

## FIELD EXPERIMENT HISTORY

**Title:** Corn Cropping Systems  
**Experiment:** 19Systems **Trial ID:** 3470 **Year:** 2011  
**Personnel:** J. G. Lauer, J.M. Gaska, K. D. Kohn, T. H. Diallo  
**Location:** Arlington, WI **County:** Columbia  
**Supported By:** HATCH

### Site Information

**Field:** 334 E **Previous Crop:** Corn/Soybean **Soil Type:** Plano Silt Loam  
**Soil Test:** **Date:** 10/21/11 **pH:** 5.9 **OM (%)** 3 **P (ppm)** 11 **K (ppm)** 129

### Plot Management

**Tillage Operations:** 1-No-Till & 2-Conventional Tillage

	<u>Analysis:</u>	<u>Rate lbs/A:</u>	<u>Date:</u>
<b>Fertilizer:</b>			
<b>Preplant :</b>			
<b>Starter :</b>	N/A	N/A	N/A
<b>Post plant :</b>	C: 28-0-0	210	6 /8 /11
<b>Manure:</b>	N/A	N/A	N/A
<b>Herbicide:</b>	Dual II Mag: 24oz/A 5/03/11 Roundup: 22 oz/A 5/03/11	<b>Insecticide:</b> N/A	
<b>Irrigation:</b>	None	<b>Hybrid:</b> 1- DKC55-08(RR) 2- DKC55-09(SS)	
<b>Planting Date:</b> C: 5/11-5/27 /11	<b>Planting Depth:</b> C:1.5	<b>Row Width:</b> 30"	
<b>Target Plant Density:</b> See Factors	<b>Planting Method:</b> Kinze 2000 Interplant planter		
<b>Harvest Date:</b> 10/24/11	<b>Harvest Method:</b> C: Kincaid plot combine		
<b>Notes:</b>			

### Experimental Design

**Design:** RCB split-split plot **Replications:** 4  
**Plot Size Seeded:** 10' x 35' **Experiment Size:** 0.5 A  
**Harvest Plot Size:** 5' x 31' **Harvest Plant Density:** See Treatments

### Factors/Treatments:

<u>Tillage:</u>	<u>Rotation:</u>	<u>Nitrogen Rate:</u>
1-No-Till	1-Continuous Corn	1-160 lbs/A
2-Conventional	2-Corn - Soybean	2-210 lbs/A
<u>Date of Planting:</u>	<u>Plant Density:</u>	<u>Genotype:</u>
1-May 1 or earlier	1-32000 ppa	1-Dekalb DKC55-08 (RR)
2-May 15-20	2-42000 ppa	2-Dekalb DKC55-09 (SS)

