.6	11.9	508

continue

Table 1709-08. Corn/Soybean Rotation and Tillage Study - Soybean.

(continued)

Arlington, WI - 2017.

Tillage	Rotation	Fungicide	Yield bu/A	Moisture %	AGI \$8.48/bu \$/A
	4S	Picoxystrobin	62.5	10.6	516
	4S	Prothioconazole	59.8	10.8	493
	4S	UTC	55.6	11.4	459
	5S	Picoxystrobin	61.5	12.2	508
	5S	Prothioconazole	63.4	12.0	523
	5S	UTC	61.9	11.8	511
	S	Picoxystrobin	63.6	12.1	525
	S	Prothioconazole	64.2	12.0	530
	S	UTC	61.9	11.6	511
	SS	Picoxystrobin	58.4	11.3	482
	SS	Prothioconazole	58.5	12.0	483
	SS	UTC	54.1	12.4	446
Conv	1S	Picoxystrobin	69.1	12.3	570
Conv	1S	Prothioconazole	69.3	11.3	572
Conv	1S	UTC	69.0	12.0	569
Conv	2S	Picoxystrobin	63.4	11.7	523
Conv	2S	Prothioconazole	67.2	11.3	554
Conv	2S	UTC	63.4	11.3	523
Conv	3S	Picoxystrobin	62.3	11.8	514
Conv	3S	Prothioconazole	63.1	11.9	520
Conv	3S	UTC	61.0	12.2	503
Conv	4S	Picoxystrobin	62.6	10.7	516
Conv	4S	Prothioconazole	59.1	10.9	488
Conv	4S	UTC	56.8	11.3	469
Conv	5S	Picoxystrobin	59.2	12.3	488
Conv	5S	Prothioconazole	62.0	12.6	511
Conv	5S	UTC	59.5	11.6	491
Conv	S	Picoxystrobin	64.7	12.1	534
Conv	S	Prothioconazole	64.6	11.9	533
Conv	S	UTC	60.4	11.6	499
Conv	SS	Picoxystrobin	59.2	11.9	488
Conv	SS	Prothioconazole	60.1	12.2	496
Conv	SS	UTC	53.9	12.7	445
Notill	1S	Picoxystrobin	73.4	11.7	605
Notill	1S	Prothioconazole	72.3	11.5	596
Notill	1S	UTC	73.2	11.7	604
Notill	2S	Picoxystrobin	66.7	11.4	551
Notill	2S	Prothioconazole	68.9	11.0	568
Notill	2S	UTC	66.2	11.5	546
Notill	3S	Picoxystrobin	62.1	11.8	512
Notill	3S	Prothioconazole	64.3	12.1	530
Notill	3S	UTC	62.2	11.6	513
Notill	4S	Picoxystrobin	62.5	10.4	516
Notill	4S	Prothioconazole	60.5	10.7	499
Notill	4S	UTC	54.4	11.5	449

continue

Table 1709-08. Corn/Soybean Rotation and Tillage Study - Soybean.(continued) **Arlington, WI - 2017.**

Tillage	Rotation	Fungicide	Yield bu/A	Moisture %	AGI \$8.48/bu \$/A
Notill	5S	Picoxystrobin	63.9	12.0	527
Notill	5S	Prothioconazole	64.8	11.5	535
Notill	5S	UTC	64.3	12.1	530
Notill	S	Picoxystrobin	62.5	12.1	516
Notill	S	Prothioconazole	63.9	12.1	527
Notill	S	UTC	63.4	11.7	523
Notill	SS	Picoxystrobin	57.7	10.8	476
Notill	SS	Prothioconazole	56.9	11.9	469
Notill	SS	UTC	54.2	12.1	447
Mean			63.1	11.7	520
<u>Probability(%)</u>					
Tillage (T)			17.7	37.1	17.6
Rotation (R)			0.0	5.3	0.0
Fungicide (F)			0.1	55.6	0.1
T x R			35.4	97.7	35.2
T x F			67.2	64.3	67.2
R x F			14.2	12.6	14.4
T x R x F			95.4	78.5	95.6
<u>LSD(0.10)</u>					
Tillage (T)			NS	NS	NS
Rotation (R)			2.4	0.6	20
Fungicide (F)			1.1	NS	9
T x R			NS	NS	NS
T x F			NS	NS	NS
R x F			NS	NS	NS
T x R x F			NS	NS	NS