FIELD EXPERIMENT HISTORY

Title: **Plant Density and Hybrid Influence on Corn Grain and Silage Performance**

Experiment: 02 Plant Density **Trial ID** 2579 **Year:** 2004

Personnel: J. G. Lauer, P. J. Flannery, K. D. Kohn, and T. F. Stanger

Location: Arlington, WI **County:** Columbia

Supported By: HATCH

Site Information

Field: ARS407 **Previous Crop:** Soybean **Soil Type:** Plano Silt Loam

Soil Test: **Date:** 10/1 /04 **pH** 7.0 **OM (%)** 3.9 **P (ppm)** 69 **K (ppm)** 258

Plot Management

Tillage Operations: Chisel Plow Field Cultivator Soil Finisher Cultivated 6/14/04

		Analysis:	Rate lbs/A:	Date:
Fertilizer:	**Preplant :**	46-0-0	325 lbs/A	4 /15/04
	Starter :	9-24-24	150 lbs/A	4 /29/04
	Post plant :	34-0-0	150 lbs/A	6 /14/04
	Manure:	N/A	N/A	N/A

Herbicide: Harness 2.5 pt/A
Hornet 3.0 oz/A

Insecticide: None

Hybrid:

Irrigation: None

Planting Date: 4/29/04 **Planting Depth:** 1.5" **Row Width:** 30"

Target Plant Density: See Factors **Planting Method:** Kinze Plot Planter

Harvest Date: 10/20/04 **Harvest Method:** Kincaid Plot Combine

Notes:

Experimental Design

Design: RCB **Replications:** 3

Plot Size Seeded: 10' x 25' **Experiment Size:** 0.26 Acre

Harvest Plot Size: 5' x 22' **Harvest Plant Density:** **plants per acre**

Factors/Treatments:

Plant Density: (plants/A)	Hybrids:	Rind Measurement Dates:	K Measurement Date:
26000	Pioneer 34M94	8/10/04	10/1/04
32000	Pioneer 34M95	9/10/04	
38000	Jung HDS104	10/8/04	
44000			
50000			

Results: Tables C-32, 33, 34, 35, 36, and 37.

Table C-32. Plant Density and Hybrid Influence on Corn Grain. Arlington, WI - 2004.

Target Density	Hybrid	Trait	Grain Yield	Grain Moisture	Grain Test Weight	Grower Return	Lodged Total	Lodged Stalk	Lodged Root	Barren	Ears Dropped	Harvest plants	Harvest ears	Plants emerged	Seeds planted
plants/A			bu/A	%	lbs/bu	$/A	%	%	%	%	%	plants/A	ears/A	plants/A	seeds/A
	Jung HDS104		161	33.9	51	191	24	23	1	4	0	35851	34769	54938	49896
	Pioneer 34M94		199	30.3	50	249	12	11	0	1	0	36590	36010	57275	49896
	Pioneer 34M95	Bt	203	29.0	50	247	15	15	0	1	0	37726	37409	57446	49896
26000			178	31.9	51	230	6	6	1	0	0	26136	26620	39402	34056
32000			186	30.9	50	236	15	14	0	1	0	31108	30976	48004	41976
38000			193	30.8	50	239	19	19	0	2	0	37444	36652	57508	49896
44000			193	30.7	50	229	20	20	0	3	0	42768	41404	65318	57816
50000			188	31.0	50	210	24	23	1	4	0	46156	44660	72534	65736
26000	Jung HDS104		169	34.0	51	217	15	14	2	0	0	25608	26796	38478	34056
26000	Pioneer 34M94		182	31.6	51	237	1	1	0	1	0	26136	26136	39534	34056
26000	Pioneer 34M95	Bt	185	30.1	50	238	2	2	0	0	0	26664	26928	40194	34056
32000	Jung HDS104		168	33.8	51	209	21	21	0	0	0	29964	30360	46530	41976
32000	Pioneer 34M94		195	30.1	50	253	4	4	0	1	0	31944	31416	48510	41976
32000	Pioneer 34M95	Bt	195	28.9	50	247	20	19	1	1	0	31416	31152	48972	41976
38000	Jung HDS104		158	34.0	51	185	25	24	1	5	0	36696	34980	56100	49896
38000	Pioneer 34M94		210	30.2	50	267	9	9	0	1	0	37092	36696	58146	49896
38000	Pioneer 34M95	Bt	212	28.3	50	265	24	24	0	1	0	38544	38280	58278	49896
44000	Jung HDS104		159	33.8	51	180	26	26	0	7	0	41976	39204	65076	57816
44000	Pioneer 34M94		202	29.7	50	247	21	21	0	2	0	41976	41052	64878	57816
44000	Pioneer 34M95	Bt	218	28.7	50	260	13	12	0	1	0	44352	43956	66000	57816
50000	Jung HDS104		153	34.0	51	163	31	29	2	6	0	45012	42504	68508	65736
50000	Pioneer 34M94		206	29.9	50	242	24	24	0	2	0	45804	44748	75306	65736
50000	Pioneer 34M95	Bt	205	29.2	50	225	16	16	0	2	0	47652	46728	73788	65736
Mean			188	31.1	50	229	17	16	0	2	0	36722	36062	56553	49896
Probability(%)															
Plant Density (D)			3.2	2.0	5.1	1.0	0.7	0.7	97.3	0.0	-	0.0	0.0	0.0	-
Hybrid (H)			0.0	0.0	0.1	0.0	20.3	24.2	3.8	2.3	-	6.7	0.2	0.1	-
D x H			1.2	45.8	78.8	2.9	30.3	35.3	68.8	0.2	-	63.5	7.6	2.8	-
LSD (0.10)															
Plant Density (D)			8	0.6	0	13	8	8	NS	1	-	989	1043	1139	-
Hybrid (H)			8	0.6	0	13	NS	NS	0	1	-	1241	780	697	-
D x H			14	NS	NS	23	NS	NS	NS	2	-	NS	1806	1972	-
CV(%)			6	2	1	7	56	58	331	64	-	3	4	2	-

Table C-33. Plant Density and Hybrid Influence on Silage Preformance.
Arlington, WI - 2004.

			Whole Plant												
Target			Dry Matter		Kernel	Crude			*In Vitro*			Milk per		Forage Harvest	
Density	Hybrid	Trait	Yield	Moisture	Milk	Protein	ADF	NDF	Digest	NDFD	Starch	Ton	Acre	plants	ears
plants/A			tons/A	%	%	%	%	%	%	%	%	lbs/T	lbs/T	plants/A	ears/A
	Jung HDS104		10.1	63.0	62	7.4	25.1	49.4	79.2	57.8	27.9	3307	33421	37435	37118
	Pioneer 34M94		10.9	62.7	48	7.5	23.3	47.1	81.8	61.3	31.7	3528	38580	37330	36379
	Pioneer 34M95	Bt	11.0	62.3	55	7.6	23.8	48.4	81.3	61.4	30.0	3488	38394	38702	38386
26000			9.8	63.5	53	7.6	23.2	47.0	81.7	61.0	29.7	3525	34549	26136	26928
32000			10.5	62.8	57	7.4	24.3	48.8	80.7	60.4	29.5	3447	36270	31856	32032
38000			11.1	62.0	55	7.6	23.7	47.7	81.1	60.5	30.4	3459	38316	38104	37664
44000			10.9	62.5	53	7.3	24.3	48.5	80.4	59.6	30.2	3409	37065	43560	41976
50000			11.2	62.5	56	7.5	24.9	49.5	79.8	59.3	29.6	3365	37791	49456	47872
26000	Jung HDS104		9.3	64.3	65	7.5	24.0	47.9	80.0	58.3	28.5	3385	31343	26136	28248
26000	Pioneer 34M94		10.1	63.0	48	7.7	22.7	46.2	82.3	61.8	31.2	3576	36173	26136	26136
26000	Pioneer 34M95	Bt	10.0	63.3	47	7.7	22.8	46.9	82.7	63.1	29.4	3614	36132	26136	26400
32000	Jung HDS104		10.5	62.5	62	7.3	25.1	49.4	79.2	58.0	28.6	3315	34816	31680	32208
32000	Pioneer 34M94		10.7	62.9	50	7.4	23.0	46.6	82.1	61.6	31.8	3563	38006	31416	31416
32000	Pioneer 34M95	Bt	10.4	62.9	58	7.5	24.9	50.4	80.7	61.6	28.0	3462	35987	32472	32472
38000	Jung HDS104		9.9	63.0	62	7.6	24.9	49.0	79.3	57.8	27.8	3317	32895	37752	36960
38000	Pioneer 34M94		11.4	62.1	43	7.4	22.7	46.1	82.3	61.7	32.9	3561	40557	37224	36960
38000	Pioneer 34M95	Bt	11.9	61.1	60	7.7	23.4	48.1	81.7	62.0	30.5	3499	41496	39336	39072
44000	Jung HDS104		9.9	62.9	58	7.2	25.4	49.3	79.0	57.5	28.4	3290	32638	42768	40392
44000	Pioneer 34M94		11.5	62.8	52	7.5	23.2	47.1	81.7	61.1	32.0	3521	40596	44088	41976
44000	Pioneer 34M95	Bt	11.1	61.8	50	7.3	24.3	49.0	80.6	60.4	30.0	3414	37961	43824	43560
50000	Jung HDS104		11.0	62.4	63	7.6	26.3	51.3	78.2	57.6	26.4	3225	35411	48840	47784
50000	Pioneer 34M94		11.0	62.8	47	7.3	24.9	49.3	80.4	60.2	30.3	3417	37567	47784	45408
50000	Pioneer 34M95	Bt	11.7	62.3	58	7.5	23.6	47.9	80.9	60.2	32.0	3452	40395	51744	50424
Mean			10.7	62.7	55	7.5	24.1	48.3	80.7	60.2	29.9	3441	36798	37822	37294
Probability(%)															
Plant Density (D)			4.0	37.2	71.9	17.0	2.1	7.8	0.6	6.7	84.7	0.3	21.4	0.0	0.0
Hybrid (H)			1.5	33.3	1.3	44.6	3.0	5.5	0.4	0.1	1.7	0.3	0.2	10.7	3.9
D x H			71.5	93.3	16.7	52.1	42.7	49.7	69.8	85.3	29.4	69.4	64.8	38.5	14.0
LSD (0.10)															
Plant Density (D)			0.8	NS	NS	NS	0.9	1.5	0.8	1.1	NS	62	NS	1196	1377
Hybrid (H)			0.4	NS	6	NS	1.0	1.4	0.9	1.1	1.7	74	1664	NS	1152
D x H			NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
CV(%)			9	2	12	4	4	4	1	2	7	2	10	4	5

Table C-34. Plant Density and Hybrid Influence on Yield Components. Arlington, WI - 2004.

