

## FIELD EXPERIMENT HISTORY

**Title:** Plant Density and Hybrid Influence on Corn Grain Performance  
**Experiment:** 02Plant Density **Trial ID:** 3185 **Year:** 2008  
**Personnel:** J. G. Lauer, K. D. Kohn and T. H. Diallo  
**Location:** Arlington, WI **County:** Columbia  
**Supported By:** Monsanto

### Site Information

**Field:** ARS392 **Previous Crop:** Soybean **Soil Type:** Plano Silt Loam  
**Soil Test:** **Date:** 11/4 /08 **pH:** 7.1 **OM (%)** 2.7 **P (ppm)** 49 **K (ppm)** 128

### Plot Management

**Tillage Operations:** Fall Chisel Plow    Field Cultivator    Soil Finisher    Cultivate  
**Fertilizer:**    **Preplant :**    46-0-0    138    N/A  
                   **Starter :**    10-34-0    3.0 gal/A    5 /5 /08  
                   **Post plant :**    N/A    N/A    N/A  
                   **Manure:**    N/A    N/A    N/A  
**Herbicide:**    Dual II Mag 24 oz/A    **Insecticide:**    None  
                   Hornet 4 oz/A    **Hybrid:**    See Factors  
                   Accent 0.33 oz/A  
**Irrigation:**    None  
**Planting Date:**    5/5/08    **Planting Depth:**    1.5"    **Row Width:**    30"  
**Target Plant Density:** See Factors    **Planting Method:**    Almaco Precision Planter  
**Harvest Date:**    10/13/08    **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:**    N/A    plants per acre

### Factors/Treatments:

<b><u>Target Plant Density: (plants/A)</u></b> 18000 23000 28000 33000 38000 43000	<b><u>Hybrid:</u></b> Dekalb DKC44-92 Dekalb DKC46-60 Dekalb DKC52-59 Dekalb DKC52-62
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**Results: Table C-21.**

**Table C-21. Plant Density and Hybrid Influence on Corn Grain.****Arlington, WI - 2008.**

Target density	Hybrid	Yield bu/A	Moisture %	Test weight lbs/bu	Lodged			Due to Borers	Grower return \$/A	Plant height inches	V4 population plants/A	Harvest	
					Total %	Stalk %	Root %					population plants/A	ears ears/A
	Dekalb DKC44-92	221	19.1	55	0	0	0	0	754	98	35227	34974	35606
	Dekalb DKC46-60	209	19.6	57	0	0	0	0	712	96	34532	34385	35216
	Dekalb DKC52-59	231	20.2	55	0	0	0	0	781	100	34953	35122	35732
	Dekalb DKC52-62	235	20.2	55	0	0	0	0	797	102	35206	34806	35195
18000		210	21.4	55	0	0	0	0	705	96	21401	21149	22490
23000		219	20.7	55	0	0	0	0	740	100	26325	26609	27493
28000		224	19.7	56	0	0	0	0	761	100	31597	31281	31944
33000		225	19.0	56	0	0	0	0	767	101	38162	37768	38178
38000		233	19.2	56	0	0	0	0	792	98	42802	42739	42929
43000		234	18.6	55	0	0	0	0	801	99	49589	49384	49589
18000	Dekalb DKC44-92	208	21.0	54	0	0	0	0	701	96	21591	21212	22601
18000	Dekalb DKC46-60	190	20.4	56	0	0	0	0	644	93	21212	20581	22096
18000	Dekalb DKC52-59	213	22.8	53	0	0	0	0	710	95	21212	21212	22727
18000	Dekalb DKC52-62	228	21.4	54	0	0	0	0	766	99	21591	21591	22538
23000	Dekalb DKC44-92	213	20.2	55	0	0	0	0	720	101	26262	26389	27399
23000	Dekalb DKC46-60	210	20.7	56	0	0	0	0	708	97	26262	26389	27904
23000	Dekalb DKC52-59	230	21.3	55	0	0	0	0	774	101	26767	27651	28282
23000	Dekalb DKC52-62	224	20.7	55	0	0	0	0	757	101	26010	26010	26389
28000	Dekalb DKC44-92	221	18.7	55	0	0	0	0	756	98	32449	32070	32702
28000	Dekalb DKC46-60	204	19.8	57	0	0	0	0	693	97	28156	28030	29166
28000	Dekalb DKC52-59	236	19.7	55	0	0	0	0	803	103	33080	32575	33080
28000	Dekalb DKC52-62	234	20.8	55	0	0	0	0	791	103	32702	32449	32828
33000	Dekalb DKC44-92	223	18.3	56	1	1	0	0	764	98	38636	37752	38131
33000	Dekalb DKC46-60	212	19.3	56	0	0	0	0	724	100	38636	38446	38825
33000	Dekalb DKC52-59	228	19.0	55	0	0	0	0	778	102	38383	38257	38636
33000	Dekalb DKC52-62	236	19.6	56	0	0	0	0	802	103	36994	36616	37121
38000	Dekalb DKC44-92	228	18.3	56	0	0	0	0	781	97	43307	42929	43055
38000	Dekalb DKC46-60	215	19.2	57	0	0	0	0	732	94	44065	44191	44444
38000	Dekalb DKC52-59	239	19.7	55	0	0	0	0	812	101	39772	40782	41161
38000	Dekalb DKC52-62	248	19.6	56	0	0	0	0	843	100	44065	43055	43055
43000	Dekalb DKC44-92	235	18.3	55	0	0	0	0	803	98	49115	49494	49747
43000	Dekalb DKC46-60	225	18.2	57	0	0	0	0	771	95	48863	48674	48863
43000	Dekalb DKC52-59	238	19.0	54	0	0	0	0	811	100	50504	50252	50504
43000	Dekalb DKC52-62	241	19.1	55	0	0	0	0	820	104	49873	49115	49242
Mean		224	19.8	55	0	0	0	0	761	99	34980	34822	35437
<b>Probability(%)</b>													
Plant Density (D)		0.5	0.0	0.0	61.2	65.8	48.8	-	0.1	3.6	0.0	0.0	0.0
Hybrid (H)		0.0	0.7	0.0	90.2	87.8	47.6	-	0.0	0.0	75.2	77.7	80.1
D x H		99.2	83.0	63.0	57.9	52.3	56.5	-	99.3	88.3	16.7	41.8	41.1
<b>LSD (0.10)</b>													
Plant Density (D)		10	0.7	0	NS	NS	NS	-	36	2	1459	1498	1368
Hybrid (H)		9	0.6	0	NS	NS	NS	-	29	2	NS	NS	NS
D x H		NS	NS	NS	NS	NS	NS	-	NS	NS	NS	NS	NS

## FIELD EXPERIMENT HISTORY

**Title:** Plant Density and Hybrid Influence on Corn Grain Performance  
**Experiment:** 02Plant Density **Trial ID:** 3186 **Year:** 2008  
**Personnel:** J. G. Lauer, K. D. Kohn and T. H. Diallo  
**Location:** Hancock, WI **County:** Waushara  
**Supported By:** Monsanto

### Site Information

**Field:** K-13 **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>	28-0-0	11.67 gal/A	6/11
	46-0-0	360	6/27
<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:** See Factors

**Irrigation:** 12.7 inches

**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:** 3  
**Plot Size Seeded:** 10' x 25' **Experiment Size:** 0.46 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>Hybrid:</u>
18000 23000 28000	Dekalb DKC44-92
33000 38000 43000	Dekalb DKC46-60
	Dekalb DKC52-59
	Dekalb DKC52-62

