

FIELD EXPERIMENT HISTORY

Title: Plant Density, Planting Date, and Hybrid Influence on Corn Grain and Silage
Experiment: 04 PD x DOP **Trial ID** 2924 **Year:** 2006
Personnel: J. G. Lauer, K.D. Kohn, P.J. Flannery
Location: Arlington, WI **County:** Columbia
Supported By: HATCH

Site Information

Field: ARS427 **Previous Crop:** Soybean **Soil Type:** Plano Silt Loam
Soil Test: **Date:** 10/1 /06 **pH:** 6.8 **OM (%)** 4.2 **P (ppm)** 86 **K (ppm)** 249

Plot Management

Tillage Operations: Fall Chisel Plow Field Cultivator Soil Finisher

	<u>Analysis:</u>	<u>Rate lbs/A:</u>	<u>Date:</u>
Fertilizer: Preplant :	46-0-0	325	4 /20/06
Starter :	9-23-30	150	Each DOP
Post plant :	N/A	N/A	N/A
Manure:	N/A	N/A	N/A

Herbicide: Outlook 20.0 oz/A **Insecticide:** None
 Hornet 4.0 oz/A **Hybrid:** See Factors
Irrigation: None

Planting Date: See Factors **Planting Depth:** 1.5" **Row Width:** 30"
Target Plant Density: See Factors **Planting Method:** Kinze Plot Planter
Harvest Date: S: 9/8/05, 10/3/06 & 10/25/06 **Harvest Method:** S: New Holland 707
 G: 10/24/06 G: Massey Ferguson 8XP

Experimental Design

Design: RCB split plot **Replications:** 3
Plot Size Seeded 20' x 25' **Experiment Size:** 1.2 Acre
Harvest Plot Size: S: 2.5' x 22' **Harvest Plant Density:** Varies
 G: 5' x 22'
Factors/Treatments:

<u>Planting Dates:</u>	<u>Plant Densities: (plants/A)</u>	<u>Hybrids:</u>
April 29, May 22, and June 09	15000, 30000, and 45000	Dekalb DKC58-78(YGCB) Pioneer 37R71

Results: Table C-37 and 38.

**Table C-37. Plant Density and Planting Date Influence on Corn Silage, Grain and Quality - Dekalb DKC58-78(YGCB).
Arlington, WI - 2006**

Date of planting	Target plant density	Grain																	
		Yield	Moisture	Test Wt	Lodged			Grower	Harvest		Seeds	Plants	Plant	Silk	Grain Composition			Ethanol	
		bu/A	%	lbs/bu	Total	Stalk	Root	return	plants/A	ears/A	seeds/A	plants/A	inches	doy	%	%	%	per bu	per A
	15000	188	30.9	51.5	1	1	2	540	17380	26620	23760	22572	109	208	3.5	58.3	8.4	2.82	531
	30000	233	30.6	52.0	1	18	19	672	31196	31460	43560	40458	109	208	3.7	58.8	8.2	2.82	659
	45000	227	31.3	52.0	4	30	34	650	43692	43516	59400	54967	103	209	3.6	58.1	8.1	2.83	642
April 28		240	24.1	54.0	2	1	3	718	30360	32604	42240	38533	109	200	3.6	58.7	8.0	2.85	683
May 22		235	28.2	52.1	2	11	13	683	31900	34144	42240	39248	110	205	3.7	58.2	8.1	2.83	664
June 09		173	40.5	49.4	1	37	38	462	30008	34848	42240	40216	103	219	3.6	58.4	8.5	2.80	485
April 28	15000	189	23.7	53.8	3	2	5	566	17028	23496	23760	22077	110	200	3.5	58.3	8.2	2.84	536
April 28	30000	267	23.5	54.1	2	1	3	802	31944	32208	43560	39468	113	200	3.7	59.2	8.0	2.84	760
April 28	45000	264	25.1	54.1	1	1	2	785	42108	42108	59400	54054	104	201	3.6	58.5	7.9	2.85	754
May 22	15000	213	28.4	51.8	1	0	1	620	18876	25608	23760	22737	112	204	3.6	58.4	8.4	2.82	602
May 22	30000	246	27.9	52.2	0	3	3	717	31944	31944	43560	40524	109	204	3.8	58.6	8.1	2.82	695
May 22	45000	245	28.2	52.3	6	29	36	713	44880	44880	59400	54483	107	207	3.6	57.6	8.0	2.83	695
June 09	15000	163	40.6	49.0	0	0	0	433	16236	30756	23760	22902	106	219	3.5	58.2	8.6	2.80	456
June 09	30000	187	40.3	49.7	0	51	51	499	29700	30228	43560	41382	105	220	3.7	58.5	8.6	2.79	522
June 09	45000	170	40.6	49.5	4	60	64	453	44088	43560	59400	56364	99	220	3.5	58.4	8.4	2.80	478
Mean		216	30.9	51.8	2	16	18	621	30756	33865	42240	39332	107	208	3.6	58.4	8.2	2.82	611
Probability(%)																			
Date of Planting (P)		0.1	0.0	0.0	87.0	13.0	12.5	0.1	75.6	63.6	-	0.8	10.1	0.0	56.3	78.0	2.0	0.1	0.1
Plant Density (D)		0.1	24.6	4.1	21.1	0.8	0.3	0.1	0.0	0.0	-	0.0	19.3	1.9	5.2	32.4	11.2	24.6	0.1
P x D		8.6	56.5	87.3	55.5	3.8	1.4	7.7	33.5	3.2	-	40.5	90.6	23.4	86.1	74.8	79.1	91.1	7.8
LSD(0.10)																			
Date of Planting (P)		15	2	0.7	NS	NS	NS	48	NS	NS	-	557	NS	2	NS	NS	0.2	0.0	43
Plant Density (D)		17	NS	0.3	NS	14	15	49	1449	1909	-	682	NS	1	0.1	NS	NS	NS	47
P x D		29	NS	NS	NS	24	22	85	NS	3306	-	NS	NS	NS	NS	NS	NS	NS	82
CV(%)																			
		9	3	1	195	100	82	9	6	7	-	2	7	0	2	1	3	1	9