Target Density	Hybrid	Trait	Ear Size			1000 Kernel weight
			Kernels/Ear	Kernels/Row	Rows/Ear	
plants/A			no./ear	no./row	no./ear	grams
	Jung HDS104		451	30	15	218.9
	Pioneer 34M94		452	28	16	241.9
	Pioneer 34M95	Bt	427	27	16	239.7
26000			483	31	15	265.7
32000			454	29	16	244.3
38000			444	28	16	231.9
44000			416	27	15	212.8
50000			421	26	16	212.7
26000	Jung HDS104		506	34	15	244.9
26000	Pioneer 34M94		491	31	16	276.2
26000	Pioneer 34M95	Bt	451	29	16	276.0
32000	Jung HDS104		468	30	15	226.1
32000	Pioneer 34M94		456	29	16	250.7
32000	Pioneer 34M95	Bt	439	28	16	256.3
38000	Jung HDS104		456	30	15	215.2
38000	Pioneer 34M94		449	27	17	242.2
38000	Pioneer 34M95	Bt	427	27	16	238.2
44000	Jung HDS104		406	28	15	201.5
44000	Pioneer 34M94		422	27	16	220.9
44000	Pioneer 34M95	Bt	418	26	16	216.1
50000	Jung HDS104		418	28	15	207.0
50000	Pioneer 34M94		444	27	17	219.3
50000	Pioneer 34M95	Bt	402	25	16	211.8
Mean			443	28	16	233.5
Probability(%)						
Plant Density (D)			0.3	0.0	67.9	0.0
Hybrid (H)			4.6	0.5	0.9	0.0
D x H			84.4	54.2	89.3	12.9
LSD (0.10)						
Plant Density (D)			28	1	NS	6.1
Hybrid (H)			17	1	0	5.5
D x H			NS	NS	NS	NS
CV(%)			8	5	6	3

Table C-35. Plant Density and Hybrid Influence on Rind Strength and Stalk K Concentration.

Arlington, WI - 2004.

Target Density	Hybrid	Trait	Rind Strength 10-Aug	Rind Strength 10-Sep	Rind Strength 8-Oct	Stalk K
plants/A				load-lbs/section		g/kg
	Jung HDS104		7.59	7.81	6.61	
	Pioneer 34M94		9.42	10.36	8.65	20.4
	Pioneer 34M95	Bt	9.10	9.89	8.37	19.4
26000			9.00	10.09	8.70	18.3
32000			8.87	9.49	8.07	17.1
38000			8.66	9.28	7.53	19.9
44000			8.27	8.85	8.00	22.0
50000			8.70	9.06	7.09	22.1
26000	Jung HDS104		8.17	8.21	7.00	
26000	Pioneer 34M94		9.66	11.64	10.01	19.5
26000	Pioneer 34M95	Bt	9.16	10.41	9.08	17.0
32000	Jung HDS104		8.09	8.15	6.87	
32000	Pioneer 34M94		9.13	10.44	9.02	17.3
32000	Pioneer 34M95	Bt	9.39	9.88	8.33	16.9
38000	Jung HDS104		7.51	7.91	6.22	
38000	Pioneer 34M94		9.49	10.34	8.29	19.9
38000	Pioneer 34M95	Bt	8.98	9.59	8.08	19.9
44000	Jung HDS104		7.07	7.43	6.46	
44000	Pioneer 34M94		9.07	9.51	8.87	23.6
44000	Pioneer 34M95	Bt	8.68	9.61	8.68	20.4
50000	Jung HDS104		7.08	7.36	6.51	
50000	Pioneer 34M94		9.74	9.86	7.07	21.7
50000	Pioneer 34M95	Bt	9.29	9.95	7.70	22.5
Mean			8.70	9.35	7.88	19.9
Probability(%)						
Plant Density (D)			20.6	0.7	0.0	2.5
Hybrid (H)			0.2	0.0	0.1	7.2
D x H			60.8	58.9	9.5	70.9
LSD (0.10)						
Plant Density (D)			NS	0.54	0.47	2.3
Hybrid (H)			0.56	0.49	0.56	0.9
D x H			NS	NS	0.82	NS
CV(%)			7	7	7	14

Table C-36. Plant Density, Hybrid, and Date Influence on Rind Strength. Arlington, WI - 2004.

Target Density	Hybrid	Trait	Observation Day of Year	Rind Strength
plants/A				load-lbs/section
			223	8.70
			254	9.35
			282	7.88
	Jung HDS104			7.34
	Pioneer 34M94			9.48
	Pioneer 34M95	Bt		9.12
	Jung HDS104		223	7.59
	Jung HDS104		254	7.81
	Jung HDS104		282	6.61
	Pioneer 34M94		223	9.42
	Pioneer 34M94		254	10.36
	Pioneer 34M94		282	8.65
	Pioneer 34M95	Bt	223	9.10
	Pioneer 34M95	Bt	254	9.89
	Pioneer 34M95	Bt	282	8.37
26000				9.26
32000				8.81
38000				8.49
44000				8.38
50000				8.28
26000			223	9.00
26000			254	10.09
26000			282	8.70
32000			223	8.87
32000			254	9.49
32000			282	8.07
38000			223	8.66
38000			254	9.28
38000			282	7.53
44000			223	8.27
44000			254	8.85
44000			282	8.00
50000			223	8.70
50000			254	9.06
50000			282	7.09

(continued)

Table C-36. Plant Density, Hybrid, and Date Influence on Rind Strength. Arlington, WI - 2004.

(continued)

Target Density	Hybrid	Trait	Day of Year	Rind Strength
plants/A				load-lbs/section
26000	Jung HDS104			7.79
26000	Pioneer 34M94			10.44
26000	Pioneer 34M95	Bt		9.55
32000	Jung HDS104			7.70
32000	Pioneer 34M94			9.53
32000	Pioneer 34M95	Bt		9.20
38000	Jung HDS104			7.21
38000	Pioneer 34M94			9.37
38000	Pioneer 34M95	Bt		8.88
44000	Jung HDS104			6.99
44000	Pioneer 34M94			9.15
44000	Pioneer 34M95	Bt		8.99
50000	Jung HDS104			6.98
50000	Pioneer 34M94			8.89
50000	Pioneer 34M95	Bt		8.98
26000	Jung HDS104		223	8.17
26000	Jung HDS104		254	8.21
26000	Jung HDS104		282	7.00
26000	Pioneer 34M94		223	9.66
26000	Pioneer 34M94		254	11.64
26000	Pioneer 34M94		282	10.01
26000	Pioneer 34M95	Bt	223	9.16
26000	Pioneer 34M95	Bt	254	10.41
26000	Pioneer 34M95	Bt	282	9.08
32000	Jung HDS104		223	8.09
32000	Jung HDS104		254	8.15
32000	Jung HDS104		282	6.87
32000	Pioneer 34M94		223	9.13
32000	Pioneer 34M94		254	10.44
32000	Pioneer 34M94		282	9.02
32000	Pioneer 34M95	Bt	223	9.39
32000	Pioneer 34M95	Bt	254	9.88
32000	Pioneer 34M95	Bt	282	8.33

(continued)

Table C-36. Plant Density, Hybrid, and Date Influence on Rind Strength. Arlington, WI - 2004.

(continued)

Target Density	Hybrid	Trait	Day of Year	Rind Strength
plants/A				load-lbs/section
38000	Jung HDS104		223	7.51
38000	Jung HDS104		254	7.91
38000	Jung HDS104		282	6.22
38000	Pioneer 34M94		223	9.49
38000	Pioneer 34M94		254	10.34
38000	Pioneer 34M94		282	8.29
38000	Pioneer 34M95	Bt	223	8.98
38000	Pioneer 34M95	Bt	254	9.59
38000	Pioneer 34M95	Bt	282	8.08
44000	Jung HDS104		223	7.07
44000	Jung HDS104		254	7.43
44000	Jung HDS104		282	6.46
44000	Pioneer 34M94		223	9.07
44000	Pioneer 34M94		254	9.51
44000	Pioneer 34M94		282	8.87
44000	Pioneer 34M95	Bt	223	8.68
44000	Pioneer 34M95	Bt	254	9.61
44000	Pioneer 34M95	Bt	282	8.68
50000	Jung HDS104		223	7.08
50000	Jung HDS104		254	7.36
50000	Jung HDS104		282	6.51
50000	Pioneer 34M94		223	9.74
50000	Pioneer 34M94		254	9.86
50000	Pioneer 34M94		282	7.07
50000	Pioneer 34M95	Bt	223	9.29
50000	Pioneer 34M95	Bt	254	9.95
50000	Pioneer 34M95	Bt	282	7.70
Mean				8.64
Probability(%)				
Hybrid (H)				0.0
Plant Density (D)				0.0
H x D				40.8
DOY (T)				70.6
T x D				4.2
T x H				44.3
T x H x D				29.8
LSD (0.10)				
Hybrid (H)				0.28
Plant Density (D)				0.29
H x D				NS
DOY (T)				NS
T x D				0.50
T x H				NS
T x H x D				NS
CV(%)				7

Table C-37. Plant Density and Hybrid Influence on Corn Growth and Development. Arlington, WI - 2004.

Target Density	Hybrid	Trait	Observation Day of Year	Leaf Development: Leaf Collars	Leaf Development: Hail Adjusters Method	Leaf Development: Total Leaves	Plant Height
plants/A				no./plant	no./plant	no./plant	inches
			148	2.0	2.9	3.7	3.8
			163	4.5	6.5	7.4	10.4
			174	6.5	8.7	10.0	22.5
			189	9.6	12.9	14.8	51.9
			202	14.8	16.1	17.4	88.4
			217	20.2	20.2	20.4	112.3
	Jung HDS104			9.6	11.3	12.5	44.7
	Pioneer 34M94			9.6	11.2	12.2	48.8
	Pioneer 34M95	Bt		9.6	11.1	12.1	51.1
	Jung HDS104		148	1.9	2.4	3.2	3.1
	Jung HDS104		163	4.0	5.9	6.7	8.4
	Jung HDS104		174	6.1	8.3	9.7	18.8
	Jung HDS104		189	9.4	13.0	15.1	44.4
	Jung HDS104		202	14.5	16.8	18.1	82.2
	Jung HDS104		217	21.6	21.5	22.2	111.7
	Pioneer 34M94		148	2.0	3.1	4.0	4.0
	Pioneer 34M94		163	4.6	6.8	7.7	11.1
	Pioneer 34M94		174	6.6	9.0	10.2	23.1
	Pioneer 34M94		189	9.7	12.8	14.7	54.3
	Pioneer 34M94		202	14.9	15.9	17.2	89.5
	Pioneer 34M94		217	19.7	19.7	19.7	110.5
	Pioneer 34M95	Bt	148	2.0	3.1	4.0	4.4
	Pioneer 34M95	Bt	163	4.8	6.8	7.8	11.6
	Pioneer 34M95	Bt	174	6.8	8.8	10.2	25.6
	Pioneer 34M95	Bt	189	9.7	12.8	14.7	57.0
	Pioneer 34M95	Bt	202	14.9	15.6	16.9	93.4
	Pioneer 34M95	Bt	217	19.4	19.4	19.4	114.5
26000				9.7	11.2	12.4	48.4
32000				9.6	11.3	12.4	47.7
38000				9.6	11.2	12.3	47.5
44000				9.5	11.1	12.2	48.1
50000				9.5	11.2	12.3	49.4

