

## FIELD EXPERIMENT HISTORY

**Title:** Corn - Soybean Response to Tillage and Rotation - N source  
**Experiment:** 09CS **Trial ID:** 3668 **Year:** 2014  
**Personnel:** Joe Lauer, Thierno Diallo, Kent Kohn,  
**Location:** Arlington, WI **County:** Columbia

### Supported By:

### Site Information

**Field:** 334 **Previous Crop:** See factors **Soil Type:** Silt Loam  
**Soil Test Date:** 11/4 /13 **pH:** 6.7 **OM (%)** 3.2 **P (ppm)** 16 **K (ppm)** 102

### Plot Management

**Tillage Operations:** Fall Chisel plow Field Cultivator Soil Finisher

<b>Fertilizer:</b>	<b>Preplant :</b>	<u>Analysis:</u>	<u>Rate lbs/A:</u>	<u>Date:</u>
		N/A	N/A	N/A
	<b>Starter :</b>	N/A	N/A	N/A
	<b>Post plant :</b>	28-0-0	CC:190 CS:160	5 /27/14
	<b>Manure:</b>	N/A	N/A	N/A
<b>Herbicide:</b>	Dual II-Magnum 24 oz/A on 5/8/14 Roundup WeatherMax 5/8/14 Roundup Pmax 28 oz/A on 6/24/14		<b>Insecticide:</b>	See Seed Treatments
<b>Irrigation:</b>	None		<b>Hybrid:</b>	C: Syngenta N61P-3000GT S: Syngenta S20Y2
<b>Planting Date:</b>	Corn: 5/21/14 Soybean: 5/4/14		<b>Row Width:</b>	30"
<b>Target Plant Density:</b>	Corn: 32500 Plants/A Soybean: 150000 Plants/A		<b>Planting Depth:</b>	C: 1.5" S: 1"
<b>Harvest Date:</b>	Corn: 11/5/14 Soybean: 10/06/14		<b>Planting Method:</b>	JD 1700 Planter w/ RTK
<b>Notes:</b>			<b>Harvest Method:</b>	C: Kincaid plot combine S: Almaco plot combine #2

### 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:

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

#### Nematicide

- Corn:
- 1) UTC
  - 2) Avicta
  - 3) Poncho + Votivo
- Soybean:
- 1) UTC
  - 2) Clariva
  - 3) Poncho + Votivo

**Results: Tables 1409-09 & 1409-10**

**Table 1409-09. Corn/Soybean Rotation and Tillage Study - Corn.  
Arlington, WI - 2014.**

Tillage	Rotation	Seed Treatment	Yield bu/A	Moisture %	Test weight lbs/bu	Lodged			Harvest density plants/A	AGI \$3.67/bu \$/A
						Total %	Stalk %	Root %		
Conv			191	23.3	51.1	5.1	0.0	5.1	30083	627
Notill			160	26.8	51.2	3.2	0.0	3.2	29060	517
	1C		217	22.7	51.2	0.0	0.0	0.0	30917	714
	1CC		164	24.4	53.4	1.5	0.0	1.5	29458	535
	1CS		206	24.0	50.9	0.0	0.0	0.0	29875	676
	2C		179	25.2	52.5	3.9	0.0	3.9	29333	582
	3C		160	26.7	50.6	10.9	0.1	10.8	29375	514
	4C		151	25.3	49.8	6.1	0.0	6.1	29667	490
	5C		153	26.8	49.6	6.8	0.0	6.8	28375	493
		Avicta	175	24.9	51.2	4.3	0.0	4.3	30089	572
		Poncho+Votivo	177	25.1	50.9	3.3	0.1	3.3	29929	577
		UTC	174	25.1	51.4	4.9	0.0	4.9	28696	566
Conv	1C		222	22.7	51.5	0.0	0.0	0.0	30667	731
Conv	1CC		185	22.7	51.3	0.6	0.0	0.6	30750	610
Conv	1CS		215	22.3	51.9	0.0	0.0	0.0	29667	712
Conv	2C		189	23.1	51.3	3.3	0.0	3.3	29833	620
Conv	3C		177	24.9	51.4	14.1	0.3	13.8	29917	576
Conv	4C		173	23.1	50.5	7.9	0.0	7.9	30583	570
Conv	5C		174	24.2	50.0	10.2	0.0	10.2	29167	570
Notill	1C		211	22.7	51.0	0.0	0.0	0.0	31167	697
Notill	1CC		143	26.2	55.5	2.4	0.0	2.4	28167	461
Notill	1CS		197	25.6	50.0	0.0	0.0	0.0	30083	639
Notill	2C		170	27.3	53.7	4.5	0.0	4.5	28833	544
Notill	3C		142	28.5	49.8	7.7	0.0	7.7	28833	452
Notill	4C		128	27.6	49.0	4.4	0.0	4.4	28750	409
Notill	5C		132	29.5	49.3	3.5	0.0	3.5	27583	416
Conv		Avicta	192	23.4	51.2	5.4	0.0	5.4	29821	632
Conv		Poncho+Votivo	193	23.1	51.1	4.7	0.1	4.6	30393	634
Conv		UTC	187	23.4	51.1	5.3	0.0	5.3	30036	616
Notill		Avicta	159	26.4	51.1	3.3	0.0	3.3	30357	512
Notill		Poncho+Votivo	162	27.2	50.8	1.9	0.0	1.9	29464	521
Notill		UTC	161	26.7	51.6	4.4	0.0	4.4	27357	517
	1C	Avicta	221	22.3	51.6	0.0	0.0	0.0	29875	729
	1C	Poncho+Votivo	213	22.6	50.8	0.0	0.0	0.0	30750	702
	1C	UTC	216	23.3	51.3	0.0	0.0	0.0	32125	710

