

FIELD EXPERIMENT HISTORY

Title: Plant Density and Hybrid Influence on Corn Grain and Silage Performance
Experiment: 02PD **Trial ID** 2464 **Year:** 2003
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: 412 **Previous Crop:** Soybean **Soil Type:** Plano Silt Loam
Soil Test: **Date:** 10/15/03 **pH** 6.5 **OM (%)** 5.4 **P (ppm)** 112 **K (ppm)** 281

Plot Management

Tillage Operations: Fall Chisel Plow Field Cultivator Cultivated 6/18/03

	<u>Analysis:</u>	<u>Rate lbs/A:</u>	<u>Date:</u>
Fertilizer: Preplant :	46-0-0	150 lbs/A	N/A
Starter :	6-24-24	9 lbs/A	5 /3 /03
Post plant :	N/A	N/A	N/A
Manure:	N/A	N/A	N/A

Herbicide: Harness 2.5 pt/A **Insecticide:**
 Hornet 3.0 oz/A **Hybrid:**
 Callisto 3.0 oz/A

Irrigation: None

Planting Date: 5/3/03 **Planting Depth:** 1.5" **Row Width:** 30"
Target Plant Density: See Factors **Planting Method:** Kinze Plot Planter
Harvest Date: 10/16/03 **Harvest Method:** G: Kincaid Plot Combine
S: NH707 Plot Chopper

Experimental Design

Design: RCB **Replications:** 3
Plot Size Seeded: 25' x 10' **Experiment Size:** 22' x 5'
Harvest Plot Size: G: 5' x 22' **Harvest Plant Density:** N/A plants per acre
 S: 2.5' x 22'

Factors/Treatments:

<u>Plant Density: (plants/A)</u>	<u>Hybrids:</u>
26000	Pioneer 34M94
32000	Pioneer 34M95
38000	Pioneer 37R71
44000	Renk RK622
50000	

Results: Table C-30, C-31, C-32, C-33, C-34, and C-35.

**Table C-30. Plant Density and Hybrid Influence on Corn Grain.
Arlington, WI - 2003.**

Target Density	Hybrid	Trait	Grain											Plants emerged	Seeds planted
			Yield	Moisture	Test Wt	Grower Return	Lodged			Barren	Ears Dropped	Harvest			
							bu/A	%	lbs/bu			\$/A	%		
	Pioneer 34M94		196	23.7	53	306	70	70	0	2	0	36986	36300	42266	49896
	Pioneer 34M95	Bt	195	25.2	54	290	77	77	0	2	0	36722	36194	40220	49896
	Pioneer 37R71	Bt	189	20.7	55	301	30	30	0	1	0	38465	37963	42702	49896
	Renk RK622		167	19.7	57	276	82	82	0	1	0	37937	37409	45012	49896
26000			185	22.7	54	307	37	37	0	1	0	26862	27093	29865	34056
32000			196	22.4	55	318	55	55	0	1	0	32604	32142	35888	41976
38000			190	21.7	55	300	72	72	0	1	0	37455	37224	42801	49896
44000			184	22.5	55	280	78	78	0	2	0	42438	41613	49038	57816
50000			178	22.2	56	262	83	83	0	3	0	48279	46761	55160	65736
26000	Pioneer 34M94		197	24.4	50	324	39	39	0	0	0	26268	26268	29898	34056
26000	Pioneer 34M95	Bt	186	25.7	52	292	44	44	0	1	0	26400	26664	27984	34056
26000	Pioneer 37R71	Bt	188	20.7	55	317	4	4	0	0	0	27720	27720	29964	34056
26000	Renk RK622		171	20.1	57	296	61	61	0	1	0	27060	27720	31614	34056
32000	Pioneer 34M94		206	24.6	54	333	64	64	0	1	0	32340	32208	35640	41976
32000	Pioneer 34M95	Bt	199	25.1	54	307	72	72	0	1	0	31548	31152	33264	41976
32000	Pioneer 37R71	Bt	203	19.1	55	337	6	6	0	2	0	33792	33132	36960	41976
32000	Renk RK622		180	20.9	57	303	76	76	0	1	1	32736	32076	37686	41976
38000	Pioneer 34M94		223	21.8	54	354	70	70	0	2	0	36168	35640	41184	49896
38000	Pioneer 34M95	Bt	196	25.3	55	290	90	90	0	0	0	36564	36432	41844	49896
38000	Pioneer 37R71	Bt	192	20.9	54	306	36	36	0	1	0	39204	38940	42702	49896
38000	Renk RK622		160	18.7	58	266	91	91	0	0	0	37884	37884	45474	49896
44000	Pioneer 34M94		185	23.8	55	281	88	88	0	2	0	42504	41844	49962	57816
44000	Pioneer 34M95	Bt	203	24.8	54	296	86	86	0	3	0	41184	39996	45276	57816
44000	Pioneer 37R71	Bt	186	22.1	55	282	50	50	0	2	0	43164	42372	48180	57816
44000	Renk RK622		162	19.4	58	260	88	88	0	1	0	42900	42240	52734	57816
50000	Pioneer 34M94		175	24.0	55	253	89	89	0	4	0	47652	45540	54648	65736
50000	Pioneer 34M95	Bt	192	24.9	56	265	94	94	0	2	0	47916	46728	52734	65736
50000	Pioneer 37R71	Bt	184	20.6	54	274	56	56	0	2	0	48444	47652	55704	65736
50000	Renk RK622		163	19.3	58	255	94	94	0	3	1	49104	47124	57552	65736
Mean			187	22.3	55	293	65	65	0	1	0	37528	36967	42550	49896
Probability(%)															
Plant Density (D)			8.0	53.8	1.0	0.0	0.0	0.0	-	0.2	30.6	0.0	0.0	0.0	-
Hybrid (H)			0.0	0.0	0.0	2.9	0.0	0.0	-	51.9	6.7	0.1	0.0	0.0	-
D x H			48.3	41.3	2.4	65.8	24.7	24.7	-	70.9	46.8	82.6	56.9	7.9	-
LSD (0.10)															
Plant Density (D)			11	NS	1	21	8	8	-	1	NS	801	822	892	-
Hybrid (H)			10	1.0	1	19	7	7	-	NS	0	716	735	797	-
D x H			NS	NS	2	NS	NS	NS	-	NS	NS	NS	NS	1783	-
Contrasts-D (%)															
Linear			8.3	50.2	0.1	0.0	0.0	0.0	-	0.0	97.6	0.0	0.0	0.0	-
Quadratic			3.5	36.4	40.7	4.5	0.6	0.6	-	22.7	58.3	79.4	70.3	73.4	-
Cubic			23.7	61.0	42.9	23.3	99.9	99.9	-	48.6	8.6	10.8	50.9	40.0	-
Quartic			91.7	21.4	81.2	94.8	47.1	47.1	-	10.8	21.5	91.6	45.5	50.0	-
CV(%)			9	7	2	10	18	18	-	99	288	3	3	3	-

**Table C-31. Plant Density and Hybrid Influence on Silage Performance.
Arlington, WI - 2003.**

Target Density	Hybrid	Trait	Whole Plant										Milk per		Forage Harvest	
			Dry Matter		Kernel	Crude	In Vitro			Starch	Ton	Acre	plants/A	ears/A		
			Yield	Moisture	Milk	Protein	ADF	NDF	Digest						NDFD	lbs/T
tons/A	%	%	%	%	%	%	%	%	%	%						
	Pioneer 34M94		9.1	65.6	52	7.6	29.6	54.3	81.4	66.1	27.9	3511	32172	39283	35851	
	Pioneer 34M95	Bt	9.1	65.8	49	7.6	29.9	55.3	81.1	66.0	26.5	3506	31905	38491	35798	
	Pioneer 37R71	Bt	7.9	61.1	16	7.3	29.0	52.4	79.6	61.3	32.2	3288	26231	38808	37277	
	Renk RK622		7.8	59.4	21	7.5	29.0	52.3	79.8	61.5	31.4	3282	25613	39811	38122	
26000			8.3	65.0	44	7.8	28.5	52.5	81.3	64.4	28.8	3482	28761	28380	27390	
32000			7.8	63.9	34	7.3	30.4	55.2	79.9	63.8	27.7	3351	26397	32538	31152	
38000			8.9	62.1	33	7.4	28.4	52.3	81.2	64.1	31.4	3451	30786	39006	37290	
44000			9.1	60.9	29	7.6	27.8	51.4	81.7	64.6	32.3	3461	31959	44946	42042	
50000			8.5	62.9	31	7.4	31.7	56.6	78.3	61.7	27.4	3239	27790	50622	45936	
26000	Pioneer 34M94		9.1	68.1	60	7.8	29.8	54.6	81.0	65.3	25.9	3494	31617	28512	27192	
26000	Pioneer 34M95	Bt	8.6	67.9	62	7.9	29.7	55.2	81.4	66.4	24.0	3527	30438	27720	26136	
26000	Pioneer 37R71	Bt	7.6	63.0	25	7.8	26.4	48.7	81.9	63.2	33.5	3526	26935	27720	26928	
26000	Renk RK622		7.6	61.2	30	7.7	28.3	51.4	80.7	62.8	31.8	3383	24700	29568	29304	
32000	Pioneer 34M94		8.0	69.7	57	7.7	31.8	57.5	80.2	65.7	23.5	3436	27428	31680	30096	
32000	Pioneer 34M95	Bt	8.4	68.7	52	7.3	31.7	57.6	80.0	65.5	23.8	3426	28705	31416	29568	
32000	Pioneer 37R71	Bt	6.7	63.3	15	7.0	31.1	55.5	78.0	60.7	29.0	3200	21679	33528	32208	
32000	Renk RK622		8.3	53.8	13	7.2	27.2	50.2	81.5	63.3	34.5	3342	27777	33528	32736	
38000	Pioneer 34M94		9.2	61.9	42	7.2	30.2	55.8	80.8	65.7	27.9	3449	31874	39600	36432	
38000	Pioneer 34M95	Bt	9.9	63.9	52	7.7	27.0	51.2	83.4	67.9	30.9	3686	36668	38544	36696	
38000	Pioneer 37R71	Bt	8.5	59.8	18	7.1	27.8	50.8	80.5	61.9	35.0	3314	28350	39072	38016	
38000	Renk RK622		7.8	62.6	22	7.7	28.5	51.3	79.9	60.9	31.8	3353	26252	38808	38016	
44000	Pioneer 34M94		9.9	62.4	48	7.9	24.1	46.6	85.5	69.1	35.8	3781	37644	45144	40392	
44000	Pioneer 34M95	Bt	9.6	63.3	38	7.5	29.3	54.5	81.7	66.6	28.4	3552	34269	44352	41448	
44000	Pioneer 37R71	Bt	8.1	61.5	13	7.2	30.6	54.5	78.4	60.6	30.1	3208	26243	44088	42240	
44000	Renk RK622		8.4	56.5	15	7.7	27.3	49.8	81.0	62.1	34.8	3304	28541	46200	44088	
50000	Pioneer 34M94		9.5	65.7	52	7.5	31.9	57.0	79.7	64.5	26.3	3396	32298	51480	45144	
50000	Pioneer 34M95	Bt	8.8	65.0	40	7.4	32.0	57.8	79.0	63.7	25.5	3338	29446	50424	45144	
50000	Pioneer 37R71	Bt	8.7	58.1	8	7.2	29.3	52.5	79.0	60.1	33.5	3190	27947	49632	46992	
50000	Renk RK622		7.1	62.8	23	7.5	33.7	58.9	75.6	58.6	24.1	3030	21468	50952	46464	
Mean			8.5	63.0	34	7.5	29.4	53.6	80.5	63.7	29.5	3397	29096	39098.4	36762	
Probability(%)																
Plant Density (D)			0.9	5.6	0.6	4.2	10.4	12.6	9.1	5.6	12.7	6.1	3.3	0.0	0.0	
Hybrid (H)			0.0	0.0	0.0	8.4	89.9	39.4	29.8	0.0	2.1	0.5	0.0	12.1	0.1	
D x H			17.4	2.2	59.3	53.5	51.7	49.3	57.8	63.5	32.2	63.9	35.6	76.8	91.0	
LSD (0.10)																
Plant Density (D)			0.6	2.4	7	0.3	NS	NS	2.2	1.7	NS	154	2948	1067	1153	
Hybrid (H)			0.5	2.1	6	0.2	NS	NS	NS	1.6	3.4	138	2636	NS	1032	
D x H			NS	4.8	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
Contrasts-D (%)																
Linear			2.6	2.9	0.1	15.6	30.3	39.3	16.1	5.8	74.0	7.3	34.4	0.0	0.0	
Quadratic			23.5	6.9	6.7	11.4	20.6	24.6	17.9	11.7	8.8	26.9	14.3	14.3	53.9	
Cubic			1.1	24.2	78.6	1.7	2.5	2.4	3.5	6.8	4.3	2.9	0.8	7.7	4.1	
Quartic			23.1	89.6	34.1	76.7	79.8	78.7	98.0	65.2	72.4	75.0	41.3	41.3	29.6	
CV(%)																
			10	5	29	5	13	10	4	4	19	7	15	4	5	

**Table C-32. Plant Density and Hybrid Influence on Yield Components.
Arlington, WI - 2003.**

Target Density	Hybrid	Trait	Ear Size			1000 Kernel weight
			Kernels/Ear no./ear	Kernels/Row no./row	Rows/Ear no./ear	
	Pioneer 37R71	Bt	523	35	15	254.9
	Renk RK622		526	34	16	240.9
26000			591	37	16	281.1
32000			571	37	16	265.9
38000			500	33	15	244.3
44000			480	33	15	226.2
50000			482	32	15	221.9
26000	Pioneer 37R71	Bt	586	36	16	289.6
26000	Renk RK622		595	38	16	272.6
32000	Pioneer 37R71	Bt	574	38	15	264.8
32000	Renk RK622		569	36	16	267.0
38000	Pioneer 37R71	Bt	509	34	15	254.0
38000	Renk RK622		490	31	16	234.6
44000	Pioneer 37R71	Bt	482	34	14	237.9
44000	Renk RK622		478	31	15	214.4
50000	Pioneer 37R71	Bt	465	31	15	228.0
50000	Renk RK622		499	33	15	215.9
Mean			525	34	15	247.9
Probability(%)						
Plant Density (D)			0.0	0.0	12.0	0.0
Hybrid (H)			79.5	25.0	8.5	0.1
D x H			72.9	11.2	30.7	24.8
LSD (0.10)						
Plant Density (D)			24	1	NS	7.1
Hybrid (H)			NS	NS	0	6.3
D x H			NS	NS	NS	NS
Contrasts-D (%)						
Linear			0.0	0.0	2.1	0.0
Quadratic			8.4	47.6	25.1	11.3
Cubic			10.8	15.9	78.2	13.1
Quartic			25.2	7.1	44.3	98.8
CV(%)						
			6	6	5	4

Table C-33. Plant Density and Hybrid Influence on Rind Strength, and % Stalk K. Arlington, WI - 2003.