continued.

Table C-37. Plant Density and Planting Date Influence on Corn Silage, Grain and Quality - Dekalb DKC58-78(YGCB).
(continued) **Arlington, WI - 2006**

Date of planting	Target plant density	Whole Plant															
		Dry Matter		Kernel milk	KMR 0-5	SMR 0-5	VMR 0-10	Harvest		CP %	ADF %	NDF %	In Vitro		Milk per		
		yield tons/A	Moisture %					plants/A	ears/A				Digest %	NDFD %	Starch %	Ton lbs/T	Acre lbs/A
	15000	9.1	63.3	44	2.2	2.6	5.3	19008	30624	8.1	23.1	45.5	79.5	55.0	31.9	3098.2	28046
	30000	10.5	62.1	43	2.1	2.4	5.3	30448	32296	8.0	24.0	46.3	78.4	53.3	32.0	3027.9	31853
	45000	10.2	61.6	38	1.9	2.4	5.4	38544	41096	7.8	25.1	47.8	78.0	53.8	30.9	2991.3	30375
April 28		10.4	66.6	73	3.7	3.0	6.6	30008	35200	7.9	23.3	45.4	79.4	54.6	33.4	3093.1	32067
May 22		10.2	62.7	38	1.9	2.0	4.1	27280	32824	7.8	24.6	47.2	77.7	52.7	30.8	2981.8	30284
June 09		9.2	57.6	13	0.7	1.2	3.2	30712	35992	8.2	24.3	47.0	78.8	54.9	30.7	3042.6	27922
April 28	15000	8.8	66.4	67	3.3	3.2	6.5	16104	27984	8.2	21.4	43.3	80.9	55.9	34.7	3198.2	28094
April 28	30000	10.7	66.4	75	3.8	2.9	6.7	29568	32208	7.9	23.4	45.5	79.0	54.0	33.1	3073.6	32924
April 28	45000	11.7	67.1	78	3.9	2.8	6.7	44352	45408	7.6	25.1	47.3	78.2	53.9	32.3	3007.5	35184
May 22	15000	9.4	66.1	45	2.3	2.4	4.7	15048	24552	8.1	25.1	48.3	77.8	54.1	28.0	2976.6	27958
May 22	30000	11.2	62.5	43	2.2	1.8	4.0	31944	33264	7.7	24.3	46.6	77.3	51.2	32.2	2968.1	33279
May 22	45000	9.9	59.6	25	1.3	1.8	3.4	34848	40656	7.5	24.3	46.7	77.9	52.7	32.2	3000.6	29616
June 09	15000	9.1	57.4	20	1.0	1.2	3.2	25872	39336	8.1	22.7	44.9	79.8	55.0	33.1	3119.9	28087
June 09	30000	9.7	57.3	10	0.5	-	-	29832	31416	8.2	24.2	46.9	78.8	54.8	30.6	3042.1	29355
June 09	45000	8.9	58.1	10	0.5	-	-	36432	37224	8.1	25.9	49.3	77.8	55.0	28.4	2965.9	26326
Mean		9.9	62.3	41	2.1	2.5	5.3	29333	34672	8.0	24.0	46.5	78.6	54.1	31.6	3039.2	30091
Probability(%)																	
Date of Planting (P)		11.4	0.6	0.0	0.0	2.2	0.5	69.6	39.6	24.7	63.6	62.4	31.9	3.3	31.4	40.6	3.0
Plant Density (D)		3.2	46.0	33.8	33.8	0.4	7.7	0.2	0.3	1.7	9.8	19.2	15.8	7.9	56.4	17.4	3.9
P x D		12.8	25.1	6.2	6.2	31.0	2.2	40.9	3.7	28.1	29.6	27.1	66.0	51.3	4.4	56.4	11.9
LSD(0.10)																	
Date of Planting (P)		NS	2.8	7.6	0.4	0.4	0.4	NS	NS	NS	NS	NS	NS	1.2	NS	NS	2867
Plant Density (D)		0.9	NS	NS	NS	0.2	0.3	7252	5392	0.2	2	NS	NS	1.3	NS	NS	2332
P x D		NS	NS	13	1	NS	0	NS	7806	NS	NS	NS	NS	NS	3.4	NS	NS
CV(%)																	
		10	5	22	22	8	6	29	15	3	8	5	2	3	7	4	12