**Results: Table C-22.**

**Table C-22. Plant Density and Hybrid Influence on Corn Grain.****Hancock, WI - 2008.**

Target density	Hybrid	Yield bu/A	Moisture %	Test weight lbs/bu	Lodged				Grower return \$/A	V4 population plants/A	Harvest population plants/A
					Total %	Stalk %	Root %	Due to Borers %			
	Dekalb DKC44-92	221	21.3	56	0	0	0	0	745	35458	34806
	Dekalb DKC46-60	220	21.4	57	0	0	0	0	740	35416	34953
	Dekalb DKC52-59	230	22.5	55	0	0	0	0	770	34806	34469
	Dekalb DKC52-62	235	22.3	56	1	1	0	0	785	36258	35311
18000		198	22.5	56	0	0	0	0	660	20486	20833
23000		218	22.1	56	0	0	0	0	730	27241	26799
28000		233	21.7	56	1	1	0	0	781	32481	32323
33000		236	21.8	56	0	0	0	0	792	37878	36837
38000		239	21.7	56	0	0	0	0	802	44854	43749
43000		236	21.5	56	1	1	0	0	794	49968	48768
18000	Dekalb DKC44-92	192	21.7	56	0	0	0	0	645	20328	20833
18000	Dekalb DKC46-60	188	21.7	57	0	0	0	0	629	20328	20959
18000	Dekalb DKC52-59	204	23.4	54	0	0	0	0	676	20707	20833
18000	Dekalb DKC52-62	207	22.9	56	1	1	0	0	690	20581	20707
23000	Dekalb DKC44-92	211	21.3	56	0	0	0	0	709	26767	26894
23000	Dekalb DKC46-60	208	21.6	57	0	0	0	0	698	27525	26010
23000	Dekalb DKC52-59	223	23.3	54	0	0	0	0	741	26894	26641
23000	Dekalb DKC52-62	231	22.2	55	1	1	0	0	773	27777	27651
28000	Dekalb DKC44-92	230	21.3	57	1	1	0	0	772	32449	32197
28000	Dekalb DKC46-60	223	21.3	57	0	0	0	0	751	31565	32323
28000	Dekalb DKC52-59	245	22.2	55	0	0	0	0	820	33333	32702
28000	Dekalb DKC52-62	233	22.0	56	1	1	0	0	779	32575	32070
33000	Dekalb DKC44-92	230	21.3	56	0	0	0	0	775	40277	38257
33000	Dekalb DKC46-60	237	21.0	58	0	0	0	0	800	39646	38510
33000	Dekalb DKC52-59	233	22.9	55	0	0	0	0	777	32575	32702
33000	Dekalb DKC52-62	243	22.0	56	0	0	0	0	816	39015	37878
38000	Dekalb DKC44-92	234	21.4	55	0	0	0	0	785	43560	42550
38000	Dekalb DKC46-60	232	21.4	57	0	0	0	0	780	44191	43434
38000	Dekalb DKC52-59	241	21.9	55	0	0	0	0	807	45454	44318
38000	Dekalb DKC52-62	250	22.2	56	2	2	0	0	837	46211	44696
43000	Dekalb DKC44-92	232	21.1	56	1	1	0	0	781	49368	48105
43000	Dekalb DKC46-60	232	21.2	57	0	0	0	0	779	49242	48484
43000	Dekalb DKC52-59	238	21.1	55	0	0	0	0	801	49873	49621
43000	Dekalb DKC52-62	244	22.5	55	2	2	0	0	814	51388	48863
Mean		227	21.9	56	0	0	0	0	760	35485	34885

**Probability(%)**

Plant Density (D)	0.0	0.0	18.2	77.2	77.2	-	-	0.0	0.0	0.0
Hybrid (H)	0.0	0.0	0.0	0.2	0.2	-	-	0.0	22.2	71.8
D x H	53.5	0.0	2.1	95.4	95.4	-	-	53.3	3.9	39.2

**LSD (0.10)**

Plant Density (D)	6	0.3	NS	NS	NS	-	-	20	1404	1511
Hybrid (H)	5	0.2	0	0	0	-	-	16	NS	NS
D x H	NS	0.5	1	NS	NS	-	-	NS	2808	NS

## FIELD EXPERIMENT HISTORY

**Title:** Plant Density and Hybrid Influence on Corn Grain and Silage Performance  
**Experiment:** 02Plant Density **Trial ID:** 3181 **Year:** 2008  
**Personnel:** J. G. Lauer, K. D. Kohn and T. H. Diallo  
**Location:** Arlington, WI **County:** Columbia  
**Supported By:** Pioneer

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### Site Information

**Field:** ARS 407 **Previous Crop:** Soybean **Soil Type:** Plano Silt Loam  
**Soil Test:** **Date:** 11/4 /08 **pH:** 6.1 **OM (%)** 2.9 **P (ppm)** 41 **K (ppm)** 110

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### Plot Management

<b>Tillage Operations:</b>	Fall Chisel Plow	Field Cultivator	Soil Finisher	Cultivate
		<b><u>Analysis:</u></b>	<b><u>Rate lbs/A:</u></b>	<b><u>Date:</u></b>
<b>Fertilizer:</b>	<b>Preplant :</b>	46-0-0	138	N/A
	<b>Starter :</b>	10-34-0	3.0 gal/A	5 /9 /08
	<b>Post plant :</b>	46-0-0	50	6 /17/08
	<b>Manure:</b>	N/A	N/A	N/A
<b>Herbicide:</b>	Dual II Mag 24 oz/A Hornet 4 oz/A Accent 0.33 oz/A		<b>Insecticide:</b> Force 3G 4.4 lb/A <b>Hybrid:</b> See Factors	
<b>Irrigation:</b>	None			
<b>Planting Date:</b>	5/9/08	<b>Planting Depth:</b> 1.5"	<b>Row Width:</b> 30"	
<b>Target Plant Density:</b> See Factors			<b>Planting Method:</b> Almaco Precision Planter	
<b>Harvest Date:</b> S: 9/18/08 G: 10/17/08			<b>Harvest Method:</b> S: New Holland 707 G: Massey Ferguson 8XP	

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### Experimental Design

<b>Design:</b> RCB	<b>Replications:</b> 3
<b>Plot Size Seeded:</b> 20' x 25'	<b>Experiment Size:</b> 1.2 Acre
<b>Harvest Plot Size:</b> S: 2.5' x 23' G: 5' x 23'	<b>Harvest Plant Density:</b> N/A plants per acre

### **Factors/Treatments:**

<b><u>Target Plant Density: (plants/A)</u></b>	<b><u>Hybrid:</u></b>
14000 20000 26000	Pioneer 34A20
32000 38000 44000	Pioneer 34A89
50000 56000	Pioneer 35A30
	Pioneer 35F44

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**Results: Tables C-23 and C-24.**

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

Arlington, WI - 2008.