(continued)

Table C-37. Plant Density and Hybrid Influence on Corn Growth and Development.
(continued) **Arlington, WI - 2004.**

Target Density	Hybrid	Trait	Observation Day of Year	Leaf Development: Leaf Collars	Leaf Development: Hail Adjusters Method	Leaf Development: Total Leaves	Plant Height
plants/A				no./plant	no./plant	no./plant	inches
26000			148	2.0	3.0	3.8	3.7
26000			163	4.6	6.2	7.3	10.3
26000			174	6.6	8.6	10.0	21.7
26000			189	9.6	13.1	15.1	50.6
26000			202	14.9	16.2	17.6	88.1
26000			217	20.3	20.3	20.6	116.1
32000			148	1.9	2.9	3.7	4.0
32000			163	4.6	6.7	7.6	10.1
32000			174	6.6	8.9	10.1	21.6
32000			189	9.7	13.2	15.1	51.2
32000			202	15.0	16.2	17.4	88.7
32000			217	20.1	20.1	20.3	110.7
38000			148	2.0	2.8	3.8	3.9
38000			163	4.3	6.4	7.3	9.7
38000			174	6.4	8.7	9.8	21.5
38000			189	9.7	12.8	14.8	50.6
38000			202	14.8	16.1	17.4	87.6
38000			217	20.6	20.6	20.8	111.7
44000			148	2.0	2.9	3.6	3.7
44000			163	4.4	6.4	7.3	11.2
44000			174	6.4	8.5	10.0	22.5
44000			189	9.5	12.7	14.6	51.7
44000			202	14.5	16.0	17.3	87.7
44000			217	20.1	20.1	20.3	111.6
50000			148	1.9	2.8	3.7	3.9
50000			163	4.4	6.7	7.4	10.5
50000			174	6.4	8.8	10.2	25.2
50000			189	9.4	12.7	14.7	55.6
50000			202	14.7	16.0	17.3	89.8
50000			217	20.1	20.1	20.3	111.2
26000	Jung HDS104			9.6	11.3	12.5	43.9
26000	Pioneer 34M94			9.7	11.2	12.4	49.2
26000	Pioneer 34M95	Bt		9.7	11.2	12.3	52.2
32000	Jung HDS104			9.6	11.4	12.6	44.9
32000	Pioneer 34M94			9.6	11.3	12.3	47.4
32000	Pioneer 34M95	Bt		9.8	11.2	12.2	50.8
38000	Jung HDS104			9.8	11.5	12.7	45.7
38000	Pioneer 34M94			9.8	11.4	12.5	48.7
38000	Pioneer 34M95	Bt		9.4	10.8	11.8	48.0
44000	Jung HDS104			9.6	11.3	12.5	43.9
44000	Pioneer 34M94			9.4	11.1	11.9	48.6
44000	Pioneer 34M95	Bt		9.5	10.9	12.2	51.7
50000	Jung HDS104			9.4	11.1	12.4	45.3
50000	Pioneer 34M94			9.5	11.1	12.1	50.0
50000	Pioneer 34M95	Bt		9.7	11.3	12.3	52.8

(continued)

Table C-37. Plant Density and Hybrid Influence on Corn Growth and Development.
(continued) **Arlington, WI - 2004.**

Target Density	Hybrid	Trait	Observation Day of Year	Leaf Development: Leaf Collars	Leaf Development: Hail Adjusters Method	Leaf Development: Total Leaves	Plant Height
plants/A				no./plant	no./plant	no./plant	inches
26000	Jung HDS104		148	2.0	2.8	3.5	3.0
26000	Jung HDS104		163	4.0	5.2	6.3	8.5
26000	Jung HDS104		174	6.2	8.2	9.3	17.3
26000	Jung HDS104		189	9.3	13.2	15.3	42.0
26000	Jung HDS104		202	14.3	16.5	18.0	80.5
26000	Jung HDS104		217	21.8	21.8	22.5	112.0
26000	Pioneer 34M94		148	2.0	2.8	4.0	3.9
26000	Pioneer 34M94		163	4.7	6.7	7.7	11.4
26000	Pioneer 34M94		174	6.8	8.8	10.3	23.8
26000	Pioneer 34M94		189	9.8	13.0	15.2	54.0
26000	Pioneer 34M94		202	15.2	16.2	17.5	90.2
26000	Pioneer 34M94		217	19.7	19.7	19.7	112.0
26000	Pioneer 34M95	Bt	148	2.0	3.3	4.0	4.3
26000	Pioneer 34M95	Bt	163	5.0	6.7	7.8	11.0
26000	Pioneer 34M95	Bt	174	6.7	8.8	10.3	24.0
26000	Pioneer 34M95	Bt	189	9.7	13.0	14.7	55.7
26000	Pioneer 34M95	Bt	202	15.2	15.8	17.3	93.7
26000	Pioneer 34M95	Bt	217	19.5	19.5	19.5	124.3
32000	Jung HDS104		148	1.8	2.2	3.3	3.6
32000	Jung HDS104		163	4.0	6.2	7.0	8.1
32000	Jung HDS104		174	6.0	8.5	9.7	18.7
32000	Jung HDS104		189	9.3	13.2	15.3	43.7
32000	Jung HDS104		202	14.8	17.0	18.0	83.2
32000	Jung HDS104		217	21.3	21.3	22.0	112.3
32000	Pioneer 34M94		148	2.0	3.5	4.0	4.1
32000	Pioneer 34M94		163	4.7	7.0	7.7	10.7
32000	Pioneer 34M94		174	6.7	9.3	10.5	23.0
32000	Pioneer 34M94		189	9.7	13.0	14.8	52.5
32000	Pioneer 34M94		202	15.0	15.7	17.3	87.8
32000	Pioneer 34M94		217	19.5	19.5	19.5	106.3
32000	Pioneer 34M95	Bt	148	2.0	3.0	3.8	4.3
32000	Pioneer 34M95	Bt	163	5.0	6.8	8.0	11.5
32000	Pioneer 34M95	Bt	174	7.0	9.0	10.0	23.2
32000	Pioneer 34M95	Bt	189	10.0	13.3	15.0	57.3
32000	Pioneer 34M95	Bt	202	15.2	15.8	17.0	95.0
32000	Pioneer 34M95	Bt	217	19.3	19.3	19.3	113.3
38000	Jung HDS104		148	2.0	2.3	3.3	3.3
38000	Jung HDS104		163	4.0	6.2	6.7	8.2
38000	Jung HDS104		174	6.2	8.5	9.8	19.0
38000	Jung HDS104		189	9.7	13.0	15.3	44.8
38000	Jung HDS104		202	14.8	17.2	18.3	83.8
38000	Jung HDS104		217	22.0	21.8	22.5	115.3
38000	Pioneer 34M94		148	2.0	3.0	4.0	4.0
38000	Pioneer 34M94		163	4.5	6.8	7.8	10.6
38000	Pioneer 34M94		174	6.5	9.2	10.2	22.5
38000	Pioneer 34M94		189	9.8	12.8	15.0	53.7
38000	Pioneer 34M94		202	15.2	16.0	17.3	90.3
38000	Pioneer 34M94		217	20.7	20.7	20.7	111.0
38000	Pioneer 34M95	Bt	148	2.0	3.0	4.0	4.3
38000	Pioneer 34M95	Bt	163	4.5	6.3	7.5	10.2
38000	Pioneer 34M95	Bt	174	6.7	8.5	9.5	23.0
38000	Pioneer 34M95	Bt	189	9.5	12.5	14.0	53.2
38000	Pioneer 34M95	Bt	202	14.3	15.2	16.5	88.5
38000	Pioneer 34M95	Bt	217	19.2	19.2	19.2	108.8

(continued)

Table C-37. Plant Density and Hybrid Influence on Corn Growth and Development.
(continued) **Arlington, WI - 2004.**

Target Density	Hybrid	Trait	Observation Day of Year	Leaf Development: Leaf Collars	Leaf Development: Hail Adjusters Method	Leaf Development: Total Leaves	Plant Height
plants/A				no./plant	no./plant	no./plant	inches
44000	Jung HDS104		148	2.0	3.0	3.0	2.5
44000	Jung HDS104		163	4.0	5.8	6.7	8.3
44000	Jung HDS104		174	6.2	8.0	9.7	18.5
44000	Jung HDS104		189	9.3	12.7	14.8	43.2
44000	Jung HDS104		202	14.3	16.8	18.3	80.3
44000	Jung HDS104		217	21.7	21.5	22.3	110.3
44000	Pioneer 34M94		148	2.0	3.0	3.8	3.9
44000	Pioneer 34M94		163	4.5	6.7	7.7	11.7
44000	Pioneer 34M94		174	6.5	9.0	10.0	22.2
44000	Pioneer 34M94		189	9.5	12.7	14.2	54.2
44000	Pioneer 34M94		202	14.5	15.7	16.7	88.8
44000	Pioneer 34M94		217	19.3	19.3	19.3	110.7
44000	Pioneer 34M95	Bt	148	2.0	2.7	4.0	4.6
44000	Pioneer 34M95	Bt	163	4.8	6.7	7.7	13.5
44000	Pioneer 34M95	Bt	174	6.7	8.5	10.3	26.8
44000	Pioneer 34M95	Bt	189	9.7	12.7	14.8	57.8
44000	Pioneer 34M95	Bt	202	14.7	15.5	16.8	93.8
44000	Pioneer 34M95	Bt	217	19.3	19.3	19.3	113.8
50000	Jung HDS104		148	1.8	1.8	3.0	3.0
50000	Jung HDS104		163	4.0	6.0	7.0	8.6
50000	Jung HDS104		174	6.0	8.3	9.8	20.3
50000	Jung HDS104		189	9.2	13.0	14.8	48.3
50000	Jung HDS104		202	14.3	16.5	17.8	83.0
50000	Jung HDS104		217	21.0	21.2	21.7	108.7
50000	Pioneer 34M94		148	2.0	3.3	4.0	4.1
50000	Pioneer 34M94		163	4.5	6.7	7.5	11.1
50000	Pioneer 34M94		174	6.5	8.8	10.0	24.2
50000	Pioneer 34M94		189	9.5	12.7	14.3	57.3
50000	Pioneer 34M94		202	14.8	15.8	17.2	90.5
50000	Pioneer 34M94		217	19.5	19.5	19.5	112.7
50000	Pioneer 34M95	Bt	148	2.0	3.3	4.0	4.6
50000	Pioneer 34M95	Bt	163	4.8	7.3	7.8	11.9
50000	Pioneer 34M95	Bt	174	6.8	9.2	10.7	31.0
50000	Pioneer 34M95	Bt	189	9.7	12.5	14.8	61.0
50000	Pioneer 34M95	Bt	202	15.0	15.7	16.8	95.8
50000	Pioneer 34M95	Bt	217	19.7	19.7	19.7	112.3
Mean				9.6	11.2	12.3	48.2
Probability(%)							
Hybrid (H)				99.0	3.9	0.1	0.0
Plant Density (D)				40.8	44.6	46.7	11.1
H x D				17.6	16.1	2.9	4.5
DOY (T)				0.0	0.1	0.2	1.0
T x D				97.2	89.4	94.6	34.5
T x H				0.0	0.0	0.0	0.0
T x H x D				100.0	98.3	99.5	95.5
LSD (0.10)							
Hybrid (H)				NS	0.2	0.2	1.0
Plant Density (D)				NS	NS	NS	NS
H x D				NS	NS	0.3	2.2
DOY (T)				0.0	0.7	1.1	18.7
T x D				NS	NS	NS	NS
T x H				0.4	0.4	0.4	2.4
T x H x D				NS	NS	NS	NS
CV(%)				6	6	5	8