Target Density	Hybrid	Trait	Rind Strength			Stalk K
			7-Aug	4-Sep	1-Oct	
				load-lbs/section		%
	Pioneer 34M94		8.87	9.85	9.94	
	Pioneer 34M95	Bt	9.17	9.91	9.56	
	Pioneer 37R71	Bt	7.57	7.47	7.48	3.0
	Renk RK622		8.27	8.27	8.21	3.4
26000			8.70	9.70	9.49	3.0
32000			8.84	9.20	9.15	2.9
38000			8.71	8.80	8.55	3.3
44000			8.06	8.46	8.26	3.4
50000			8.03	8.22	8.54	3.3
26000	Pioneer 34M94		8.67	10.29	10.64	
26000	Pioneer 34M95	Bt	9.20	10.29	10.68	
26000	Pioneer 37R71	Bt	8.24	8.64	8.35	3.0
26000	Renk RK622		8.72	9.56	8.30	3.0
32000	Pioneer 34M94		9.45	10.58	10.01	
32000	Pioneer 34M95	Bt	9.59	11.05	9.58	
32000	Pioneer 37R71	Bt	7.69	7.17	7.73	2.7
32000	Renk RK622		8.61	7.99	9.28	3.2
38000	Pioneer 34M94		9.47	9.61	9.72	
38000	Pioneer 34M95	Bt	9.80	9.36	8.71	
38000	Pioneer 37R71	Bt	7.42	7.93	7.81	3.0
38000	Renk RK622		8.15	8.29	7.95	3.6
44000	Pioneer 34M94		8.40	9.80	9.34	
44000	Pioneer 34M95	Bt	8.52	9.65	9.36	
44000	Pioneer 37R71	Bt	7.33	6.94	7.01	3.2
44000	Renk RK622		8.01	7.45	7.33	3.6
50000	Pioneer 34M94		8.35	8.96	10.01	
50000	Pioneer 34M95	Bt	8.76	9.18	9.46	
50000	Pioneer 37R71	Bt	7.16	6.66	6.51	3.0
50000	Renk RK622		7.86	8.07	8.18	3.6
Mean			8.47	8.87	8.80	3.2
Probability(%)						
	Plant Density (D)		1.1	0.0	0.0	16.7
	Hybrid (H)		0.0	0.0	0.0	0.3
	D x H		77.6	14.2	11.8	57.3
LSD (0.10)						
	Plant Density (D)		0.48	0.51	0.46	NS
	Hybrid (H)		0.43	0.46	0.41	0.2
	D x H		NS	NS	NS	NS
Contrasts-D (%)						
	Linear		0.2	0.0	0.0	4.3
	Quadratic		26.8	47.1	3.7	54.8
	Cubic		17.6	100.0	18.1	21.6
	Quartic		41.3	96.7	84.5	45.9
CV(%)						
			8	8	8	11

**Table C-34. Plant Density, Hybrid, and Date Influence on Rind Strength.
Arlington, WI - 2003.**

Target Density	Hybrid	Trait	Day of Year	Rind Strength load-lbs/section
			219	8.47
			247	8.87
			274	8.80
	Pioneer 34M94			9.55
	Pioneer 34M95	Bt		9.55
	Pioneer 37R71	Bt		7.50
	Renk RK622			8.25
	Pioneer 34M94		219	8.87
	Pioneer 34M94		247	9.85
	Pioneer 34M94		274	9.94
	Pioneer 34M95	Bt	219	9.17
	Pioneer 34M95	Bt	247	9.91
	Pioneer 34M95	Bt	274	9.56
	Pioneer 37R71	Bt	219	7.57
	Pioneer 37R71	Bt	247	7.47
	Pioneer 37R71	Bt	274	7.48
	Renk RK622		219	8.27
	Renk RK622		247	8.27
	Renk RK622		274	8.21
26000				9.30
32000				9.06
38000				8.68
44000				8.26
50000				8.26
26000			219	8.70
26000			247	9.70
26000			274	9.49
32000			219	8.84
32000			247	9.20
32000			274	9.15
38000			219	8.71
38000			247	8.80
38000			274	8.55

(continued)

Table C-34. Plant Density, Hybrid, and Date Influence on Rind Strength.
 (continued) **Arlington, WI - 2003.**

Target Density	Hybrid	Trait	Day of Year	Rind Strength load-lbs/section
44000			219	8.06
44000			247	8.46
44000			274	8.26
50000			219	8.03
50000			247	8.22
50000			274	8.54
26000	Pioneer 34M94			9.87
26000	Pioneer 34M95	Bt		10.06
26000	Pioneer 37R71	Bt		8.41
26000	Renk RK622			8.86
32000	Pioneer 34M94			10.01
32000	Pioneer 34M95	Bt		10.07
32000	Pioneer 37R71	Bt		7.53
32000	Renk RK622			8.63
38000	Pioneer 34M94			9.60
38000	Pioneer 34M95	Bt		9.29
38000	Pioneer 37R71	Bt		7.72
38000	Renk RK622			8.13
44000	Pioneer 34M94			9.18
44000	Pioneer 34M95	Bt		9.17
44000	Pioneer 37R71	Bt		7.09
44000	Renk RK622			7.59
50000	Pioneer 34M94			9.11
50000	Pioneer 34M95	Bt		9.13
50000	Pioneer 37R71	Bt		6.77
50000	Renk RK622			8.03
26000	Pioneer 34M94		219	8.67
26000	Pioneer 34M94		247	10.29
26000	Pioneer 34M94		274	10.64
26000	Pioneer 34M95	Bt	219	9.20
26000	Pioneer 34M95	Bt	247	10.29
26000	Pioneer 34M95	Bt	274	10.68
26000	Pioneer 37R71	Bt	219	8.24
26000	Pioneer 37R71	Bt	247	8.64
26000	Pioneer 37R71	Bt	274	8.35

(continued)

Table C-34. Plant Density, Hybrid, and Date Influence on Rind Strength.
 (continued) **Arlington, WI - 2003.**

Target Density	Hybrid	Trait	Day of Year	Rind Strength load-lbs/section
26000	Renk RK622		219	8.72
26000	Renk RK622		247	9.56
26000	Renk RK622		274	8.30
32000	Pioneer 34M94		219	9.45
32000	Pioneer 34M94		247	10.58
32000	Pioneer 34M94		274	10.01
32000	Pioneer 34M95	Bt	219	9.59
32000	Pioneer 34M95	Bt	247	11.05
32000	Pioneer 34M95	Bt	274	9.58
32000	Pioneer 37R71	Bt	219	7.69
32000	Pioneer 37R71	Bt	247	7.17
32000	Pioneer 37R71	Bt	274	7.73
32000	Renk RK622		219	8.61
32000	Renk RK622		247	7.99
32000	Renk RK622		274	9.28
38000	Pioneer 34M94		219	9.47
38000	Pioneer 34M94		247	9.61
38000	Pioneer 34M94		274	9.72
38000	Pioneer 34M95	Bt	219	9.80
38000	Pioneer 34M95	Bt	247	9.36
38000	Pioneer 34M95	Bt	274	8.71
38000	Pioneer 37R71	Bt	219	7.42
38000	Pioneer 37R71	Bt	247	7.93
38000	Pioneer 37R71	Bt	274	7.81
38000	Renk RK622		219	8.15
38000	Renk RK622		247	8.29
38000	Renk RK622		274	7.95
44000	Pioneer 34M94		219	8.40
44000	Pioneer 34M94		247	9.80
44000	Pioneer 34M94		274	9.34
44000	Pioneer 34M95	Bt	219	8.52
44000	Pioneer 34M95	Bt	247	9.65
44000	Pioneer 34M95	Bt	274	9.36
44000	Pioneer 37R71	Bt	219	7.33
44000	Pioneer 37R71	Bt	247	6.94
44000	Pioneer 37R71	Bt	274	7.01

(continued)

Table C-34. Plant Density, Hybrid, and Date Influence on Rind Strength.
 (continued) **Arlington, WI - 2003.**

Target Density	Hybrid	Trait	Day of Year	Rind Strength load-lbs/section
44000	Renk RK622		219	8.01
44000	Renk RK622		247	7.45
44000	Renk RK622		274	7.33
50000	Pioneer 34M94		219	8.35
50000	Pioneer 34M94		247	8.96
50000	Pioneer 34M94		274	10.01
50000	Pioneer 34M95	Bt	219	8.76
50000	Pioneer 34M95	Bt	247	9.18
50000	Pioneer 34M95	Bt	274	9.46
50000	Pioneer 37R71	Bt	219	7.16
50000	Pioneer 37R71	Bt	247	6.66
50000	Pioneer 37R71	Bt	274	6.51
50000	Renk RK622		219	7.86
50000	Renk RK622		247	8.07
50000	Renk RK622		274	8.18
Mean				8.71
<u>Probability(%)</u>				
Hybrid (H)				0.0
Plant Density (D)				0.0
H x D				34.9
DOY (T)				0.7
T x D				33.9
T x H				1.2
T x H x D				16.0
<u>LSD (0.10)</u>				
Hybrid (H)				0.23
Plant Density (D)				0.26
H x D				NS
DOY (T)				0.22
T x D				NS
T x H				0.44
T x H x D				NS
<u>CV(%)</u>				
				8

**Table C-35. Plant Density and Hybrid Influence on Corn Growth and Development.
Arlington, WI - 2003.**

Target Density	Hybrid	Trait	Observation	Leaf Development			Plant Height inches
			Day of Year	Leaf Collars #/plant	Hail Adjusters Method #/plant	Total Leaves #/plant	
			150	1.7	2.9	3.8	2.9
			164	3.9	5.6	6.7	8.8
			176	6.7	9.3	11.0	24.9
			191	10.9	14.0	16.0	64.7
			204	15.6	16.7	18.0	98.3
			219	19.4	19.4	19.4	113.3
	Pioneer 34M94			9.9	11.6	12.7	52.0
	Pioneer 34M95	Bt		9.6	11.2	12.4	51.4
	Pioneer 37R71	Bt		9.5	11.1	12.2	51.7
	Renk RK622			9.6	11.2	12.3	52.4
	Pioneer 34M94		150	1.9	3.0	4.0	3.0
	Pioneer 34M94		164	4.0	5.9	6.9	8.3
	Pioneer 34M94		176	6.7	9.4	10.8	24.1
	Pioneer 34M94		191	10.7	13.9	15.8	63.7
	Pioneer 34M94		204	15.5	16.9	18.3	94.9
	Pioneer 34M94		219	20.4	20.4	20.4	118.1
	Pioneer 34M95	Bt	150	1.7	2.9	3.9	3.1
	Pioneer 34M95	Bt	164	3.9	5.7	6.7	9.1
	Pioneer 34M95	Bt	176	6.8	9.0	10.8	24.7
	Pioneer 34M95	Bt	191	10.8	13.7	15.8	63.4
	Pioneer 34M95	Bt	204	15.5	16.8	18.0	96.1
	Pioneer 34M95	Bt	219	20.3	20.3	20.3	119.4
	Pioneer 37R71	Bt	150	1.4	2.7	3.6	2.8
	Pioneer 37R71	Bt	164	3.9	5.7	6.9	8.8
	Pioneer 37R71	Bt	176	6.5	9.4	11.3	24.9
	Pioneer 37R71	Bt	191	11.1	14.2	16.2	65.3
	Pioneer 37R71	Bt	204	15.9	16.3	17.5	102.0
	Pioneer 37R71	Bt	219	17.9	17.9	17.9	106.7
	Renk RK622		150	1.7	2.9	3.7	2.8
	Renk RK622		164	3.9	5.2	6.3	9.1
	Renk RK622		176	6.8	9.3	11.0	26.1
	Renk RK622		191	10.9	13.9	16.0	66.5
	Renk RK622		204	15.5	16.6	18.0	100.2
	Renk RK622		219	18.9	18.9	18.9	109.5
26000				9.7	11.4	12.5	51.1
32000				9.8	11.5	12.6	52.5
38000				9.4	11.1	12.3	50.9
44000				9.7	11.2	12.4	52.7
50000				9.6	11.2	12.3	52.1