continued.

**Table C-38. Plant Density and Planting Date Influence on Corn Silage, Grain and Quality - Pioneer 37R71.
Arlington, WI - 2006**

Date of planting	Target plant density	Grain																	
		Yield	Moisture	Test Wt	Lodged			Grower	Harvest		Seeds	Plants	Plant	Silk	Grain Composition			Ethanol	
		bu/A	%	lbs/bu	Total	Stalk	Root	return	plants/A	ears/A	seeds/A	plants/A	inches	doy	Oil	Starch	Protein	per bu	per A
	15000	156	24.7	51.6	1	6	6	466	16104	21736	23760	22187	103	205	3.6	58.9	8.4	2.81	440
	30000	207	23.9	52.9	1	25	26	621	31240	31240	43560	42911	108	204	3.7	59.2	8.0	2.83	586
	45000	209	23.9	51.7	5	41	46	628	42152	41492	59400	54406	101	204	3.7	59.6	7.7	2.85	597
April 28		214	18.8	54.2	2	3	5	662	30272	31152	42240	38874	104	197	3.6	59.1	7.7	2.87	614
May 22		187	21.2	52.8	3	21	24	569	29260	30316	42240	40513	106	201	3.8	59.3	8.2	2.84	530
June 09		172	32.6	49.2	1	49	50	484	29964	33000	42240	40117	102	216	3.7	59.3	8.1	2.79	479
April 28	15000	166	19.4	53.4	0	0	0	510	17556	20196	23760	21714	103	197	3.6	58.4	8.2	2.85	472
April 28	30000	226	18.4	54.9	1	3	4	702	34848	34716	43560	45078	110	197	3.6	59.0	7.6	2.87	650
April 28	45000	249	18.6	54.4	5	6	11	773	38412	38544	59400	49830	99	197	3.6	60.0	7.3	2.89	720
May 22	15000	158	21.8	52.0	1	13	14	479	15180	20460	23760	22638	106	200	3.7	59.7	8.5	2.82	445
May 22	30000	215	20.8	53.5	1	5	6	655	29436	29436	43560	42042	108	200	3.9	59.2	8.2	2.84	609
May 22	45000	188	20.8	52.9	7	43	51	573	43164	41052	59400	56859	104	201	3.7	58.9	7.9	2.86	537
June 09	15000	146	33.0	49.5	1	3	4	410	15576	24552	23760	22209	101	216	3.6	58.6	8.4	2.77	404
June 09	30000	179	32.6	50.2	1	68	69	505	29436	29568	43560	41613	105	215	3.7	59.4	8.1	2.79	500
June 09	45000	190	32.3	47.8	2	74	77	537	44880	44880	59400	56529	99	215	3.8	60.0	7.9	2.80	533
Mean		191	24.2	52.1	2	24	26	572	29832	31489	42240	39835	104	204	3.7	59.2	8.0	2.83	541
Probability(%)																			
Date of Planting (P)		0.5	0.0	0.0	75.4	1.7	1.7	0.2	73.4	22.1	-	6.3	55.3	0.0	12.5	93.0	1.4	0.0	0.4
Plant Density (D)		0.0	0.5	1.1	4.2	0.0	0.0	0.0	0.0	0.0	-	0.0	6.7	46.2	15.6	49.2	0.0	0.2	0.0
P x D		1.5	78.6	7.2	75.5	0.1	0.0	1.3	17.2	26.1	-	43.1	85.0	17.8	8.6	55.1	69.5	94.5	1.6
LSD(0.10)																			
Hybrid (H)		13	1	0.8	NS	19	19	104	NS	NS	-	1057	NS	1	NS	NS	0.2	0.0	36
Date of Planting (P)		11	0	0.7	3	10	9	34	3469	3705	-	4218	5	NS	NS	NS	0.2	0.0	32
Plant Density (D)		19	NS	1.2	NS	18	16	59	NS	NS	-	NS	NS	NS	0.1	NS	NS	NS	55
P x D																			
CV(%)		7	2	2	173	52	43	7	14	14	-	13	6	0	1	2	3	1	7

