

## FIELD EXPERIMENT HISTORY

**Title:** Plant Density and Hybrid Influence on Corn Grain Performance  
**Experiment:** 02Plant Density **Trial ID** 3279 **Year:** 2009  
**Personnel:** J. G. Lauer, K. D. Kohn and T. H. Diallo  
**Location:** Arlington, WI **County:** Columbia  
**Supported By:** Monsanto

### Site Information

**Field:** ARS406 **Previous Crop:** Alfalfa **Soil Type:** Plano Silt Loam  
**Soil Test:** **Date:** 10/25/09 **pH** 6.6 **OM (%)** 3.4 **P (ppm)** 42 **K (ppm)** 123

### Plot Management

**Tillage Operations:** Fall Chisel Plow    Field Cultivator    Soil Finisher    Cultivate  
**Fertilizer:**

	<u>Analysis:</u>	<u>Rate lbs/A:</u>	<u>Date:</u>
<b>Preplant :</b>	NA	NA	NA
<b>Starter :</b>	10-34-0	3.0 gal/A	5 /2 /09
<b>Post plant :</b>	46-0-0	50	6 /26/09

**Herbicide:** Dual II Mag 24 oz/A    **Insecticide:** None  
 Hornet 4 oz/A    **Hybrid:** See Factors

**Irrigation:** None

**Planting Date:** 5/2/09    **Planting Depth:** 1.5"    **Row Width:** 30"

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

**Harvest Date:** 11/5/09    **Harvest Method:** Massey Ferguson 8XP

### Experimental Design

**Design:** RCB    **Replications:** 3  
**Plot Size Seeded:** 10' x 25'    **Experiment Size:** 0.46 Acre  
**Harvest Plot Size:** 5' x 23'    **Harvest Plant Density:** See Factors

### Factors/Treatments:

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

14000 26000 32000  
38000 44000 56000

#### Hybrid:

Dekalb DKC44-92    Dekalb DKC46-60  
Dekalb DKC52-59    Dekalb DKC52-62

**Results: Table C-21.**

**Table C-21. Plant Density and Hybrid Influence on Corn Grain.**  
**Arlington, WI - 2009.**

Target density	Hybrid	Yield	Moisture	Test weight	Lodged			Grower return	V4 population	Harvest	
					Total	Stalk	Root			population	ears
plants/A		bu/A	%	lbs/bu	%	%	%	\$/A	plants/A	plants/A	ears/A
	Dekalb DKC44-92	218	20.4	55	1	1	0	773	37163	35858	37037
	Dekalb DKC46-60	216	20.2	57	2	2	0	767	36426	36153	38173
	Dekalb DKC52-59	235	20.8	56	6	6	0	831	37268	36153	37289
	Dekalb DKC52-62	241	21.1	57	3	2	0	850	32218	31691	33670
14000		174	22.1	54	5	5	0	611	12910	15404	22222
26000		221	21.4	55	0	0	0	779	26609	26452	27462
32000		238	20.4	56	0	0	0	842	33680	33017	33838
38000		241	20.3	56	1	1	0	854	40593	39330	39646
44000		248	19.7	57	3	3	0	883	45422	44823	45075
56000		243	19.8	57	7	7	0	862	55397	50757	51009
14000	Dekalb DKC44-92	166	20.4	55	1	1	0	587	13762	14899	20202
26000	Dekalb DKC44-92	217	22.0	54	0	0	0	760	27651	27777	29040
32000	Dekalb DKC44-92	225	20.4	56	0	0	0	797	34974	34343	34595
38000	Dekalb DKC44-92	223	20.4	55	0	0	0	788	41666	39141	39141
44000	Dekalb DKC44-92	243	19.0	57	3	2	1	867	48610	48989	49242
56000	Dekalb DKC44-92	236	20.1	56	1	1	0	836	56312	49999	49999
14000	Dekalb DKC46-60	160	20.8	54	3	3	0	566	12879	16161	24495
26000	Dekalb DKC46-60	208	21.7	56	0	0	0	732	26641	26262	27525
32000	Dekalb DKC46-60	226	19.8	57	0	0	0	805	33964	35101	36616
38000	Dekalb DKC46-60	233	20.6	58	0	0	0	823	41540	40656	41161
44000	Dekalb DKC46-60	244	19.3	59	3	3	0	869	47095	46464	46464
56000	Dekalb DKC46-60	226	19.2	58	3	3	0	806	56439	52272	52777
14000	Dekalb DKC52-59	199	24.1	54	13	13	0	692	13636	17171	22727
26000	Dekalb DKC52-59	227	20.2	56	0	0	0	804	28030	27525	27777
32000	Dekalb DKC52-59	240	20.6	56	0	0	0	850	34974	33080	33080
38000	Dekalb DKC52-59	248	19.8	56	2	2	0	882	41792	40909	41414
44000	Dekalb DKC52-59	245	20.1	56	4	4	0	869	45833	43181	43181
56000	Dekalb DKC52-59	250	19.9	56	17	17	0	888	59343	55050	55555
14000	Dekalb DKC52-62	171	23.3	54	3	3	0	598	11363	13384	21464
26000	Dekalb DKC52-62	233	21.7	56	0	0	0	819	24116	24242	25505
32000	Dekalb DKC52-62	259	21.0	57	1	1	0	915	30808	29545	31060
38000	Dekalb DKC52-62	260	20.5	57	3	2	1	922	37373	36616	36868
44000	Dekalb DKC52-62	262	20.3	58	1	1	0	928	40151	40656	41414
56000	Dekalb DKC52-62	258	19.8	58	8	7	1	918	49494	45706	45706
Mean		227	20.6	56	3	3	0	805	35769	34964	36542
<b>Probability(%)</b>											
Plant Density (D)		0.0	0.0	0.0	0.0	0.0	65.7	0.0	0.0	0.0	0.0
Hybrid (H)		0.0	1.0	0.1	0.0	0.0	24.6	0.0	0.0	0.0	0.2
D x H		48.0	0.0	31.6	0.0	0.0	55.5	53.8	0.1	9.5	42.2
<b>LSD (0.10)</b>											
Plant Density (D)		10	0.6	1	2	2	NS	34	904	1625	2414
Hybrid (H)		8	0.5	1	1	2	NS	28	739	1326	1971
D x H		NS	1.1	2	4	4	NS	NS	1809	3249	NS