(continued)

Table C-35. Plant Density and Hybrid Influence on Corn Growth and Development.
(continued) **Arlington, WI - 2003.**

Target Density	Hybrid	Trait	Observation Day of Year	Leaf Development			Plant Height
				Leaf Collars #/plant	Hail Adjusters Method #/plant	Total Leaves #/plant	
26000			150	1.6	2.8	3.8	2.9
26000			164	3.8	5.6	6.6	8.3
26000			176	6.7	9.1	11.0	23.5
26000			191	11.0	14.3	16.2	62.3
26000			204	15.8	17.0	18.1	97.0
26000			219	19.3	19.3	19.3	112.8
32000			150	1.6	3.0	3.8	2.9
32000			164	4.0	5.7	6.8	9.4
32000			176	6.8	9.4	11.1	24.9
32000			191	11.0	14.3	16.2	65.1
32000			204	15.9	16.9	18.0	98.6
32000			219	19.5	19.5	19.5	113.8
38000			150	1.6	2.8	3.8	2.9
38000			164	3.9	5.6	6.7	8.6
38000			176	6.7	9.4	10.9	25.3
38000			191	10.7	13.9	16.0	64.9
38000			204	15.6	16.7	18.0	100.0
38000			219	19.4	19.4	19.4	113.1
44000			150	1.9	3.0	3.9	3.0
44000			164	3.9	5.7	6.8	9.4
44000			176	6.7	9.4	11.0	26.1
44000			191	10.8	13.6	15.8	65.8
44000			204	15.4	16.3	17.8	98.8
44000			219	19.3	19.3	19.3	113.3
50000			150	1.6	2.8	3.7	2.9
50000			164	4.0	5.5	6.6	8.5
50000			176	6.6	9.1	10.8	25.0
50000			191	10.7	13.7	15.6	65.4
50000			204	15.2	16.5	17.9	97.4
50000			219	19.4	19.4	19.4	113.6
26000	Pioneer 34M94			9.9	11.8	12.8	50.9
26000	Pioneer 34M95	Bt		9.9	11.3	12.5	52.3
26000	Pioneer 37R71	Bt		9.6	11.2	12.3	49.3
26000	Renk RK622			9.5	11.2	12.4	51.9
32000	Pioneer 34M94			9.9	11.7	12.8	53.1
32000	Pioneer 34M95	Bt		9.9	11.6	12.6	52.4
32000	Pioneer 37R71	Bt		9.6	11.2	12.3	51.4
32000	Renk RK622			9.8	11.4	12.6	52.9
38000	Pioneer 34M94			10.0	11.8	12.9	52.9
38000	Pioneer 34M95	Bt		8.8	10.5	11.8	46.4
38000	Pioneer 37R71	Bt		9.3	10.9	12.2	51.7
38000	Renk RK622			9.6	11.1	12.3	52.2
44000	Pioneer 34M94			9.8	11.4	12.6	52.2
44000	Pioneer 34M95	Bt		9.8	11.4	12.6	53.1
44000	Pioneer 37R71	Bt		9.4	11.0	12.2	52.9
44000	Renk RK622			9.6	11.0	12.3	52.7
50000	Pioneer 34M94			9.6	11.3	12.5	50.9
50000	Pioneer 34M95	Bt		9.8	11.4	12.6	52.1
50000	Pioneer 37R71	Bt		9.4	10.9	12.1	53.4
50000	Renk RK622			9.5	11.1	12.2	52.1

(continued)

Table C-35. Plant Density and Hybrid Influence on Corn Growth and Development.
 (continued) **Arlington, WI - 2003.**

Target Density	Hybrid	Trait	Observation Day of Year	Leaf Development			Plant Height
				Leaf Collars #/plant	Hail Adjusters Method #/plant	Total Leaves #/plant	
26000	Pioneer 34M94		150	2.0	3.0	4.0	2.8
26000	Pioneer 34M94		164	4.0	6.0	7.0	8.4
26000	Pioneer 34M94		176	6.7	9.7	10.8	23.6
26000	Pioneer 34M94		191	10.8	14.3	16.2	61.2
26000	Pioneer 34M94		204	15.5	17.3	18.3	93.3
26000	Pioneer 34M94		219	20.3	20.3	20.3	116.2
26000	Pioneer 34M95	Bt	150	1.7	2.8	3.8	3.2
26000	Pioneer 34M95	Bt	164	3.8	5.5	6.5	8.1
26000	Pioneer 34M95	Bt	176	6.8	8.3	10.8	23.8
26000	Pioneer 34M95	Bt	191	11.0	14.0	15.7	62.3
26000	Pioneer 34M95	Bt	204	15.8	17.0	18.0	94.8
26000	Pioneer 34M95	Bt	219	20.2	20.2	20.2	121.5
26000	Pioneer 37R71	Bt	150	1.3	2.7	3.8	2.8
26000	Pioneer 37R71	Bt	164	3.8	5.8	6.8	8.4
26000	Pioneer 37R71	Bt	176	6.7	9.3	11.3	22.0
26000	Pioneer 37R71	Bt	191	11.3	14.7	16.3	60.7
26000	Pioneer 37R71	Bt	204	16.3	16.8	17.8	99.0
26000	Pioneer 37R71	Bt	219	17.8	17.8	17.8	103.0
26000	Renk RK622		150	1.5	2.8	3.5	2.6
26000	Renk RK622		164	3.7	5.0	6.0	8.2
26000	Renk RK622		176	6.5	9.2	11.0	24.5
26000	Renk RK622		191	11.0	14.3	16.7	65.0
26000	Renk RK622		204	15.7	16.8	18.3	100.8
26000	Renk RK622		219	18.8	18.8	18.8	110.3
32000	Pioneer 34M94		150	2.0	3.0	4.0	3.0
32000	Pioneer 34M94		164	4.0	5.8	7.0	9.4
32000	Pioneer 34M94		176	6.8	9.5	10.8	24.9
32000	Pioneer 34M94		191	10.8	14.0	15.8	65.5
32000	Pioneer 34M94		204	15.5	17.2	18.3	96.3
32000	Pioneer 34M94		219	20.5	20.5	20.5	119.7
32000	Pioneer 34M95	Bt	150	1.7	3.0	3.8	3.2
32000	Pioneer 34M95	Bt	164	4.0	5.8	6.8	9.4
32000	Pioneer 34M95	Bt	176	6.8	9.2	10.8	23.2
32000	Pioneer 34M95	Bt	191	11.0	14.2	16.0	62.0
32000	Pioneer 34M95	Bt	204	15.7	16.8	18.0	96.3
32000	Pioneer 34M95	Bt	219	20.3	20.3	20.3	120.0
32000	Pioneer 37R71	Bt	150	1.3	3.0	3.7	2.8
32000	Pioneer 37R71	Bt	164	4.0	5.7	6.8	9.3
32000	Pioneer 37R71	Bt	176	6.7	9.7	11.3	25.2
32000	Pioneer 37R71	Bt	191	11.2	14.5	16.5	65.7
32000	Pioneer 37R71	Bt	204	16.5	16.5	17.5	100.5
32000	Pioneer 37R71	Bt	219	18.0	18.0	18.0	105.2
32000	Renk RK622		150	1.5	3.0	3.7	2.7
32000	Renk RK622		164	4.0	5.3	6.5	9.6
32000	Renk RK622		176	7.0	9.3	11.3	26.2
32000	Renk RK622		191	11.2	14.3	16.3	67.3
32000	Renk RK622		204	15.8	17.0	18.2	101.3
32000	Renk RK622		219	19.3	19.3	19.3	110.5

(continued)

Table C-35. Plant Density and Hybrid Influence on Corn Growth and Development.
 (continued) **Arlington, WI - 2003.**

Target Density	Hybrid	Trait	Observation Day of Year	Leaf Development			Plant Height inches
				Leaf Collars #/plant	Hail Adjusters Method #/plant	Total Leaves #/plant	
38000	Pioneer 34M94		150	1.7	3.0	4.0	3.2
38000	Pioneer 34M94		164	4.0	5.8	6.8	7.7
38000	Pioneer 34M94		176	6.8	9.7	11.0	24.3
38000	Pioneer 34M94		191	10.8	14.2	16.2	65.7
38000	Pioneer 34M94		204	15.8	17.3	18.7	97.3
38000	Pioneer 34M94		219	20.7	20.7	20.7	119.2
38000	Pioneer 34M95	Bt	150	1.7	2.8	4.0	3.0
38000	Pioneer 34M95	Bt	164	3.8	5.7	6.5	9.1
38000	Pioneer 34M95	Bt	176	6.7	9.2	10.7	26.0
38000	Pioneer 34M95	Bt	191	10.7	13.5	15.8	63.5
38000	Pioneer 34M95	Bt	204	15.8	17.0	18.3	100.3
38000	Pioneer 34M95	Bt	219	20.3	20.3	20.3	118.3
38000	Pioneer 37R71	Bt	150	1.3	2.7	3.7	2.5
38000	Pioneer 37R71	Bt	164	3.8	5.7	7.0	8.9
38000	Pioneer 37R71	Bt	176	6.3	9.3	11.2	25.5
38000	Pioneer 37R71	Bt	191	10.8	13.8	16.0	64.5
38000	Pioneer 37R71	Bt	204	15.7	16.3	17.3	101.5
38000	Pioneer 37R71	Bt	219	17.8	17.8	17.8	107.5
38000	Renk RK622		150	1.7	2.7	3.7	2.9
38000	Renk RK622		164	4.0	5.3	6.3	8.7
38000	Renk RK622		176	6.8	9.3	10.8	25.3
38000	Renk RK622		191	10.5	14.0	15.8	66.0
38000	Renk RK622		204	15.3	16.3	17.8	101.0
38000	Renk RK622		219	19.0	19.0	19.0	109.2
44000	Pioneer 34M94		150	2.0	3.2	4.0	3.0
44000	Pioneer 34M94		164	3.8	5.7	6.8	8.3
44000	Pioneer 34M94		176	6.7	9.3	10.7	25.5
44000	Pioneer 34M94		191	10.5	13.7	15.5	63.5
44000	Pioneer 34M94		204	15.5	16.3	18.2	95.7
44000	Pioneer 34M94		219	20.5	20.5	20.5	117.5
44000	Pioneer 34M95	Bt	150	2.0	3.0	4.0	3.0
44000	Pioneer 34M95	Bt	164	4.0	5.8	6.8	9.1
44000	Pioneer 34M95	Bt	176	6.8	9.3	10.8	25.1
44000	Pioneer 34M95	Bt	191	10.7	13.5	15.8	64.8
44000	Pioneer 34M95	Bt	204	15.2	16.5	17.8	96.7
44000	Pioneer 34M95	Bt	219	20.0	20.0	20.0	120.0
44000	Pioneer 37R71	Bt	150	1.7	2.7	3.5	3.0
44000	Pioneer 37R71	Bt	164	3.8	5.8	6.8	9.1
44000	Pioneer 37R71	Bt	176	6.5	9.5	11.3	25.8
44000	Pioneer 37R71	Bt	191	11.0	14.2	16.2	66.8
44000	Pioneer 37R71	Bt	204	15.5	16.0	17.3	104.0
44000	Pioneer 37R71	Bt	219	18.0	18.0	18.0	108.5
44000	Renk RK622		150	2.0	3.0	4.0	3.1
44000	Renk RK622		164	4.0	5.5	6.5	10.9
44000	Renk RK622		176	6.8	9.5	11.2	28.0
44000	Renk RK622		191	11.0	13.2	15.8	68.2
44000	Renk RK622		204	15.3	16.2	17.8	98.8
44000	Renk RK622		219	18.7	18.7	18.7	107.3

(continued)

Table C-35. Plant Density and Hybrid Influence on Corn Growth and Development.
(continued) **Arlington, WI - 2003.**