continued.

Table C-38. Plant Density and Planting Date Influence on Corn Silage, Grain and Quality - Pioneer 37R71.(continued) **Arlington, WI - 2006**

Date of planting	Target plant density	Whole Plant															
		Dry Matter		Kernel milk	KMR 0-5	SMR 0-5	VMR 0-10	Harvest		In Vitro					Milk per		
		yield	Moisture					plants	ears	CP	ADF	NDF	Digest	NDFD	Starch	Ton	Acre
tons/A	%	%	plants/A	ears/A	%	%	%	%	%	%	lbs/T	lbs/A					
	15000	6.6	57.8	12	0.6	2.2	3.1	15400	22352	8.2	20.5	42.4	80.7	54.5	34.5	3195.8	20924
	30000	8.3	56.9	11	0.6	1.7	2.5	29040	29920	7.4	21.1	42.3	80.0	52.7	36.3	3162.5	26170
	45000	8.3	56.3	6	0.3	1.3	1.8	40216	40656	7.4	22.2	43.7	78.7	51.4	34.6	3077.5	25311
April 28		8.6	61.4	27	1.3	2.6	3.9	29128	31240	7.4	22.1	43.6	79.2	52.3	35.0	3106.9	26710
May 22		8.2	57.3	3	0.1	0.8	1.0	28512	31152	7.9	21.8	44.1	78.8	51.9	33.5	3073.2	25251
June 09		6.3	52.2	0	0.0			27016	30536	7.6	19.9	40.8	81.4	54.4	36.9	3255.8	20445
April 28	15000	6.9	63.3	32	1.6	3.2	4.8	16104	21384	8.1	21.8	43.9	79.9	54.1	33.3	3135.1	21518
April 28	30000	9.2	60.8	30	1.5	2.5	4.0	29040	29832	7.2	21.9	43.4	79.4	52.6	35.6	3118.7	28771
April 28	45000	9.7	60.0	18	0.9	2.1	3.0	42240	42504	6.9	22.5	43.3	78.4	50.3	36.2	3066.9	29842
May 22	15000	6.8	57.9	5	0.3	1.2	1.4	14520	21384	8.4	20.7	43.3	80.0	53.8	33.4	3147	21320
May 22	30000	8.7	56.3	3	0.2	0.8	0.9	28776	29304	7.6	21.4	43.0	79.3	51.9	35.5	3115.4	27054
May 22	45000	9.3	57.8	0	0.0	0.5	0.5	42240	42768	7.8	23.4	45.9	77.0	49.9	31.5	2957.1	27379
June 09	15000	6.0	52.1	0	0.0	-	-	15576	24288	8.0	19.0	40.1	82.2	55.7	36.7	3305.4	19934
June 09	30000	7.0	53.6	0	0.0	-	-	29304	30624	7.5	19.9	40.3	81.3	53.5	37.8	3253.4	22687
June 09	45000	5.8	51.0	0	0.0	-	-	36168	36696	7.3	20.7	42.0	80.8	54.1	36.1	3208.4	18713
Mean		7.7	57.0	10	0.5	1.7	2.5	28219	30976	7.6	21.3	42.8	79.8	52.9	35.1	3145.3	24135
Probability(%)																	
Date of Planting (P)		1.1	0.1	0.0	0.0	0.4	0.1	46.7	86.0	2.1	21.2	16.5	5.5	2.9	13.6	6.8	0.7
Plant Density (D)		0.0	44.5	6.4	6.4	0.1	0.0	0.0	0.0	0.0	10.3	30.1	1.2	0.0	33.7	3.2	0.1
P x D		1.1	46.6	26.1	26.1	25.4	10.4	9.2	5.5	38.7	83.4	69.0	64.3	16.3	54.9	68.1	4.5
LSD(0.10)																	
Hybrid (H)		0.9	2	1.9	0.1	0.3	0.2	NS	NS	0	NS	NS	2	1.3	NS	123	2083
Date of Planting (P)		0.5	NS	4.4	0.2	0.2	0.2	1973	2214	0	NS	NS	1	0.9	NS	71	1978
Plant Density (D)		0.9	NS	NS	NS	NS	NS	3418	3835	NS	NS	NS	NS	NS	NS	NS	3426
P x D																	
CV(%)		9	4	53	53	13	13	8	9	4	7	5	1	2	8	3	10