Target density plants/A	Hybrid	Grain																	
		Yield bu/A	Moisture %	Test			Lodged			Grower return \$/A	Harvest		Silk date doy	Plant height inches	Grain Composition			Ethanol	
				weight lbs/bu	Total %	Stalk %	Root %	plants/A	ears/A		Oil %	Starch %			Protein %	per bu gallons	per A gallons		
	Pioneer 34A20	232	33.0	56	6	6	0	725	37058	38715	212	117	3.5	60.4	7.4	2.89	669		
	Pioneer 34A89	218	36.9	54	1	0	0	666	37263	37042	214	124	3.5	59.5	8.0	2.85	623		
	Pioneer 35A30	227	28.6	57	5	5	0	731	33585	33933	211	115	3.3	60.7	7.5	2.91	661		
	Pioneer 35F44	214	32.1	55	0	0	0	674	31565	31834	210	111	3.5	60.0	7.6	2.89	619		
14000		176	33.1	54	2	2	0	551	14267	20044	210	114	3.4	60.0	8.0	2.87	505		
20000		202	34.3	55	0	0	0	625	20928	22064	211	117	3.4	59.7	8.0	2.85	575		
26000		231	34.0	55	1	1	0	718	27746	28314	211	116	3.5	60.0	7.8	2.87	663		
32000		236	33.5	56	1	1	0	736	33459	33617	212	118	3.5	60.2	7.5	2.89	681		
38000		238	32.3	56	5	5	0	748	38983	38794	212	117	3.5	60.3	7.4	2.90	689		
44000		233	30.7	56	5	5	0	740	44097	43560	212	115	3.5	60.4	7.4	2.90	676		
50000		233	32.0	56	5	5	1	736	49147	48358	212	120	3.5	60.4	7.4	2.89	676		
56000		233	31.3	56	4	4	0	739	50315	48295	213	117	3.5	60.3	7.5	2.90	677		
14000	Pioneer 34A20	196	34.1	55	0	0	0	609	14899	25883	211	119	3.3	60.3	7.7	2.88	564		
14000	Pioneer 34A89	177	36.5	53	0	0	0	540	14899	16161	212	119	3.5	59.3	8.4	2.83	500		
14000	Pioneer 35A30	187	30.2	55	7	7	0	596	14520	21212	210	112	3.4	60.7	7.5	2.90	542		
14000	Pioneer 35F44	145	31.6	54	0	0	0	458	12752	16919	208	107	3.4	59.7	8.2	2.86	415		
20000	Pioneer 34A20	209	35.2	55	0	0	0	646	22474	24873	211	121	3.4	59.7	8.0	2.85	597		
20000	Pioneer 34A89	210	36.9	53	0	0	0	641	22348	22222	213	126	3.5	59.3	8.1	2.84	597		
20000	Pioneer 35A30	206	31.7	55	0	0	0	649	19823	22096	210	113	3.4	60.2	8.0	2.87	590		
20000	Pioneer 35F44	181	33.3	55	0	0	0	565	19065	19065	208	107	3.5	59.7	8.1	2.85	516		
26000	Pioneer 34A20	238	35.3	56	1	0	0	735	31060	31944	211	118	3.5	60.0	8.0	2.85	680		
26000	Pioneer 34A89	236	37.0	54	0	0	0	718	28787	28787	214	121	3.4	59.4	7.8	2.85	672		
26000	Pioneer 35A30	248	30.9	56	2	2	0	786	27020	27525	210	114	3.3	60.7	7.6	2.90	718		
26000	Pioneer 35F44	202	32.8	55	0	0	0	634	24116	25000	209	111	3.5	59.9	7.7	2.87	581		
32000	Pioneer 34A20	250	34.2	56	0	0	0	776	34848	35353	211	121	3.4	60.5	7.3	2.89	722		
32000	Pioneer 34A89	233	36.8	55	0	0	0	712	35984	35858	214	124	3.5	59.6	7.9	2.86	668		
32000	Pioneer 35A30	242	30.2	57	2	2	0	771	32954	33459	211	117	3.4	60.7	7.5	2.90	702		
32000	Pioneer 35F44	218	32.8	55	0	0	0	683	30050	29798	210	112	3.5	60.0	7.5	2.90	632		
38000	Pioneer 34A20	241	30.9	56	11	11	0	763	39015	39393	211	116	3.5	60.8	7.2	2.90	697		
38000	Pioneer 34A89	233	37.7	55	0	0	0	707	43181	42929	214	127	3.5	59.6	7.9	2.86	666		
38000	Pioneer 35A30	240	28.3	57	9	9	0	774	38636	38636	211	113	3.3	60.6	7.4	2.92	701		
38000	Pioneer 35F44	238	32.5	56	0	0	0	747	35101	34217	210	111	3.5	60.0	7.4	2.91	693		
44000	Pioneer 34A20	239	30.9	56	14	14	1	759	46717	46085	213	109	3.4	60.8	6.9	2.92	699		
44000	Pioneer 34A89	231	36.5	55	1	1	1	706	48232	47979	214	121	3.6	59.8	7.9	2.86	660		
44000	Pioneer 35A30	229	24.3	57	6	6	0	756	41287	40025	211	118	3.3	60.9	7.6	2.91	667		
44000	Pioneer 35F44	233	31.3	56	0	0	0	739	40151	40151	211	112	3.6	60.1	7.3	2.91	679		
50000	Pioneer 34A20	241	31.5	56	13	13	0	762	54166	53661	213	119	3.5	60.9	6.9	2.91	701		
50000	Pioneer 34A89	213	36.9	54	4	2	2	651	51767	50631	215	128	3.5	59.4	8.1	2.84	607		
50000	Pioneer 35A30	238	27.2	57	4	4	1	772	45454	44696	211	118	3.2	61.0	7.3	2.93	697		
50000	Pioneer 35F44	241	32.4	56	0	0	0	757	45201	44444	210	114	3.6	60.3	7.3	2.90	698		
56000	Pioneer 34A20	238	31.7	56	10	10	0	750	53282	52525	214	116	3.6	60.6	7.2	2.90	689		
56000	Pioneer 34A89	215	37.2	55	1	0	1	655	52903	51767	215	123	3.5	59.5	8.0	2.84	611		
56000	Pioneer 35A30	228	26.3	58	6	6	0	743	48989	43813	211	116	3.3	60.9	7.3	2.93	668		
56000	Pioneer 35F44	254	30.0	56	0	0	0	808	46085	45075	211	113	3.6	60.4	7.3	2.91	738		
Mean		223	32.7	55	3	3	0	699	34868	35381	212	117	3.5	60.2	7.6	2.88	643		
<b>Probability(%)</b>																			
Plant Density (D)		0.0	0.0	0.0	2.6	4.1	41.2	0.0	0.0	0.0	0.0	3.0	1.6	0.0	0.0	0.0	0.0		
Hybrid (H)		0.0	0.0	0.0	0.0	0.0	12.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
D x H		0.0	4.6	59.1	30.9	26.7	85.7	0.0	7.4	0.0	2.3	6.4	0.1	18.8	0.0	0.2	0.0		
<b>LSD (0.10)</b>																			
Plant Density (D)		8	1.2	0	3	3	NS	25	1435	1305	0	3	0.0	0.2	0.1	0.01	24		
Hybrid (H)		6	0.8	0	2	2	NS	18	1015	923	0	2	0.0	0.1	0.1	0.01	17		
D x H		16	2.3	NS	NS	NS	NS	51	2870	2609	1	5	0.1	NS	0.2	0.02	48		

continued



**Table C-24. Plant Density and Hybrid Influence on Corn Leaf Development.  
Arlington, WI - 2008.**

Plant density	Hybrid	Observation date day of year	Leaf Development			Plant height inches
			Leaf collars no./plant	Hail adjusters method no./plant	Total leaves no./plant	
		156	1.9	3.2	4.2	4.4
		171	4.7	6.2	7.9	5.9
		184	7.4	10.7	12.3	32.0
		198	11.9	14.4	15.6	69.7
		212	20.0	20.1	20.3	115.6
	Pioneer 34A20		9.7	11.4	12.4	47.0
	Pioneer 34A89		9.0	10.7	12.0	46.4
	Pioneer 35A30		9.3	11.1	12.2	45.7
	Pioneer 35F44		8.9	10.5	11.6	43.0
	Pioneer 34A20	156	2.0	3.6	4.2	4.7
	Pioneer 34A20	171	5.0	6.5	8.0	6.4
	Pioneer 34A20	184	7.8	10.8	12.5	34.4
	Pioneer 34A20	198	12.1	14.6	15.8	70.8
	Pioneer 34A20	212	21.6	21.6	21.7	118.7
	Pioneer 34A89	156	2.0	3.1	4.2	5.1
	Pioneer 34A89	171	4.6	6.1	7.9	6.3
	Pioneer 34A89	184	7.1	10.2	11.9	32.7
	Pioneer 34A89	198	11.3	13.9	15.1	70.1
	Pioneer 34A89	212	20.1	20.3	20.8	117.6
	Pioneer 35A30	156	2.0	3.5	4.4	4.1
	Pioneer 35A30	171	4.8	6.4	8.0	5.9
	Pioneer 35A30	184	7.7	11.3	12.6	33.2
	Pioneer 35A30	198	12.4	14.8	16.0	70.7
	Pioneer 35A30	212	19.7	19.7	19.7	114.9
	Pioneer 35F44	156	1.8	2.7	3.9	3.6
	Pioneer 35F44	171	4.5	5.8	7.6	5.1
	Pioneer 35F44	184	7.2	10.5	12.2	27.5
	Pioneer 35F44	198	12.0	14.5	15.6	67.3
	Pioneer 35F44	212	18.8	18.8	18.9	111.4
14000			9.4	11.2	12.3	45.6
20000			9.2	11.0	12.1	45.2
26000			9.0	10.7	11.8	45.3
32000			9.1	10.8	12.0	46.1
38000			8.9	10.7	11.7	44.8
44000			9.5	11.1	12.3	44.7
50000			8.9	10.6	11.7	46.4
56000			9.7	11.4	12.5	46.1
14000		156	2.0	3.3	4.3	4.3
14000		171	4.8	6.2	8.0	6.0
14000		184	7.7	11.4	13.0	31.2
14000		198	12.9	15.3	16.5	70.8
14000		212	19.9	19.9	19.9	115.7