Target Density	Hybrid	Trait	Observation Day of Year	Leaf Development			Plant Height inches
				Leaf Collars #/plant	Hail Adjusters Method #/plant	Total Leaves #/plant	
50000	Pioneer 34M94		150	1.7	2.7	3.8	2.9
50000	Pioneer 34M94		164	4.0	6.0	6.8	7.9
50000	Pioneer 34M94		176	6.5	9.0	10.5	22.2
50000	Pioneer 34M94		191	10.3	13.3	15.3	62.8
50000	Pioneer 34M94		204	15.0	16.5	18.2	91.7
50000	Pioneer 34M94		219	20.2	20.2	20.2	118.0
50000	Pioneer 34M95	Bt	150	1.5	3.0	3.8	3.0
50000	Pioneer 34M95	Bt	164	4.0	5.5	6.7	9.6
50000	Pioneer 34M95	Bt	176	6.7	9.0	10.8	25.3
50000	Pioneer 34M95	Bt	191	10.8	13.5	15.7	64.3
50000	Pioneer 34M95	Bt	204	15.0	16.8	18.0	93.7
50000	Pioneer 34M95	Bt	219	20.5	20.5	20.5	116.7
50000	Pioneer 37R71	Bt	150	1.5	2.5	3.3	2.7
50000	Pioneer 37R71	Bt	164	4.0	5.7	6.8	8.3
50000	Pioneer 37R71	Bt	176	6.5	9.3	11.2	25.9
50000	Pioneer 37R71	Bt	191	11.0	14.0	16.0	68.7
50000	Pioneer 37R71	Bt	204	15.5	15.8	17.3	105.0
50000	Pioneer 37R71	Bt	219	18.0	18.0	18.0	109.5
50000	Renk RK622		150	1.8	3.0	3.8	2.8
50000	Renk RK622		164	3.8	5.0	6.2	8.2
50000	Renk RK622		176	6.7	9.0	10.8	26.4
50000	Renk RK622		191	10.7	13.8	15.5	65.8
50000	Renk RK622		204	15.2	16.8	18.0	99.2
50000	Renk RK622		219	18.8	18.8	18.8	110.2
Mean				9.6	11.3	12.4	51.9
Probability(%)							
Hybrid (H)				0.2	0.0	0.4	52.4
Plant Density (D)				28.9	19.9	63.0	10.0
H x D				98.7	94.4	99.4	43.1
DOY (T)				0.0	0.0	0.0	0.0
T x D				0.1	1.0	10.3	66.7
T x H				0.0	0.0	0.0	0.0
T x H x D				97.5	99.4	89.4	74.5
LSD (0.10)							
Hybrid (H)				0.0	0.0	0.0	NS
Plant Density (D)				NS	NS	NS	1.0
H x D				NS	NS	NS	NS
DOY (T)				0.1	0.1	0.1	0.7
T x D				0.2	0.3	NS	NS
T x H				0.2	0.3	0.2	1.4
T x H x D				NS	NS	NS	NS
CV(%)							
				3	4	3	5

FIELD EXPERIMENT HISTORY

Title: Plant Density and Hybrid Influence on Corn Grain
Experiment: 02PD **Trial ID** 2468 **Year:** 2003
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:** 9 /19/03 **pH** 6.5 **OM (%)** 2.4 **P (ppm)** 26 **K (ppm)** 61

Plot Management

Tillage Operations: Field Cultivator Cultivated 6/17/03

	<u>Analysis:</u>	<u>Rate lbs/A:</u>	<u>Date:</u>
Fertilizer: Preplant :	28-0-0	150 lbs/A	N/A
Starter :	6-24-24	9 lbs/A	4 /29/03
Post plant :	N/A	N/A	N/A
Manure:	N/A	N/A	N/A

Herbicide: Harness 1.6 pt/A 5/14/03 **Insecticide:**
 Hornet 3.0 oz/A **Hybrid:**
Irrigation: None

Planting Date: 4/29/03 **Planting Depth:** 1.5" **Row Width:** 30"
Target Plant Density: See Factors **Planting Method:** Kinze Plot Planter
Harvest Date: 9/24/03 **Harvest Method:** Kincaid Plot Combine

Heavy Drought, Small Kernels

Experimental Design

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

Factors/Treatments:

<u>Plant Density: (plants/A)</u>	<u>Hybrids:</u>
26000	NK Brand 3030
32000	NK Brand 3030Bt
38000	Pioneer 37R71
44000	Renk RK622
50000	

Results: Table C-36, C-37, and C-38.

**Table C-36. Plant Density and Hybrid Influence on Corn Grain.
Chippewa Falls, WI - 2003.**

Target Density	Hybrid	Trait	Grain											Plants emerged	Seeds planted
			Yield	Moisture	Test Wt	Grower Return	Lodged			Barren	Ears Dropped	Harvest			
							bu/A	%	lbs/bu			\$/A	Total		
	NK Brand N3030		115	18.5	54	173	7	7	0	7	0	39336	37250	44537	49896
	NK Brand N3030Bt	Bt	126	17.2	54	181	1	1	0	2	0	39442	39098	45857	49896
	Pioneer 37R71	Bt	126	20.2	50	181	2	2	0	2	0	39600	40313	45566	49896
	Renk RK622		84	15.8	51	123	8	8	0	4	0	39336	38254	47837	49896
26000			116	18.2	53	189	2	2	0	2	0	27819	30294	31614	34056
32000			115	17.8	53	179	3	3	0	3	0	33396	34848	38808	41976
38000			116	18.1	52	170	6	6	0	4	0	39369	37884	46629	49896
44000			106	17.2	52	144	5	5	0	5	0	45474	43065	53262	57816
50000			110	18.4	52	140	7	7	0	7	0	51084	47553	59433	65736
26000	NK Brand N3030		114	17.6	55	190	2	2	0	4	0	27984	28512	30492	34056
26000	NK Brand N3030Bt	Bt	143	19.8	54	229	0	0	0	3	0	28512	31548	31416	34056
26000	Pioneer 37R71	Bt	119	19.6	52	190	2	2	0	2	0	27324	32340	31812	34056
26000	Renk RK622		89	15.5	51	147	3	3	0	1	0	27456	28776	32736	34056
32000	NK Brand N3030		129	19.7	54	205	5	5	0	3	0	33396	37092	38016	41976
32000	NK Brand N3030Bt	Bt	130	16.5	54	203	0	0	0	2	0	33132	33396	38940	41976
32000	Pioneer 37R71	Bt	116	18.5	51	176	1	1	0	2	0	33660	35112	38280	41976
32000	Renk RK622		87	16.6	52	134	5	5	0	3	0	33396	33792	39996	41976
38000	NK Brand N3030		118	19.3	54	176	8	8	0	4	0	39468	37884	45012	49896
38000	NK Brand N3030Bt	Bt	114	16.1	54	162	2	2	0	2	0	38544	36036	47652	49896
38000	Pioneer 37R71	Bt	142	21.4	50	208	1	1	0	3	0	39996	39732	46068	49896
38000	Renk RK622		89	15.7	51	133	12	12	0	4	1	39468	37884	47784	49896
44000	NK Brand N3030		107	17.1	54	153	9	9	0	11	0	44880	39336	51612	57816
44000	NK Brand N3030Bt	Bt	109	15.8	54	141	1	1	0	2	0	46200	45672	53328	57816
44000	Pioneer 37R71	Bt	127	20.3	50	175	1	1	0	2	0	44880	43296	52008	57816
44000	Renk RK622		80	15.5	51	108	10	10	0	4	0	45936	43956	56100	57816
50000	NK Brand N3030		107	18.8	53	140	12	12	0	15	0	50952	43428	57552	65736
50000	NK Brand N3030Bt	Bt	132	17.8	53	172	1	1	0	3	0	50820	48840	57948	65736
50000	Pioneer 37R71	Bt	124	21.2	49	156	4	4	0	3	0	52140	51084	59664	65736
50000	Renk RK622		76	15.7	52	92	11	11	0	7	1	50424	46860	62568	65736
Mean			113	17.9	52	165	5	5	0	4	0	39428	38729	45949	49896
Probability(%)															
Plant Density (D)			58.2	68.9	0.2	0.2	0.1	0.1	-	0.1	99.5	0.0	0.0	0.0	-
Hybrid (H)			0.0	0.0	0.0	0.0	0.0	0.0	-	0.0	5.0	84.1	1.1	0.0	-
D x H			57.3	45.9	2.3	59.8	21.0	21.0	-	0.5	76.0	17.4	2.8	33.4	-
LSD (0.10)															
Plant Density (D)			NS	NS	1	23	2	2	-	2	NS	630	1685	986	-
Hybrid (H)			12	1.3	0	20	2	2	-	2	0	NS	1507	882	-
D x H			NS	NS	1	NS	NS	NS	-	4	NS	NS	3371	NS	-
Contrasts-D (%)															
Linear			20.3	94.7	0.0	0.0	0.0	0.0	-	0.0	86.2	0.0	0.0	0.0	-
Quadratic			97.4	44.1	83.3	88.8	70.7	70.7	-	12.9	85.5	84.2	45.1	4.3	-
Cubic			46.4	45.9	88.3	47.2	85.8	85.8	-	94.3	82.8	29.3	71.4	41.0	-
Quartic			42.0	30.2	72.9	50.4	16.6	16.6	-	75.9	75.7	87.1	27.9	46.7	-
CV(%)			17	12	2	20	70	70	-	63	307	2	6	3	-

**Table C-37. Plant Density and Hybrid Influence on Yield Components.
Chippewa Falls, WI - 2003.**

Target Density	Hybrid	Trait	Ear Size			1000 Kernel weight
			Kernels/Ear no./ear	Kernels/Row no./row	Rows/Ear no./ear	
	Pioneer 37R71	Bt	427	28	15	169.8
	Renk RK622		367	24	16	147.1
26000			421	27	15	167.8
32000			431	27	16	163.0
38000			399	26	16	163.2
44000			359	23	15	145.0
50000			374	25	15	153.1
26000	Pioneer 37R71	Bt	433	29	15	183.6
26000	Renk RK622		409	26	16	152.1
32000	Pioneer 37R71	Bt	477	29	16	164.7
32000	Renk RK622		385	25	15	161.3
38000	Pioneer 37R71	Bt	438	29	15	178.0
38000	Renk RK622		360	23	16	148.3
44000	Pioneer 37R71	Bt	408	27	15	158.2
44000	Renk RK622		311	20	16	131.8
50000	Pioneer 37R71	Bt	378	25	15	164.4
50000	Renk RK622		371	25	15	141.8
Mean			397	26	15	158.4
<u>Probability(%)</u>						
Plant Density (D)			3.9	16.8	84.1	11.1
Hybrid (H)			0.1	0.1	28.6	0.1
D x H			25.6	39.1	36.1	52.7
<u>LSD (0.10)</u>						
Plant Density (D)			29	NS	NS	NS
Hybrid (H)			26	2	NS	9.7
D x H			NS	NS	NS	NS
<u>Contrasts-D (%)</u>						
Linear			0.7	3.6	44.7	2.7
Quadratic			95.9	68.2	52.0	74.9
Cubic			9.0	18.8	56.7	29.6
Quartic			84.1	74.1	88.5	20.8
<u>CV(%)</u>						
			10	12	6	10

**Table C-38. Plant Density and Hybrid Influence on Rind Strength.
Chippewa Falls, WI - 2003.**

Target Density	Hybrid	Trait	Rind Strength load-lbs/section
	NK Brand N3030		8.09
	NK Brand N3030Bt	Bt	6.81
	Pioneer 37R71	Bt	7.64
	Renk RK622		8.65
26000			7.95
38000			7.80
50000			7.65
26000	NK Brand N3030		8.08
26000	NK Brand N3030Bt	Bt	7.31
26000	Pioneer 37R71	Bt	7.71
26000	Renk RK622		8.68
38000	NK Brand N3030		8.08
38000	NK Brand N3030Bt	Bt	6.44
38000	Pioneer 37R71	Bt	7.57
38000	Renk RK622		9.12
50000	NK Brand N3030		8.12
50000	NK Brand N3030Bt	Bt	6.69
50000	Pioneer 37R71	Bt	7.65
50000	Renk RK622		8.15
Mean			7.80
<u>Probability(%)</u>			
Plant Density (D)			73.1
Hybrid (H)			0.3
D x H			85.0
<u>LSD (0.10)</u>			
Plant Density (D)			NS
Hybrid (H)			0.57
D x H			NS
<u>Contrasts-D (%)</u>			
Linear			43.4
Quadratic			99.0
<u>CV(%)</u>			12

FIELD EXPERIMENT HISTORY

Title: Plant Density and Hybrid Influence on Corn Grain
Experiment: 02PD **Trial ID** 2469 **Year:** 2003
Personnel: J. G. Lauer, P. J. Flannery, K. D. Kohn, and T. F. Stanger
Location: Fond du Lac, WI **County:** Fond du Lac
Supported By: HATCH

Site Information

Field: Matsuna **Previous Crop:** Soybean **Soil Type:** Virgil Silt Loam
Soil Test: **Date:** 10/22/03 **pH** 6.7 **OM (%)** 2.9 **P (ppm)** 47 **K (ppm)** 57

Plot Management

Tillage Operations: Soil Finisher Cultivated 6/19/03

	<u>Analysis:</u>	<u>Rate lbs/A:</u>	<u>Date:</u>
Fertilizer: Preplant :	28-0-0	120 lbs/A	N/A
Starter :	6-24-24	9 lbs/A	5 /3 /03
Post plant :	N/A	N/A	N/A
Manure:	N/A	N/A	N/A

Herbicide: Basis 0.33 oz/A **Insecticide:**
 Lumax 5.0 pt/A **Hybrid:**
Irrigation: None

Planting Date: 5/3/03 **Planting Depth:** 1.5" **Row Width:** 30"
Target Plant Density: See Factors **Planting Method:** Kinze Plot Planter
Harvest Date: 10/22/03 **Harvest Method:** Kincaid Plot Combine

Run over prior to emergence by fertilizer spreader when ground was wet.

Experimental Design

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

Factors/Treatments:

<u>Plant Density: (plants/A)</u>	<u>Hybrids:</u>
26000	Dekalb DK5018
32000	Dekalb DK5143
38000	Pioneer 37R71
44000	Renk RK622
50000	

Results: Table C-39 and C-40.

