

## FIELD EXPERIMENT HISTORY

**Title:** Cultivation, Plant Density, and Hybrid Influence on Corn Grain  
**Experiment:** 11 Misc **Trial ID** 2580 **Year:** 2004  
**Personnel:** J. G. Lauer, P. J. Flannery, K. D. Kohn, and T. F. Stanger  
**Location:** Arlington, WI **County:** Columbia  
**Supported By:** HATCH

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### Site Information

**Field:** ARS392 **Previous Crop:** Soybean **Soil Type:** Plano Silt Loam  
**Soil Test:** **Date:** 10/1 /04 **pH** 6.9 **OM (%)** 3.1 **P (ppm)** 89 **K (ppm)** 268

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### Plot Management

**Tillage Operations:** Chisel Plow Field Cultivator Soil Finisher Cultivated 6/22/04  

	<u>Analysis:</u>	<u>Rate lbs/A:</u>	<u>Date:</u>
<b>Fertilizer:</b> <b>Preplant :</b>	46-0-0	325 lbs/A	4 /15/04
<b>Starter :</b>	9-24-24	150 lbs/A	5 /7 /04
<b>Post plant :</b>	N/A	N/A	N/A
<b>Manure:</b>	N/A	N/A	N/A

**Herbicide:** Accent 0.66 oz/A **Insecticide:** None  
 Callisto 6.0 fl-oz/A **Hybrid:** See Factors  
**Irrigation:** None

**Planting Date:** 5/7/04 **Planting Depth:** 1.5" **Row Width:** 30"  
**Target Plant Density:** See Factors **Planting Method:** Kinze Plot Planter  
**Harvest Date:** 10/21/04 **Harvest Method:** Kincaid Plot Combine

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### Experimental Design

**Design:** RCB **Replications:** 3  
**Plot Size Seeded:** 10' x 25' **Experiment Size:** 0.21 Acre  
**Harvest Plot Size:** 5' x 22' **Harvest Plant Density:** N/A **plants per acre**

### Factors/Treatments:

#### Plant Density: (plants/A)

30000  
38000

#### Hybrids:

Dekalb DKC5334  
Pioneer 34M94  
Pioneer 34M95

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**Results: Table C-75.**

**Table C-75. Cultivation, Plant Density, and Hybrid Influence on Corn Grain.  
Arlington, WI - 2004.**

Target Density plants/A	Hybrid	Trait	Cultivation Y or N	Grain										
				Yield bu/A	Moisture %	Test Weight lbs/bu	Grower Return \$/A	Lodged				Ears Dropped %	Harvest	
								Total %	Stalk %	Root %	Barren %		plants/A	ears/A
			N	199	27.5	51	323	6	6	0	1	0	33616	33836
			Y	199	27.9	51	321	5	5	0	1	0	33594	33550
	Dekalb DKC5334	BtRR		199	25.1	51	332	7	7	0	1	0	33627	34320
	Pioneer 34M94			199	28.8	50	317	5	5	0	1	0	33297	33099
	Pioneer 34M95	Bt		200	29.3	50	317	4	4	0	1	0	33891	33660
	Dekalb DKC5334	BtRR	N	196	25.0	51	327	10	10	0	1	0	33990	34782
	Dekalb DKC5334	BtRR	Y	203	25.1	51	338	5	5	0	1	0	33264	33858
	Pioneer 34M94		N	199	28.6	51	318	7	6	0	1	0	33000	32868
	Pioneer 34M94		Y	199	29.0	50	316	4	4	0	1	0	33594	33330
	Pioneer 34M95	Bt	N	204	28.9	50	325	3	3	0	1	0	33858	33858
	Pioneer 34M95	Bt	Y	196	29.7	50	309	5	5	0	1	0	33924	33462
30000				194	28.2	51	312	3	3	0	1	0	30030	30426
38000				204	27.3	50	332	9	8	0	1	0	37180	36960
30000			N	196	27.8	51	316	3	3	0	0	0	30096	30668
30000			Y	193	28.5	51	308	2	2	0	1	0	29964	30184
38000			N	203	27.2	51	330	10	10	0	1	0	37136	37004
38000			Y	206	27.4	50	334	7	7	0	1	0	37224	36916
30000	Dekalb DKC5334	BtRR		200	25.4	51	333	3	3	0	0	0	29964	31482
30000	Pioneer 34M94			193	29.5	51	304	2	2	0	1	0	29568	29436
30000	Pioneer 34M95	Bt		190	29.7	50	300	3	3	0	1	0	30558	30360
38000	Dekalb DKC5334	BtRR		198	24.8	52	332	11	11	0	2	0	37290	37158
38000	Pioneer 34M94			205	28.1	50	330	9	9	1	1	0	37026	36762
38000	Pioneer 34M95	Bt		210	28.9	50	334	5	5	0	1	0	37224	36960