**Results: Table C-58**

**Table C - 58. Corn Cropping Systems - Corn.  
Arlington, WI - 2012**

Rotation	Plant Tillage	Date of density planting	N rate lbs/A	Genotype	Grain yield bu/A	Grain moisture	Test weight	Grower return \$	Lodged			Harvest population plants/A
									Total %	Stalk %	Root %	
				DKC55-08	161	20.6	55.0	861	40.7	36.9	3.8	39438
				DKC55-09	167	21.1	53.9	889	26.5	17.1	9.4	39000
			160		154	21.0	54.2	821	34.6	28.7	5.8	38688
			210		174	20.7	54.8	930	32.7	25.3	7.4	39750
			160	DKC55-08	153	20.2	55.0	818	46.3	43.3	3.0	38875
			160	DKC55-09	155	21.8	53.4	825	22.8	14.1	8.7	38500
			210	DKC55-08	170	21.0	55.1	905	35.2	30.5	4.6	40000
			210	DKC55-09	179	20.4	54.4	954	30.2	20.1	10.1	39500
		May 11			170	18.3	55.4	913	34.7	32.3	2.3	38750
		May 27			158	23.4	53.5	837	32.6	21.7	10.9	39688
		May 11		DKC55-08	170	18.2	56.0	916	42.7	40.2	2.4	39250
		May 11		DKC55-09	169	18.4	54.8	910	26.7	24.4	2.3	38250
		May 27		DKC55-08	152	23.0	54.0	806	38.8	33.6	5.2	39625
		May 27		DKC55-09	165	23.7	53.0	869	26.4	9.9	16.5	39750
		May 11	160		160	18.7	54.8	861	33.1	31.2	1.9	37625
		May 11	210		179	18.0	56.0	966	36.2	33.5	2.7	39875
		May 27	160		148	23.3	53.6	781	36.1	26.3	9.8	39750
		May 27	210		169	23.4	53.5	894	29.2	17.2	12.0	39625
			32000		163	20.6	54.7	870	26.5	20.8	5.7	33750
			42000		165	21.1	54.2	881	40.7	33.2	7.5	44688
			32000	DKC55-08	159	20.2	55.4	848	31.9	27.7	4.2	33875
			32000	DKC55-09	167	21.1	54.1	891	21.1	13.9	7.2	33625
			42000	DKC55-08	164	21.0	54.7	874	49.5	46.1	3.4	45000
			42000	DKC55-09	167	21.1	53.8	888	31.9	20.3	11.6	44375
			32000	160	158	21.0	54.4	841	33.2	25.8	7.4	33250
			32000	210	168	20.2	55.1	899	19.9	15.9	4.0	34250
			42000	160	150	21.0	54.0	801	36.0	31.7	4.3	44125
			42000	210	180	21.2	54.4	961	45.5	34.8	10.7	45250
		32000	May 11		165	18.0	55.9	888	26.8	24.1	2.7	33625
		32000	May 27		161	23.3	53.6	851	26.2	17.5	8.7	33875
		42000	May 11		175	18.7	54.9	938	42.5	40.5	2.0	43875
		42000	May 27		156	23.5	53.5	823	39.0	25.9	13.1	45500
	CT				176	18.7	55.8	945	53.9	45.4	8.5	40313
	NT				152	23.0	53.1	805	13.4	8.7	4.7	38125
	CT			DKC55-08	175	18.9	56.2	941	62.0	59.1	2.9	40500
	CT			DKC55-09	177	18.5	55.5	950	45.7	31.6	14.1	40125
	NT			DKC55-08	147	22.4	53.9	782	19.5	14.7	4.7	38375
	NT			DKC55-09	157	23.7	52.3	829	7.3	2.6	4.7	37875
	CT		160		162	18.1	55.8	873	56.3	50.1	6.2	39250
	CT		210		190	19.3	55.9	1018	51.4	40.6	10.8	41375
	NT		160		146	24.0	52.6	769	12.9	7.4	5.5	38125
	NT		210		158	22.1	53.6	841	13.9	10.0	3.9	38125

continue

**Table C - 58. Corn Cropping Systems - Corn.**(continued) **Arlington, WI - 2012**

Rotation	Plant Tillage density	Date of planting	N rate lbs/A	Genotype	Grain yield bu/A	Grain moisture	Test weight	Grower return \$	Lodged			Harvest population plants/A
									Total %	Stalk %	Root %	
	CT	May 11			182	16.4	57.0	987	57.2	55.3	1.9	40000
	CT	May 27			170	21.0	54.7	904	50.5	35.5	15.1	40625
	NT	May 11			157	20.3	53.8	839	12.1	9.4	2.7	37500
	NT	May 27			147	25.7	52.4	771	14.7	8.0	6.7	38750
	CT	32000			171	18.1	56.1	922	41.4	35.7	5.6	35250
	CT	42000			181	19.3	55.6	969	66.4	55.0	11.4	45375
	NT	32000			155	23.1	53.3	818	11.7	6.0	5.8	32250
	NT	42000			150	22.9	52.9	793	15.1	11.4	3.7	44000
	CC				162	20.6	54.4	865	41.0	33.4	7.6	38500
	CS				166	21.1	54.5	886	26.3	20.6	5.6	39938
	CC			DKC55-08	158	20.4	55.1	846	46.7	41.6	5.1	38750
	CC			DKC55-09	165	20.8	53.7	883	35.3	25.2	10.1	38250
	CS			DKC55-08	164	20.8	55.0	876	34.8	32.2	2.6	40125
	CS			DKC55-09	168	21.3	54.1	896	17.7	9.1	8.7	39750
	CC		160		152	20.9	54.2	811	39.5	33.4	6.1	37750
	CC		210		172	20.4	54.7	918	42.6	33.4	9.1	39250
	CS		160		156	21.1	54.2	831	29.7	24.1	5.6	39625
	CS		210		177	21.0	54.9	941	22.8	17.2	5.6	40250
	CC			May 11	167	17.9	55.3	900	47.3	43.6	3.7	37750
	CC			May 27	157	23.3	53.5	830	34.7	23.2	11.5	39250
	CS			May 11	173	18.7	55.5	927	22.0	21.0	1.0	39750
	CS			May 27	160	23.4	53.5	845	30.5	20.2	10.3	40125
	CC	32000			158	20.6	54.7	844	31.4	24.6	6.8	33000
	CC	42000			166	20.6	54.1	885	50.7	42.2	8.4	44000
	CS	32000			168	20.6	54.7	896	21.7	17.1	4.6	34500
	CS	42000			165	21.5	54.3	876	30.8	24.2	6.6	45375
	CC	CT			183	18.7	55.7	984	63.7	54.1	9.6	40250
	CC	NT			141	22.5	53.1	746	18.3	12.7	5.6	36750
	CS	CT			169	18.6	56.0	907	44.0	36.6	7.4	40375
	CS	NT			164	23.5	53.1	865	8.5	4.6	3.8	39500
	Mean				164	20.8	54.5	875	33.6	27.0	6.6	39219
<b>Probability(%)</b>												
	Tillage (T)				0.9	0.0	0.0	0.5	0.0	0.0	13.7	0.7
	Rotation (R)				55.7	58.9	76.0	59.4	1.3	3.2	41.7	4.9
	DOP (DOP)				15.7	0.0	0.1	7.8	68.6	6.5	0.4	17.5
	Plant Density (PD)				75.6	57.5	24.7	77.9	1.6	3.6	45.3	0.0
	Genotype (G)				45.2	55.4	2.4	48.0	1.6	0.3	3.8	51.2
	Nitrogen Rate (Nrate)				2.1	67.4	20.2	1.8	71.0	52.1	52.8	12.9
	T x R				2.8	52.2	64.2	3.0	34.5	37.9	94.8	6.8
	T x DOP				84.6	62.2	33.6	84.7	36.6	10.2	7.9	63.7
	T x PD				35.1	38.5	85.4	37.0	5.2	20.6	12.7	23.5
	T x G				59.5	30.9	31.6	63.4	68.4	16.4	3.7	92.4
	T x Nrate				31.1	6.7	38.8	36.4	56.0	26.6	21.8	12.9