**Table C-39. Plant Density and Hybrid Influence on Corn Grain.
Fond du Lac, WI - 2003.**

Target Density	Hybrid	Trait	Grain											Plants emerged	Seeds planted
			Yield bu/A	Moisture %	Test Wt lbs/bu	Grower Return \$/A	Lodged			Barren %	Ears Dropped %	Harvest			
							Total %	Stalk %	Root %			plants/A	ears/A		
	Dekalb DK5018	Bt	193	24.1	54	280	0	0	0	1	0	37118	37092	38518	49896
	Dekalb DK5143		198	23.2	54	307	2	2	0	1	0	38729	39178	41448	49896
	Pioneer 37R71	Bt	181	23.4	53	277	1	1	0	2	0	34320	35350	34716	49896
	Renk RK622		167	20.4	56	273	6	6	0	2	1	35165	34373	35587	49896
26000			180	23.1	54	293	1	1	0	0	0	24981	27390	25212	34056
32000			182	22.8	54	289	3	2	0	1	0	30954	31614	31515	41976
38000			187	22.5	54	290	3	3	0	1	0	36102	35970	37224	49896
44000			186	22.8	54	277	3	3	0	2	0	40953	40392	42867	57816
50000			189	22.7	54	274	3	3	0	3	0	48675	47124	51018	65736
26000	Dekalb DK5018	Bt	176	24.4	54	272	1	1	0	1	0	24816	26268	25212	34056
26000	Dekalb DK5143		193	23.6	54	316	1	1	0	0	0	25740	28512	26796	34056
26000	Pioneer 37R71	Bt	183	23.1	54	300	0	0	0	0	0	25476	30360	25872	34056
26000	Renk RK622		167	21.3	56	285	1	1	0	1	0	23892	24420	22968	34056
32000	Dekalb DK5018	Bt	197	24.1	54	299	0	0	0	1	0	32736	32604	33924	41976
32000	Dekalb DK5143		185	22.6	55	296	3	3	0	1	0	33264	33924	35508	41976
32000	Pioneer 37R71	Bt	178	23.1	54	282	1	1	0	2	0	29304	31152	29436	41976
32000	Renk RK622		166	21.2	55	277	6	6	0	1	1	28512	28776	27192	41976
38000	Dekalb DK5018	Bt	201	23.8	54	295	1	1	0	1	0	37884	37356	39864	49896
38000	Dekalb DK5143		202	22.7	54	317	2	2	0	1	0	38280	38280	39600	49896
38000	Pioneer 37R71	Bt	179	23.4	53	273	0	0	0	1	0	33000	33528	33660	49896
38000	Renk RK622		167	20.1	55	275	8	8	0	1	0	35244	34716	35772	49896
44000	Dekalb DK5018	Bt	187	24.4	53	255	0	0	0	2	0	39072	38808	40392	57816
44000	Dekalb DK5143		208	23.0	54	317	3	3	0	1	0	44748	44484	49764	57816
44000	Pioneer 37R71	Bt	182	23.4	53	271	2	2	0	3	0	40392	39996	40656	57816
44000	Renk RK622		166	20.6	55	263	8	8	0	3	1	39600	38280	40656	57816
50000	Dekalb DK5018	Bt	205	23.9	54	279	1	1	0	2	0	51084	50424	53196	65736
50000	Dekalb DK5143		200	24.0	53	291	2	2	0	2	0	51612	50688	55572	65736
50000	Pioneer 37R71	Bt	182	23.8	53	259	2	2	0	4	0	43428	41712	43956	65736
50000	Renk RK622		168	18.9	56	266	8	8	0	6	0	48576	45672	51348	65736
Mean			185	22.8	54	284	2	2	0	2	0	36333	36498	37567	49896
Probability(%)															
Plant Density (D)			5.2	17.2	21.1	1.9	0.5	0.4	42.0	0.0	34.3	0.0	0.0	0.0	-
Hybrid (H)			0.0	0.0	0.0	0.0	0.0	0.0	40.3	0.2	5.2	0.0	0.0	0.0	-
D x H			2.1	0.3	20.5	7.4	4.8	3.9	46.7	13.1	55.7	5.6	0.2	5.6	-
LSD (0.10)															
Plant Density (D)			6	NS	NS	11	1	1	NS	1	NS	1563	1476	2181	-
Hybrid (H)			5	0.4	0	10	1	1	NS	1	0	1398	1320	1951	-
D x H			11	0.8	NS	23	3	2	NS	NS	NS	3126	2952	4362	-
Contrasts-D (%)															
Linear			0.5	13.6	5.1	0.2	0.1	0.1	48.4	0.0	67.5	0.0	0.0	0.0	-
Quadratic			60.7	14.5	63.8	50.2	4.9	5.1	55.4	34.2	28.1	20.0	3.4	29.6	-
Cubic			86.0	28.1	23.3	76.1	53.3	61.3	16.5	30.4	17.2	8.3	27.3	29.0	-
Quartic			26.6	31.6	52.8	25.1	47.1	52.4	29.2	42.6	25.6	63.3	65.8	79.1	-
CV(%)			4	3	1	6	75	74	775	67	242	6	6	8	-

**Table C-40. Plant Density and Hybrid Influence on Rind Strength.
Fond du Lac, WI - 2003.**

Target Density	Hybrid	Trait	Rind Strength load-lbs/section
	Dekalb DK5018	Bt	8.35
	Dekalb DK5143		8.13
	Pioneer 37R71	Bt	8.23
	Renk RK622		9.13
26000			8.71
32000			8.38
38000			8.59
44000			8.23
50000			8.39
26000	Dekalb DK5018	Bt	8.32
26000	Dekalb DK5143		8.03
26000	Pioneer 37R71	Bt	9.02
26000	Renk RK622		9.49
32000	Dekalb DK5018	Bt	7.31
32000	Dekalb DK5143		8.36
32000	Pioneer 37R71	Bt	8.73
32000	Renk RK622		9.12
38000	Dekalb DK5018	Bt	9.45
38000	Dekalb DK5143		8.14
38000	Pioneer 37R71	Bt	7.83
38000	Renk RK622		8.94
44000	Dekalb DK5018	Bt	8.27
44000	Dekalb DK5143		8.08
44000	Pioneer 37R71	Bt	7.62
44000	Renk RK622		8.96
50000	Dekalb DK5018	Bt	8.42
50000	Dekalb DK5143		8.04
50000	Pioneer 37R71	Bt	7.94
50000	Renk RK622		9.16
Mean			8.46
<u>Probability(%)</u>			
Plant Density (D)			50.5
Hybrid (H)			0.2
D x H			10.6
<u>LSD (0.10)</u>			
Plant Density (D)			NS
Hybrid (H)			0.44
D x H			NS
<u>Contrasts-D (%)</u>			
Linear			23.2
Quadratic			29.2
Cubic			97.1
Quartic			21.2
<u>CV(%)</u>			
			8

FIELD EXPERIMENT HISTORY

Title: Plant Density and Hybrid Influence on Corn Grain
Experiment: 02PD **Trial ID** 2467 **Year:** 2003
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:** 10/20/03 **pH** 6.5 **OM (%)** 3.1 **P (ppm)** 47 **K (ppm)** 85

Plot Management

Tillage Operations: Fall Zone Field Cultivator Cultivated 6/17/03

	<u>Analysis:</u>	<u>Rate lbs/A:</u>	<u>Date:</u>
Fertilizer:	Preplant :	46-0-0	160 lbs/A
	Starter :	6-24-24	9 lbs/A
	Post plant :	N/A	N/A
	Manure:	N/A	N/A

Herbicide: Dual II 2.25 pt/A
 Hornet 3.0 oz/A
 Clarity 4.0 oz/A

Irrigation: None

Planting Date: 4/28/03 **Planting Depth:** 1.5" **Row Width:** 30"
Target Plant Density: See Factors **Planting Method:** Kinze Plot Planter
Harvest Date: 10/20/03 **Harvest Method:** Kincaid Plot Combine

Experimental Design

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

Factors/Treatments:

Plant Density: (plants/A)

26000
32000
38000
44000
50000

Hybrids:

Dekalb DK5018
Dekalb DK5143
Pioneer 37R71
Renk RK622

Results: Table C-41, C-42, and C-43.

**Table C-41. Plant Density and Hybrid Influence on Corn Grain.
Galesville, WI - 2003.**

Target Density	Hybrid	Trait	Grain											Plants emerged	Seeds planted
			Yield	Moisture	Test Wt	Grower Return	Lodged			Barren	Ears Dropped	Harvest			
							bu/A	%	lbs/bu			\$/A	%		
	Dekalb DK5018	Bt	212	19.8	57	334	10	10	0	0	0	38993	38993	47969	49896
	Dekalb DK5143		207	19.8	58	339	17	17	0	1	0	39019	38676	47150	49896
	Pioneer 37R71	Bt	194	19.0	56	318	15	15	0	1	0	39125	38623	45751	49896
	Renk RK622		173	18.2	58	292	38	38	0	1	0	38570	38069	46332	49896
26000			192	19.0	57	331	3	3	0	0	0	27027	27027	32010	34056
32000			198	19.0	57	333	10	10	0	0	0	33198	33165	39501	41976
38000			201	19.3	57	329	16	16	0	1	0	38940	38610	47388	49896
44000			198	19.3	57	313	34	34	0	1	0	44913	44319	53427	57816
50000			194	19.4	57	296	36	36	0	1	0	50556	49830	61677	65736
26000	Dekalb DK5018	Bt	200	18.8	58	336	2	2	0	0	0	26796	26928	32472	34056
26000	Dekalb DK5143		201	19.7	58	346	3	3	0	0	0	26928	26928	32340	34056
26000	Pioneer 37R71	Bt	181	18.8	56	311	1	1	0	0	0	26928	26796	30888	34056
26000	Renk RK622		186	18.5	58	332	7	7	0	1	0	27456	27456	32340	34056
32000	Dekalb DK5018	Bt	217	19.8	57	354	0	0	0	0	0	33000	33264	40656	41976
32000	Dekalb DK5143		206	19.2	58	349	13	13	0	0	0	33132	33132	39864	41976
32000	Pioneer 37R71	Bt	186	18.9	57	311	3	3	0	1	0	33528	33264	39336	41976
32000	Renk RK622		182	17.9	58	319	24	24	0	1	0	33132	33000	38148	41976
38000	Dekalb DK5018	Bt	223	20.4	57	351	0	0	0	0	0	39072	39072	48180	49896
38000	Dekalb DK5143		201	19.6	58	328	24	24	0	1	0	38940	38412	47256	49896
38000	Pioneer 37R71	Bt	207	18.9	56	343	11	11	0	0	0	39072	39072	45672	49896
38000	Renk RK622		174	18.2	58	294	27	27	0	3	0	38676	37884	48444	49896
44000	Dekalb DK5018	Bt	213	20.2	57	321	21	21	0	0	0	45012	45012	55044	57816
44000	Dekalb DK5143		216	19.7	58	346	26	26	0	1	0	45276	44880	53856	57816
44000	Pioneer 37R71	Bt	193	19.4	56	306	32	32	0	3	0	44880	43560	52008	57816
44000	Renk RK622		170	18.2	58	279	58	58	0	1	1	44484	43824	52800	57816
50000	Dekalb DK5018	Bt	210	19.8	57	305	25	25	0	1	0	51084	50688	63492	65736
50000	Dekalb DK5143		213	20.6	57	328	20	20	0	2	0	50820	50028	62436	65736
50000	Pioneer 37R71	Bt	203	19.0	56	317	27	27	0	2	0	51216	50424	60852	65736
50000	Renk RK622		151	18.1	58	235	71	71	0	2	0	49104	48180	59928	65736
Mean			197	19.2	57	321	20	20	0	1	0	38927	38590	46801	49896
Probability(%)															
Plant Density (D)			53.9	53.3	16.2	0.4	0.1	0.1	-	6.3	65.2	0.0	0.0	0.0	-
Hybrid (H)			0.0	0.0	0.0	0.0	0.3	0.3	-	0.5	38.2	17.3	4.6	0.1	-
D x H			4.9	61.9	17.2	7.9	76.4	76.4	-	2.2	51.7	21.3	16.6	42.9	-
LSD (0.10)															
Plant Density (D)			NS	NS	NS	17	14	14	-	1	NS	492	599	980	-
Hybrid (H)			8	0.5	0	16	12	12	-	1	NS	NS	536	877	-
D x H			19	NS	NS	35	NS	NS	-	1	NS	NS	NS	NS	-
Contrasts-D (%)															
Linear			69.1	10.8	1.7	0.0	0.0	0.0	-	0.4	76.3	0.0	0.0	0.0	-
Quadratic			9.7	82.9	53.5	8.7	91.7	91.7	-	86.4	74.6	29.2	29.9	83.1	-
Cubic			85.8	62.5	93.2	81.4	37.7	37.7	-	81.8	19.1	88.0	53.7	17.1	-
Quartic			78.8	66.2	57.5	81.3	35.6	35.6	-	51.6	48.1	48.4	50.4	7.5	-
CV(%)			7	4	1	8	102	102	-	109	506	2	2	3	-