FIELD EXPERIMENT HISTORY

Title: **Plant Density and Hybrid Influence on Corn Grain**

Experiment: 02 Plant Density **Trial ID** 2581 **Year:** 2004

Personnel: J. G. Lauer, P. J. Flannery, K. D. Kohn, and T. F. Stanger

Location: Chippewa Falls, WI **County:** Chippewa

Supported By: HATCH

Site Information

Field: **Previous Crop:** Soybean **Soil Type:** Sattre Silt Loam

Soil Test: **Date:** 10/1 /03 **pH** 6.4 **OM (%)** 2.1 **P (ppm)** 25 **K (ppm)** 109

Plot Management

Tillage Operations: Field Cultivator Cultivated 6/17/04

		Analysis:	Rate lbs/A:	Date:
Fertilizer:	**Preplant :**	28-0-0	535 lbs/A	N/A
	Starter :	6-24-24	150 lbs/A	4 /28/04
	Post plant :	N/A	N/A	N/A
	Manure:	N/A	N/A	N/A

Herbicide: Harness 1.6 pt/A
Hornet 3.0 oz/A

Insecticide: None

Hybrid:

Irrigation: None

Planting Date: 4/28/04 **Planting Depth:** 1.5" **Row Width:** 30"

Target Plant Density: See Factors **Planting Method:** Kinze Plot Planter

Harvest Date: 10/25/04 **Harvest Method:** Kincaid Plot Combine

Notes:

Experimental Design

Design: RCB **Replications:** 3

Plot Size Seeded: 25' x 10' **Experiment Size:** 0.17 Acre

Harvest Plot Size: 5' x 22' **Harvest Plant Density:** N/A **plants per acre**

Factors/Treatments:

Plant Density: (plants/A)	Hybrids:	Rind Measurement Date:
26000	NK Brand 3030	8/11/04
32000	NK Brand 3030Bt	
38000		
44000		
50000		

Results: Tables C-38 and 39.

Table C-38. Plant Density and Hybrid Influence on Corn Grain.
Chippewa Falls, WI - 2004.

			Grain												
Target					Test	Grower	Lodged				Ears	Harvest		Plants	Seeds
Density	Hybrid	Trait	Yield	Moisture	Weight	Return	Total	Stalk	Root	Barren	Dropped	plants	ears	emerged	planted
plants/A			bu/A	%	lbs/bu	$/A	%	%	%	%	%	plants/A	ears/A	plants/A	seeds/A
	NK N3030		140	23.6	51	187	10	10	0	0	0	29568	29700	41105	49896
	NK N3030Bt	Bt	159	25.4	51	199	7	7	0	0	0	32182	32208	41976	49896
26000			148	23.7	51	211	10	10	0	0	0	24288	24420	28776	34056
32000			159	23.6	52	221	5	5	0	0	0	28116	28182	34848	41976
38000			155	24.2	51	203	4	4	0	0	0	31680	31746	41382	49896
44000			152	25.4	51	185	10	10	0	0	0	34056	34122	48312	57816
50000			134	25.7	50	145	14	14	0	0	0	36234	36300	54384	65736
26000	NK N3030		142	23.2	51	208	15	15	0	0	0	23760	23892	28512	34056
26000	NK N3030Bt	Bt	153	24.1	51	213	4	4	0	0	0	24816	24948	29040	34056
32000	NK N3030		149	22.9	52	212	6	6	0	0	0	26928	27060	35508	41976
32000	NK N3030Bt	Bt	169	24.4	51	230	4	4	0	0	0	29304	29304	34188	41976
38000	NK N3030		143	22.8	51	196	7	7	0	0	0	28644	28776	41184	49896
38000	NK N3030Bt	Bt	166	25.6	51	210	2	2	0	0	0	34716	34716	41580	49896
44000	NK N3030		149	24.4	51	193	9	9	0	0	0	31812	31944	45672	57816
44000	NK N3030Bt	Bt	154	26.3	51	178	11	11	0	0	0	36300	36300	50952	57816
50000	NK N3030		115	24.9	50	127	14	14	0	0	0	36696	36828	54648	65736
50000	NK N3030Bt	Bt	153	26.5	51	164	14	14	0	0	0	35772	35772	54120	65736
Mean			149	24.5	51	193	9	9	0	0	0	30875	30954	41540	49896
Probability(%)															
Plant Density (D)			1.8	0.6	2.8	0.0	1.9	1.9	-	-	-	0.0	0.0	0.0	-
Hybrid (H)			0.0	0.0	41.9	15.8	7.1	7.1	-	-	-	0.1	0.2	41.2	-
D x H			19.2	57.4	94.8	35.6	20.1	20.1	-	-	-	3.7	3.3	33.2	-
LSD (0.10)															
Plant Density (D)			12	1.0	1	22	5	5	-	-	-	1886	1844	2845	-
Hybrid (H)			7	0.6	NS	NS	3	3	-	-	-	1193	1167	NS	-
D x H			NS	NS	NS	NS	NS	NS	-	-	-	2667	2608	NS	-
CV(%)			8	4	1	11	55	55	-	-	-	6	6	7	-

Table C-39. Plant Density and Hybrid Influence on Rind Strength. Chippewa Falls, WI - 2004.

Target Density	Hybrid	Trait	Rind Strength
plants/A			load-lbs/section
	NK N3030		7.33
	NK N3030Bt	Bt	7.30
26000			7.39
32000			7.27
38000			6.78
44000			7.41
50000			7.73
26000	NK N3030		7.68
26000	NK N3030Bt	Bt	7.10
32000	NK N3030		6.92
32000	NK N3030Bt	Bt	7.61
38000	NK N3030		6.94
38000	NK N3030Bt	Bt	6.61
44000	NK N3030		7.28
44000	NK N3030Bt	Bt	7.53
50000	NK N3030		7.81
50000	NK N3030Bt	Bt	7.64
Mean			7.31
Probability(%)			
Plant Density (D)			6.5
Hybrid (H)			86.5
D x H			26.3
LSD (0.10)			
Plant Density (D)			0.52
Hybrid (H)			NS
D x H			NS
CV(%)			7

FIELD EXPERIMENT HISTORY

Title: **Plant Density and Hybrid Influence on Corn Grain**

Experiment: 02 Plant Density **Trial ID** 2583 **Year:** 2004

Personnel: J. G. Lauer, P. J. Flannery, K. D. Kohn, and T. F. Stanger

Location: Galesville, WI **County:** Trempealeau

Supported By: HATCH

Site Information

Field: **Previous Crop:** Soybean **Soil Type:** Downs Silt Loam

Soil Test: **Date:** 10/1 /04 **pH** 6.1 **OM (%)** 3.8 **P (ppm)** 22 **K (ppm)** 150

Plot Management

Tillage Operations: V-Rip Field Cultivator Cultivated 6/25/04

		Analysis:	Rate lbs/A:	Date:
Fertilizer:	**Preplant :**	46-0-0	348 lbs/A	N/A
	Starter :	6-24-24	150 lbs/A	4 /28/04
	Post plant :	34-0-0	150 lbs/A	6 /25/04
	Manure:	N/A	N/A	N/A

Herbicide: Dual II 2.25 pt/A
Callisto 3.0 oz/A

Insecticide: None

Hybrid:

Irrigation: None

Planting Date: 4/28/04 **Planting Depth:** 1.5" **Row Width:** 30"

Target Plant Density: See Factors **Planting Method:** Kinze Plot Planter

Harvest Date: 10/25/04 **Harvest Method:** Kincaid Plot Combine

Notes:

Experimental Design

Design: RCB **Replications:** 3

Plot Size Seeded: 10' x 25' **Experiment Size:** 0.17 Acre

Harvest Plot Size: 5' x 22' **Harvest Plant Density:** **plants per acre**

Factors/Treatments:

Plant Density: (plants/A)	Hybrids:	Rind Measurement Date:
26000	Dekalb DK5018	8/11/04
32000	Dekalb DK5143	
38000		
44000		
50000		

Results: Tables C-40 and 41.

Table C-40. Plant Density and Hybrid Influence on Corn Grain. Galesville, WI - 2004.