continued



**Table C-24. Plant Density and Hybrid Influence on Corn Leaf Development.**(continued) **Arlington, WI - 2008.**

Plant density	Hybrid	Observation date day of year	Leaf Development			Plant height inches
			Leaf collars no./plant	Hail adjusters method no./plant	Total leaves no./plant	
20000		156	1.9	3.4	4.3	4.1
20000		171	4.7	6.2	7.8	5.7
20000		184	7.6	10.8	12.5	31.4
20000		198	12.1	15.0	16.1	68.8
20000		212	19.7	19.7	19.7	116.1
26000		156	2.0	3.3	4.1	4.5
26000		171	4.6	6.0	7.8	5.8
26000		184	7.4	10.7	12.3	31.4
26000		198	11.9	14.3	15.5	69.3
26000		212	19.1	19.2	19.4	115.3
32000		156	1.9	3.3	4.3	4.5
32000		171	4.8	6.3	7.8	6.0
32000		184	7.5	10.6	12.4	32.0
32000		198	11.9	14.6	15.8	70.7
32000		212	19.3	19.4	19.5	117.1
38000		156	1.9	3.2	4.0	4.3
38000		171	4.8	6.5	7.9	5.7
38000		184	7.4	10.5	12.2	31.4
38000		198	11.9	14.2	15.3	68.1
38000		212	18.8	18.9	19.3	114.5
44000		156	2.0	3.1	4.3	4.5
44000		171	4.5	6.2	7.7	5.6
44000		184	7.4	10.5	11.9	31.7
44000		198	11.5	14.0	15.1	69.0
44000		212	21.8	22.0	22.3	112.9
50000		156	2.0	3.3	4.1	4.5
50000		171	4.8	6.3	8.0	6.3
50000		184	7.2	10.4	12.1	33.0
50000		198	11.6	14.0	15.3	70.7
50000		212	19.0	19.0	19.2	117.7
56000		156	2.0	3.2	4.2	4.4
56000		171	4.8	6.1	7.9	6.4
56000		184	7.4	10.6	12.1	33.6
56000		198	11.8	14.2	15.4	70.2
56000		212	22.5	22.8	23.0	115.9
14000	Pioneer 34A20		9.7	11.7	12.7	48.1
14000	Pioneer 34A89		9.3	11.1	12.2	46.6
14000	Pioneer 35A30		9.6	11.5	12.6	45.7
14000	Pioneer 35F44		9.1	10.7	11.9	42.0
20000	Pioneer 34A20		9.6	11.4	12.4	47.1
20000	Pioneer 34A89		9.3	11.1	12.3	47.5
20000	Pioneer 35A30		9.1	11.1	12.1	43.8
20000	Pioneer 35F44		8.8	10.5	11.6	42.5

continued

**Table C-24. Plant Density and Hybrid Influence on Corn Leaf Development.**(continued) **Arlington, WI - 2008.**

Plant density	Hybrid	Observation date day of year	Leaf Development			Plant height inches
			Leaf collars no./plant	Hail adjusters method no./plant	Total leaves no./plant	
26000	Pioneer 34A20		9.4	11.1	12.2	48.4
26000	Pioneer 34A89		8.4	10.0	11.4	44.0
26000	Pioneer 35A30		9.3	11.2	12.1	45.7
26000	Pioneer 35F44		8.9	10.5	11.6	42.9
32000	Pioneer 34A20		9.2	10.9	12.0	47.8
32000	Pioneer 34A89		8.8	10.4	11.7	47.0
32000	Pioneer 35A30		9.4	11.5	12.5	46.8
32000	Pioneer 35F44		8.9	10.6	11.7	42.7
38000	Pioneer 34A20		9.1	10.9	11.7	44.6
38000	Pioneer 34A89		8.5	10.3	11.6	46.3
38000	Pioneer 35A30		9.4	11.3	12.1	46.2
38000	Pioneer 35F44		8.7	10.2	11.5	42.1
44000	Pioneer 34A20		11.8	13.5	14.6	44.5
44000	Pioneer 34A89		8.2	9.9	11.1	45.6
44000	Pioneer 35A30		9.0	10.8	11.8	45.6
44000	Pioneer 35F44		8.8	10.4	11.6	43.2
50000	Pioneer 34A20		9.2	10.9	11.9	47.6
50000	Pioneer 34A89		8.4	9.9	11.3	47.7
50000	Pioneer 35A30		9.1	10.9	11.9	45.3
50000	Pioneer 35F44		8.9	10.6	11.7	45.1
56000	Pioneer 34A20		9.4	11.0	12.0	47.9
56000	Pioneer 34A89		11.3	13.1	14.3	46.3
56000	Pioneer 35A30		9.3	11.0	12.2	46.9
56000	Pioneer 35F44		8.8	10.3	11.5	43.4
14000	Pioneer 34A20	156	2.0	3.7	4.3	5.0
14000	Pioneer 34A20	171	5.0	6.7	8.3	6.2
14000	Pioneer 34A20	184	8.0	11.7	13.3	34.0
14000	Pioneer 34A20	198	12.8	15.7	16.7	73.8
14000	Pioneer 34A20	212	20.7	20.7	20.7	121.7
14000	Pioneer 34A89	156	2.0	3.3	4.3	4.7
14000	Pioneer 34A89	171	4.8	6.3	8.0	6.2
14000	Pioneer 34A89	184	7.5	11.0	12.3	32.3
14000	Pioneer 34A89	198	12.5	15.0	16.3	70.8
14000	Pioneer 34A89	212	19.8	19.8	19.8	118.8
14000	Pioneer 35A30	156	2.0	3.7	4.5	4.3
14000	Pioneer 35A30	171	4.8	6.2	8.3	6.1
14000	Pioneer 35A30	184	7.8	11.8	13.5	32.7
14000	Pioneer 35A30	198	13.5	15.7	16.8	72.5
14000	Pioneer 35A30	212	20.0	20.0	20.0	113.0
14000	Pioneer 35F44	156	1.8	2.5	3.8	3.3
14000	Pioneer 35F44	171	4.5	5.5	7.5	5.4
14000	Pioneer 35F44	184	7.3	11.2	12.7	26.0
14000	Pioneer 35F44	198	12.7	15.0	16.3	66.2
14000	Pioneer 35F44	212	19.2	19.2	19.2	109.3