continue

**Table 1409-09. Corn/Soybean Rotation and Tillage Study - Corn.**

(continued)

**Arlington, WI - 2014.**

Tillage	Rotation	Seed Treatment	Yield bu/A	Moisture %	Test weight lbs/bu	Lodged			Harvest density plants/A	
						Total %	Stalk %	Root %		
	1CC	Avicta	170	24.5	55.5	2.4	0.0	2.4	30750	554
	1CC	Poncho+Votivo	166	24.0	54.0	0.0	0.0	0.0	30500	543
	1CC	UTC	156	24.8	50.7	2.0	0.0	2.0	27125	509
	1CS	Avicta	207	24.4	50.8	0.0	0.0	0.0	30375	675
	1CS	Poncho+Votivo	207	24.2	51.9	0.0	0.0	0.0	30125	676
	1CS	UTC	206	23.4	50.1	0.0	0.0	0.0	29125	676
	2C	Avicta	176	24.5	50.2	5.0	0.0	5.0	29625	574
	2C	Poncho+Votivo	182	25.9	50.1	0.8	0.0	0.8	30000	589
	2C	UTC	179	25.3	57.1	5.8	0.0	5.8	28375	582
	3C	Avicta	156	26.4	50.7	9.8	0.0	9.8	30375	504
	3C	Poncho+Votivo	165	27.1	50.5	8.5	0.4	8.0	29625	529
	3C	UTC	158	26.7	50.6	14.5	0.0	14.5	28125	510
	4C	Avicta	148	25.4	50.1	8.5	0.0	8.5	30750	479
	4C	Poncho+Votivo	152	25.8	49.4	6.9	0.0	6.9	29750	492
	4C	UTC	153	24.8	49.9	3.0	0.0	3.0	28500	498
	5C	Avicta	152	26.7	49.3	4.7	0.0	4.7	28875	489
	5C	Poncho+Votivo	158	26.5	49.8	7.0	0.0	7.0	28750	510
	5C	UTC	149	27.3	49.8	8.9	0.0	8.9	27500	480
Conv	1C	Avicta	224	22.5	52.2	0.0	0.0	0.0	29500	740
Conv	1C	Poncho+Votivo	220	22.9	51.1	0.0	0.0	0.0	29750	724
Conv	1C	UTC	221	22.7	51.1	0.0	0.0	0.0	32750	728
Conv	1CC	Avicta	186	23.3	50.1	0.8	0.0	0.8	31000	612
Conv	1CC	Poncho+Votivo	189	21.6	51.9	0.0	0.0	0.0	30500	626
Conv	1CC	UTC	180	23.1	52.0	0.9	0.0	0.9	30750	591
Conv	1CS	Avicta	220	22.5	52.1	0.0	0.0	0.0	29000	727
Conv	1CS	Poncho+Votivo	209	22.9	53.0	0.0	0.0	0.0	30500	690
Conv	1CS	UTC	217	21.7	50.7	0.0	0.0	0.0	29500	719
Conv	2C	Avicta	187	23.5	50.9	5.7	0.0	5.7	29000	614
Conv	2C	Poncho+Votivo	190	23.0	51.1	0.0	0.0	0.0	30750	626
Conv	2C	UTC	188	22.9	51.9	4.1	0.0	4.1	29750	619
Conv	3C	Avicta	184	24.3	51.5	12.2	0.0	12.2	30250	601
Conv	3C	Poncho+Votivo	178	25.9	51.0	13.6	0.9	12.7	31000	575
Conv	3C	UTC	169	24.6	51.8	16.5	0.0	16.5	28500	552
Conv	4C	Avicta	170	23.3	51.3	12.9	0.0	12.9	30250	557
Conv	4C	Poncho+Votivo	180	22.2	49.6	7.1	0.0	7.1	32000	595
Conv	4C	UTC	170	23.7	50.7	3.6	0.0	3.6	29500	558
Conv	5C	Avicta	174	24.2	50.4	5.9	0.0	5.9	29750	570
Conv	5C	Poncho+Votivo	182	23.1	50.2	12.3	0.0	12.3	28250	599
Conv	5C	UTC	166	25.2	49.3	12.2	0.0	12.2	29500	541