**Addendum Table C-58. Plant Density Influence on Corn Stover Agronomic and Biofuel Measurements. Arlington, WI - 2009.†**

Density		Moisture	Yield					CP	ADF	NDF	NDFD	ADL	Lignin	Glucan	Xylan	Cell	Hem	
Target	Harvest		Stover	TEP	TE	Etoh												
plants / A		%	g/plant	T/A	G/T	G/A	g/L	-----%-----										
26000	27500	40.2	119	3.6	96.1	345	4.34	5.2	48.3	80.5	55.4	3.7	13.0	34.6	20.5	41.9	29.3	
32000	33100	34.0	102	3.7	95.7	355	4.81	5.4	48.7	80.9	55.7	3.6	13.2	35.1	20.3	42.3	29.5	
38000	40900	27.7	91	4.1	96.5	396	4.70	5.0	48.5	81.1	55.7	3.6	14.4	34.9	20.4	42.4	29.5	
44000	43200	20.6	76	3.6	97.7	353	4.76	5.1	48.9	81.8	55.5	3.6	13.5	35.5	20.5	42.7	29.5	
56000	55100	19.7	62	3.8	98.2	375	4.42	4.8	49.5	82.2	55.1	3.7	14.1	35.8	20.5	43.3	29.5	
Mean	39900	28.4	90.1	3.8	96.8	365	4.61	5.1	48.8	81.3	55.5	3.6	13.6	35.2	20.4	42.5	29.5	
<b>Probability (%)</b>																		
Plant Density (D)	0.0	3.2	0.1	85.7	24.2	83.5	80.9	43.4	8.8	55.2	31.8	49.7	24.8	20.4	96.0	8.6	88.6	
<b>LSD (0.05)</b>																		
Plant Density (D)	5776	13.4	19.0	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	

† TEP, Theoretical ethanol potential; TE, Theoretical ethanol; Etoh, ethanol; CP, crude protein; ADF, acid detergent fiber; NDF; neutral detergent fiber; NDFD, neutral detergent fiber digestibility; ADL, acid detergent lignin; Cell, cellulose; Hem, hemicellulose

## FIELD EXPERIMENT HISTORY

**Title:** Plant Density and Hybrid Influence on Corn Grain Performance  
**Experiment:** 02Plant Density **Trial ID** 3280 **Year:** 2009  
**Personnel:** J. G. Lauer, K. D. Kohn and T. H. Diallo  
**Location:** Hancock, WI **County:** Waushara  
**Supported By:** Monsanto

### Site Information

**Field:** K22 **Previous Crop:** Potatoes **Soil Type:** Plainfield Sand  
**Soil Test:** **Date:** 10/25/09 **pH** 5.9 **OM (%)** 0.9 **P (ppm)** 101 **K (ppm)** 95

### 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 /1 /09
	<b>Starter :</b>	10-34-0	3.0 gal/A	4 /28/09
	<b>Post plant :</b>	28-0-0	41	6/1/09
		28-0-0	76	6/26/09
28-0-0		84	7/6/09	

**Herbicide:** Cinch 1.33 pt/A **Insecticide:** None  
 Callisto 2.0 pt/A **Hybrid:** See Factors

**Irrigation:** 22.4 inches

**Planting Date:** 4/28/09 **Planting Depth:** 1.5" **Row Width:** 30"

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

**Harvest Date:** 11/06/09 **Harvest Method:** Massey Ferguson 8XP

### Experimental Design

**Design:** RCB **Replications:** 3  
**Plot Size Seeded:** 10' x 25' **Experiment Size:** 0.46 Acre  
**Harvest Plot Size:** 5' x 23' **Harvest Plant Density:** See Factors

### Factors/Treatments:

<u>Target Plant Density: (plants/A)</u>	<u>Hybrid:</u>
14000 26000 32000	Dekalb DKC44-92 Dekalb DKC46-60
38000 44000 56000	Dekalb DKC52-59 Dekalb DKC52-62