Table C-39. Plant Density, Planting Date, and Hybrid Influence on Corn Grain Quality. Arlington, WI - 2005

Brand	Hybrid	Date of planting	Target plant density	Grain Composition			Ethanol	
				Oil %	Starch %	Protein %	per bu gallons	per A gallons
			15000	3.6	58.9	8.3	2.84	503
			30000	3.6	59.3	7.9	2.86	614
			45000	3.5	59.8	7.6	2.88	604
		April 29		3.6	59.5	7.9	2.87	565
		May 23		3.7	59.2	7.9	2.86	587
		June 10		3.3	59.4	7.9	2.85	576
		April 29	15000	3.6	59.1	8.1	2.86	496
		April 29	30000	3.7	59.3	7.9	2.86	590
		April 29	45000	3.6	60.0	7.6	2.89	609
		May 23	15000	3.7	58.7	8.3	2.84	523
		May 23	30000	3.8	59.1	7.9	2.85	638
		May 23	45000	3.7	59.8	7.6	2.87	599
		June 10	15000	3.5	58.8	8.6	2.82	477
		June 10	30000	3.3	59.6	7.8	2.85	614
		June 10	45000	3.1	59.7	7.5	2.87	604
Dekalb	DKC58-78(YGCB)			3.7	59.2	7.8	2.86	613
Pioneer	37R71			3.5	59.5	8.0	2.86	547
Dekalb	DKC58-78(YGCB)		15000	3.7	58.9	8.0	2.86	587
Dekalb	DKC58-78(YGCB)		30000	3.7	59.3	7.8	2.85	664
Dekalb	DKC58-78(YGCB)		45000	3.6	59.4	7.7	2.87	587
Pioneer	37R71		15000	3.6	58.9	8.4	2.83	447
Pioneer	37R71		30000	3.6	59.2	8.0	2.86	575
Pioneer	37R71		45000	3.4	60.2	7.5	2.89	619
Dekalb	DKC58-78(YGCB)	April 29		3.8	59.3	7.9	2.86	607
Dekalb	DKC58-78(YGCB)	May 23		3.7	59.1	7.8	2.86	620
Dekalb	DKC58-78(YGCB)	June 10		3.1	59.3	7.5	2.87	607
Pioneer	37R71	April 29		3.4	59.6	7.9	2.88	523
Pioneer	37R71	May 23		3.8	59.3	8.0	2.85	553
Pioneer	37R71	June 10		3.4	59.4	8.0	2.85	565

continued.