continued

**Table C-24. Plant Density and Hybrid Influence on Corn Leaf Development.**(continued) **Arlington, WI - 2008.**

Plant density	Hybrid	Observation date day of year	Leaf Development			Plant height inches
			Leaf collars no./plant	Hail adjusters method no./plant	Total leaves no./plant	
20000	Pioneer 34A20	156	2.0	3.8	4.2	4.4
20000	Pioneer 34A20	171	5.0	6.7	8.0	6.2
20000	Pioneer 34A20	184	8.0	10.7	12.7	34.2
20000	Pioneer 34A20	198	12.5	15.2	16.5	70.0
20000	Pioneer 34A20	212	20.5	20.5	20.5	120.8
20000	Pioneer 34A89	156	2.0	3.3	4.5	5.0
20000	Pioneer 34A89	171	4.7	6.3	8.0	6.5
20000	Pioneer 34A89	184	7.7	10.8	12.5	33.0
20000	Pioneer 34A89	198	12.3	15.3	16.3	71.5
20000	Pioneer 34A89	212	19.8	19.8	20.0	121.5
20000	Pioneer 35A30	156	1.8	3.5	4.5	3.7
20000	Pioneer 35A30	171	4.7	6.2	7.8	5.3
20000	Pioneer 35A30	184	7.5	11.3	12.7	31.8
20000	Pioneer 35A30	198	12.0	15.0	16.0	67.0
20000	Pioneer 35A30	212	19.5	19.5	19.5	111.0
20000	Pioneer 35F44	156	1.8	2.8	4.0	3.3
20000	Pioneer 35F44	171	4.3	5.7	7.5	4.7
20000	Pioneer 35F44	184	7.3	10.3	12.2	26.5
20000	Pioneer 35F44	198	11.7	14.7	15.7	66.8
20000	Pioneer 35F44	212	18.8	18.8	18.8	111.0
26000	Pioneer 34A20	156	2.0	3.3	4.0	4.9
26000	Pioneer 34A20	171	5.0	6.7	8.0	6.6
26000	Pioneer 34A20	184	8.0	11.0	12.7	35.0
26000	Pioneer 34A20	198	12.2	14.5	16.0	73.3
26000	Pioneer 34A20	212	20.0	20.0	20.2	122.2
26000	Pioneer 34A89	156	2.0	3.0	4.0	4.9
26000	Pioneer 34A89	171	4.2	5.7	7.7	5.7
26000	Pioneer 34A89	184	7.0	9.8	11.8	29.8
26000	Pioneer 34A89	198	10.8	13.5	14.8	65.3
26000	Pioneer 34A89	212	17.8	18.0	18.8	114.2
26000	Pioneer 35A30	156	2.0	3.8	4.5	4.0
26000	Pioneer 35A30	171	4.8	6.2	8.0	5.8
26000	Pioneer 35A30	184	7.5	11.3	12.3	33.7
26000	Pioneer 35A30	198	12.3	14.7	15.8	71.0
26000	Pioneer 35A30	212	19.8	19.8	19.8	114.2
26000	Pioneer 35F44	156	1.8	2.8	3.8	4.1
26000	Pioneer 35F44	171	4.5	5.7	7.7	5.1
26000	Pioneer 35F44	184	7.2	10.5	12.2	27.0
26000	Pioneer 35F44	198	12.2	14.5	15.5	67.7
26000	Pioneer 35F44	212	18.8	18.8	18.8	110.8
32000	Pioneer 34A20	156	2.0	3.5	4.2	4.8
32000	Pioneer 34A20	171	5.0	6.0	7.8	6.5
32000	Pioneer 34A20	184	7.7	10.7	12.5	34.2
32000	Pioneer 34A20	198	11.7	14.5	15.8	71.8
32000	Pioneer 34A20	212	19.7	19.7	19.8	121.8

continued

**Table C-24. Plant Density and Hybrid Influence on Corn Leaf Development.**(continued) **Arlington, WI - 2008.**

Plant density	Hybrid	Observation date day of year	Leaf Development			Plant height inches
			Leaf collars no./plant	Hail adjusters method no./plant	Total leaves no./plant	
32000	Pioneer 34A89	156	2.0	3.0	4.2	5.6
32000	Pioneer 34A89	171	4.7	6.2	7.8	6.9
32000	Pioneer 34A89	184	7.2	10.0	12.0	32.3
32000	Pioneer 34A89	198	11.3	14.0	15.0	72.3
32000	Pioneer 34A89	212	18.8	19.0	19.3	118.0
32000	Pioneer 35A30	156	2.0	3.8	4.7	4.2
32000	Pioneer 35A30	171	5.0	7.0	8.3	5.9
32000	Pioneer 35A30	184	8.0	11.3	13.0	33.7
32000	Pioneer 35A30	198	12.5	15.3	16.7	72.8
32000	Pioneer 35A30	212	19.7	19.8	19.8	117.2
32000	Pioneer 35F44	156	1.7	3.0	4.0	3.3
32000	Pioneer 35F44	171	4.5	5.8	7.3	4.8
32000	Pioneer 35F44	184	7.2	10.5	12.2	27.8
32000	Pioneer 35F44	198	12.0	14.5	15.7	66.0
32000	Pioneer 35F44	212	19.0	19.2	19.2	111.3
38000	Pioneer 34A20	156	2.0	3.8	4.0	4.3
38000	Pioneer 34A20	171	5.0	6.7	7.8	6.3
38000	Pioneer 34A20	184	7.5	10.7	12.0	33.0
38000	Pioneer 34A20	198	11.7	14.0	15.2	65.2
38000	Pioneer 34A20	212	19.5	19.5	19.7	114.2
38000	Pioneer 34A89	156	1.8	2.8	3.8	5.1
38000	Pioneer 34A89	171	4.7	6.5	8.0	6.2
38000	Pioneer 34A89	184	7.0	10.0	12.0	31.3
38000	Pioneer 34A89	198	11.3	13.8	14.8	71.2
38000	Pioneer 34A89	212	17.8	18.2	19.2	117.8
38000	Pioneer 35A30	156	2.0	3.7	4.2	3.9
38000	Pioneer 35A30	171	5.0	7.0	8.2	6.0
38000	Pioneer 35A30	184	8.0	11.5	12.7	34.3
38000	Pioneer 35A30	198	12.7	14.8	15.8	71.0
38000	Pioneer 35A30	212	19.5	19.5	19.5	116.0
38000	Pioneer 35F44	156	1.7	2.5	4.0	3.8
38000	Pioneer 35F44	171	4.3	5.8	7.5	4.5
38000	Pioneer 35F44	184	7.2	10.0	12.0	27.0
38000	Pioneer 35F44	198	11.8	14.2	15.5	65.2
38000	Pioneer 35F44	212	18.3	18.5	18.7	110.0
44000	Pioneer 34A20	156	2.0	3.7	4.3	4.7
44000	Pioneer 34A20	171	4.8	6.7	8.0	6.0
44000	Pioneer 34A20	184	7.8	10.8	12.2	34.3
44000	Pioneer 34A20	198	11.8	14.0	15.5	67.5
44000	Pioneer 34A20	212	32.3	32.3	32.8	110.0
44000	Pioneer 34A89	156	2.3	3.0	4.7	5.3
44000	Pioneer 34A89	171	4.3	5.8	7.5	5.9
44000	Pioneer 34A89	184	6.7	9.8	11.2	32.8
44000	Pioneer 34A89	198	10.7	13.2	14.2	68.7
44000	Pioneer 34A89	212	17.2	17.5	18.2	115.5

continued

**Table C-24. Plant Density and Hybrid Influence on Corn Leaf Development.**(continued) **Arlington, WI - 2008.**

Plant density	Hybrid	Observation date day of year	Leaf Development			Plant height inches
			Leaf collars no./plant	Hail adjusters method no./plant	Total leaves no./plant	
44000	Pioneer 35A30	156	2.0	3.2	4.3	4.4
44000	Pioneer 35A30	171	4.5	6.3	7.7	5.6
44000	Pioneer 35A30	184	7.5	10.8	12.2	32.5
44000	Pioneer 35A30	198	11.7	14.2	15.3	70.0
44000	Pioneer 35A30	212	19.5	19.5	19.5	115.3
44000	Pioneer 35F44	156	1.5	2.5	3.8	3.5
44000	Pioneer 35F44	171	4.5	6.0	7.7	4.9
44000	Pioneer 35F44	184	7.5	10.3	12.2	27.2
44000	Pioneer 35F44	198	12.0	14.5	15.5	69.7
44000	Pioneer 35F44	212	18.3	18.7	18.7	110.7
50000	Pioneer 34A20	156	2.0	3.7	4.2	4.3
50000	Pioneer 34A20	171	5.0	6.5	8.2	6.6
50000	Pioneer 34A20	184	7.5	10.5	12.2	35.2
50000	Pioneer 34A20	198	11.7	14.2	15.3	72.7
50000	Pioneer 34A20	212	19.8	19.8	19.8	119.5
50000	Pioneer 34A89	156	2.0	3.0	4.2	5.1
50000	Pioneer 34A89	171	4.7	5.8	7.8	6.7
50000	Pioneer 34A89	184	6.8	9.8	11.7	35.7
50000	Pioneer 34A89	198	10.8	13.2	14.7	71.3
50000	Pioneer 34A89	212	17.8	17.8	18.3	119.8
50000	Pioneer 35A30	156	1.8	3.3	4.0	4.1
50000	Pioneer 35A30	171	4.7	6.3	7.8	5.9
50000	Pioneer 35A30	184	7.3	10.8	12.3	31.2
50000	Pioneer 35A30	198	12.0	14.3	15.7	68.8
50000	Pioneer 35A30	212	19.5	19.5	19.7	116.3
50000	Pioneer 35F44	156	2.0	3.0	4.0	4.3
50000	Pioneer 35F44	171	4.8	6.3	8.0	5.8
50000	Pioneer 35F44	184	7.0	10.5	12.3	30.2
50000	Pioneer 35F44	198	11.8	14.3	15.5	70.0
50000	Pioneer 35F44	212	18.8	18.8	18.8	115.0
56000	Pioneer 34A20	156	2.0	3.7	4.3	4.9
56000	Pioneer 34A20	171	5.0	6.0	8.0	7.2
56000	Pioneer 34A20	184	7.7	10.7	12.2	35.7
56000	Pioneer 34A20	198	12.3	14.5	15.5	72.0
56000	Pioneer 34A20	212	20.0	20.0	20.0	119.7
56000	Pioneer 34A89	156	2.0	3.2	4.2	5.2
56000	Pioneer 34A89	171	4.8	6.5	8.0	6.6
56000	Pioneer 34A89	184	7.0	10.0	11.8	34.5
56000	Pioneer 34A89	198	10.8	13.5	14.7	70.0
56000	Pioneer 34A89	212	31.7	32.5	33.0	115.0