**Results: Table C-22.**

**Table C-22. Plant Density and Hybrid Influence on Corn Grain.****Hancock, WI - 2009.**

Target density	Hybrid	Yield bu/A	Moisture %	Test weight lbs/bu	Lodged			Grower return \$/A	V4 population plants/A	Harvest	
					Total %	Stalk %	Root %			population plants/A	ears ears/A
plants/A											
	Dekalb DKC44-92	245	27.6	51	0	0	0	831	38308	38383	40467
	Dekalb DKC46-60	238	26.6	53	0	0	0	813	38678	38552	40972
	Dekalb DKC52-59	252	31.5	51	0	0	0	838	39264	37678	38909
	Dekalb DKC52-62	245	29.6	52	1	1	0	821	32849	32870	34827
14000		174	27.4	51	0	0	0	591	13771	14536	25031
26000		240	28.5	52	0	0	0	810	28282	27935	28377
32000		256	28.3	52	0	0	0	868	35321	34627	34943
38000		263	29.1	52	0	0	0	887	41256	40845	40909
44000		265	29.3	52	0	0	0	891	47790	47064	47222
56000		271	30.3	51	1	1	0	905	57228	56218	56281
14000	Dekalb DKC44-92	168	26.7	49	0	0	0	574	12555	14394	26136
26000	Dekalb DKC44-92	232	27.0	51	0	0	0	792	29166	29040	29293
32000	Dekalb DKC44-92	259	27.5	51	0	0	0	882	37121	36994	37499
38000	Dekalb DKC44-92	269	27.5	51	1	1	0	914	43813	44065	44065
44000	Dekalb DKC44-92	269	27.7	52	0	0	0	914	49368	49368	49368
56000	Dekalb DKC44-92	270	29.1	51	0	0	0	909	57827	56439	56439
14000	Dekalb DKC46-60	182	25.4	53	0	0	0	626	15151	15151	28661
26000	Dekalb DKC46-60	224	26.5	53	0	0	0	767	28787	29419	30176
32000	Dekalb DKC46-60	248	25.9	53	0	0	0	851	36489	36111	36237
38000	Dekalb DKC46-60	257	26.3	52	0	0	0	879	43813	43434	43434
44000	Dekalb DKC46-60	264	27.1	53	0	0	0	899	49621	48610	48737
56000	Dekalb DKC46-60	253	28.3	51	0	0	0	855	58206	58585	58585
14000	Dekalb DKC52-59	189	29.3	51	0	0	0	637	15005	16098	22727
26000	Dekalb DKC52-59	243	30.9	52	0	0	0	809	30808	28409	28409
32000	Dekalb DKC52-59	258	30.3	50	0	0	0	863	36111	33964	34343
38000	Dekalb DKC52-59	270	32.7	51	1	1	0	890	43307	41161	41161
44000	Dekalb DKC52-59	274	32.4	51	1	1	0	905	49873	48484	48610
56000	Dekalb DKC52-59	280	33.1	51	0	0	0	922	60479	57954	58206
14000	Dekalb DKC52-62	157	28.4	52	0	0	0	529	12374	12500	22601
26000	Dekalb DKC52-62	260	29.4	52	0	0	0	873	24368	24873	25631
32000	Dekalb DKC52-62	260	29.4	53	1	1	0	874	31565	31439	31691
38000	Dekalb DKC52-62	258	29.8	52	0	0	0	866	34090	34722	34974
44000	Dekalb DKC52-62	253	30.0	52	1	1	0	847	42297	41792	42171
56000	Dekalb DKC52-62	280	30.8	51	2	2	0	934	52398	51893	51893
Mean		245	28.8	52	0	0		825	37275	36871	38794
<b>Probability(%)</b>											
Plant Density (D)		0.0	0.0	5.9	33.4	33.4	-	0.0	0.0	0.0	0.0
Hybrid (H)		26.6	0.0	0.0	12.0	12.0	-	76.8	0.0	0.0	0.0
D x H		74.6	85.2	8.6	31.1	31.1	-	78.5	20.4	15.5	16.9
<b>LSD (0.10)</b>											
Plant Density (D)		15	0.8	1	NS	NS	-	53	1468	1317	1418
Hybrid (H)		NS	0.6	0	NS	NS	-	NS	1200	1077	1160
D x H		NS	NS	1	NS	NS	-	NS	NS	NS	NS

**Addendum Table C-59. Plant Density Influence on Corn Stover Agronomic and Biofuel Measurements.  
Hancock, WI - 2009.†**