Table C-39. Plant Density, Planting Date, and Hybrid Influence on Corn Grain Quality.
 (continued) **Arlington, WI - 2005**

Brand	Hybrid	Date of planting	Target plant density	Grain Composition			Ethanol	
				Oil %	Starch %	Protein %	per bu gallons	per A gallons
Dekalb	DKC58-78(YGCB)	April 29	15000	3.8	59.1	8.1	2.85	561
Dekalb	DKC58-78(YGCB)	April 29	30000	3.9	59.2	7.9	2.85	651
Dekalb	DKC58-78(YGCB)	April 29	45000	3.9	59.6	7.7	2.87	609
Dekalb	DKC58-78(YGCB)	May 23	15000	3.6	58.6	8.0	2.86	613
Dekalb	DKC58-78(YGCB)	May 23	30000	3.7	59.3	7.8	2.86	670
Dekalb	DKC58-78(YGCB)	May 23	45000	3.6	59.3	7.7	2.86	576
Dekalb	DKC58-78(YGCB)	June 10	15000	-	-	-	-	-
Dekalb	DKC58-78(YGCB)	June 10	30000	3.2	59.8	7.5	2.85	681
Dekalb	DKC58-78(YGCB)	June 10	45000	3.0	59.1	7.5	2.88	570
Pioneer	37R71	April 29	15000	3.5	59.1	8.2	2.86	430
Pioneer	37R71	April 29	30000	3.5	59.4	7.9	2.87	528
Pioneer	37R71	April 29	45000	3.3	60.4	7.5	2.90	609
Pioneer	37R71	May 23	15000	3.7	58.8	8.6	2.82	432
Pioneer	37R71	May 23	30000	3.8	58.9	8.1	2.85	606
Pioneer	37R71	May 23	45000	3.7	60.3	7.5	2.88	621
Pioneer	37R71	June 10	15000	3.5	58.8	8.6	2.82	477
Pioneer	37R71	June 10	30000	3.4	59.5	7.9	2.86	591
Pioneer	37R71	June 10	45000	3.2	60.0	7.5	2.87	627
Mean				3.6	59.3	7.9	2.86	576
Probability(%)								
Hybrid (H)				30.5	9.8	9.1	40.5	15.8
Date of Planting (P)				0.1	4.7	8.6	6.6	7.7
H x P				0.2	72.6	1.9	2.0	42.9
Plant Density (D)				4.6	0.0	0.0	0.0	0.0
P x D				50.2	19.3	3.4	56.3	11.0
H x D				79.9	0.5	0.0	0.0	0.0
H x P x D				72.6	49.7	25.2	0.9	11.7
LSD(0.10)								
Hybrid (H)				NS	0.2	0.1	0.03	NS
Date of Planting (P)				0.1	0.2	0.1	NS	32
H x P				0.1	NS	0.1	0.01	NS
Plant Density (D)				0.1	0.2	0.1	0.00	23
P x D				NS	NS	0.2	NS	NS
H x D				NS	0.3	0.1	0.01	32
H x P x D				NS	NS	NS	0.01	NS
CV(%)				4	1	2	0	7

**Table C-40. Plant Density, Planting Date, and Hybrid Influence on Corn Quality.
Yield and Quality and Corn Grain - Arlington, WI - 2004**