continued

**Table C-24. Plant Density and Hybrid Influence on Corn Leaf Development.**(continued) **Arlington, WI - 2008.**

Plant density	Hybrid	Observation date day of year	Leaf Development			Plant height inches
			Leaf collars no./plant	Hail adjusters method no./plant	Total leaves no./plant	
56000	Pioneer 35A30	156	2.0	3.3	4.5	4.3
56000	Pioneer 35A30	171	4.8	6.0	8.0	6.3
56000	Pioneer 35A30	184	7.7	11.3	12.5	35.8
56000	Pioneer 35A30	198	12.3	14.5	15.8	72.2
56000	Pioneer 35A30	212	19.8	19.8	20.0	116.0
56000	Pioneer 35F44	156	1.8	2.5	3.7	3.3
56000	Pioneer 35F44	171	4.7	5.8	7.7	5.3
56000	Pioneer 35F44	184	7.2	10.5	12.0	28.5
56000	Pioneer 35F44	198	11.8	14.2	15.5	66.8
56000	Pioneer 35F44	212	18.7	18.7	18.8	113.0
Mean			9.2	10.9	12.1	45.5
<b>Probability(%)</b>						
Plant Density (D)			63.7	65.1	61.9	0.0
Hybrid (H)			8.2	2.5	13.0	0.0
D x H			37.9	19.4	26.9	0.0
Sample Day of Year (S)			0.0	0.0	0.0	0.0
D x S			80.0	59.0	59.1	35.5
H x S			48.9	50.4	32.5	0.0
D x H x S			46.1	41.9	36.8	38.4
<b>LSD(0.10)</b>						
Plant Density (D)			NS	NS	NS	0.7
Hybrid (H)			0.6	0.6	NS	0.5
D x H			NS	NS	NS	1.5
Sample Day of Year (S)			0.6	0.6	0.6	0.6
D x S			NS	NS	NS	NS
H x S			NS	NS	NS	1.2
D x H x S			NS	NS	NS	NS

## FIELD EXPERIMENT HISTORY

**Title:** Plant Density and Hybrid Influence on Silage Performance  
**Experiment:** 02Plant Density **Trial ID:** 3183 **Year:** 2008  
**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:** 10/23/08 **pH:** 6.7 **OM (%)** 4.6 **P (ppm)** 17 **K (ppm)** 95

### 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 /8 /08
<b>Post plant :</b>	28-0-0	120	N/A
<b>Manure:</b>	N/A	N/A	N/A

**Herbicide:** Cinch 0.8 oz/A **Insecticide:** None  
 Atrazine 0.5 oz/A **Hybrid:** See Factors  
 Accent Gold 3.5 oz/A  
 Callisto 1.5 oz/A

**Irrigation:** None

**Planting Date:** 5/8/08 **Planting Depth:** 1.5" **Row Width:** 30"  
**Target Plant Density:** See Factors **Planting Method:** Almaco Precision Planter  
**Harvest Date:** 9/23/08: **Harvest Method:** New Holland 707

### Experimental Design

**Design:** RCB **Replications:** 3  
**Plot Size Seeded:** 10' x 25' **Experiment Size:** 0.45 Acre  
**Harvest Plot Size:** 2.5' x 23' **Harvest Plant Density:** N/A plants per acre

### Factors/Treatments:

<u>Target Plant Density: (plants/A)</u>	<u>Hybrid:</u>
14000 20000 26000	Pioneer 34A20
32000 38000 44000	Pioneer 34A89
50000 56000	Pioneer 35F44