Density		Moisture	Yield							CP	ADF	NDF	NDFD	ADL	Lignin	Glucan	Xylan	Cell	Hem
Target	Harvest		Stover	TEP	TE	Etoh	TEP	TE	Etoh										
plants / A		%	g/plant	T/A	G/T	G/A	g/L	-----%-----											
26000	28400	63.3	115	3.6	98	351	5.26	5.8	48.5	79.8	56.8	3.4	11.9	34.9	21.2	42.3	29.2		
32000	33900	64.9	62	2.3	100	234	4.72	5.6	49.5	81.4	56.8	3.4	11.5	36.2	21.3	43.7	29.6		
38000	41100	61.9	77	3.5	99	349	4.75	5.4	49.8	81.5	56.8	3.4	12.1	35.7	21.3	44.0	29.7		
44000	48500	60.9	36	1.9	98	189	4.44	5.4	49.3	80.7	56.5	3.4	12.4	35.4	20.9	43.4	29.3		
56000	57900	61.6	64	4.1	100	408	4.83	5.7	49.7	81.2	56.1	3.4	12.9	36.4	20.8	44.1	29.6		
Mean	42000	62.5	71.0	3.1	99.0	306	4.8	5.6	49.4	80.9	56.6	3.4	12.2	35.7	21.1	43.5	29.5		
<b>Probability (%)</b>																			
Plant Density (D)	0.00	51.9	0.1	0.2	36.5	0.2	74.6	67.7	8.8	34.1	10.3	13.7	62.0	16.5	54.7	4.6	34.0		
<b>LSD (0.05)</b>																			
Plant Density (D)	5890	5.5	25.7	1.31	NS	214	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS		

† TEP, Theoretical ethanol potential; TE, Theoretical ethanol; Etoh, ethanol; CP, crude protein; ADF, acid detergent fiber; NDF; neutral detergent fiber; NDFD, neutral detergent fiber digestibility; ADL, acid detergent lignin; Cell, cellulose; Hem, hemicellulose

## FIELD EXPERIMENT HISTORY

**Title:** Plant Density and Hybrid Influence on Silage and Corn Grain Performance  
**Experiment:** 02Plant Density **Trial ID** 3275 **Year:** 2009  
**Personnel:** J. G. Lauer, K. D. Kohn and T. H. Diallo  
**Location:** Arlington, WI **County:** Columbia  
**Supported By:** Pioneer

### Site Information

**Field:** ARS406 **Previous Crop:** Alfalfa **Soil Type:** Plano Silt Loam  
**Soil Test:** **Date:** 10/25/09 **pH** 6.6 **OM (%)** 3.4 **P (ppm)** 42 **K (ppm)** 123

### Plot Management

**Tillage Operations:** Fall Chisel Plow    Field Cultivator    Soil Finisher    Cultivate

		<u>Analysis:</u>	<u>Rate lbs/A:</u>	<u>Date:</u>
<b>Fertilizer:</b>	<b>Preplant :</b>	NA	NA	NA
	<b>Starter :</b>	10-34-0	3.0 gal/A	5 /2 /09
	<b>Post plant :</b>	46-0-0	50	6 /26/09

**Herbicide:** Dual II Mag 24 oz/A    **Insecticide:** Force 3G 4.4 lb/A  
 Hornet 4 oz/A    **Hybrid:** See Factors

**Irrigation:** None

**Planting Date:** 5/2/09    **Planting Depth:** 1.5"    **Row Width:** 30"

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

**Harvest Date:** S:9/18/09    **Harvest Method:** S: New Holland 707  
 G:11/5/09    G: Massey Ferguson 8XP

### Experimental Design

**Design:** RCB    **Replications:** 3  
**Plot Size Seeded:** 20' x 25'    **Experiment Size:** 1.2 Acre  
**Harvest Plot Size:** S: 2.5' x 23'    **Harvest Plant Density:** See Factors  
 G: 5' x 23'

### Factors/Treatments:

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

14000 20000 26000  
 32000 38000 44000  
 50000 56000

#### Hybrid:

Pioneer 33F88 Pioneer 34A89  
 Pioneer 35F38 Pioneer 35F44

**Results: Table C-23.**

Table C-23. Plant Density and Hybrid Influence on Corn Grain.

Arlington, WI - 2009.