**Table C-42. Plant Density and Hybrid Influence on Yield Components.
Galesville, WI - 2003.**

Target Density	Hybrid	Trait	Ear Size			1000 Kernel weight
			Kernels/Ear no./ear	Kernels/Row no./row	Rows/Ear no./ear	
	Pioneer 37R71	Bt	504	35	15	272.4
	Renk RK622		511	34	15	274.8
26000			576	39	15	297.6
32000			520	36	14	271.5
38000			519	33	16	277.0
44000			492	34	15	259.4
50000			429	30	14	262.7
26000	Pioneer 37R71	Bt	572	40	14	296.8
26000	Renk RK622		579	38	15	298.3
32000	Pioneer 37R71	Bt	510	35	14	269.2
32000	Renk RK622		531	37	14	273.8
38000	Pioneer 37R71	Bt	522	34	16	279.5
38000	Renk RK622		515	33	16	274.4
44000	Pioneer 37R71	Bt	466	33	14	253.7
44000	Renk RK622		519	35	15	265.1
50000	Pioneer 37R71	Bt	450	32	14	263.0
50000	Renk RK622		408	29	14	262.5
Mean			507	34	15	273.6
<u>Probability(%)</u>						
Plant Density (D)			0.0	0.0	15.9	0.0
Hybrid (H)			48.8	49.4	27.9	61.3
D x H			6.5	20.4	80.2	83.5
<u>LSD (0.10)</u>						
Plant Density (D)			19	2	NS	8.9
Hybrid (H)			NS	NS	NS	NS
D x H			37	NS	NS	NS
<u>Contrasts-D (%)</u>						
Linear			0.0	0.0	52.4	0.0
Quadratic			31.8	57.7	19.8	7.9
Cubic			1.5	18.3	44.0	51.9
Quartic			47.9	15.2	4.4	3.3
<u>CV(%)</u>						
			5	6	6	5

**Table C-43. Plant Density and Hybrid Influence on Rind Strength.
Galesville, WI - 2003.**

Target Density	Hybrid	Trait	Rind Strength load-lbs/section
	Dekalb DK5018	Bt	8.17
	Dekalb DK5143		8.45
	Pioneer 37R71	Bt	7.26
	Renk RK622		7.91
26000			8.07
32000			7.43
38000			8.33
44000			8.11
50000			7.80
26000	Dekalb DK5018	Bt	8.61
26000	Dekalb DK5143		8.49
26000	Pioneer 37R71	Bt	7.10
26000	Renk RK622		8.08
32000	Dekalb DK5018	Bt	7.99
32000	Dekalb DK5143		7.57
32000	Pioneer 37R71	Bt	6.90
32000	Renk RK622		7.25
38000	Dekalb DK5018	Bt	8.33
38000	Dekalb DK5143		9.04
38000	Pioneer 37R71	Bt	7.51
38000	Renk RK622		8.42
44000	Dekalb DK5018	Bt	8.20
44000	Dekalb DK5143		9.24
44000	Pioneer 37R71	Bt	7.17
44000	Renk RK622		7.83
50000	Dekalb DK5018	Bt	7.72
50000	Dekalb DK5143		7.92
50000	Pioneer 37R71	Bt	7.60
50000	Renk RK622		7.96
Mean			7.95
<u>Probability(%)</u>			
Plant Density (D)			14.7
Hybrid (H)			0.5
D x H			88.9
<u>LSD (0.10)</u>			
Plant Density (D)			NS
Hybrid (H)			0.55
D x H			NS
<u>Contrasts-D (%)</u>			
Linear			86.9
Quadratic			63.8
Cubic			5.1
Quartic			9.4
<u>CV(%)</u>			
			11

FIELD EXPERIMENT HISTORY

Title: Plant Density and Hybrid Influence on Corn Grain
Experiment: 02PD **Trial ID** 2466 **Year:** 2003
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: V18 & V19 **Previous Crop:** Soybean **Soil Type:** Plainfield Sand
Soil Test: **Date:** 10/15/03 **pH** 6.2 **OM (%)** 0.8 **P (ppm)** 112 **K (ppm)** 30

Plot Management

Tillage Operations: Plow & Disk

	<u>Analysis:</u>	<u>Rate lbs/A:</u>	<u>Date:</u>
Fertilizer: Preplant :	0-0-60	100 lbs/A	4 /3 /03
Starter :	6-24-24	9 lbs/A	4 /24/03
Post plant :	34-0-0	102 lbs/A (2x)	6/16/03 & 6/20/03
Manure:	N/A	N/A	N/A

Herbicide: Aatrex 4L 0.75 lbs/A **Insecticide:**
 5/1/03 **Hybrid:**
 Lasso 2.0 qt/A

 Callisto 3.0 oz/A
 6/12/03

Irrigation: 19.6 Inches

Planting Date: 4/24/03 **Planting Depth:** 1.5" **Row Width:** 30"
Target Plant Density: See Factors **Planting Method:** Kinze Plot Planter
Harvest Date: 10/15/03 **Harvest Method:** Kincaid Plot Combine

Experimental Design

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

Factors/Treatments:

<u>Plant Density: (plants/A)</u>	<u>Hybrids:</u>
26000	Dekalb DK5018
32000	Dekalb DK5143
38000	Pioneer 37R71
44000	Renk RK622
50000	

Results: Table C-44, C-45, and C-46.

**Table C-44. Plant Density and Hybrid Influence on Corn Grain.
Hancock, WI - 2003.**

Target Density	Hybrid	Trait	Grain											Plants emerged	Seeds planted
			Yield bu/A	Moisture %	Test Wt lbs/bu	Grower Return \$/A	Lodged			Barren %	Ears Dropped %	Harvest			
							Total %	Stalk %	Root %			plants/A	ears/A		
	Dekalb DK5018	Bt	266	21.5	55	427	0	0	0	1	0	39204	39283	48629	49896
	Dekalb DK5143		271	21.2	55	454	2	2	0	1	0	39574	39468	48259	49896
	Pioneer 37R71	Bt	256	21.9	54	424	3	3	0	1	0	39838	40709	46886	49896
	Renk RK622		231	19.9	56	397	16	16	0	2	1	39864	39389	48154	49896
26000			243	21.7	55	417	2	2	0	0	0	28578	30393	32901	34056
32000			256	21.7	55	433	4	4	0	1	0	33858	34122	40524	41976
38000			256	20.8	56	428	7	7	0	1	0	39831	39666	47949	49896
44000			263	21.4	56	427	6	6	0	1	0	44946	44385	55308	57816
50000			261	20.1	56	422	7	7	0	2	0	50886	49995	63228	67336
26000	Dekalb DK5018	Bt	261	22.1	55	439	0	0	0	0	0	28512	29304	32868	34056
26000	Dekalb DK5143		255	22.4	54	436	2	2	0	0	0	27192	28908	33132	34056
26000	Pioneer 37R71	Bt	232	21.6	54	399	0	0	0	0	0	29304	32604	32340	34056
26000	Renk RK622		224	20.8	55	395	6	6	0	0	0	29304	30756	33264	34056
32000	Dekalb DK5018	Bt	256	21.8	55	420	0	0	0	0	0	33132	33264	40392	41976
32000	Dekalb DK5143		270	21.2	56	461	1	1	0	0	0	33528	33792	41052	41976
32000	Pioneer 37R71	Bt	257	22.5	54	432	2	2	0	1	0	34056	35244	39600	41976
32000	Renk RK622		242	21.1	56	421	13	13	0	2	1	34716	34188	41052	41976
38000	Dekalb DK5018	Bt	269	21.2	55	434	0	0	0	0	0	39204	39468	48840	49896
38000	Dekalb DK5143		269	20.3	56	456	1	1	0	1	0	40260	38808	47916	49896
38000	Pioneer 37R71	Bt	258	21.6	55	429	2	2	0	0	0	39732	40524	46596	49896
38000	Renk RK622		229	20.2	57	393	24	24	0	1	0	40128	39864	48444	49896
44000	Dekalb DK5018	Bt	274	21.6	56	430	0	0	0	1	0	44220	43956	56760	57816
44000	Dekalb DK5143		276	21.5	55	453	4	4	0	1	0	45012	44352	55572	57816
44000	Pioneer 37R71	Bt	270	22.9	54	435	3	3	0	1	0	45276	44748	53592	57816
44000	Renk RK622		230	19.4	57	392	18	18	0	2	0	45276	44484	55308	57816
50000	Dekalb DK5018	Bt	269	20.9	56	413	0	0	0	1	0	50952	50424	64284	65736
50000	Dekalb DK5143		284	20.7	56	463	2	2	0	1	0	51876	51480	63624	65736
50000	Pioneer 37R71	Bt	265	20.8	55	428	8	8	1	2	0	50820	50424	62304	65736
50000	Renk RK622		227	17.9	57	384	17	17	0	3	1	49896	47652	62700	65736
Mean			256	21.1	55	426	5	5	0	1	0	39620	39712	47982	49896
Probability(%)															
Plant Density (D)			0.0	0.0	0.0	21.1	3.3	3.1	53.2	1.0	36.0	0.0	0.0	0.0	-
Hybrid (H)			0.0	0.0	0.0	0.0	0.0	0.0	54.7	4.3	4.6	27.3	1.3	0.2	-
D x H			3.4	15.0	1.9	12.5	2.9	2.7	36.1	52.8	75.6	15.9	4.0	80.5	-
LSD (0.10)															
Plant Density (D)			6	0.6	0	NS	3	3	NS	1	NS	704	879	836	-
Hybrid (H)			6	0.6	0	11	3	3	NS	1	0	NS	786	748	-
D x H			13	NS	1	NS	6	6	NS	NS	NS	NS	1757	NS	-
Contrasts-D (%)															
Linear			0.0	0.0	0.0	82.7	0.4	0.4	46.3	0.1	48.1	0.0	0.0	0.0	-
Quadratic			2.7	28.9	29.7	4.8	21.7	19.7	53.5	59.9	92.1	67.8	4.0	69.0	-
Cubic			50.3	22.5	29.1	29.6	90.9	97.4	15.7	42.5	7.0	88.8	43.3	49.8	-
Quartic			13.3	2.2	27.1	38.0	40.5	38.5	67.2	56.5	48.4	19.8	16.6	86.7	-
CV(%)															
			4	4	1	4	78	77	540	110	324	3	3	3	-

**Table C-45. Plant Density and Hybrid Influence on Yield Components.
Hancock, WI - 2003.**

Target Density	Hybrid	Trait	Ear Size			1000 Kernel weight
			Kernels/Ear no./ear	Kernels/Row no./row	Rows/Ear no./ear	
	Pioneer 37R71	Bt	533	36	15	282.2
	Renk RK622		544	36	15	281.0
26000			576	38	15	309.7
32000			561	37	15	302.8
38000			549	36	15	279.9
44000			500	34	15	263.7
50000			507	34	15	251.9
26000	Pioneer 37R71	Bt	559	37	15	308.5
26000	Renk RK622		593	38	16	310.8
32000	Pioneer 37R71	Bt	533	36	15	302.4
32000	Renk RK622		588	38	15	303.3
38000	Pioneer 37R71	Bt	568	36	16	281.5
38000	Renk RK622		531	35	15	278.3
44000	Pioneer 37R71	Bt	502	35	15	270.5
44000	Renk RK622		498	34	15	256.9
50000	Pioneer 37R71	Bt	504	35	15	248.2
50000	Renk RK622		510	33	15	255.6
Mean			539	36	15	281.6
Probability(%)						
Plant Density (D)			1.2	0.3	67.6	0.0
Hybrid (H)			44.1	80.8	33.6	63.7
D x H			33.6	44.9	67.0	17.5
LSD (0.10)						
Plant Density (D)			28	1	NS	5.1
Hybrid (H)			NS	NS	NS	NS
D x H			NS	NS	NS	NS
Contrasts-D (%)						
Linear			0.1	0.0	44.2	0.0
Quadratic			91.1	88.4	94.2	77.5
Cubic			30.9	23.7	79.6	4.1
Quartic			31.9	74.5	21.4	31.9
CV(%)						
			7	5	7	3

**Table C-46. Plant Density and Hybrid Influence on Rind Strength.
Hancock, WI - 2003.**

Target Density	Hybrid	Trait	Rind Strength load-lbs/section
	Dekalb DK5018	Bt	7.60
	Dekalb DK5143		7.42
	Pioneer 37R71	Bt	6.58
	Renk RK622		7.41
26000			7.34
38000			7.42
50000			6.99
26000	Dekalb DK5018	Bt	7.40
26000	Dekalb DK5143		7.25
26000	Pioneer 37R71	Bt	7.36
26000	Renk RK622		7.37
38000	Dekalb DK5018	Bt	8.14
38000	Dekalb DK5143		7.43
38000	Pioneer 37R71	Bt	6.58
38000	Renk RK622		7.55
50000	Dekalb DK5018	Bt	7.27
50000	Dekalb DK5143		7.58
50000	Pioneer 37R71	Bt	5.80
50000	Renk RK622		7.31
Mean			7.25
<u>Probability(%)</u>			
Plant Density (D)			18.9
Hybrid (H)			0.7
D x H			13.4
<u>LSD (0.10)</u>			
Plant Density (D)			NS
Hybrid (H)			0.37
D x H			NS
<u>Contrasts-D (%)</u>			
Linear			16.0
Quadratic			23.6
<u>CV(%)</u>			8

FIELD EXPERIMENT HISTORY

Title: Plant Density and Hybrid Influence on Corn Grain
Experiment: 02PD **Trial ID** 2472 **Year:** 2003
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: R5-E **Previous Crop:** Soybean **Soil Type:** Plano Silt Loam
Soil Test: **Date:** 10/9 /03 **pH** 6.6 **OM (%)** 3.9 **P (ppm)** 98 **K (ppm)** 229

Plot Management

Tillage Operations: Fall Chisel Plow Field Cultivator Cultivated 6/18/03

	<u>Analysis:</u>	<u>Rate lbs/A:</u>	<u>Date:</u>
Fertilizer: Preplant :	28-0-0	100 lbs/A	4 /24/03
Starter :	6-24-24	9 lbs/A	4 /25/03
Post plant :	N/A	N/A	N/A
Manure:	N/A	N/A	N/A

Herbicide: Dual II Magnum 1.8 pt/A **Insecticide:**
 Hornet 4.5 oz/A **Hybrid:**
 Callisto 0.25 lbs/A
 Steadfast 0.75 lbs/A
 Atrazine

Irrigation: None

Planting Date: 4/25/03 **Planting Depth:** 1.5" **Row Width:** 30"
Target Plant Density: See Factors **Planting Method:** Kinze Plot Planter
Harvest Date: 10/21/03 **Harvest Method:** Kincaid Plot Combine

Experimental Design

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

Factors/Treatments:

<u>Plant Density: (plants/A)</u>	<u>Hybrids:</u>
26000	Pioneer 34M94
32000	Pioneer 34M95
38000	Pioneer 37R71
44000	Renk RK622
50000	

Results: Table C-47 and C-48.