Target Density	Hybrid	Trait	Grain Yield	Grain Moisture	Grain Test Weight	Grain Grower Return	Lodged Total	Lodged Stalk	Lodged Root	Barren	Ears Dropped	Harvest plants	Harvest ears	Plants emerged	Seeds planted
plants/A			bu/A	%	lbs/bu	$/A	%	%	%	%	%	plants/A	ears/A	plants/A	seeds/A
	Dekalb DK5018	Bt	228	23.3	52	315	1	1	0	0	0	35482	35482	48866	49896
	Dekalb DK5143		227	22.8	52	324	1	1	0	0	0	35719	35878	48576	49896
26000			207	22.3	53	310	0	0	0	0	0	25674	26202	33396	34056
32000			220	22.5	52	320	0	0	0	0	0	30822	30756	41910	41976
38000			238	23.1	52	337	1	1	0	0	0	36894	36894	47850	49896
44000			230	23.7	52	311	2	2	0	0	0	40590	40524	56298	57816
50000			242	23.6	52	320	3	3	0	0	0	44022	44022	64152	65736
26000	Dekalb DK5018	Bt	207	22.5	53	306	0	0	0	0	0	25608	25872	33528	34056
26000	Dekalb DK5143		208	22.1	52	315	0	0	0	0	0	25740	26532	33264	34056
32000	Dekalb DK5018	Bt	220	22.7	52	315	0	0	0	0	0	30360	30228	41976	41976
32000	Dekalb DK5143		220	22.2	52	325	0	0	0	0	0	31284	31284	41844	41976
38000	Dekalb DK5018	Bt	237	23.4	52	331	1	0	1	0	0	36828	36828	49236	49896
38000	Dekalb DK5143		238	22.7	53	344	2	2	0	0	0	36960	36960	46464	49896
44000	Dekalb DK5018	Bt	235	23.9	52	312	2	2	0	0	0	41052	40920	55440	57816
44000	Dekalb DK5143		226	23.4	52	310	1	1	0	0	0	40128	40128	57156	57816
50000	Dekalb DK5018	Bt	241	23.7	52	312	3	3	0	0	0	43560	43560	64152	65736
50000	Dekalb DK5143		243	23.4	52	328	3	2	1	0	0	44484	44484	64152	65736
Mean			227	23.0	52	320	1	1	0	0	0	35600	35680	48721	49896
Probability(%)															
Plant Density (D)			1.2	0.4	10.0	52.6	12.2	22.0	59.2	51.1	-	0.0	0.0	0.0	-
Hybrid (H)			89.5	5.3	67.7	40.1	92.4	90.2	89.6	15.7	-	62.2	42.2	43.5	-
D x H			97.8	99.4	63.5	98.5	92.5	83.3	35.3	51.1	-	72.5	74.5	1.9	-
LSD (0.10)															
Plant Density (D)			16	0.6	1	NS	NS	NS	NS	NS	-	1298	1322	998	-
Hybrid (H)			NS	0.4	NS	NS	NS	NS	NS	NS	-	NS	NS	NS	-
D x H			NS	NS	NS	NS	NS	NS	NS	NS	-	NS	NS	1411	-
CV(%)			7	3	1	9	179	213	400	371	-	4	4	2	-

Table C-41. Plant Density and Hybrid Influence on Rind Strength. Galesville, WI - 2004.

Target Density	Hybrid	Trait	Rind Strength
plants/A			load-lbs/section
	Dekalb DK5018	Bt	8.97
	Dekalb DK5143		8.96
26000			9.06
32000			9.54
38000			9.09
44000			8.51
50000			8.63
26000	Dekalb DK5018	Bt	9.21
26000	Dekalb DK5143		8.91
32000	Dekalb DK5018	Bt	9.25
32000	Dekalb DK5143		9.83
38000	Dekalb DK5018	Bt	9.07
38000	Dekalb DK5143		9.12
44000	Dekalb DK5018	Bt	8.31
44000	Dekalb DK5143		8.70
50000	Dekalb DK5018	Bt	9.03
50000	Dekalb DK5143		8.22
Mean			8.96
Probability(%)			
Plant Density (D)			7.3
Hybrid (H)			94.2
D x H			36.1
LSD (0.10)			
Plant Density (D)			0.63
Hybrid (H)			NS
D x H			NS
CV(%)			7

FIELD EXPERIMENT HISTORY

Title: **Plant Density and Hybrid Influence on Corn Grain**

Experiment: 02 Plant Density **Trial ID** 2584 **Year:** 2004

Personnel: J. G. Lauer, P. J. Flannery, K. D. Kohn, and T. F. Stanger

Location: Hancock, WI **County:** Waushara

Supported By: HATCH

Site Information

Field: **Previous Crop:** Soybean **Soil Type:** Plainfield Sand

Soil Test: **Date:** 10/1 /03 **pH** 6.8 **OM (%)** 0.7 **P (ppm)** 98 **K (ppm)** 96

Plot Management

Tillage Operations: Moldboard Disk

		Analysis:	Rate lbs/A:	Date:
Fertilizer:	**Preplant :**	N/A	N/A	N/A
	Starter :	9-24-24	150 lbs/A	4 /23/04
	Post plant :	34-0-0	600 lbs/A	6/21/04 & 6/28/04
	Manure:	N/A	N/A	N/A

Herbicide: Aatrex 4L 0.75 lbs/A
Lasso 2.0 qt/A

Insecticide: None

Hybrid:

Irrigation: 10.3 inches

Planting Date: 4/23/04 **Planting Depth:** 1.5" **Row Width:** 30"

Target Plant Density: See Factors **Planting Method:** Kinze Plot Planter

Harvest Date: 10/13/04 **Harvest Method:** Kincaid Plot Combine

Notes:

Experimental Design

Design: RCB **Replications:** 3

Plot Size Seeded: 10' x 25' **Experiment Size:** 0.17 Acre

Harvest Plot Size: 5' x 22' **Harvest Plant Density:** **plants per acre**

Factors/Treatments:

Plant Density: (plants/A)	Hybrids:	Rind Measurement Dates:
26000	Dekalb DK5018	8/12/04
32000	Dekalb DK5143	
38000		
44000		
50000		

Results: Tables C-42 and 43.

Table C-42. Plant Density and Hybrid Influence on Corn Grain. Hancock, WI - 2004.

Target Density	Hybrid	Trait	Grain Yield	Grain Moisture	Grain Test Weight	Grain Grower Return	Lodged Total	Lodged Stalk	Lodged Root	Barren	Ears Dropped	Harvest plants	Harvest ears	Plants emerged	Seeds planted
plants/A			bu/A	%	lbs/bu	$/A	%	%	%	%	%	plants/A	ears/A	plants/A	seeds/A
	Dekalb DK5018	Bt	244	25.1	52	334	0	0	0	0	0	37013	37039	48444	49896
	Dekalb DK5143		255	23.9	53	367	0	0	0	0	0	37541	37646	47467	49896
26000			230	24.5	52	339	0	0	0	0	0	26268	26466	33264	34056
32000			248	24.2	52	361	0	0	0	0	0	31482	31482	40986	41976
38000			252	25.1	52	351	0	0	0	0	0	37488	37554	48048	49896
44000			255	24.8	52	347	0	0	0	0	0	43032	43098	54516	57816
50000			264	24.0	52	356	0	0	0	0	0	48114	48114	62964	65736
26000	Dekalb DK5018	Bt	227	25.4	52	327	0	0	0	0	0	26136	26268	33396	34056
26000	Dekalb DK5143		232	23.6	53	350	0	0	0	0	0	26400	26664	33132	34056
32000	Dekalb DK5018	Bt	246	24.1	53	353	0	0	0	0	0	31284	31284	41448	41976
32000	Dekalb DK5143		251	24.2	52	368	0	0	0	0	0	31680	31680	40524	41976
38000	Dekalb DK5018	Bt	238	26.2	52	319	0	0	0	0	0	36168	36168	49368	49896
38000	Dekalb DK5143		265	24.0	53	383	0	0	0	0	0	38808	38940	46728	49896
44000	Dekalb DK5018	Bt	250	25.7	52	330	0	0	0	0	0	42768	42768	53988	57816
44000	Dekalb DK5143		260	24.0	52	364	0	0	0	0	0	43296	43428	55044	57816
50000	Dekalb DK5018	Bt	260	24.3	52	342	0	0	0	0	0	48708	48708	64020	65736
50000	Dekalb DK5143		268	23.7	53	369	0	0	0	0	0	47520	47520	61908	65736
Mean			250	24.5	52	351	0	0	0	0	0	37277	37343	47956	49896
Probability(%)															
Plant Density (D)			0.1	49.9	73.2	46.4	61.0	61.0	-	-	43.3	0.0	0.0	0.0	-
Hybrid (H)			1.6	1.0	5.3	0.1	27.9	27.9	-	-	33.1	46.0	39.3	22.7	-
D x H			44.4	47.0	37.5	38.6	75.8	75.8	-	-	43.3	56.2	52.2	59.3	-
LSD (0.10)															
Plant Density (D)			11	NS	NS	NS	NS	NS	-	-	NS	1919	1901	2141	-
Hybrid (H)			7	0.8	0	14	NS	NS	-	-	NS	NS	NS	NS	-
D x H			NS	NS	NS	NS	NS	NS	-	-	NS	NS	NS	NS	-
CV(%)			4	5	1	6	289	289	-	-	548	5	5	4	-

Table C-43. Plant Density and Hybrid Influence on Rind Strength. Hancock, WI - 2004.

Target Density	Hybrid	Trait	Rind Strength
plants/A			load-lbs/section
	Dekalb DK5018	Bt	8.75
	Dekalb DK5143		8.72
26000			9.19
32000			8.84
38000			8.76
44000			8.56
50000			8.32
26000	Dekalb DK5018	Bt	8.91
26000	Dekalb DK5143		9.46
32000	Dekalb DK5018	Bt	9.03
32000	Dekalb DK5143		8.65
38000	Dekalb DK5018	Bt	8.88
38000	Dekalb DK5143		8.63
44000	Dekalb DK5018	Bt	8.86
44000	Dekalb DK5143		8.27
50000	Dekalb DK5018	Bt	8.05
50000	Dekalb DK5143		8.58
Mean			8.73
Probability(%)			
Plant Density (D)			29.6
Hybrid (H)			90.7
D x H			48.5
LSD (0.10)			
Plant Density (D)			NS
Hybrid (H)			NS
D x H			NS
CV(%)			8

FIELD EXPERIMENT HISTORY

Title: **Plant Density and Hybrid Influence on Corn Grain**

Experiment: 02 Plant Density **Trial ID** 2590 **Year:** 2004

Personnel: J. G. Lauer, P. J. Flannery, K. D. Kohn, and T. F. Stanger

Location: Janesville, WI **County:** Rock

Supported By: HATCH

Site Information

Field: **Previous Crop:** Soybean **Soil Type:** Plano Silt Loam

Soil Test: **Date:** 10/1 /03 **pH** 6.8 **OM (%)** 3.2 **P (ppm)** 51 **K (ppm)** 170

Plot Management

Tillage Operations: Fall Chisel Plow Field Cultivator (2x) Cultivated 6/20/04

		Analysis:	Rate lbs/A:	Date:
Fertilizer:	**Preplant :**	28-0-0	160 lbs/A	N/A
	Starter :	6-24-24	150 lbs/A	4 /27/04
	Post plant :	N/A	N/A	N/A
	Manure:			

Herbicide: Dual II Magnum 1.8 pt/A
Hornet 4.0 oz/A

Insecticide: None

Hybrid:

Irrigation: None

Planting Date: 4/27/04 **Planting Depth:** 1.5" **Row Width:** 30"

Target Plant Density: See Factors **Planting Method:** Kinze Plot Planter

Harvest Date: 10/12/04 **Harvest Method:** Kincaid Plot Combine

Notes:

Experimental Design

Design: RCB **Replications:** 3

Plot Size Seeded: 10' x 25' **Experiment Size:** 0.17 Acre

Harvest Plot Size: 5' x 22' **Harvest Plant Density:** **plants per acre**

Factors/Treatments:

Plant Density: (plants/A)	Hybrids:	Rind Measurement Dates:
26000	Pioneer 34M94	8/10/04
32000	Pioneer 34M95	
38000		
44000		
50000		

Results: Tables C-44 and 45.