Target density plants/A	Hybrid	Grain																
		Harvest		V4		Test weight	Lodged			Grower return	Silk date	Plant height	Grain Composition			Ethanol		
		plants/A	ears/A	population	Yield		Moisture	Total	Stalk				Root	Oil	Starch	Protein	per bu gallons	per A gallons
35606	Pioneer 33F88	37373	37373	36521	232	27.5	53	17	14	2	787	212	106	3.0	59.5	7.6	2.88	666
	Pioneer 34A89	34800	36937	36005	226	25.8	54	10	7	2	775	211	108	3.2	58.8	7.9	2.87	648
	Pioneer 35F38	35921	41350	36458	236	23.0	56	8	7	2	823	207	99	3.1	59.6	7.4	2.92	689
	Pioneer 35F44	32859	38131	33775	237	23.4	56	1	1	0	824	207	98	3.2	59.3	7.4	2.92	691
14000		12121	27588	12184	176	26.1	54	0	0	0	602	208	101	3.1	59.2	7.8	2.88	506
20000		19318	26641	20328	216	25.9	54	0	0	0	741	208	103	3.2	59.2	7.8	2.87	620
26000		25631	27841	26767	240	25.2	55	1	1	1	827	209	103	3.2	59.1	7.6	2.89	693
32000		33868	34670	33817	250	24.5	55	2	0	2	866	209	104	3.1	59.1	7.5	2.89	724
38000		39520	40467	40025	247	24.2	55	11	10	2	856	210	105	3.2	59.4	7.5	2.90	717
44000		45265	46022	45833	251	24.4	56	22	19	3	867	210	103	3.1	59.7	7.4	2.92	732
50000		51073	51893	52777	235	24.6	55	14	12	2	814	210	102	3.1	59.5	7.5	2.92	686
56000		51578	52461	53787	245	24.7	55	20	17	4	846	210	103	3.1	59.1	7.5	2.90	710
14000	Pioneer 33F88	13131	22727	12879	178	28.8	52	0	0	0	600	210	105	3.0	59.3	8.1	2.83	504
20000	Pioneer 33F88	20707	22727	20707	217	28.1	52	1	1	0	737	210	108	3.2	59.2	8.0	2.85	619
26000	Pioneer 33F88	26010	27272	27272	246	27.1	52	1	1	0	838	211	106	3.1	59.8	7.5	2.86	704
32000	Pioneer 33F88	35101	35353	34595	235	26.5	53	4	1	3	803	212	107	3.0	59.3	7.5	2.88	677
38000	Pioneer 33F88	40909	41161	41666	246	27.3	54	24	23	1	838	213	107	3.0	59.6	7.4	2.88	709
44000	Pioneer 33F88	43939	44444	45706	262	27.4	54	51	46	5	892	213	106	3.0	60.1	7.2	2.91	764
50000	Pioneer 33F88	52272	52272	54040	231	27.0	53	20	18	2	786	213	108	2.8	59.8	7.5	2.91	671
56000	Pioneer 33F88	52777	53030	55302	237	28.0	53	34	26	7	804	212	105	3.0	59.1	7.5	2.88	683
14000	Pioneer 34A89	11363	21717	12121	166	26.5	53	0	0	0	567	208	106	3.3	58.3	8.1	2.84	472
20000	Pioneer 34A89	20454	23232	20454	212	27.5	52	1	0	1	721	210	106	3.3	58.6	8.1	2.85	604
26000	Pioneer 34A89	24495	26010	25757	235	27.2	55	2	1	2	802	210	111	3.2	58.6	7.9	2.87	676
32000	Pioneer 34A89	33957	34388	34007	248	24.7	56	2	0	2	857	211	108	3.0	58.9	7.8	2.88	714
38000	Pioneer 34A89	38888	39141	39898	236	24.8	55	14	11	4	813	212	110	3.2	59.1	7.8	2.88	679
44000	Pioneer 34A89	46464	46717	47474	247	25.6	55	12	8	4	850	212	110	3.2	59.2	7.8	2.88	713
50000	Pioneer 34A89	50252	51514	53030	232	25.5	55	23	20	3	797	212	106	3.2	58.7	7.9	2.88	668
56000	Pioneer 34A89	52525	52777	55302	229	24.9	55	23	20	3	790	212	110	3.1	58.7	7.9	2.89	661
14000	Pioneer 35F38	12121	33585	12121	181	24.4	55	0	0	0	626	207	96	3.1	59.7	7.4	2.92	528
20000	Pioneer 35F38	18182	29798	19949	221	24.6	56	0	0	0	764	206	100	3.0	59.6	7.6	2.90	641
26000	Pioneer 35F38	26767	30555	27272	249	22.9	57	2	1	1	868	207	100	3.2	59.0	7.5	2.91	724
32000	Pioneer 35F38	34343	36111	34343	263	24.0	55	1	0	1	912	207	102	3.3	59.3	7.4	2.90	761
38000	Pioneer 35F38	39141	40656	40403	249	21.9	56	6	4	2	873	207	103	3.2	59.8	7.4	2.93	729
44000	Pioneer 35F38	48232	49494	48484	250	22.2	57	25	22	3	877	207	101	3.1	59.9	7.3	2.94	735
50000	Pioneer 35F38	53787	54797	53787	234	22.0	57	11	8	3	822	207	97	3.1	59.7	7.4	2.94	689
56000	Pioneer 35F38	54797	55807	55302	240	22.1	56	22	17	5	842	208	98	3.1	59.6	7.3	2.93	703
14000	Pioneer 35F44	11869	32323	11616	178	24.7	55	0	0	0	615	206	98	3.1	59.6	7.5	2.91	518
20000	Pioneer 35F44	17929	30808	20202	213	23.5	55	0	0	0	741	207	98	3.3	59.4	7.6	2.90	617
26000	Pioneer 35F44	25252	27525	26767	230	23.6	56	1	0	1	802	207	95	3.2	59.0	7.5	2.90	668
32000	Pioneer 35F44	32070	32828	32323	255	22.9	56	1	0	1	890	207	99	3.3	59.1	7.4	2.92	743
38000	Pioneer 35F44	39141	40909	38131	257	22.6	57	1	1	0	899	207	98	3.3	59.3	7.3	2.92	752
44000	Pioneer 35F44	42424	43434	41666	243	22.2	57	1	1	1	851	208	97	3.1	59.6	7.4	2.94	715
50000	Pioneer 35F44	47979	48989	50252	245	24.0	56	4	3	1	849	208	99	3.1	59.5	7.3	2.93	718
56000	Pioneer 35F44	46211	48232	49242	273	23.9	57	3	2	0	949	208	99	3.3	59.1	7.2	2.91	794
Mean		34796	38448	35690	232	24.9	55	9	7	2	802	209	103	3.1	59.3	7.6	2.90	674
<b>Probability(%)</b>																		
Plant Density (D)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.2	0.0	0.0	33.3	38.2	0.3	0.0	0.0	0.0
Hybrid (H)		0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	20.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D x H		0.6	0.0	1.0	2.9	5.2	50.1	1.5	1.9	96.3	5.0	0.1	56.0	24.7	35.7	0.1	13.7	5.9
<b>LSD (0.10)</b>																		
Plant Density (D)		1255	1863	1049	8	0.7	1	7	6	2	28	0	NS	NS	0	0	0.01	25
Hybrid (H)		887	1318	742	6	0.5	1	5	5	NS	20	0	2	0	0	0	0.01	17
D x H		2508	3726	2097	17	1.3	NS	14	13	NS	57	1	NS	NS	NS	0	NS	49