**Results: Table C-25.**

**Table C-25. Plant Density and Hybrid Influence on Silage Performance.  
Fond du Lac, WI - 2008.**

Target density plants/A	Hybrid	Whole Plant																		
		Harvest		V4	Dry Matter		Kernel	Plant	Plant	KMR	SMR	VMR	Crude		<i>in vitro</i>			Milk per		
		plants/A	ears/A	population	Yield	Moist	milk	lodging	height	0-5	0-5	0-10	protein	ADF	NDF	Digest	NDFD	Starch	Ton	Acre
	Pioneer 34A20	37657	38194	38399	8.3	61.4	64	0	107	3.2	2.5	5.7	5.0	23.9	45.3	80.5	56.9	31.5	3208	26669
	Pioneer 34A89	37405	36868	36868	8.5	62.5	64	0	114	3.2	1.7	4.9	4.8	25.4	47.8	79.2	56.5	27.9	3108	26372
	Pioneer 35F44	33686	33918	34085	7.4	62.0	55	0	103	2.7	2.4	5.1	5.3	23.2	44.1	81.4	57.9	33.0	3270	24437
14000		14562	17929	14478	6.6	62.4	56	0	112	2.8	2.7	5.4	5.9	23.4	46.1	80.8	58.5	29.3	3215	21414
20000		20959	22138	24915	7.7	61.3	55	0	108	2.8	2.5	5.2	5.4	22.7	44.0	82.1	59.2	32.6	3306	25516
26000		28198	28114	28198	7.7	61.2	62	0	107	3.1	1.9	5.0	4.9	23.1	44.4	80.5	56.3	33.2	3220	24758
32000		33922	33838	33670	8.5	61.2	64	0	110	3.2	2.0	5.3	4.7	24.2	45.5	80.1	56.4	31.4	3185	26948
38000		39478	39225	39267	8.3	62.0	63	0	107	3.2	2.3	5.4	4.9	24.3	45.6	80.2	56.7	31.2	3192	26623
44000		46380	45875	45243	8.7	62.2	63	0	107	3.2	2.2	5.4	4.8	25.1	46.5	79.9	57.0	30.0	3167	27625
50000		52861	51430	51725	8.9	62.5	64	0	107	3.2	1.9	5.1	4.9	24.7	46.4	80.0	56.8	30.0	3168	28043
56000		53634	52066	54108	8.3	63.2	60	0	107	3.0	2.1	5.1	4.8	25.7	47.3	79.3	56.2	28.7	3111	25678
14000	Pioneer 34A20	15909	20202	15783	7.5	61.3	60	0	112	3.0	2.9	5.9	5.8	22.6	45.2	81.5	59.2	30.0	3261	24472
14000	Pioneer 34A89	14899	15404	14899	6.8	61.9	55	0	119	2.8	2.0	4.8	5.2	24.2	46.9	80.1	57.6	28.5	3171	21740
14000	Pioneer 35F44	12879	18182	12752	5.5	63.9	52	0	104	2.6	3.1	5.7	6.7	23.5	46.2	80.8	58.7	29.3	3212	18031
20000	Pioneer 34A20	21717	22979	22853	7.6	64.0	70	0	108	3.5	2.9	6.4	5.5	24.3	46.1	81.0	58.8	29.6	3224	24698
20000	Pioneer 34A89	22222	22222	22853	8.2	60.5	60	0	112	3.0	2.1	5.1	5.3	21.7	42.3	82.4	58.4	33.9	3341	27571
20000	Pioneer 35F44	18939	21212	29040	7.2	59.5	35	0	103	1.8	2.4	4.2	5.4	22.0	43.4	82.8	60.4	34.2	3352	24279
26000	Pioneer 34A20	28787	29545	30681	8.0	61.8	67	0	104	3.3	2.1	5.4	4.8	23.8	45.1	79.4	54.3	32.4	3153	25180
26000	Pioneer 34A89	29798	29545	29545	8.6	60.6	58	0	112	2.9	1.4	4.3	4.6	23.9	46.1	79.6	55.8	31.6	3153	27135
26000	Pioneer 35F44	26010	25252	24368	6.6	61.2	62	0	105	3.1	2.2	5.3	5.3	21.6	42.1	82.6	58.7	35.7	3354	21958
32000	Pioneer 34A20	36363	36363	36868	9.0	60.5	67	0	111	3.3	2.4	5.7	4.6	23.1	43.8	81.0	56.5	33.8	3249	29262
32000	Pioneer 34A89	34595	34595	33712	8.6	63.0	70	0	117	3.5	1.7	5.2	4.6	26.5	48.9	77.9	54.9	26.2	3026	26150
32000	Pioneer 35F44	30808	30555	30429	7.7	60.1	57	0	103	2.8	2.0	4.8	4.8	22.9	43.7	81.5	57.7	34.1	3281	25431
38000	Pioneer 34A20	40403	39898	42297	8.4	61.5	63	0	104	3.2	2.5	5.7	4.9	24.7	46.2	79.7	56.0	30.9	3156	26328
38000	Pioneer 34A89	39898	39898	38888	8.7	61.4	67	0	115	3.3	2.0	5.3	4.6	25.5	48.0	79.6	57.5	28.2	3135	27214
38000	Pioneer 35F44	38131	37878	36616	8.0	63.0	60	0	102	3.0	2.3	5.3	5.2	22.7	42.6	81.4	56.6	34.4	3285	26327
44000	Pioneer 34A20	48232	48232	47979	8.5	61.2	67	0	106	3.3	2.5	5.9	4.9	25.1	46.6	79.9	57.0	30.0	3165	26897
44000	Pioneer 34A89	47222	46717	47853	8.9	63.2	63	0	114	3.2	1.5	4.7	4.3	26.7	49.1	78.0	55.3	26.8	3040	27072
44000	Pioneer 35F44	43686	42676	39898	8.7	62.1	60	0	101	3.0	2.7	5.7	5.1	23.4	43.9	81.8	58.7	33.3	3295	28906
50000	Pioneer 34A20	54292	53787	54545	9.2	59.9	62	0	106	3.1	2.1	5.2	4.8	22.7	43.4	81.1	56.4	34.0	3260	29851
50000	Pioneer 34A89	55302	52272	53661	9.3	63.5	70	0	110	3.5	1.4	4.9	4.6	27.1	50.6	77.9	56.2	25.0	3015	28007
50000	Pioneer 35F44	48989	48232	46969	8.1	64.1	60	0	104	3.0	2.3	5.3	5.2	24.2	45.2	80.9	57.7	31.1	3230	26272
56000	Pioneer 34A20	55555	54545	56186	8.3	61.3	58	0	102	2.9	2.5	5.5	4.7	24.5	45.8	80.3	57.1	31.1	3195	26659
56000	Pioneer 34A89	55302	54292	53535	8.7	65.8	68	0	114	3.4	1.8	5.2	5.0	27.5	50.4	78.1	56.6	22.9	2984	26085
56000	Pioneer 35F44	50044	47360	52604	7.7	62.6	53	0	106	2.6	2.1	4.7	4.7	24.9	45.5	79.5	55.0	32.1	3153	24289
Mean		36249	36327	36451	8.1	62.0	61	0	108	3.0	2.2	5.3	5.0	24.1	45.7	80.4	57.1	30.8	3195	25826
<b>Probability(%)</b>																				
Plant Density (D)		0.0	0.0	0.0	0.0	33.8	10.4	-	1.1	10.4	0.7	78.1	0.0	5.2	40.4	14.0	0.9	6.3	16.3	0.8
Hybrid (H)		0.0	0.0	0.2	0.1	17.9	0.0	-	0.0	0.0	0.0	0.0	0.0	0.1	0.1	4.3	0.0	0.0	0.0	7.7
D x H		67.9	16.1	23.3	87.9	2.0	7.4	-	11.8	7.4	77.8	9.1	4.5	38.7	39.3	54.9	41.2	7.0	47.3	80.1
<b>LSD (0.10)</b>																				
Plant Density (D)		1440	1764	3179	0.7	NS	NS	-	3	NS	0.4	NS	0.3	1.6	NS	NS	1.5	2.6	NS	2823
Hybrid (H)		882	1080	1947	0.5	NS	4	-	2	0.2	0.2	0.3	0.2	1.0	1.5	0.9	0.9	1.6	64	1729
D x H		NS	NS	NS	NS	2.7	12	-	NS	0.6	NS	0.9	0.5	NS	NS	NS	NS	4.4	NS	NS



## FIELD EXPERIMENT HISTORY

**Title:** Plant Density and Hybrid Influence on Silage Performance  
**Experiment:** 02Plant Density **Trial ID:** 3184 **Year:** 2008  
**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:** 10/21/08 **pH:** 6.1 **OM (%)** 3.6 **P (ppm)** 22 **K (ppm)** 140

### Plot Management

**Tillage Operations:** Fall Zone 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 /12/08
<b>Post plant :</b>	28-0-0	120	N/A
<b>Manure:</b>	N/A	N/A	N/A

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

**Planting Date:** 5/12/08 **Planting Depth:** 1.5" **Row Width:** 30"  
**Target Plant Density:** See Factors **Planting Method:** Almaco Precision Planter  
**Harvest Date:** 9/17/08: **Harvest Method:** New Holland 707

### Experimental Design

**Design:** RCB **Replications:** 3  
**Plot Size Seeded:** 10' x 25' **Experiment Size:** 0.45 Acre  
**Harvest Plot Size:** 2.5' x 23' **Harvest Plant Density:** N/A plants per acre

### Factors/Treatments:

<u>Target Plant Density: (plants/A)</u>	<u>Hybrid:</u>
14000 20000 26000	Pioneer 34A20
32000 38000 44000	Pioneer 34A89
50000 56000	Pioneer 35F44

**Results: Table C-26.**



## FIELD EXPERIMENT HISTORY

**Title:** Plant Density and Hybrid Influence on Silage Performance  
**Experiment:** 02Plant Density **Trial ID:** 3182 **Year:** 2008  
**Personnel:** J. G. Lauer, K. D. Kohn and T. H. Diallo  
**Location:** Lancaster, WI **County:** Grant  
**Supported By:** Pioneer

### Site Information

**Field:** **Previous Crop:** Soybean **Soil Type:** Fayette Silt Loam  
**Soil Test:** **Date:** 10/20/08 **pH:** 7.4 **OM (%)** 2.1 **P (ppm)** 26 **K (ppm)** 78

### Plot Management

**Tillage Operations:** Field Cultivator Cultivate  

	<u>Analysis:</u>	<u>Rate lbs/A:</u>	<u>Date:</u>
<b>Fertilizer:</b> <b>Preplant :</b>	46-0-0	160	N/A
<b>Starter :</b>	10-34-0	3.0 gal/A	5 /15/08
<b>Post plant :</b>	N/A	N/A	N/A
<b>Manure:</b>	N/A	N/A	N/A

**Herbicide:** Dual II 2.0 pt/A  
 Accent 0.67 oz/A  
 Callisto 6.0 oz/A  
 Aatrex 4L 0.7 qt./A

**Insecticide:** Force 3G 4.4 lbs/A  
**Hybrid:** See Factors

**Irrigation:** None

**Planting Date:** 5/15/08 **Planting Depth:** 1.5" **Row Width:** 30"  
**Target Plant Density:** See Factors **Planting Method:** Almaco Precision Planter  
**Harvest Date:** 9/15/08 **Harvest Method:** New Holland 707

### Experimental Design

**Design:** RCB **Replications:** 3  
**Plot Size Seeded:** 10' x 25' **Experiment Size:** 0.45 Acre  
**Harvest Plot Size:** 2.5' x 23' **Harvest Plant Density:** N/A plants per acre

### Factors/Treatments:

<u>Target Plant Density: (plants/A)</u>	<u>Hybrid:</u>
14000 20000 26000	Pioneer 34A20
32000 38000 44000	Pioneer 34A89
50000 56000	Pioneer 35F44