Table C-44. Plant Density and Hybrid Influence on Corn Grain. Janesville, WI - 2004.

Target Density	Hybrid	Trait	Grain Yield	Grain Moisture	Grain Test Weight	Grain Grower Return	Lodged Total	Lodged Stalk	Lodged Root	Barren	Ears Dropped	Harvest plants	Harvest ears	Plants emerged	Seeds planted
plants/A			bu/A	%	lbs/bu	$/A	%	%	%	%	%	plants/A	ears/A	plants/A	seeds/A
	Pioneer 34M94		224	22.3	55	323	17	10	7	0	0	35851	35851	45038	49896
	Pioneer 34M95	Bt	228	22.7	55	316	9	6	3	0	0	38755	38676	45065	49896
26000			217	23.6	54	322	7	1	5	0	0	27852	27852	32406	34056
32000			229	22.6	55	336	7	4	3	0	0	33924	33990	38676	41976
38000			219	22.2	55	309	20	13	7	0	0	36564	36564	44748	49896
44000			244	22.0	55	342	11	9	2	0	0	42702	42570	51876	57816
50000			221	22.1	55	291	18	11	7	1	0	45474	45342	57552	65736
26000	Pioneer 34M94		211	23.1	55	318	12	2	10	0	0	27192	27192	33000	34056
26000	Pioneer 34M95	Bt	224	24.1	54	326	1	1	0	0	0	28512	28512	31812	34056
32000	Pioneer 34M94		223	22.6	55	331	11	4	6	0	0	31944	31944	38148	41976
32000	Pioneer 34M95	Bt	235	22.6	55	340	4	4	0	0	0	35904	36036	39204	41976
38000	Pioneer 34M94		217	21.6	56	316	23	16	7	0	0	34320	34320	45012	49896
38000	Pioneer 34M95	Bt	220	22.7	54	302	17	10	7	0	0	38808	38808	44484	49896
44000	Pioneer 34M94		243	21.9	55	348	15	11	4	0	0	42372	42504	51480	57816
44000	Pioneer 34M95	Bt	245	22.1	55	336	8	7	1	0	0	43032	42636	52272	57816
50000	Pioneer 34M94		223	22.0	55	304	23	17	6	0	0	43428	43296	57552	65736
50000	Pioneer 34M95	Bt	218	22.2	55	277	14	6	8	1	0	47520	47388	57552	65736
Mean			226	22.5	55	320	13	8	5	0	0	37303	37264	45052	49896
Probability(%)															
Plant Density (D)			10.1	4.6	1.0	4.6	11.0	11.4	26.5	36.2	-	0.0	0.0	0.0	-
Hybrid (H)			47.0	18.8	2.1	50.2	5.2	16.0	3.9	5.6	-	1.6	1.8	97.4	-
D x H			89.2	80.6	4.5	78.1	99.6	82.2	19.9	36.2	-	71.9	63.3	89.1	-
LSD (0.10)															
Plant Density (D)			NS	0.9	0	29	NS	NS	NS	NS	-	3002	2987	2167	-
Hybrid (H)			NS	NS	0	NS	6	NS	3	0	-	1898	1889	NS	-
D x H			NS	NS	1	NS	NS	NS	NS	NS	-	NS	NS	NS	-
CV(%)			8	4	1	9	80	105	84	268	-	8	8	5	-

Table C-45. Plant Density and Hybrid Influence on Rind Strength. Janesville, WI - 2004.

Target Density	Hybrid	Trait	Rind Strength
plants/A			load-lbs/section
	Pioneer 34M94		10.02
	Pioneer 34M95	Bt	10.17
26000			10.90
32000			10.08
38000			10.30
44000			9.61
50000			9.60
26000	Pioneer 34M94		10.40
26000	Pioneer 34M95	Bt	11.40
32000	Pioneer 34M94		10.56
32000	Pioneer 34M95	Bt	9.60
38000	Pioneer 34M94		9.75
38000	Pioneer 34M95	Bt	10.86
44000	Pioneer 34M94		9.53
44000	Pioneer 34M95	Bt	9.69
50000	Pioneer 34M94		9.87
50000	Pioneer 34M95	Bt	9.32
Mean			10.10
Probability(%)			
Plant Density (D)			0.2
Hybrid (H)			43.5
D x H			0.9
LSD (0.10)			
Plant Density (D)			0.52
Hybrid (H)			NS
D x H			0.74
CV(%)			5

FIELD EXPERIMENT HISTORY

Title: **Plant Density and Hybrid Influence on Corn Grain**

Experiment: 02 Plant Density **Trial ID** 2591 **Year:** 2004

Personnel: J. G. Lauer, P. J. Flannery, K. D. Kohn, and T. F. Stanger

Location: Lancaster, WI **County:** Grant

Supported By: HATCH

Site Information

Field: **Previous Crop:** Soybean **Soil Type:** Fayette Silt Loam

Soil Test: **Date:** 10/1 /04 **pH** 7.4 **OM (%)** 2.1 **P (ppm)** 60 **K (ppm)** 147

Plot Management

Tillage Operations: Soil Finisher Cultivated 6/15/04

		Analysis:	Rate lbs/A:	Date:
Fertilizer:	**Preplant :**	46-0-0	140 lbs/A	N/A
	Starter :	6-24-24	150 lbs/A	4 /27/04
	Post plant :	N/A	N/A	N/A
	Manure:	N/A	N/A	N/A

Herbicide: Atrazine 1 qt/A Harness 1 qt/A Northstar 2.5 oz/A **Insecticide:** None **Hybrid:**

Irrigation: None

Planting Date: 4/27/04 **Planting Depth:** 1.5" **Row Width:** 30"

Target Plant Density: See Factors **Planting Method:** Kinze Plot Planter

Harvest Date: 9/17/04 **Harvest Method:** Kincaid Plot Combine

Notes:

Experimental Design

Design: RCB **Replications:** 3

Plot Size Seeded: 10' x 25' **Experiment Size:** 0.17 Acre

Harvest Plot Size: 5' x 22' **Harvest Plant Density:** **plants per acre**

Factors/Treatments:

Plant Density: (plants/A)	Hybrids:	Rind Measurement Dates:
26000	Pioneer 34M94	8/10/04
32000	Pioneer 34M95	
38000		
44000		
50000		

Results: Tables C-46 and 47.

Table C-46. Plant Density and Hybrid Influence on Corn Grain. Lancaster, WI - 2004.

Target Density	Hybrid	Trait	Grain Yield	Grain Moisture	Grain Test Weight	Grain Grower Return	Lodged Total	Lodged Stalk	Lodged Root	Barren	Ears Dropped	Harvest plants	Harvest ears	Plants emerged	Seeds planted
plants/A			bu/A	%	lbs/bu	$/A	%	%	%	%	%	plants/A	ears/A	plants/A	seeds/A
	Pioneer 34M94		238	19.9	56	359	1	1	0	0	0	36036	36036	46464	49896
	Pioneer 34M95	Bt	249	20.5	56	363	0	0	0	0	0	36749	36881	47890	49896
26000			235	22.0	55	360	0	0	0	0	0	26862	27060	32802	34056
32000			237	21.3	55	355	0	0	0	0	0	31086	31086	40458	41976
38000			249	20.3	56	370	0	0	0	0	0	35772	35772	47850	49896
44000			249	19.0	56	366	1	1	0	0	0	41976	41976	54978	57816
50000			247	18.5	56	354	1	1	0	0	0	46266	46398	59796	65736
26000	Pioneer 34M94		234	21.6	55	365	0	0	0	0	0	26532	26532	33000	34056
26000	Pioneer 34M95	Bt	236	22.3	55	355	0	0	0	0	0	27192	27588	32604	34056
32000	Pioneer 34M94		232	21.4	55	352	0	0	0	0	0	30228	30228	40656	41976
32000	Pioneer 34M95	Bt	241	21.2	55	357	0	0	0	0	0	31944	31944	40260	41976
38000	Pioneer 34M94		248	20.2	56	375	1	1	0	0	0	35772	35772	46860	49896
38000	Pioneer 34M95	Bt	250	20.4	55	364	0	0	0	0	0	35772	35772	48840	49896
44000	Pioneer 34M94		244	18.5	56	367	1	1	0	0	0	42900	42900	53328	57816
44000	Pioneer 34M95	Bt	254	19.4	56	365	2	2	0	0	0	41052	41052	56628	57816
50000	Pioneer 34M94		231	17.9	56	336	2	2	0	0	0	44748	44748	58476	65736
50000	Pioneer 34M95	Bt	264	19.1	57	372	0	0	0	0	0	47784	48048	61116	65736
Mean			243	20.2	56	361	1	1	0	0	0	36392	36458	47177	49896
Probability(%)															
Plant Density (D)			15.6	0.0	0.0	58.3	29.9	29.9	-	43.3	-	0.0	0.0	0.0	-
Hybrid (H)			2.0	9.8	89.1	60.6	30.7	30.7	-	33.1	-	20.6	14.2	3.1	-
D x H			20.1	67.6	70.6	28.2	22.2	22.2	-	43.3	-	10.0	8.3	21.7	-
LSD (0.10)															
Plant Density (D)			NS	0.9	1	NS	NS	NS	-	NS	-	1488	1506	1673	-
Hybrid (H)			8	0.6	NS	NS	NS	NS	-	NS	-	NS	NS	1058	-
D x H			NS	NS	NS	NS	NS	NS	-	NS	-	2105	2130	NS	-
CV(%)			5	4	1	6	193	193	-	548	-	4	4	4	-

Table C-47. Plant Density and Hybrid Influence on Rind Strength. Lancaster, WI - 2004.