continued





## FIELD EXPERIMENT HISTORY

**Title:** Plant Density and Hybrid Influence on Silage Performance  
**Experiment:** 02Plant Density **Trial ID** 3276 **Year:** 2009  
**Personnel:** J. G. Lauer, K. D. Kohn and T. H. Diallo  
**Location:** Fond du Lac, WI **County:** Fond du Lac  
**Supported By:** Pioneer

### Site Information

**Field:** **Previous Crop:** Soybean **Soil Type:** Virgil Silt Loam  
**Soil Test:** **Date:** 10/25/09 **pH** 6.9 **OM (%)** 3.4 **P (ppm)** 31 **K (ppm)** 73

### Plot Management

**Tillage Operations:** Fall Chisel Plow Field Cultivator Cultivate  

	<u>Analysis:</u>	<u>Rate lbs/A:</u>	<u>Date:</u>
<b>Fertilizer:</b> <b>Preplant :</b>	N/A	N/A	N/A
<b>Starter :</b>	10-34-0	3.0 gal/A	5 /20/09
<b>Post plant :</b>	28-0-0	128	N/A

**Herbicide:** Lumax 3.0 qt/A **Insecticide:** None  
**Irrigation:** None **Hybrid:** See Factors  
**Planting Date:** 5/20/09 **Planting Depth:** 1.5" **Row Width:** 30"  
**Target Plant Density:** See Factors **Planting Method:** Almaco Precision Planter  
**Harvest Date:** 9/30/09 **Harvest Method:** New Holland 707

### Experimental Design

**Design:** RCB **Replications:** 3  
**Plot Size Seeded:** 20' x 25' **Experiment Size:** 0.45 Acre  
**Harvest Plot Size:** 2.5' x 23' **Harvest Plant Density:** See Factors

### Factors/Treatments:

<u>Target Plant Density: (plants/A)</u>	<u>Hybrid:</u>
14000 20000 26000	Pioneer 33F88
32000 38000 44000	Pioneer 34A89
50000 56000	