**Table C-47. Plant Density and Hybrid Influence on Corn Grain.
Janesville, WI - 2003.**

Target Density	Hybrid	Trait	Grain											Plants emerged	Seeds planted
			Yield	Moisture	Test Wt	Grower Return	Lodged			Barren	Ears Dropped	Harvest			
							bu/A	%	lbs/bu			\$/A	Total		
	Pioneer 34M94		208	19.1	59	351	4	1	3	2	0	39468	38465	46649	49896
	Pioneer 34M95	Bt	210	19.9	58	339	3	2	1	3	0	39468	38201	43375	49896
	Pioneer 37R71	Bt	190	16.0	59	321	1	1	0	1	0	39758	39574	46147	49896
	Renk RK622		193	16.0	60	339	2	2	0	1	0	39679	39389	48048	49896
26000			182	17.9	59	317	0	0	0	1	0	27159	27357	31152	34056
32000			204	17.9	59	354	1	1	1	0	0	33297	33231	39105	41976
38000			210	17.9	59	355	1	1	1	1	0	39963	39600	46299	49896
44000			206	17.7	59	341	3	2	2	3	0	45639	44484	53658	57816
50000			199	17.2	59	320	5	3	2	4	0	51909	49863	60060	65736
26000	Pioneer 34M94		169	18.1	59	295	0	0	0	0	0	27192	27060	31020	34056
26000	Pioneer 34M95	Bt	216	21.3	57	365	0	0	0	1	0	27192	26928	30756	34056
26000	Pioneer 37R71	Bt	167	15.7	59	295	0	0	0	0	0	27192	27588	31020	34056
26000	Renk RK622		174	16.6	60	314	0	0	0	0	0	27060	27852	31812	34056
32000	Pioneer 34M94		221	19.8	58	381	3	1	2	0	0	33132	33000	39204	41976
32000	Pioneer 34M95	Bt	205	19.3	58	343	2	0	1	2	0	33264	32868	36828	41976
32000	Pioneer 37R71	Bt	186	15.9	59	324	0	0	0	0	0	33264	33264	39864	41976
32000	Renk RK622		204	16.5	61	367	1	1	0	0	0	33528	33792	40524	41976
38000	Pioneer 34M94		225	19.8	59	380	0	0	0	1	0	39600	39204	47520	49896
38000	Pioneer 34M95	Bt	227	20.3	58	371	3	1	2	2	0	39864	39204	43164	49896
38000	Pioneer 37R71	Bt	206	16.1	59	354	1	0	1	1	0	41052	40920	46068	49896
38000	Renk RK622		180	15.5	60	315	1	1	0	0	0	39336	39072	48444	49896
44000	Pioneer 34M94		221	19.4	59	366	6	1	5	3	0	45804	44220	54516	57816
44000	Pioneer 34M95	Bt	201	19.6	58	311	3	1	2	6	0	45144	42768	50424	57816
44000	Pioneer 37R71	Bt	201	16.3	59	333	1	1	1	1	0	45408	45012	53592	57816
44000	Renk RK622		203	15.6	60	353	4	3	1	1	0	46200	45936	56100	57816
50000	Pioneer 34M94		205	18.4	59	331	9	1	8	5	0	51612	48840	60984	65736
50000	Pioneer 34M95	Bt	202	18.9	59	306	7	7	0	5	0	51876	49236	55704	65736
50000	Pioneer 37R71	Bt	187	15.9	59	297	2	2	0	2	0	51876	51084	60192	65736
50000	Renk RK622		203	15.6	60	347	4	4	0	3	1	52272	50292	63360	65736
Mean			200	17.7	59	337	2	1	1	2	0	39593	38907	46055	49896
Probability(%)															
Plant Density (D)			0.4	28.1	71.9	1.3	0.1	2.0	0.6	0.0	39.9	0.0	0.0	0.0	-
Hybrid (H)			0.4	0.0	0.0	10.9	9.3	37.8	0.0	0.0	10.0	79.3	0.3	0.0	-
D x H			5.8	8.5	17.7	4.8	64.3	67.7	0.0	3.2	49.9	81.7	44.0	18.1	-
LSD (0.10)															
Plant Density (D)			12	NS	NS	22	2	2	1	1	NS	673	762	1091	-
Hybrid (H)			11	0.6	0	NS	2	NS	1	1	0	NS	682	976	-
D x H			25	1.3	NS	45	NS	NS	2	1	NS	NS	NS	NS	-
Contrasts-D (%)															
Linear			2.9	6.4	42.3	82.2	0.0	0.2	0.0	0.0	11.4	0.0	0.0	0.0	-
Quadratic			0.1	25.8	70.9	0.1	30.1	23.0	96.4	0.1	97.2	49.6	4.5	9.4	-
Cubic			41.7	59.4	32.1	34.3	68.1	50.5	76.6	20.2	32.0	94.2	100.0	89.2	-
Quartic			93.4	88.6	59.6	89.9	47.8	85.8	27.2	30.7	47.1	19.7	14.7	59.6	-
CV(%)															
			9	5	1	10	127	202	137	58	280	2	3	3	-

**Table C-48. Plant Density and Hybrid Influence on Rind Strength.
Janesville, WI - 2003.**

Target Density	Hybrid	Trait	Rind Strength load-lbs/section
	Pioneer 34M94		8.22
	Pioneer 34M95	Bt	8.50
	Pioneer 37R71	Bt	7.36
	Renk RK622		8.46
26000			8.05
38000			8.56
50000			7.80
26000	Pioneer 34M94		7.55
26000	Pioneer 34M95	Bt	8.45
26000	Pioneer 37R71	Bt	7.34
26000	Renk RK622		8.85
38000	Pioneer 34M94		8.93
38000	Pioneer 34M95	Bt	8.92
38000	Pioneer 37R71	Bt	7.80
38000	Renk RK622		8.59
50000	Pioneer 34M94		8.18
50000	Pioneer 34M95	Bt	8.15
50000	Pioneer 37R71	Bt	6.93
50000	Renk RK622		7.95
Mean			8.14
<u>Probability(%)</u>			
Plant Density (D)			2.2
Hybrid (H)			0.3
D x H			39.3
<u>LSD (0.10)</u>			
Plant Density (D)			0.44
Hybrid (H)			0.39
D x H			NS
<u>Contrasts-D (%)</u>			
Linear			34.7
Quadratic			0.9
<u>CV(%)</u>			
			8

FIELD EXPERIMENT HISTORY

Title: Plant Density and Hybrid Influence on Corn Grain
Experiment: 02PD **Trial ID** 2470 **Year:** 2003
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:** 10/3 /03 **pH** 6.9 **OM (%)** 2.3 **P (ppm)** 53 **K (ppm)** 80

Plot Management

Tillage Operations: Soil Finisher Cultivated 6/27/03

	<u>Analysis:</u>	<u>Rate lbs/A:</u>	<u>Date:</u>
Fertilizer: Preplant :	46-0-0	140 lbs/A	4 /27/03
Starter :	6-24-24	9 lbs/A	4 /28/03
Post plant :	N/A	N/A	N/A
Manure:	N/A	N/A	N/A

Herbicide: Aatrex 4L 1.0 qt/A **Insecticide:**
 Harness 1.0 qt/A **Hybrid:**
 Northstar 4.0 oz/A
 Accent 0.33 oz/A

Irrigation: None

Planting Date: 4/28/03 **Planting Depth:** 1.5" **Row Width:** 30"
Target Plant Density: See Factors **Planting Method:** Kinze Plot Planter
Harvest Date: 10/7/03 **Harvest Method:** Kincaid Plot Combine

Experimental Design

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

Factors/Treatments:

<u>Plant Density: (plants/A)</u>	<u>Hybrids:</u>
26000	Pioneer 34M94
32000	Pioneer 34M95
38000	Pioneer 37R71
44000	Renk RK622
50000	

Results: Table C-49, C-50, and C-51.

**Table C-49. Plant Density and Hybrid Influence on Corn Grain.
Lancaster, WI - 2003.**

Target Density	Hybrid	Trait	Grain											Plants emerged	Seeds planted
			Yield	Moisture	Test Wt	Grower Return	Lodged			Barren	Ears Dropped	Harvest			
							bu/A	%	lbs/bu			\$/A	%		
	Pioneer 34M94		158	20.8	56	247	15	15	0	2	0	37673	36881	43454	49896
	Pioneer 34M95	Bt	156	21.6	55	229	24	24	0	2	0	37910	37198	41369	49896
	Pioneer 37R71	Bt	167	17.8	56	270	13	13	0	3	0	38359	37831	44378	49896
	Renk RK622		154	16.1	57	262	11	11	0	3	0	37884	36749	43798	49896
26000			167	20.9	56	279	4	4	0	4	0	27588	27357	29502	34056
32000			164	19.1	56	272	10	10	0	2	0	32142	31713	36366	41976
38000			163	19.3	56	260	18	18	0	2	0	38511	37752	43395	49896
44000			157	18.3	56	242	16	16	0	2	0	43395	42603	50688	57816
50000			143	17.8	55	208	30	30	0	3	0	48147	46398	56298	65736
26000	Pioneer 34M94		177	23.5	56	291	4	4	0	2	0	26532	26268	29832	34056
26000	Pioneer 34M95	Bt	176	24.2	55	279	3	3	0	2	0	27852	27720	27852	34056
26000	Pioneer 37R71	Bt	162	18.9	57	274	0	0	0	8	0	27852	27852	31416	34056
26000	Renk RK622		154	17.0	57	273	8	8	0	5	0	28116	27588	28908	34056
32000	Pioneer 34M94		158	20.6	56	258	10	10	0	1	0	32472	32076	36168	41976
32000	Pioneer 34M95	Bt	166	21.7	55	258	17	17	0	2	0	32340	31812	33660	41976
32000	Pioneer 37R71	Bt	172	18.2	56	288	6	6	0	3	0	31152	30624	37620	41976
32000	Renk RK622		161	16.1	57	283	6	6	0	2	0	32604	32340	38016	41976
38000	Pioneer 34M94		157	20.8	56	245	24	24	0	1	0	38412	38280	45276	49896
38000	Pioneer 34M95	Bt	156	21.8	55	229	19	19	0	0	0	38412	38412	41448	49896
38000	Pioneer 37R71	Bt	171	17.8	55	277	21	21	0	1	0	38280	37356	43824	49896
38000	Renk RK622		169	16.5	58	289	7	7	0	5	1	38940	36960	43032	49896
44000	Pioneer 34M94		151	19.2	55	231	13	13	0	2	1	44352	43032	51216	57816
44000	Pioneer 34M95	Bt	150	20.8	55	210	30	30	0	2	0	42504	41712	48708	57816
44000	Pioneer 37R71	Bt	174	17.8	56	273	10	10	0	2	0	44748	44352	50292	57816
44000	Renk RK622		153	15.6	56	254	11	11	0	1	1	41976	41316	52536	57816
50000	Pioneer 34M94		147	19.8	56	213	22	22	0	2	0	46596	44748	54780	65736
50000	Pioneer 34M95	Bt	132	19.4	55	171	51	51	0	4	0	48444	46332	55176	65736
50000	Pioneer 37R71	Bt	157	16.4	55	237	28	28	0	1	0	49764	48972	58740	65736
50000	Renk RK622		135	15.5	55	211	20	20	0	4	1	47784	45540	56496	65736
Mean			159	19.1	56	252	16	16	0	2	0	37957	37165	43250	49896
Probability(%)															
Plant Density (D)			0.2	0.0	3.2	0.0	0.0	0.0	42.0	6.0	2.7	0.0	0.0	0.0	-
Hybrid (H)			7.7	0.0	0.0	0.1	3.0	3.0	40.3	14.8	0.2	67.3	30.5	0.0	-
D x H			34.7	50.6	9.0	34.7	48.5	48.2	46.7	7.3	6.4	25.3	15.5	20.1	-
LSD (0.10)															
Plant Density (D)			10	0.8	1	18	9	9	NS	2	0	1070	1150	1217	-
Hybrid (H)			9	0.8	0	16	8	8	NS	NS	0	NS	NS	1088	-
D x H			NS	NS	1	NS	NS	NS	NS	3	0	NS	NS	NS	-
Contrasts-D (%)															
Linear			0.0	0.0	0.2	0.0	0.0	0.0	48.4	19.0	0.2	0.0	0.0	0.0	-
Quadratic			8.5	32.3	58.7	3.8	66.0	65.6	55.4	0.8	96.2	52.1	20.8	24.7	-
Cubic			51.3	18.4	73.4	61.9	24.2	23.8	16.5	53.4	22.3	17.8	8.1	25.9	-
Quartic			91.9	15.3	52.7	91.4	23.8	23.4	29.2	92.7	87.0	22.3	46.2	63.5	-
CV(%)															
			9	6	1	10	81	81	775	92	200	4	4	4	-