Hybrid	Date of planting	Target plant density	Grain Composition			Ethanol	
			Oil %	Starch %	Protein %	per bu gallons	per A gallons
		15000	8.3	60.1	3.5	2.81	472
		30000	8.2	60.4	3.6	2.81	548
		45000	7.9	60.5	3.6	2.82	573
	April 30		7.7	60.3	3.7	2.84	574
	May 20		8.4	60.2	3.5	2.79	527
	June 15		9.3	61.1	3.4	2.76	292
	April 30	15000	7.8	60.2	3.6	2.84	524
	April 30	30000	7.8	60.3	3.7	2.83	594
	April 30	45000	7.5	60.5	3.7	2.85	604
	May 20	15000	8.6	60.0	3.4	2.79	458
	May 20	30000	8.4	60.2	3.6	2.79	545
	May 20	45000	8.1	60.4	3.6	2.80	579
	June 15	15000	9.8	60.6	3.4	2.74	240
	June 15	30000	9.4	61.5	3.3	2.78	286
	June 15	45000	8.7	61.3	3.4	2.78	349
Dekalb DKC5878(YGCB)			8.0	60.3	3.4	2.83	538
Pioneer 37R71			8.2	60.4	3.8	2.80	524
Dekalb DKC5878(YGCB)		15000	8.0	60.3	3.4	2.84	531
Dekalb DKC5878(YGCB)		30000	8.1	60.4	3.4	2.83	552
Dekalb DKC5878(YGCB)		45000	8.0	60.3	3.4	2.83	533
Pioneer 37R71		15000	8.6	60.0	3.6	2.79	421
Pioneer 37R71		30000	8.3	60.4	3.8	2.79	544
Pioneer 37R71		45000	7.8	60.7	3.8	2.81	607
Dekalb DKC5878(YGCB)	April 30		7.8	60.1	3.5	2.85	549
Dekalb DKC5878(YGCB)	May 20		8.3	60.5	3.2	2.81	528
Dekalb DKC5878(YGCB)	June 15		-	-	-	-	-
Pioneer 37R71	April 30		7.6	60.6	3.9	2.84	599
Pioneer 37R71	May 20		8.5	59.9	3.8	2.77	526
Pioneer 37R71	June 15		9.3	61.1	3.4	2.76	292

continued

Table C-40. Plant Density, Planting Date, and Hybrid Influence on Corn Quality.(continued) **Yield and Quality and Corn Grain - Arlington, WI - 2004**

Hybrid	Date of planting	Target plant density	Grain Composition			Ethanol	
			Oil %	Starch %	Protein %	per bu gallons	per A gallons
Dekalb DKC5878(YGCB)	April 30	15000	7.7	60.2	3.5	2.86	551
Dekalb DKC5878(YGCB)	April 30	30000	7.8	60.2	3.6	2.85	568
Dekalb DKC5878(YGCB)	April 30	45000	7.9	60.0	3.5	2.84	528
Dekalb DKC5878(YGCB)	May 20	15000	8.4	60.3	3.2	2.81	511
Dekalb DKC5878(YGCB)	May 20	30000	8.5	60.6	3.2	2.81	536
Dekalb DKC5878(YGCB)	May 20	45000	8.0	60.6	3.3	2.82	537
Dekalb DKC5878(YGCB)	June 15	15000	-	-	-	-	-
Dekalb DKC5878(YGCB)	June 15	30000	-	-	-	-	-
Dekalb DKC5878(YGCB)	June 15	45000	-	-	-	-	-
Pioneer 37R71	April 30	15000	8.0	60.2	3.8	2.82	497
Pioneer 37R71	April 30	30000	7.8	60.5	3.9	2.82	620
Pioneer 37R71	April 30	45000	7.1	61.1	3.9	2.86	679
Pioneer 37R71	May 20	15000	8.8	59.7	3.6	2.76	405
Pioneer 37R71	May 20	30000	8.4	59.9	4.0	2.77	554
Pioneer 37R71	May 20	45000	8.2	60.1	3.9	2.78	620
Pioneer 37R71	June 15	15000	9.8	60.6	3.4	2.74	240
Pioneer 37R71	June 15	30000	9.4	61.5	3.3	2.78	286
Pioneer 37R71	June 15	45000	8.7	61.3	3.4	2.78	349
Mean			8.1	60.3	3.6	2.81	531
Probability(%)							
Hybrid (H)			86.6	56.0	0.1	2.8	30.3
Date of Planting (P)			0.1	14.0	0.0	0.0	0.1
H x P			10.0	4.8	0.3	2.5	10.6
Plant Density (D)			0.0	0.2	8.0	3.4	0.2
P x D			44.4	12.7	7.3	22.0	42.1
H x D			0.2	0.2	0.7	0.2	0.0
H x P x D			0.4	2.6	2.5	1.9	88.9
LSD(0.10)							
Hybrid (H)			NS	NS	0.0	0.01	NS
Date of Planting (P)			0.2	NS	0.0	0.01	26
H x P			NS	0.6	0.1	0.01	NS
Plant Density (D)			0.1	0.1	0.0	0.01	24
P x D			NS	NS	0.1	NS	NS
H x D			0.2	0.2	0.1	0.01	34
H x P x D			0.3	0.3	0.1	0.01	NS
CV(%)			2	0	2	0	8