

FIELD EXPERIMENT HISTORY

Title: Cultivation, Plant Density, and Hybrid Influence on Corn Grain
Experiment: 11Misc **Trial ID** 2478 **Year:** 2003
Personnel: J. G. Lauer, K. D. Kohn, and T. F. Stanger
Location: Arlington, WI **County:** Columbia
Supported By: HATCH

Site Information

Field: 375 **Previous Crop:** Soybean **Soil Type:** Plano Silt Loam
Soil Test: **Date:** 10/1 /03 **pH** 6.8 **OM (%)** 3.8 **P (ppm)** 59 **K (ppm)** 199

Plot Management

Tillage Operations: Fall Chisel Plow Field Cultivator Cultivated 7/2/03

	<u>Analysis:</u>	<u>Rate lbs/A:</u>	<u>Date:</u>
Fertilizer: Preplant :	46-0-0	150 lbs/A	N/A
Starter :	6-24-24	9 lbs/A	5 /27/03
Post plant :	N/A	N/A	N/A
Manure:	N/A	N/A	N/A

Herbicide: Hornet 3.0 oz/A **Insecticide:** N/A
Dual II 2.0 pt/A **Hybrid:** See Factors
Irrigation: None

Planting Date: 5/27/03 **Planting Depth:** 1.5" **Row Width:** 30"
Target Plant Density: See Factors **Planting Method:** Kinze 2000 Interplant Planter
Harvest Date: 10/23/03 **Harvest Method:** Kincaid Plot Combine

Experimental Design

Design: **Replications:** 3
Plot Size Seeded: 25' x 10' **Experiment Size:** 22' x 5'
Harvest Plot Size: 2.5' x 22' **Harvest Plant Density:** N/A **plants per acre**

Factors/Treatments:

Plant Density: (plants/A)

30000
38000

Hybrids:

Dekalb DKC3947
Dekalb DKC4628
NK Brand 3030

Results: Table C-79

**Table C-79. Cultivation, Plant Density, and Hybrid Influence on Corn Grain.
Arlington, WI - 2003.**

Target Density	Hybrid	Trait	Cultivation	Grain											
				Yield	Moisture	Test Wt	Grower Return	Lodged			Barren	Ears Dropped	Harvest		
								bu/A	%	lbs/bu			\$/A	%	%
			Y or N												
			Y	178	20.9	57	338	37	37	0	0	0	31944	32604	
			N	181	21.1	57	344	36	36	0	1	0	32846	33286	
	Dekalb 3947	RR		184	20.7	58	350	17	17	0	0	0	32505	32934	
	Dekalb 4628	RR		190	21.6	56	359	46	46	0	0	0	32670	33528	
	NK 3030			165	20.7	57	315	47	47	0	1	0	32010	32373	
	Dekalb 3947	RR	Y	177	20.4	57	338	20	20	0	0	0	32076	32472	
	Dekalb 3947	RR	N	191	21.0	58	362	14	14	0	0	0	32934	33396	
	Dekalb 4628	RR	Y	194	21.6	56	365	46	46	0	0	0	32406	33462	
	Dekalb 4628	RR	N	187	21.6	56	353	46	46	0	0	0	32934	33594	
	NK 3030		Y	164	20.8	56	312	45	45	0	0	0	31350	31878	
	NK 3030		N	166	20.6	57	317	49	49	1	1	0	32670	32868	
30000				180	20.7	57	342	28	28	0	0	0	29436	30118	
38000				180	21.3	57	340	46	45	0	0	0	35354	35772	
30000			Y	182	20.8	57	346	28	28	0	0	0	29304	30008	
30000			N	178	20.6	57	338	28	28	0	0	0	29568	30228	
38000			Y	174	21.0	57	330	46	46	0	0	0	34584	35200	
38000			N	185	21.5	57	350	45	45	0	1	0	36124	36344	
30000	Dekalb 3947	RR		183	20.5	58	350	7	7	0	0	0	29502	30294	
30000	Dekalb 4628	RR		185	20.8	56	353	38	38	0	0	0	29172	29898	
30000	NK 3030			171	20.8	56	324	38	38	0	0	0	29634	30162	
38000	Dekalb 3947	RR		184	20.9	58	349	27	27	0	1	0	35508	35574	
38000	Dekalb 4628	RR		195	22.3	56	365	54	54	0	0	0	36168	37158	
38000	NK 3030			160	20.6	57	305	56	56	1	1	0	34386	34584	