continue



**Table 1409-10. Corn/Soybean Rotation Study - Soybean.  
Arlington, WI - 2014**

Tillage	Rotation		Seed Treatment	Grain Yield bu/a
	Name	#		
			CMA-VIB	55.9
			CMA-VIB-Pn	56.0
			APRMX-P/V	53.4
	5th year SB	3		57.2
	4th year SB	4		52.2
	3rd year SB	5		54.5
	2nd year SB	6		57.9
	1st year SB	7		56.3
	S/C rotation	12		59.8
	Continuous SB	14		47.6
	5th year SB	3	CMA-VIB	60.3
	5th year SB	3	CMA-VIB-Pn	58.4
	5th year SB	3	APRMX-P/V	52.9
	4th year SB	4	CMA-VIB	52.9
	4th year SB	4	CMA-VIB-Pn	52.9
	4th year SB	4	APRMX-P/V	50.9
	3rd year SB	5	CMA-VIB	52.4
	3rd year SB	5	CMA-VIB-Pn	56.2
	3rd year SB	5	APRMX-P/V	54.9
	2nd year SB	6	CMA-VIB	59.1
	2nd year SB	6	CMA-VIB-Pn	58.7
	2nd year SB	6	APRMX-P/V	55.9
	1st year SB	7	CMA-VIB	57.4
	1st year SB	7	CMA-VIB-Pn	57.9
	1st year SB	7	APRMX-P/V	53.6
	S/C rotation	12	CMA-VIB	59.9
	S/C rotation	12	CMA-VIB-Pn	61.1
	S/C rotation	12	APRMX-P/V	58.5
	Continuous SB	14	CMA-VIB	48.0
	Continuous SB	14	CMA-VIB-Pn	47.5
	Continuous SB	14	APRMX-P/V	47.3
Notill				57.7
Conventional				52.6
Notill			CMA-VIB	57.8
Notill			CMA-VIB-Pn	59.3
Notill			APRMX-P/V	56.0
Conventional			CMA-VIB	54.0
Conventional			CMA-VIB-Pn	52.8
Conventional			APRMX-P/V	50.9

