

## FIELD EXPERIMENT HISTORY

**Title:** Plant Density and Nitrogen Rate Influence on Corn Grain  
**Experiment:** 12 PD x N **Trial ID:** 3189 **Year:** 2008  
**Personnel:** J. G. Lauer, K. D. Kohn and T. H. Diallo  
**Location:** Hancock, WI **County:** Waushara  
**Supported By:** HATCH

### Site Information

**Field:** C-07 **Previous Crop:** Potatoes **Soil Type:** Plainfield Sand  
**Soil Test:** **Date:** 11/1 /07 **pH:** 6.6 **OM (%)** 1.1 **P (ppm)** 98 **K (ppm)** 107

### Plot Management

**Tillage Operations:** Disk

	<u>Analysis:</u>	<u>Rate lbs/A:</u>	<u>Date:</u>
<b>Fertilizer:</b> <b>Preplant :</b>	0-0-60	100	4 /8 /08
<b>Starter :</b>	10-34-0	3.0 gal/A	5 /6 /08
<b>Post plant :</b>	21-0-0-24S	6/24	N/A
	46-0-0	7/1	
<b>Manure:</b>	N/A	N/A	N/A

**Herbicide:** Dual II Mag 16 oz/A **Insecticide:** None  
 Aatrex 4L 1.5 pt/A **Hybrid:** Dekalb DKC50-44(VT3)

**Irrigation:** None

**Planting Date:** 5/6/08 **Planting Depth:** 1.5" **Row Width:** 30"

**Target Plant Density:** See Factors **Planting Method:** Almaco Precision Planter

**Harvest Date:** 10/23/08 **Harvest Method:** Massey Ferguson 8XP

### Experimental Design

**Design:** RCB **Replications:** 4  
**Plot Size Seeded:** 10' x 25' **Experiment Size:** 0.3 Acre  
**Harvest Plot Size:** 5' x 23' **Harvest Plant Density:** N/A plants per acre

### Factors/Treatments:

<u>Target Plant Density: (plants/A)</u>	<u>Nitrogen Rate (lbs/A)</u>
16000	90 lbs
22000	130 lbs
28000	
34000	

**Results: Table C-51.**

**Table C-51. Plant Density and Nitrogen Rate Influence on Corn Grain.  
Hancock, WI - 2008.**

Target density	Nitrogen rate	V4 population	Yield	Moisture	Test weight	Lodged			Grower return
						Total	Stalk	Root	
plants/A	lbs/A	plants/A	bu/A	%	lbs/bu	%	%	%	\$/A
	90	28906	71	16.4	56	32	32	0	244
	130	28890	69	16.4	56	40	40	0	240
16000		18197	62	15.0	57	49	49	0	216
22000		25378	68	15.2	56	37	37	0	237
28000		33238	73	17.4	56	35	35	0	252
34000		38778	76	17.9	56	24	24	0	262
16000	90	18087	53	15.6	57	56	56	0	184
22000	90	25000	73	14.7	55	34	34	0	252
28000	90	33617	69	18.0	56	26	26	0	236
34000	90	38920	87	17.2	56	13	13	0	302
16000	130	18308	71	14.4	57	41	41	0	248
22000	130	25757	64	15.7	56	41	41	0	222
28000	130	32859	78	16.9	56	44	44	0	268
34000	130	38636	65	18.7	56	35	35	0	222
Mean		28898	70	16.4	56	36	36	0	242
<b>Probability(%)</b>									
Plant Density (D)		0.0	8.8	0.5	7.9	7.2	7.2	-	13.3
Nitrogen (N)		96.4	77.2	93.4	90.9	18.2	18.2	-	78.3
D x N		44.4	0.8	31.8	64.5	19.4	19.4	-	0.7
<b>LSD (0.10)</b>									
Plant Density (D)		839	9	1.5	1	15	15	-	NS
Nitrogen (N)		NS	NS	NS	NS	NS	NS	-	NS
D x N		NS	13	NS	NS	NS	NS	-	45