(continued)

Table C-79. Cultivation, Plant Density, and Hybrid Influence on Corn Grain.
 (continued) **Arlington, WI - 2003.**

Target Density	Hybrid	Trait	Cultivation Y or N	Grain										
				Yield bu/A	Moisture %	Test Wt lbs/bu	Grower Return \$/A	Lodged			Barren %	Ears Dropped %	Harvest	
								Total %	Stalk %	Root %			plants plants/A	ears ears/A
30000	Dekalb 3947	RR	Y	183	20.3	58	350	9	9	0	0	0	29172	29964
30000	Dekalb 3947	RR	N	184	20.6	58	350	5	5	0	0	0	29832	30624
30000	Dekalb 4628	RR	Y	185	21.0	56	351	39	39	0	0	0	28776	29568
30000	Dekalb 4628	RR	N	186	20.6	57	354	37	37	0	0	0	29568	30228
30000	NK 3030		Y	178	21.1	56	338	35	35	0	0	0	29964	30492
30000	NK 3030		N	163	20.5	56	311	41	41	0	1	0	29304	29832
38000	Dekalb 3947	RR	Y	170	20.5	57	325	31	31	0	0	0	34980	34980
38000	Dekalb 3947	RR	N	198	21.3	58	374	23	23	0	1	0	36036	36168
38000	Dekalb 4628	RR	Y	202	22.1	56	379	53	53	0	0	0	36036	37356
38000	Dekalb 4628	RR	N	188	22.5	56	351	54	54	0	0	0	36300	36960
38000	NK 3030		Y	150	20.4	57	286	55	55	0	0	0	32736	33264
38000	NK 3030		N	170	20.7	57	324	57	56	1	1	0	36036	35904
Mean				180	21.0	57	341	37	37	0	0	0	32395	32945
Probability(%)														
Hybrid (H)				49.8	59.6	63.9	48.7	26.4	27.1	42.2	7.1	42.2	54.4	15.4
Plant Density (D)				99.1	38.7	84.5	81.5	0.6	0.6	42.3	22.7	42.3	1.2	2.1
H x D				19.6	0.7	34.5	31.9	87.2	87.4	38.7	18.4	38.7	12.6	6.6
Cultivation (C)				63.7	58.0	1.9	63.4	82.2	77.0	42.3	34.7	42.3	5.9	13.2
C x H				19.3	36.6	97.9	22.4	52.4	55.3	38.7	0.2	38.7	75.1	71.5
C x D				41.7	2.8	78.7	44.8	65.6	60.7	42.3	20.9	42.3	45.0	54.3
C x D x H				7.0	91.6	75.8	6.8	86.1	83.9	38.7	64.0	38.7	10.3	19.1
LSD (0.10)														
Hybrid (H)				NS	NS	NS	NS	NS	NS	NS	0	NS	NS	NS
Plant Density (D)				NS	NS	NS	NS	4	4	NS	NS	NS	1896	2454
H x D				NS	0.6	NS	NS	NS	NS	NS	NS	NS	NS	1417
Cultivation (C)				NS	NS	0	NS	NS	NS	NS	NS	NS	671	NS
C x H				NS	NS	NS	NS	NS	NS	NS	0	NS	NS	NS
C x D				NS	0.2	NS	NS	NS	NS	NS	NS	NS	NS	NS
C x D x H				19	NS	NS	35	NS	NS	NS	NS	NS	NS	NS
CV(%)				7	3	2	7	30	29	600	125	600	4	4