continue

**Table 1409-10. Corn/Soybean Rotation Study - Soybean.**(continued) **Arlington, WI - 2014**

Tillage	Rotation		Seed Treatment	Grain Yield bu/a
	Name	#		
Notill	5th year SB	3		58.1
Notill	4th year SB	4		54.6
Notill	3rd year SB	5		54.9
Notill	2nd year SB	6		60.5
Notill	1st year SB	7		61.4
Notill	S/C rotation	12		61.0
Notill	Continuous SB	14		53.1
Conventional	5th year SB	3		56.3
Conventional	4th year SB	4		49.6
Conventional	3rd year SB	5		54.0
Conventional	2nd year SB	6		55.3
Conventional	1st year SB	7		51.2
Conventional	S/C rotation	12		58.7
Conventional	Continuous SB	14		42.5
Notill	5th year SB	3	CMA-VIB	58.3
Notill	5th year SB	3	CMA-VIB-Pn	60.9
Notill	5th year SB	3	APRMX-P/V	55.1
Notill	4th year SB	4	CMA-VIB	55.0
Notill	4th year SB	4	CMA-VIB-Pn	55.4
Notill	4th year SB	4	APRMX-P/V	53.3
Notill	3rd year SB	5	CMA-VIB	51.3
Notill	3rd year SB	5	CMA-VIB-Pn	57.3
Notill	3rd year SB	5	APRMX-P/V	56.1
Notill	2nd year SB	6	CMA-VIB	61.7
Notill	2nd year SB	6	CMA-VIB-Pn	62.2
Notill	2nd year SB	6	APRMX-P/V	57.6
Notill	1st year SB	7	CMA-VIB	61.8
Notill	1st year SB	7	CMA-VIB-Pn	64.1
Notill	1st year SB	7	APRMX-P/V	58.5
Notill	S/C rotation	12	CMA-VIB	61.7
Notill	S/C rotation	12	CMA-VIB-Pn	61.7
Notill	S/C rotation	12	APRMX-P/V	59.7
Notill	Continuous SB	14	CMA-VIB	53.8
Notill	Continuous SB	14	CMA-VIB-Pn	54.2
Notill	Continuous SB	14	APRMX-P/V	51.4
Conventional	5th year SB	3	CMA-VIB	62.3
Conventional	5th year SB	3	CMA-VIB-Pn	55.8
Conventional	5th year SB	3	APRMX-P/V	50.7
Conventional	4th year SB	4	CMA-VIB	50.2
Conventional	4th year SB	4	CMA-VIB-Pn	50.3
Conventional	4th year SB	4	APRMX-P/V	48.4

continue

**Table 1409-10. Corn/Soybean Rotation Study - Soybean.**(continued) **Arlington, WI - 2014**

Tillage	Rotation		Seed Treatment	Grain Yield bu/a
	Name	#		
Conventional	3rd year SB	5	CMA-VIB	53.5
Conventional	3rd year SB	5	CMA-VIB-Pn	55.0
Conventional	3rd year SB	5	APRMX-P/V	53.6
Conventional	2nd year SB	6	CMA-VIB	56.6
Conventional	2nd year SB	6	CMA-VIB-Pn	55.3
Conventional	2nd year SB	6	APRMX-P/V	54.2
Conventional	1st year SB	7	CMA-VIB	53.1
Conventional	1st year SB	7	CMA-VIB-Pn	51.7
Conventional	1st year SB	7	APRMX-P/V	48.7
Conventional	S/C rotation	12	CMA-VIB	58.0
Conventional	S/C rotation	12	CMA-VIB-Pn	60.7
Conventional	S/C rotation	12	APRMX-P/V	57.3
Conventional	Continuous SB	14	CMA-VIB	43.6
Conventional	Continuous SB	14	CMA-VIB-Pn	40.9
Conventional	Continuous SB	14	APRMX-P/V	43.1
<b>Means</b>				55.1
<b><u>Pr&gt;F</u></b>				
Tillage (T)				0.0016
Rotation (R)				0.0004
T x R				0.2178
Seed Treatment (ST)				<0.0001
T x ST				0.0674
R x ST				0.0388
T x R x ST				0.4689
<b><u>LSD 10%</u></b>				
Tillage (T)				0.9
Rotation (R)				3.9
T x R				NS
Seed Treatment (ST)				1.0
T x ST				1.5
R x ST				4.5
<b>CV %</b>				6
<b>CMA</b>	Cruiser Maxx Advanced			
<b>VIB</b>	Vibrance			
<b>Pn</b>	Clariva			
<b>APRMX</b>	ApronMaxx			
<b>P/V</b>	Poncho/Votivo			