continue

**Table C - 58. Corn Cropping Systems - Corn.**(continued) **Arlington, WI - 2012**

Rotation	Plant	Date of	N	Grain	Grain	Test	Grower	Lodged			Harvest	
	Tillage	density	planting					rate	Genotype	yield		moisture
			lbs/A		bu/A		\$	%	%	%		plants/A
DOP x R					86.8	66.4	78.4	88.1	5.8	8.5	76.4	40.2
PD x R					47.8	56.2	84.3	45.0	32.2	32.8	95.3	92.4
G x R					85.2	95.3	58.0	83.2	57.9	52.5	81.8	92.4
Nrate x R					95.7	81.9	87.0	96.0	33.7	51.3	53.9	51.2
DOP x PD					34.0	75.6	31.0	33.6	77.2	45.2	30.3	31.0
G x DOP					39.6	77.5	82.4	39.5	72.4	45.8	3.4	40.2
Nrate x DOP					88.8	61.6	16.9	92.5	33.2	28.9	76.3	9.4
G x PD					70.1	60.2	65.0	71.8	50.3	26.9	29.7	77.7
Nrate x PD					21.4	52.7	69.4	21.8	4.3	23.2	6.3	92.4
G x Nrate					66.0	18.4	27.0	59.2	8.9	9.6	95.8	92.4
<b>LSD(0.10)</b>												
Tillage (T)					13	1.4	0.8	70	8.9	9.3	NS	1165
Rotation (R)					NS	NS	NS	NS	8.9	9.3	NS	1165
DOP (DOP)					NS	1.4	0.8	70	NS	9.3	4.2	NS
Plant Density (PD)					NS	NS	NS	NS	8.9	9.3	NS	1165
Genotype (G)					NS	NS	0.8	NS	8.9	9.3	4.2	NS
Nitrogen Rate (Nrate)					13	NS	NS	70	NS	NS	NS	NS
T x R					19	NS	NS	99	NS	NS	NS	1648
T x DOP					NS	NS	NS	NS	NS	NS	6.0	NS
T x PD					NS	NS	NS	NS	12.6	NS	NS	NS
T x G					NS	NS	NS	NS	NS	NS	NS	NS
T x Nrate					NS	2	NS	NS	NS	NS	NS	NS
DOP x R					NS	NS	NS	NS	12.6	13.1	NS	NS
PD x R					NS	NS	NS	NS	NS	NS	NS	NS
G x R					NS	NS	NS	NS	NS	NS	NS	NS
Nrate x R					NS	NS	NS	NS	NS	NS	NS	NS
DOP x PD					NS	NS	NS	NS	NS	NS	NS	NS
G x DOP					NS	NS	NS	NS	NS	NS	6.0	NS
Nrate x DOP					NS	NS	NS	NS	NS	NS	NS	1648
G x PD					NS	NS	NS	NS	NS	NS	NS	NS
Nrate x PD					NS	NS	NS	NS	12.6	NS	6.0	NS
G x Nrate					NS	NS	NS	NS	12.6	13.1	NS	NS