**Results: Table C-24.**

**Table C-24. Plant Density and Hybrid Influence on Silage Performance.**  
**Fond du Lac, WI - 2009.**

Target density plants/A	Hybrid	Whole Plant																		
		Harvest		V4	Dry Matter		Kernel	Plant	KMR	SMR	VMR			Crude		<i>in vitro</i>			Milk per	
		plants/A	ears/A	population	Yield	Moist	milk	height	0-5	0-5	0-10	protein	ADF	NDF	Digest	NDFD	Starch	Ton	Acre	
	Pioneer 33F88	36047	35921	35795	7.7	66.6	72	100	3.6	2.2	5.8	5.5	25.2	48.1	77.6	53.5	22.5	2743	20995	
	Pioneer 34A89	35921	35416	36000	7.9	66.0	71	106	3.6	1.9	5.5	5.4	25.1	47.7	77.1	51.9	22.4	2675	21012	
	Pioneer 35F44	34311	33996	34090	7.6	64.7	65	95	3.3	2.1	5.3	5.4	23.7	44.5	78.2	51.0	27.9	2946	22294	
14000		11869	12542	11911	5.9	68.2	72	99	3.6	3.2	6.8	7.1	23.2	45.2	79.4	54.5	24.0	2880	16986	
20000		20454	20454	20075	7.4	66.0	71	101	3.5	2.8	6.3	6.1	23.4	44.9	78.9	52.9	26.3	2942	21783	
26000		26599	26599	26346	7.9	65.1	70	99	3.5	2.0	5.5	5.4	23.9	45.5	78.4	52.5	26.2	2895	22744	
32000		34090	34006	33670	7.8	64.7	68	101	3.4	1.7	5.1	5.4	23.9	45.8	78.2	52.3	25.9	2863	22203	
38000		40572	40151	40109	8.2	65.5	71	101	3.5	1.7	5.2	5.0	25.9	48.5	76.8	52.1	23.2	2737	22466	
44000		45117	44781	45159	8.1	65.6	69	101	3.5	1.6	5.1	4.9	24.4	46.2	76.9	50.2	25.3	2760	22535	
50000		51178	50083	51514	8.2	65.5	68	101	3.4	1.7	5.1	4.8	26.4	49.0	76.4	51.8	21.6	2623	21509	
56000		53535	52272	53577	8.2	65.6	69	99	3.5	1.7	5.1	4.8	25.9	48.7	76.0	50.6	22.0	2607	21242	
14000	Pioneer 33F88	11616	12374	11995	6.1	69.2	75	101	3.8	3.3	7.1	7.1	23.4	46.0	80.0	56.7	22.0	2819	17163	
20000	Pioneer 33F88	20202	20202	19697	7.6	66.2	75	100	3.8	2.8	6.6	6.1	23.6	45.9	79.1	54.3	24.8	2903	21938	
26000	Pioneer 33F88	27020	27020	26641	7.4	65.5	78	99	3.9	2.1	6.0	5.5	24.2	46.8	78.7	54.5	24.8	2895	21479	
32000	Pioneer 33F88	35101	35101	34217	7.6	65.1	70	102	3.5	2.0	5.5	5.7	24.0	46.8	78.2	53.4	24.5	2862	21828	
38000	Pioneer 33F88	41666	41161	41161	8.1	67.1	78	102	3.9	1.8	5.7	4.7	27.7	51.3	76.2	53.6	19.7	2611	21351	
44000	Pioneer 33F88	47222	46717	47474	7.8	67.4	67	98	3.3	1.8	5.1	4.7	26.6	50.1	75.4	50.8	20.5	2546	19756	
50000	Pioneer 33F88	51262	51262	51767	8.4	65.6	62	99	3.1	1.9	5.0	5.0	26.1	48.8	77.4	53.6	21.7	2682	22627	
56000	Pioneer 33F88	54292	53535	53408	8.3	66.4	73	101	3.7	1.6	5.3	4.8	25.8	49.2	75.7	50.6	22.0	2632	21818	
14000	Pioneer 34A89	12626	12879	12374	6.6	66.7	75	104	3.8	3.1	6.8	6.8	23.0	44.6	80.0	55.2	25.3	2960	19696	
20000	Pioneer 34A89	20454	20454	20202	7.7	66.0	68	110	3.4	2.9	6.4	6.2	23.2	45.0	78.5	52.3	26.4	2942	22687	
26000	Pioneer 34A89	27272	27272	27020	8.3	64.0	68	103	3.4	1.7	5.1	5.2	23.7	45.6	78.3	52.4	25.6	2836	23540	
32000	Pioneer 34A89	33585	33333	33838	7.8	65.7	73	106	3.7	1.5	5.2	5.1	26.2	49.1	77.0	53.2	20.7	2610	20444	
38000	Pioneer 34A89	40151	39646	39646	8.1	65.1	67	104	3.3	1.5	4.8	5.4	25.2	48.0	76.7	51.5	22.5	2682	21897	
44000	Pioneer 34A89	45201	44696	46338	8.1	66.6	70	108	3.5	1.6	5.1	5.0	24.5	46.9	75.1	47.0	24.3	2640	21315	
50000	Pioneer 34A89	53030	51767	53408	8.1	67.1	75	109	3.8	1.5	5.3	4.8	28.0	51.8	75.2	52.0	16.6	2341	19120	
56000	Pioneer 34A89	55050	53282	55176	8.1	66.8	73	102	3.7	1.7	5.4	4.8	26.7	50.3	75.7	51.6	18.1	2390	19398	
14000	Pioneer 35F44	11363	12374	11363	5.0	68.7	65	94	3.3	3.3	6.6	7.3	23.4	45.1	78.2	51.5	24.5	2862	14099	
20000	Pioneer 35F44	20707	20707	20328	7.0	65.9	68	95	3.4	2.7	6.1	5.9	23.3	44.0	79.0	52.2	27.7	2980	20724	
26000	Pioneer 35F44	25505	25505	25378	7.9	65.7	63	96	3.2	2.1	5.3	5.5	23.6	44.3	78.2	50.7	28.1	2953	23213	
32000	Pioneer 35F44	33585	33585	32954	7.8	63.2	60	94	3.0	1.7	4.7	5.3	21.6	41.5	79.4	50.2	32.7	3118	24338	
38000	Pioneer 35F44	39898	39646	39520	8.3	64.2	67	97	3.3	1.8	5.1	5.0	24.9	46.1	77.5	51.1	27.2	2919	24151	
44000	Pioneer 35F44	42929	42929	41666	8.6	62.7	72	97	3.6	1.5	5.1	5.1	22.2	41.7	80.3	52.7	30.9	3094	26534	
50000	Pioneer 35F44	49242	47222	49368	8.0	63.8	67	93	3.3	1.6	4.9	4.7	25.1	46.5	76.7	49.8	26.5	2845	22781	
56000	Pioneer 35F44	51262	49999	52146	8.1	63.6	62	94	3.1	1.7	4.8	4.7	25.4	46.7	76.5	49.7	25.9	2799	22510	
Mean		35427	35111	35295	7.7	65.8	70	100	3.5	2.1	5.5	5.4	24.6	46.7	77.6	52.1	24.3	2788	21434	
<b>Probability(%)</b>																				
Plant Density (D)		0.0	0.0	0.0	0.0	0.1	96.7	88.8	96.7	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.5	0.0	0.0	
Hybrid (H)		1.5	2.0	0.0	9.6	0.0	1.0	0.0	1.0	0.6	0.3	84.3	0.3	0.0	2.4	0.0	0.0	0.0	5.2	
D x H		77.5	81.3	10.8	3.8	2.0	28.1	50.7	28.1	33.6	52.5	38.6	8.7	14.9	1.6	0.8	2.5	1.1	0.2	
<b>LSD (0.10)</b>																				
Plant Density (D)		1749	1877	1253	0.4	1	NS	NS	NS	0.2	0	0.3	1.2	2.0	1.1	1.4	2.4	122	1627	
Hybrid (H)		1071	1149	767	0.2	1	4	2	0.2	0.1	0.2	NS	0.8	1.2	0.7	0.8	1.5	75	996	
D x H		NS	NS	NS	0.7	2.0	NS	NS	NS	NS	NS	NS	2	NS	2	2	4.2	211	2817	