(continued)

**Table C-75. Cultivation, Plant Density, and Hybrid Influence on Corn Grain.**  
(continued) **Arlington, WI - 2004.**

Target Density	Hybrid	Trait	Cultivation	Grain										
				Yield	Moisture	Test Weight	Grower Return	Lodged			Barren	Ears Dropped	Harvest	
plants/A			Y or N	bu/A	%	lbs/bu	\$/A	%	%	%	%	%	plants/A	ears/A
30000	Dekalb DKC5334	BtRR	N	200	25.2	51	333	3	3	0	0	0	30228	31680
30000	Dekalb DKC5334	BtRR	Y	200	25.5	51	333	3	3	0	0	0	29700	31284
30000	Pioneer 34M94		N	193	29.8	51	303	1	1	0	0	0	29568	29568
30000	Pioneer 34M94		Y	193	29.1	51	306	2	2	0	1	0	29568	29304
30000	Pioneer 34M95	Bt	N	195	28.4	50	313	4	4	0	0	0	30492	30756
30000	Pioneer 34M95	Bt	Y	185	30.9	50	286	2	2	0	2	0	30624	29964
38000	Dekalb DKC5334	BtRR	N	191	24.8	52	320	16	16	0	2	0	37752	37884
38000	Dekalb DKC5334	BtRR	Y	205	24.7	51	344	7	7	0	1	0	36828	36432
38000	Pioneer 34M94		N	205	27.4	50	332	12	11	1	1	0	36432	36168
38000	Pioneer 34M94		Y	205	28.9	50	327	6	6	0	1	0	37620	37356
38000	Pioneer 34M95	Bt	N	212	29.3	50	336	2	2	0	1	0	37224	36960
38000	Pioneer 34M95	Bt	Y	208	28.5	50	332	9	9	0	1	0	37224	36960
Mean				199	27.7	51	322	6	6	0	1	0	33605	33693
<b>Probability(%)</b>														
Hybrid (H)				97.3	0.0	0.0	15.0	42.3	42.9	19.9	89.6	-	8.6	1.0
Plant Density (D)				2.5	0.1	21.1	1.2	0.5	0.8	20.1	38.9	-	0.0	0.0
H x D				12.2	43.3	15.0	13.1	49.5	53.6	19.9	13.3	-	26.9	9.8
Cultivation (C)				97.1	7.0	30.3	81.7	40.7	43.6	66.5	65.6	-	91.7	34.6
C x H				38.0	50.3	90.9	33.7	34.5	36.7	82.6	40.8	-	5.1	18.1
C x D				43.6	30.1	52.6	37.2	58.3	61.3	66.5	29.8	-	60.1	51.2
C x D x H				83.2	0.0	54.7	59.6	15.1	16.9	82.6	62.4	-	26.9	22.5
<b>LSD (0.10)</b>														
Hybrid (H)				NS	0.5	0	NS	NS	NS	NS	NS	-	436	624
Plant Density (D)				7	0.4	NS	12	3	3	NS	NS	-	356	510
H x D				NS	NS	NS	NS	NS	NS	NS	NS	-	NS	883
Cultivation (C)				NS	0.4	NS	NS	NS	NS	NS	NS	-	NS	NS
C x H				NS	NS	NS	NS	NS	NS	NS	NS	-	617	NS
C x D				NS	NS	NS	NS	NS	NS	NS	NS	-	NS	NS
C x D x H				NS	1.0	NS	NS	NS	NS	NS	NS	-	NS	NS
<b>CV(%)</b>				6	3	1	7	103	108	455	127	-	2	3