Target Density	Hybrid	Trait	Rind Strength
plants/A			load-lbs/section
	Pioneer 34M94		10.18
	Pioneer 34M95	Bt	10.30
26000			10.76
32000			10.42
38000			10.21
44000			9.99
50000			9.81
26000	Pioneer 34M94		11.07
26000	Pioneer 34M95	Bt	10.46
32000	Pioneer 34M94		10.20
32000	Pioneer 34M95	Bt	10.64
38000	Pioneer 34M94		10.06
38000	Pioneer 34M95	Bt	10.36
44000	Pioneer 34M94		10.01
44000	Pioneer 34M95	Bt	9.97
50000	Pioneer 34M94		9.57
50000	Pioneer 34M95	Bt	10.05
Mean			10.24
Probability(%)			
Plant Density (D)			18.5
Hybrid (H)			64.9
D x H			63.7
LSD (0.10)			
Plant Density (D)			NS
Hybrid (H)			NS
D x H			NS
CV(%)			7

FIELD EXPERIMENT HISTORY

Title: **Plant Density and Hybrid Influence on Corn Grain**

Experiment: 02 Plant Density **Trial ID** 2592 **Year:** 2004

Personnel: J. G. Lauer, P. J. Flannery, K. D. Kohn, and T. F. Stanger

Location: Marshfield, WI **County:** Wood

Supported By: HATCH

Site Information

Field: **Previous Crop:** Soybean **Soil Type:** Withee Silt Loam

Soil Test: **Date:** 10/15/04 **pH** 6.5 **OM (%)** 2.9 **P (ppm)** 38 **K (ppm)** 103

Plot Management

Tillage Operations: Chisel Plow, Soil Finisher (2x), Cultivated 6/22/04

		Analysis:	Rate lbs/A:	Date:
Fertilizer:	**Preplant :**	N/A	N/A	N/A
	Starter :	9-24-24	150 lbs/A	4 /29/04
	Post plant :	28-0-0	27 gal/A	6 /22/04
	Manure:	N/A	N/A	N/A

Herbicide: Lumax 2.25 qt/A **Insecticide:** None

Irrigation: None **Hybrid:**

Planting Date: 4/29/04 **Planting Depth:** 1.5" **Row Width:** 30"

Target Plant Density: See Factors **Planting Method:** Kinze Plot Planter

Harvest Date: 11/3/04 **Harvest Method:** Kincaid Plot Combine

Notes:

Experimental Design

Design: RCB **Replications:** 3

Plot Size Seeded: 10' x 25' **Experiment Size:** 0.17 Acre

Harvest Plot Size: 5' x 22' **Harvest Plant Density:** **plants per acre**

Factors/Treatments:

Plant Density: (plants/A)	Hybrids:	Rind Measurement Dates:
26000	NK N3030	8/12/04
32000	NK N3030Bt	
38000		
44000		
50000		

Results: Tables C-48 and 49.

Table C-48. Plant Density and Hybrid Influence on Corn Grain.
Marshfield, WI - 2004.

Target Density	Hybrid	Trait	Grain Yield	Grain Moisture	Grain Test Weight	Grain Grower Return	Lodged Total	Lodged Stalk	Lodged Root	Barren	Ears Dropped	Harvest plants	Harvest ears	Plants emerged	Seeds planted
plants/A			bu/A	%	lbs/bu	$/A	%	%	%	%	%	plants/A	ears/A	plants/A	seeds/A
	NK N3030		135	27.3	49	170	4	2	2	2	0	34426	34531	39785	49896
	NK N3030Bt	Bt	141	29.1	49	159	2	0	1	1	0	34742	35165	40022	49896
26000			127	27.4	49	166	0	0	0	1	0	24750	25344	28116	34056
32000			139	27.3	50	177	1	1	0	1	0	29898	30360	35112	41976
38000			141	28.2	49	169	2	1	0	1	0	34650	35112	40128	49896
44000			140	29.2	49	155	5	3	3	2	0	39732	39798	45738	57816
50000			145	28.8	50	154	6	1	5	4	0	43890	43626	50424	65736
26000	NK N3030		121	26.3	50	164	1	1	0	1	0	22572	23232	27324	34056
26000	NK N3030Bt	Bt	134	28.5	49	169	0	0	0	0	0	26928	27456	28908	34056
32000	NK N3030		133	26.4	49	176	2	2	0	2	0	29700	29964	36300	41976
32000	NK N3030Bt	Bt	146	28.2	50	178	0	0	0	0	0	30096	30756	33924	41976
38000	NK N3030		142	27.8	49	179	3	3	1	1	0	34980	35244	40656	49896
38000	NK N3030Bt	Bt	141	28.7	50	159	0	0	0	0	0	34320	34980	39600	49896
44000	NK N3030		140	28.7	50	165	5	3	2	3	0	41184	40920	46068	57816
44000	NK N3030Bt	Bt	140	29.7	49	144	6	2	4	1	0	38280	38676	45408	57816
50000	NK N3030		142	27.3	50	166	9	1	8	4	0	43692	43296	48576	65736
50000	NK N3030Bt	Bt	147	30.4	49	143	3	0	3	4	0	44088	43956	52272	65736
Mean			138	28.2	49	164	3	1	2	2	0	34584	34848	39904	49896
Probability(%)															
Plant Density (D)			15.0	2.9	71.4	27.5	1.2	11.3	3.4	0.1	-	0.0	0.0	0.0	-
Hybrid (H)			17.0	0.0	94.8	14.7	3.9	1.2	45.1	1.6	-	82.8	65.4	69.4	-
D x H			73.2	42.8	11.9	60.9	37.1	85.8	42.7	72.2	-	62.0	68.8	3.5	-
LSD (0.10)															
Plant Density (D)			NS	1.1	NS	NS	3	NS	3	1	-	3932	3812	1631	-
Hybrid (H)			NS	0.7	NS	NS	2	1	NS	1	-	NS	NS	NS	-
D x H			NS	NS	NS	NS	NS	NS	NS	NS	-	NS	NS	2307	-
CV(%)			8	4	1	12	101	120	184	76	-	11	11	4	-

Table C-49. Plant Density and Hybrid Influence on Rind Strength. Marshfield, WI - 2004.

Target Density	Hybrid	Trait	Rind Strength
plants/A			load-lbs/section
	NK N3030		7.98
	NK N3030Bt	Bt	7.75
26000			7.75
32000			7.93
38000			7.76
44000			7.86
50000			8.02
26000	NK N3030		8.05
26000	NK N3030Bt	Bt	7.45
32000	NK N3030		8.14
32000	NK N3030Bt	Bt	7.72
38000	NK N3030		7.81
38000	NK N3030Bt	Bt	7.72
44000	NK N3030		7.82
44000	NK N3030Bt	Bt	7.91
50000	NK N3030		8.08
50000	NK N3030Bt	Bt	7.96
Mean			7.87
Probability(%)			
Plant Density (D)			95.6
Hybrid (H)			38.9
D x H			91.2
LSD (0.10)			
Plant Density (D)			NS
Hybrid (H)			NS
D x H			NS
CV(%)			9

FIELD EXPERIMENT HISTORY

Title: **Plant Density and Hybrid Influence on Corn Grain**

Experiment: 02 Plant Density **Trial ID** 2595 **Year:** 2004

Personnel: J. G. Lauer, P. J. Flannery, K. D. Kohn, and T. F. Stanger

Location: Seymour, WI **County:** Outagamie

Supported By: HATCH

Site Information

Field: **Previous Crop:** Corn **Soil Type:** Clay Loam

Soil Test: **Date:** 10/15/04 **pH** 7.5 **OM (%)** 2.6 **P (ppm)** 41 **K (ppm)** 179

Plot Management

Tillage Operations: Chisel plow Soil Finisher

		Analysis:	Rate lbs/A:	Date:
Fertilizer:	**Preplant :**	N/A	N/A	N/A
	Starter :	9-24-24	150 lbs/A	5 /2 /04
	Post plant :	34-0-0	150 lbs/A	6 /30/04
	Manure:	Dairy	9000 gallons	

Herbicide: Accent 0.66 oz/A
Atrazine 0.5 lb/A
Callisto 3.0 oz/A

Insecticide: Force 3G @ 4.4lb/A

Hybrid:

Irrigation: None

Planting Date: 5/2/04 **Planting Depth:** 1.5" **Row Width:** 30"

Target Plant Density: See Factors **Planting Method:** Kinze Plot Planter

Harvest Date: 10/24/04 **Harvest Method:** Kincaid Plot Combine

Notes:

Experimental Design

Design: RCB **Replications:** 3

Plot Size Seeded: 25' x 10' **Experiment Size:** 0.17 Acre

Harvest Plot Size: 5' x 22' **Harvest Plant Density:** N/A **plants per acre**

Factors/Treatments:

Plant Density: (plants/A)	Hybrids:	Rind Measurement Date:
26000	NK Brand 3030	8/27/04
32000	NK Brand 3030Bt	
38000		
44000		
50000		

Results: Tables C-50 and 51.

Table C-50. Plant Density and Hybrid Influence on Corn Grain. Seymour, WI - 2004.

Target Density	Hybrid	Trait	Grain Yield	Grain Moisture	Grain Test Weight	Grain Grower Return	Lodged Total	Lodged Stalk	Lodged Root	Barren	Ears Dropped	Harvest plants	Harvest ears	Plants emerged	Seeds planted
plants/A			bu/A	%	lbs/bu	$/A	%	%	%	%	%	plants/A	ears/A	plants/A	seeds/A
	NK N3030		105	25.3	47	123	2	2	0	0	0	23575	23971	25793	49896
	NK N3030Bt	Bt	109	25.1	47	113	0	0	0	0	0	19885	20564	18499	49896
26000			136	21.4	49	189	0	0	0	0	0	15840	17094	16368	34056
32000			89	26.6	47	98	0	0	0	0	0	18744	18216	18282	41976
38000			98	25.9	46	104	1	1	0	0	0	22334	22810	20658	49896
44000			93	26.3	47	87	3	3	0	0	0	18876	19668	18612	57816
50000			128	25.8	47	135	1	1	0	0	0	33264	33924	36828	65736
26000	NK N3030		127	21.9	48	179	0	0	0	0	0	15312	16632	16104	34056
26000	NK N3030Bt	Bt	144	20.8	49	199	0	0	0	0	0	16368	17556	16632	34056
32000	NK N3030		84	25.5	46	98	1	1	0	0	0	20460	18612	19404	41976
32000	NK N3030Bt	Bt	93	27.8	47	98	0	0	0	0	0	17028	17820	17160	41976
38000	NK N3030		93	27.1	46	101	0	0	0	0	0	22836	23496	25344	49896
38000	NK N3030Bt	Bt	107	24.6	45	107	1	1	0	0	0	21582	21780	15972	49896
44000	NK N3030		101	25.9	47	111	5	5	0	0	0	21516	22704	24288	57816
44000	NK N3030Bt	Bt	84	26.7	47	63	0	0	0	0	0	16236	16632	10098	57816
50000	NK N3030		127	25.9	47	144	2	1	0	0	0	37752	38412	43824	65736
50000	NK N3030Bt	Bt	128	25.7	47	126	0	0	0	0	0	28776	29436	29832	65736
Mean			107	25.2	47	118	1	1	0	0	0	21794	22326	22272	49896
Probability(%)															
Plant Density (D)			5	25.4	7.3	7.5	35.2	34.6	45.4	45.4	-	0.0	0.0	0.0	-
Hybrid (H)			90	92.8	53.5	42.4	14.9	17.3	33.1	33.1	-	4.5	3.8	0.4	-
D x H			83	90.3	65.3	76.6	18.5	18.6	47.6	47.6	-	58.8	39.6	18.6	-
LSD (0.10)															
Plant Density (D)			24	NS	1	43	NS	NS	NS	NS	-	5230	4760	5508	-
Hybrid (H)			NS	NS	NS	NS	NS	NS	NS	NS	-	3308	3011	3484	-
D x H			NS	NS	NS	NS	NS	NS	NS	NS	-	NS	NS	NS	-
CV(%)			22	17	3	36	250	261	544	544	-	24	21	25	-

Table C-51. Plant Density and Hybrid Influence on Rind Strength. Seymour, WI - 2004.