**Results: Table C-27.**

**Table C-27. Plant Density and Hybrid Influence on Silage Performance.  
Lancaster, WI - 2008.**

Target density plants/A	Hybrid	Whole Plant																		
		Harvest		V4	Dry Matter		Kernel	Plant	Plant	KMR	SMR	VMR	Crude		<i>in vitro</i>			Milk per		
		plants/A	ears/A	population	Yield	Moist	milk	lodging	height	0-5	0-5	0-10	protein	ADF	NDF	Digest	NDFD	Starch	Ton	Acre
	Pioneer 34A20	34753	36268	38431	9.6	67.3	82	0	121	4.1	2.3	6.4	6.1	25.5	47.8	79.0	56.1	29.3	3091	29509
	Pioneer 34A89	33712	33112	36868	9.4	68.3	78	0	126	3.9	2.0	5.9	6.3	26.2	49.8	78.2	56.1	26.0	3018	28409
	Pioneer 35F44	28924	29704	30350	8.0	68.5	76	0	115	3.8	2.8	6.7	6.9	24.8	46.7	79.8	56.9	30.5	3142	25086
14000		12879	19613	14604	6.3	69.8	79	0	119	4.0	3.2	7.2	7.4	24.9	48.2	80.3	59.2	26.8	3139	19800
20000		19865	21717	19192	8.0	67.8	73	0	120	3.7	3.0	6.7	6.8	24.6	47.4	79.9	57.6	28.1	3140	25140
26000		24915	25336	27525	8.7	69.0	80	0	120	4.0	2.5	6.5	6.9	25.2	47.7	79.3	56.6	28.4	3104	26945
32000		31144	30892	32870	9.1	68.3	79	0	119	4.0	2.4	6.4	6.4	25.6	48.5	79.2	57.1	28.3	3091	28091
38000		36111	35774	38762	9.7	68.0	79	0	122	4.0	2.1	6.1	6.1	26.4	49.1	78.2	55.7	28.3	3032	29529
44000		41498	40909	45580	10.0	66.4	79	0	121	3.9	2.0	5.9	6.0	24.7	46.4	79.4	55.8	31.2	3128	31161
50000		47642	45370	51136	10.2	67.5	80	0	123	4.0	1.9	5.9	6.0	26.2	48.3	78.0	54.5	29.3	3030	30863
56000		45648	44616	52062	9.9	67.3	80	0	120	4.0	1.8	5.7	6.0	26.4	49.1	77.7	54.6	28.6	3006	29816
14000	Pioneer 34A20	13636	24747	16540	7.3	69.0	80	0	121	4.0	3.2	7.2	6.8	25.2	48.3	80.5	59.7	27.5	3161	23098
14000	Pioneer 34A89	15404	15909	15783	7.2	71.0	80	0	124	4.0	3.1	7.1	7.4	25.4	49.2	79.5	58.3	23.4	3061	21922
14000	Pioneer 35F44	9596	18182	11490	4.5	69.4	78	0	113	3.9	3.3	7.3	7.9	24.2	47.1	80.9	59.6	29.4	3193	14379
20000	Pioneer 34A20	21717	23990	19697	8.4	67.2	83	0	123	4.2	2.9	7.1	6.9	23.7	45.7	79.9	56.0	29.7	3157	26656
20000	Pioneer 34A89	20454	20707	21591	8.7	67.8	75	0	124	3.8	2.6	6.4	6.4	25.6	49.1	79.1	57.4	26.7	3080	26942
20000	Pioneer 35F44	17424	20454	16288	6.8	68.6	62	0	114	3.1	3.5	6.6	7.2	24.5	47.4	80.7	59.4	27.8	3183	21821
26000	Pioneer 34A20	27272	27777	32323	9.8	68.9	85	0	122	4.3	2.7	7.0	7.2	24.3	46.2	79.4	55.4	29.7	3122	30643
26000	Pioneer 34A89	25252	25252	27020	8.9	68.2	77	0	124	3.8	2.0	5.8	6.0	25.9	49.1	78.4	56.0	27.0	3041	27122
26000	Pioneer 35F44	22222	22979	23232	7.3	69.9	78	0	114	3.9	2.9	6.9	7.4	25.5	47.8	80.2	58.6	28.6	3148	23069
32000	Pioneer 34A20	34343	35353	35984	9.3	68.3	82	0	118	4.1	2.0	6.1	6.0	26.8	49.5	78.4	56.3	27.1	3039	28105
32000	Pioneer 34A89	32575	31060	35732	10.0	68.4	80	0	123	4.0	2.0	6.0	6.7	26.0	50.0	78.5	57.1	27.1	3039	30465
32000	Pioneer 35F44	26515	26262	26894	8.0	68.3	77	0	116	3.8	3.2	7.0	6.4	24.1	45.9	80.7	57.9	30.7	3196	25704
38000	Pioneer 34A20	38888	38888	42424	10.4	66.7	80	0	124	4.0	1.8	5.8	5.4	26.1	48.3	78.6	55.6	30.1	3065	31981
38000	Pioneer 34A89	37121	36616	40782	9.9	68.9	78	0	129	3.9	1.7	5.6	6.0	28.3	52.7	76.6	55.6	23.3	2910	28860
38000	Pioneer 35F44	32323	31818	33080	8.8	68.4	80	0	114	4.0	2.8	6.8	6.8	24.9	46.3	79.4	55.7	31.5	3122	27746
44000	Pioneer 34A20	42929	42171	48232	9.9	65.9	83	0	119	4.2	1.8	6.0	5.7	24.7	46.3	80.0	56.7	31.1	3158	31231
44000	Pioneer 34A89	42929	41919	46338	10.3	67.4	77	0	127	3.8	1.6	5.4	6.5	26.1	49.3	77.5	54.4	27.6	2992	30757
44000	Pioneer 35F44	38636	38636	42171	9.7	65.7	77	0	116	3.8	2.6	6.4	5.9	23.3	43.6	80.9	56.1	34.9	3233	31493
50000	Pioneer 34A20	50757	49242	55681	10.5	66.5	82	0	121	4.1	1.6	5.7	5.6	25.4	47.0	79.1	55.6	32.0	3107	32610
50000	Pioneer 34A89	47979	46464	53913	10.3	68.0	80	0	130	4.0	1.5	5.5	5.8	27.2	50.9	77.1	55.0	24.4	2956	30315
50000	Pioneer 35F44	44191	40403	43813	9.8	68.1	78	0	118	3.9	2.5	6.4	6.6	25.9	47.1	77.8	52.8	31.5	3026	29665
56000	Pioneer 34A20	48484	47979	56565	10.9	65.8	82	0	120	4.1	1.9	6.0	5.5	28.2	51.0	76.4	53.7	27.4	2920	31750
56000	Pioneer 34A89	47979	46969	53787	10.1	66.7	77	0	125	3.8	1.4	5.2	5.8	24.7	47.8	78.5	55.0	28.7	3064	30887
56000	Pioneer 35F44	40482	38899	45833	8.8	69.2	81	0	114	4.0	2.0	6.0	6.7	26.2	48.6	78.2	55.2	29.7	3033	26810
Mean		32463	33028	35216	9.0	68.0	79	0	120	3.9	2.4	6.3	6.4	25.5	48.1	79.0	56.4	28.6	3084	27668
<b>Probability(%)</b>																				
Plant Density (D)		0.0	0.0	0.0	0.0	2.4	51.7	-	65.8	51.7	0.0	0.0	0.0	19.7	51.8	2.1	0.0	30.7	11.4	0.0
Hybrid (H)		0.0	0.0	0.0	0.0	10.1	2.1	-	0.0	2.1	0.0	0.0	0.0	5.6	0.3	0.6	24.9	0.0	0.3	0.0
D x H		77.8	8.4	11.8	7.7	90.0	61.2	-	93.5	61.2	35.3	51.4	0.8	30.3	48.9	66.3	27.1	50.1	65.3	33.1
<b>LSD (0.10)</b>																				
Plant Density (D)		1773	2041	1923	0.6	1.6	NS	-	NS	NS	0.3	0.4	0.4	NS	NS	1.4	1.5	NS	NS	2301
Hybrid (H)		1086	1250	1178	0.3	NS	3	-	2	0.2	0.2	0.3	0.2	0.9	1.4	0.8	NS	1.7	58	1409
D x H		NS	3533	NS	1	NS	NS	-	NS	NS	NS	NS	0.6	NS	NS	NS	NS	NS	NS	NS