## FIELD EXPERIMENT HISTORY

**Title:** Plant Density and Hybrid Influence on Silage Performance  
**Experiment:** 02Plant Density **Trial ID** 3277 **Year:** 2009  
**Personnel:** J. G. Lauer, K. D. Kohn and T. H. Diallo  
**Location:** Galesville, WI **County:** Trempealeau  
**Supported By:** Pioneer

### Site Information

**Field:** **Previous Crop:** Soybean **Soil Type:** Downs Silt Loam  
**Soil Test:** **Date:** 10/25/09 **pH** 6.3 **OM (%)** 3.5 **P (ppm)** 23 **K (ppm)** 143

### Plot Management

**Tillage Operations:** Fall Zone

	<u>Analysis:</u>	<u>Rate lbs/A:</u>	<u>Date:</u>
<b>Fertilizer:</b> <b>Preplant :</b>	34-0-0	102	N/A
<b>Starter :</b>	10-34-0	3.0 gal/A	5 /5 /09
<b>Post plant :</b>	3.0 gal/A	35	N/A

**Herbicide:** Cinch 2.0 pt/A **Insecticide:** None  
 Callisto 3.0 oz/A **Hybrid:** See Factors

**Irrigation:** None

**Planting Date:** 5/5/09 **Planting Depth:** 1.5" **Row Width:** 30"

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

**Harvest Date:** 9/16/09 **Harvest Method:** New Holland 707

### Experimental Design

**Design:** RCB **Replications:** 3  
**Plot Size Seeded:** 20' x 25' **Experiment Size:** 0.45 Acre  
**Harvest Plot Size:** 2.5' x 23' **Harvest Plant Density:** See Factors

### Factors/Treatments:

<u>Target Plant Density: (plants/A)</u>	<u>Hybrid:</u>
14000 20000 26000	Pioneer 33F88
32000 38000 44000	Pioneer 34A89
50000 56000	

**Results: Table C-25.**



## FIELD EXPERIMENT HISTORY

**Title:** Plant Density and Hybrid Influence on Silage Performance  
**Experiment:** 02Plant Density **Trial ID** 3278 **Year:** 2009  
**Personnel:** J. G. Lauer, K. D. Kohn and T. H. Diallo  
**Location:** Lancaster, WI **County:** Grant  
**Supported By:** Pioneer

### Site Information

**Field:** **Previous Crop:** Corn **Soil Type:** Fayette Silt Loam  
**Soil Test:** **Date:** 10/25/09 **pH** 7.1 **OM (%)** 1.9 **P (ppm)** 22 **K (ppm)** 89

### Plot Management

**Tillage Operations:** Spring Disk Cultimulch Cultivate  
**Fertilizer:**

	<u>Analysis:</u>	<u>Rate lbs/A:</u>	<u>Date:</u>
<b>Preplant :</b>	46-0-0	160	N/A
<b>Starter :</b>	10-34-0	3.0 gal/A	5 /4 /09
<b>Post plant :</b>	N/A	N/A	N/A

**Herbicide:** Lumax 3.0 qt/A **Insecticide:** Force 3G 4.4 lb/A  
**Irrigation:** None **Hybrid:** See Factors  
**Planting Date:** 5/4/09 **Planting Depth:** 1.5" **Row Width:** 30"  
**Target Plant Density:** See Factors **Planting Method:** Almaco Precision Planter  
**Harvest Date:** 9/21/09 **Harvest Method:** New Holland 707

### Experimental Design

**Design:** RCB **Replications:** 3  
**Plot Size Seeded:** 20' x 25' **Experiment Size:** 0.45 Acre  
**Harvest Plot Size:** 2.5' x 23' **Harvest Plant Density:** See Factors

### Factors/Treatments:

<u>Target Plant Density: (plants/A)</u>	<u>Hybrid:</u>
14000 20000 26000	Pioneer 33F88
32000 38000 44000	Pioneer 34A89
50000 56000	

**Results: Table C-26.**