Target Density	Hybrid	Trait	Rind Strength
plants/A			load-lbs/section
	NK N3030		8.96
	NK N3030Bt	Bt	8.29
26000			8.27
32000			8.64
38000			8.97
44000			8.64
50000			8.58
26000	NK N3030		8.81
26000	NK N3030Bt	Bt	7.73
32000	NK N3030		8.56
32000	NK N3030Bt	Bt	8.72
38000	NK N3030		9.21
38000	NK N3030Bt	Bt	8.73
44000	NK N3030		9.18
44000	NK N3030Bt	Bt	8.11
50000	NK N3030		9.03
50000	NK N3030Bt	Bt	8.14
Mean			8.62
Probability(%)			
Plant Density (D)			64.7
Hybrid (H)			2.8
D x H			60.0
LSD (0.10)			
Plant Density (D)			NS
Hybrid (H)			0.49
D x H			NS
CV(%)			9

FIELD EXPERIMENT HISTORY

Title: **Plant Density and Hybrid Influence on Corn Grain**

Experiment: 02 Plant Density **Trial ID** 2596 **Year:** 2004

Personnel: J. G. Lauer, P. J. Flannery, K. D. Kohn, and T. F. Stanger

Location: Valders, WI **County:** Manitowoc

Supported By: HATCH

Site Information

Field: **Previous Crop:** Corn **Soil Type:** Kewaunee Clay Loam

Soil Test: **Date:** 10/1 /03 **pH** 6.9 **OM (%)** 4.1 **P (ppm)** 91 **K (ppm)** 186

Plot Management

Tillage Operations: Chisel Plow Field Cultivator Cultivated 6/23/04

		Analysis:	Rate lbs/A:	Date:
Fertilizer:	**Preplant :**	N/A	N/A	N/A
	Starter :	6-24-24	150 lbs/A	5 /4 /04
	Post plant :	34-0-0	150 lbs/A	6 /30/04
	Manure:	Manure	11000 gal/A	Manure

Herbicide: Dual II 1.0 pt/A
Accent Gold WDG 2.5 oz/A
Banvel 2.0 oz/A

Insecticide: Force 4.4 lb/A

Hybrid:

Irrigation: None

Planting Date: 5/4/04 **Planting Depth:** 1.5" **Row Width:** 30"

Target Plant Density: See Factors **Planting Method:** Kinze Plot Planter

Harvest Date: 10/27/04 **Harvest Method:** Kincaid Plot Combine

Notes:

Experimental Design

Design: RCB **Replications:** 3

Plot Size Seeded: 25' x 10' **Experiment Size:** 0.17 Acre

Harvest Plot Size: 5' x 22' **Harvest Plant Density:** N/A **plants per acre**

Factors/Treatments:

Plant Density: (plants/A)	Hybrids:	Rind Measurement Date:
26000	NK Brand 3030	8/27/04
32000	NK Brand 3030Bt	
38000		
44000		
50000		

Results: Tables C-52 and 53.

Table C-52. Plant Density and Hybrid Influence on Corn Grain. Valders, WI - 2004.

Target Density	Hybrid	Trait	Grain Yield	Grain Moisture	Grain Test Weight	Grain Grower Return	Lodged Total	Lodged Stalk	Lodged Root	Barren	Ears Dropped	Harvest plants	Harvest ears	Plants emerged	Seeds planted
plants/A			bu/A	%	lbs/bu	$/A	%	%	%	%	%	plants/A	ears/A	plants/A	seeds/A
	NK N3030		157	26.7	47	208	1	1	0	0	0	32472	33871	39811	49896
	NK N3030Bt	Bt	172	26.8	48	214	0	0	0	0	0	32842	33607	38438	49896
26000			168	24.1	44	246	0	0	0	0	0	23760	26862	27852	34056
32000			143	29.3	49	178	0	0	0	0	0	28050	28974	33132	41976
38000			159	28.2	49	197	1	1	0	0	0	35904	36762	42306	49896
44000			178	24.1	47	230	0	0	0	0	0	31152	31614	37554	57816
50000			175	28.1	49	207	1	1	0	0	0	44418	44484	54780	65736
26000	NK N3030		151	24.4	45	220	0	0	0	0	0	22176	25872	26400	34056
26000	NK N3030Bt	Bt	186	23.8	44	271	0	0	0	0	0	25344	27852	29304	34056
32000	NK N3030		145	28.6	49	189	0	0	0	0	0	28776	30228	35772	41976
32000	NK N3030Bt	Bt	142	30.0	48	167	0	0	0	0	0	27324	27720	30492	41976
38000	NK N3030		145	28.3	49	183	0	0	0	0	0	33924	34980	40656	49896
38000	NK N3030Bt	Bt	172	28.2	49	211	1	1	0	0	0	37884	38544	43956	49896
44000	NK N3030		168	24.5	45	225	0	0	0	0	0	33528	34452	41052	57816
44000	NK N3030Bt	Bt	193	23.7	49	236	0	0	0	0	0	28776	28776	34056	57816
50000	NK N3030		177	27.9	50	220	1	1	0	0	0	43956	43824	55176	65736
50000	NK N3030Bt	Bt	174	28.2	49	193	1	1	0	0	0	44880	45144	54384	65736
Mean			164	26.8	48	211	0	0	0	0	0	32657	33739	39125	49896
Probability(%)															
Plant Density (D)			24.4	3.4	32.6	24.8	23.1	15.4	43.3	43.3	-	0.3	1.1	0.1	-
Hybrid (H)			15.7	95.7	72.5	74.8	51.4	31.5	33.1	33.1	-	90.1	93.0	68.3	-
D x H			67.4	97.8	75.3	66.0	59.7	65.8	43.3	43.3	-	87.7	86.1	80.7	-
LSD (0.10)															
Plant Density (D)			NS	3.3	NS	NS	NS	NS	NS	NS	-	8026	8143	9076	-
Hybrid (H)			NS	NS	NS	NS	NS	NS	NS	NS	-	NS	NS	NS	-
D x H			NS	NS	NS	NS	NS	NS	NS	NS	-	NS	NS	NS	-
CV(%)			17	12	9	25	200	187	548	548	-	25	24	23	-

Table C-53. Plant Density and Hybrid Influence on Rind Strength. Valders, WI - 2004.

Target Density	Hybrid	Trait	Rind Strength
plants/A			load-lbs/section
	NK N3030		7.91
	NK N3030Bt	Bt	7.69
26000			8.10
32000			7.72
38000			7.89
44000			8.06
50000			7.22
26000	NK N3030		8.01
26000	NK N3030Bt	Bt	8.19
32000	NK N3030		8.22
32000	NK N3030Bt	Bt	7.22
38000	NK N3030		8.03
38000	NK N3030Bt	Bt	7.74
44000	NK N3030		7.65
44000	NK N3030Bt	Bt	8.47
50000	NK N3030		7.61
50000	NK N3030Bt	Bt	6.83
Mean			7.80
Probability(%)			
Plant Density (D)			36.8
Hybrid (H)			47.9
D x H			34.1
LSD (0.10)			
Plant Density (D)			NS
Hybrid (H)			NS
D x H			NS
CV(%)			10

FIELD EXPERIMENT HISTORY

Title: **Plant Density Effects on Corn Grain Yield**

Experiment: 02 Plant Density **Trial ID** 2589 **Year:** 2004

Personnel: J.G. Lauer, M. Rankin and K.D. Kohn

Location: Fond du Lac, WI **County:** Fond du Lac

Supported By:

Site Information

Field: JB **Previous Crop:** Soybean **Soil Type:** Virgil Silt Loam

Soil Test: **Date:** 11/20/02 **pH:** 7.2 **OM (%)** 3.7 **P (ppm)** 32 **K (ppm)** 84

Plot Management

Tillage Operations: Chisel Plow Field Cultivator (2x)

		Analysis:	Rate lbs/A:	Date:
Fertilizer:	**Preplant :**	N/A	N/A	N/A
	Starter :	10-34-0	5 gal/A	5 /5 /04
	Post plant :	28-0-0	15 gal/A	N/A
		32-0-0	20 gal/A	
	Manure:	N/A	N/A	N/A

Herbicide: Basis SP 0.33 oz/A
Cinch ATZ 0.75 qt/A
Dual II Mag 0.5 pt/A
Hornet WDG 1.5 oz/A

Insecticide: None

Hybrid: Pioneer 36N71

Irrigation: None

Planting Date: 5/5/04 **Planting Depth:** 1.5" **Row Width:** 30"

Harvest Date: 11/4/04 **Planting Method:** JD 7200

Harvest Method: Gleaner R52

Experimental Design

Design: RCB **Replications:** 3

Plot Size Seeded 342' x 30' **Experiment Size:** 2.1 A

Harvest Plot Size: 340' x 30' **Harvest Plant Density:** 35444 **plants per acre**

Factors/Treatments:

Plant Density: (plants/A)

30000
35000
40000

Results: Table C-54.

Table C-54. Plant Density Effects on Corn Grain Yield Fond du Lac, WI - 2004

Target density	Harvest pop	Yield	Moisture	Test weight	Broken stalks	Grower return
plants/A	plants/A	bu/A	%	lbs/bu	%	$/A
30000	30833	159	28.3	51	1	255
35000	35833	164	28.4	51	1	263
40000	39667	162	27.7	52	2	262
Mean	35444	162	28.1	51	1	260
Probability(%)						
Plant Density (D)	1.1	61.8	71.1	3.1	6.9	73.2
LSD(0.10)						
Plant Density (D)	3191	NS	NS	1	1	NS
CV(%)	5	4	4	1	44	5

Table C-54b. Plant Density and Hybrid Influence on Rind Strength. Fond du Lac, WI - 2004.

Target Density	Hybrid	Trait	Rind Strength
plants/A			load-lbs/section
	Dekalb DK5018	Bt	10.42
	Dekalb DK5143		11.58
26000			11.54
32000			11.00
38000			11.05
44000			10.01
50000			11.06
26000	Dekalb DK5018	Bt	11.51
26000	Dekalb DK5143		11.57
32000	Dekalb DK5018	Bt	9.80
32000	Dekalb DK5143		12.20
38000	Dekalb DK5018	Bt	10.69
38000	Dekalb DK5143		11.41
44000	Dekalb DK5018	Bt	9.12
44000	Dekalb DK5143		10.89
50000	Dekalb DK5018	Bt	10.52
50000	Dekalb DK5143		11.59
Mean			11.00
Probability(%)			
Plant Density (D)			83.9
Hybrid (H)			3.6
D x H			64.2
LSD (0.10)			
Plant Density (D)			NS
Hybrid (H)			0.88
D x H			NS
CV(%)			13