

FIELD EXPERIMENT HISTORY

Title: Plant Density and Row Spacing Effects on Corn Grain.
Experiment: 05RS **Trial ID:** 3378 **Year:** 2010
Personnel: J.G. Lauer, K.D. Kohn and T.H. Diallo
Location: Arlington, WI **County:** Columbia
Supported By: Monsanto

Site Information

Field: ARS330 **Previous Crop:** Corn **Soil Type:** Plano Silt Loam
Soil Test: **Date:** 10/21/10 **pH:** 6.6 **OM (%)** 3.4 **P (ppm)** 25 **K (ppm)** 105

Plot Management

Tillage Operations: Fall Chisel Plow Field Cultivator 2x

	<u>Analysis:</u>	<u>Rate lbs/A:</u>	<u>Date:</u>
Fertilizer:			
Preplant :	46-0-0	340	N/A
Starter :	N/A	N/A	N/A
Post plant :	N/A	N/A	N/A
Manure:	N/A	N/A	N/A
Herbicide:	Parallel 30 oz/A Hornet 4.0 oz/A Mirage Plus 24 oz/A	Insecticide: None	
		Hybrid: DKC52-59 DKC53-78 DKC55-09	
Irrigation:	None		
Planting Date:	5/20/10	Planting Depth: 1.5"	Row Width: See Factors
Target Plant Density:	See Factors	Planting Method:	Monsanto Plot Planter
Harvest Date:	10/18/10	Harvest Method:	Massey Ferguson 8XP

Experimental Design

Design: Split-Plot **Replications:** 3
Plot Size Seeded: 10' x 160' **Experiment Size:** 1.25 A
Harvest Plot Size: 5' x 160' **Harvest Plant Density:** See Factors

Factors/Treatments:

<u>Row Spacing:</u>	<u>Plant Density: (plants/A)</u>
Twin Row 8"	28000, 33000,
30 inch	38000, 43000 and
	48000

Results: Table C-35.

**Table C-35. Plant Density and Row Spacing Effects on Corn Grain.
Arlington, WI - 2010.**

Target population	Row spacing	Harvest		Grain yield	Grain moisture	Test weight	Lodged			Grower return
		population	ears				Total	Stalk	Root	
		plants/A	ears/A	bu/A	%	lb/bu	%	%	%	\$/A
	30 inch	36507	36640	215	14.7	54	1	1	0	965
	Twin Row	36707	36707	214	14.5	54	1	1	0	959
28000		27712	27712	206	15.4	54	0	0	0	920
33000		33355	33355	217	14.8	54	0	0	0	971
38000		36839	36839	218	14.5	54	0	0	0	977
43000		39660	39660	218	14.4	54	1	1	0	978
48000		45468	45800	215	14.0	54	1	1	0	966
28000	30 inch	27215	27215	210	15.5	54	0	0	0	939
28000	Twin Row	28210	28210	201	15.2	54	0	0	0	901
33000	30 inch	34184	34184	218	14.9	54	1	1	0	978
33000	Twin Row	32525	32525	215	14.8	55	0	0	0	965
38000	30 inch	37171	37171	218	14.6	54	1	1	0	977
38000	Twin Row	36507	36507	218	14.5	54	0	0	0	977
43000	30 inch	38831	38831	216	14.5	54	2	2	0	968
43000	Twin Row	40490	40490	220	14.3	54	1	1	0	988
48000	30 inch	45136	45800	215	14.2	54	0	0	0	965
48000	Twin Row	45800	45800	215	13.9	54	2	2	0	966
Mean		36607	36673	215	14.6	54	1	1	0	962
Probability(%)										
Density (D)		0.0	0.0	1.7	4.7	71.4	41.0	41.0	-	1.7
Row Space (S)		77.3	92.5	26.4	0.0	57.0	81.9	81.9	-	29.0
D x S		55.4	59.1	5.4	36.5	99.6	17.9	17.9	-	5.6
LSD(0.10)										
Density (D)		2326	2219	6	0.7	NS	NS	NS	NS	26
Row Space (S)		NS	NS	NS	0.1	NS	NS	NS	NS	NS
D x S		NS	NS	6	NS	NS	NS	NS	NS	29