**Table C-50. Plant Density and Hybrid Influence on Yield Components.
Lancaster, WI - 2003.**

Target Density	Hybrid	Trait	Ear Size			1000 Kernel weight
			Kernels/Ear no./ear	Kernels/Row no./row	Rows/Ear no./ear	
	Pioneer 37R71	Bt	415	27	15	235.7
	Renk RK622		389	26	15	233.3
26000			470	30	16	273.3
32000			431	29	15	241.5
38000			411	27	15	230.6
44000			357	24	15	219.8
50000			345	23	15	207.4
26000	Pioneer 37R71	Bt	491	30	16	273.4
26000	Renk RK622		448	29	15	273.3
32000	Pioneer 37R71	Bt	442	29	15	244.0
32000	Renk RK622		420	28	15	239.0
38000	Pioneer 37R71	Bt	416	27	16	233.3
38000	Renk RK622		404	27	15	228.0
44000	Pioneer 37R71	Bt	379	25	15	224.5
44000	Renk RK622		335	24	14	215.0
50000	Pioneer 37R71	Bt	348	23	15	203.3
50000	Renk RK622		342	23	14	211.4
Mean			403	26	15	234.5
<u>Probability(%)</u>						
Plant Density (D)			0.2	0.1	28.0	0.0
Hybrid (H)			15.8	40.9	11.2	54.6
D x H			94.8	93.3	91.2	65.5
<u>LSD (0.10)</u>						
Plant Density (D)			34	2	NS	7.5
Hybrid (H)			NS	NS	NS	NS
D x H			NS	NS	NS	NS
<u>Contrasts-D (%)</u>						
Linear			0.0	0.0	5.6	0.0
Quadratic			74.8	98.2	64.9	2.7
Cubic			70.8	53.7	92.7	11.7
Quartic			55.0	87.2	32.6	59.7
<u>CV(%)</u>						
			12	9	6	4

**Table C-51. Plant Density and Hybrid Influence on Rind Strength.
Lancaster, WI - 2003.**

Target Density	Hybrid	Trait	Rind Strength load-lbs/section
	Pioneer 34M94		9.83
	Pioneer 34M95	Bt	9.28
	Pioneer 37R71	Bt	7.53
	Renk RK622		8.51
26000			9.25
32000			8.90
38000			8.70
44000			8.61
50000			8.48
26000	Pioneer 34M94		10.36
26000	Pioneer 34M95	Bt	9.38
26000	Pioneer 37R71	Bt	8.09
26000	Renk RK622		9.15
32000	Pioneer 34M94		9.37
32000	Pioneer 34M95	Bt	9.68
32000	Pioneer 37R71	Bt	7.77
32000	Renk RK622		8.76
38000	Pioneer 34M94		9.56
38000	Pioneer 34M95	Bt	8.89
38000	Pioneer 37R71	Bt	7.42
38000	Renk RK622		8.93
44000	Pioneer 34M94		10.24
44000	Pioneer 34M95	Bt	9.32
44000	Pioneer 37R71	Bt	7.18
44000	Renk RK622		7.70
50000	Pioneer 34M94		9.59
50000	Pioneer 34M95	Bt	9.12
50000	Pioneer 37R71	Bt	7.19
50000	Renk RK622		8.02
Mean			8.79
<u>Probability(%)</u>			
Plant Density (D)			7.0
Hybrid (H)			0.0
D x H			43.1
<u>LSD (0.10)</u>			
Plant Density (D)			0.46
Hybrid (H)			0.41
D x H			NS
<u>Contrasts-D (%)</u>			
Linear			0.5
Quadratic			46.2
Cubic			75.1
Quartic			95.7
<u>CV(%)</u>			
			8

FIELD EXPERIMENT HISTORY

Title: Plant Density and Hybrid Influence on Corn Grain
Experiment: 02PD **Trial ID** 2465 **Year:** 2003
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: 008-03C50 **Previous Crop:** Alfalfa **Soil Type:** Withee Silt Loam
Soil Test: **Date:** 10/6 /03 **pH** 6.5 **OM (%)** 3.4 **P (ppm)** 66 **K (ppm)** 109

Plot Management

Tillage Operations: Fall Chisel Field Cultivator Cultivated 6/19/03

	<u>Analysis:</u>	<u>Rate lbs/A:</u>	<u>Date:</u>
Fertilizer:			
Preplant :	N/A	N/A	N/A
Starter :	6-24-24	9 lbs/A	5 /1 /03
Post plant :	28-0-0	45 lbs/A	6 /19/03
Manure:	Dairy	12872 gal/A	N/A
Herbicide:	Harness 1.8 pt/A	Insecticide: Force 4.4 lbs/A	5/1/03
	Hornet 2.4 oz/A	Hybrid:	
	5/2/03		
	Atrazine 4L 1.1 qt/A		
	Permit 1.07 oz/A		
	6/27/03		
Irrigation:	None		
Planting Date:	5/1/03	Planting Depth: 1.5"	Row Width: 30"
Target Plant Density:	See Factors	Planting Method:	Kinze Plot Planter
Harvest Date:	10/8/03	Harvest Method:	Kincaid Plot Combine

Very poor emergence

Experimental Design

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

Factors/Treatments:

<u>Plant Density: (plants/A)</u>	<u>Hybrids:</u>
26000	NK Brand 3030
32000	NK Brand 3030Bt
38000	Pioneer 37R71
44000	Renk RK622
50000	

Results: Table C-52 and C-53.

**Table C-52. Plant Density and Hybrid Influence on Corn Grain.
Marshfield, WI - 2003.**

Target Density	Hybrid	Trait	Grain											Plants emerged	Seeds planted
			Yield	Moisture	Test Wt	Grower Return	Lodged			Barren	Ears Dropped	Harvest			
							bu/A	%	lbs/bu			\$/A	Total		
	NK Brand N3030		112	31.6	51	140	2	2	0	3	0	21701	23417	22018	49896
	NK Brand N3030Bt	Bt	115	31.1	51	129	1	1	0	1	0	19404	23364	19615	49896
	Pioneer 37R71	Bt	126	31.8	47	153	1	1	0	2	0	29542	31627	31205	49896
	Renk RK622		104	32.1	50	128	3	3	0	4	1	33290	32762	35270	49896
26000			110	32.8	50	146	2	2	0	2	0	18645	22341	18777	34056
32000			118	31.8	50	153	1	1	0	1	0	21417	24453	21483	41976
38000			111	31.0	50	134	1	1	0	2	0	25773	27126	26697	49896
44000			117	31.0	50	135	2	2	0	3	0	31218	31812	33165	57816
50000			115	31.7	50	121	2	2	0	4	0	32868	33231	35013	65736
26000	NK Brand N3030		101	31.7	51	136	4	4	0	3	0	16104	19800	15840	34056
26000	NK Brand N3030Bt	Bt	106	33.6	50	129	1	1	0	1	0	14124	19800	14652	34056
26000	Pioneer 37R71	Bt	122	32.5	47	165	2	2	0	1	0	20988	24288	20460	34056
26000	Renk RK622		113	33.3	51	155	2	2	0	4	0	23364	25476	24156	34056
32000	NK Brand N3030		117	32.6	50	154	3	2	1	3	0	17820	21384	17952	41976
32000	NK Brand N3030Bt	Bt	110	30.3	52	133	0	0	0	2	0	17424	21252	16632	41976
32000	Pioneer 37R71	Bt	139	32.0	47	184	1	1	0	1	0	25080	28776	25080	41976
32000	Renk RK622		107	32.4	50	140	2	2	0	0	0	25344	26400	26268	41976
38000	NK Brand N3030		108	31.7	51	133	1	1	0	2	1	19008	21648	18612	49896
38000	NK Brand N3030Bt	Bt	108	30.8	52	118	1	1	0	1	0	17820	21252	17556	49896
38000	Pioneer 37R71	Bt	125	30.9	47	154	0	0	0	2	0	33132	32868	35244	49896
38000	Renk RK622		103	30.6	50	130	4	4	0	3	1	33132	32736	35376	49896
44000	NK Brand N3030		123	31.1	51	151	2	2	0	3	0	26796	26664	27720	57816
44000	NK Brand N3030Bt	Bt	125	29.5	52	140	1	1	0	1	0	24816	27720	25608	57816
44000	Pioneer 37R71	Bt	119	31.6	47	133	0	0	0	2	0	34056	35244	36696	57816
44000	Renk RK622		100	31.8	49	115	4	4	0	6	1	39204	37620	42636	57816
50000	NK Brand N3030		113	30.9	52	127	2	2	0	4	0	28776	27588	29964	65736
50000	NK Brand N3030Bt	Bt	125	31.5	52	123	0	0	0	1	0	22836	26796	23628	65736
50000	Pioneer 37R71	Bt	124	32.0	47	132	1	1	0	3	0	34452	36960	38544	65736
50000	Renk RK622		96	32.4	49	101	4	4	0	5	1	45408	41580	47916	65736
Mean			114	31.7	50	138	2	2	0	2	0	25984	27793	27027	49896
Probability(%)															
Plant Density (D)			37.8	3.4	69.0	0.4	82.5	67.6	42.0	18.3	48.7	0.0	0.0	0.0	-
Hybrid (H)			0.0	36.7	0.0	0.3	0.4	0.2	40.3	1.4	2.0	0.0	0.0	0.0	-
D x H			11.3	55.0	0.0	21.3	30.5	27.0	46.7	77.2	63.7	2.7	8.8	1.6	-
LSD (0.10)															
Plant Density (D)			NS	1.0	NS	14	NS	NS	NS	NS	NS	2289	1868	2416	-
Hybrid (H)			7	NS	0	12	1	1	NS	1	0	2048	1671	2161	-
D x H			NS	NS	1	NS	NS	NS	NS	NS	NS	4578	3735	4832	-
Contrasts-D (%)															
Linear			50.4	3.5	54.3	0.1	68.1	76.4	48.4	7.4	32.6	0.0	0.0	0.0	-
Quadratic			57.5	1.4	50.6	32.7	32.0	23.8	55.4	14.2	48.5	75.0	83.2	90.4	-
Cubic			48.1	67.2	88.6	55.9	58.1	38.6	16.5	36.4	42.3	8.5	13.1	3.2	-
Quartic			8.9	83.0	24.3	10.3	98.4	85.0	29.2	74.4	25.1	58.8	31.1	58.9	-
CV(%)			10	5	1	14	103	98	775	91	290	13	10	13	-

**Table C-53. Plant Density and Hybrid Influence on Rind Strength.
Marshfield, WI - 2003.**

Target Density	Hybrid	Trait	Rind Strength load-lbs/section
	NK Brand N3030		8.05
	NK Brand N3030Bt	Bt	8.03
	Pioneer 37R71	Bt	8.69
	Renk RK622		9.11
26000			9.11
32000			8.91
38000			8.46
44000			8.26
50000			7.63
26000	NK Brand N3030		8.70
26000	NK Brand N3030Bt	Bt	8.36
26000	Pioneer 37R71	Bt	9.07
26000	Renk RK622		10.30
32000	NK Brand N3030		8.26
32000	NK Brand N3030Bt	Bt	8.13
32000	Pioneer 37R71	Bt	8.90
32000	Renk RK622		10.34
38000	NK Brand N3030		8.11
38000	NK Brand N3030Bt	Bt	8.34
38000	Pioneer 37R71	Bt	8.52
38000	Renk RK622		8.86
44000	NK Brand N3030		7.66
44000	NK Brand N3030Bt	Bt	8.22
44000	Pioneer 37R71	Bt	8.95
44000	Renk RK622		8.21
50000	NK Brand N3030		7.53
50000	NK Brand N3030Bt	Bt	7.10
50000	Pioneer 37R71	Bt	8.02
50000	Renk RK622		7.85
Mean			8.47
<u>Probability(%)</u>			
Plant Density (D)			0.1
Hybrid (H)			0.2
D x H			45.4
<u>LSD (0.10)</u>			
Plant Density (D)			0.56
Hybrid (H)			0.50
D x H			NS
<u>Contrasts-D (%)</u>			
Linear			0.0
Quadratic			48.2
Cubic			80.2
Quartic			55.3
<u>CV(%)</u>			
			10

FIELD EXPERIMENT HISTORY

Title: Plant Density and Hybrid Influence on Corn Grain
Experiment: 02PD **Trial ID** 2473 **Year:** 2003
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:** 10/3 /03 **pH** 7.3 **OM (%)** 2.8 **P (ppm)** 25 **K (ppm)** 97

Plot Management

Tillage Operations: Fall Chisel Plow Soil Finisher Cultivated 6/26/03

	<u>Analysis:</u>	<u>Rate lbs/A:</u>	<u>Date:</u>
Fertilizer:			
Preplant :	N/A	N/A	N/A
Starter :	6-24-24	9 lbs/A	5 /2 /03
Post plant :	N/A	N/A	N/A
Manure:	Dairy	9000 gal/A	N/A
Herbicide:	Accent 0.67 oz/A Atrazine 0.5 lbs/A 6/20/03 Callisto 3.0 oz/A	Insecticide: Force 4.4 lbs/A	5/1/03
		Hybrid:	
Irrigation:	None		
Planting Date:	5/2/03	Planting Depth: 1.5"	Row Width: 30"
Target Plant Density:	See Factors	Planting Method:	Kinze Plot Planter
Harvest Date:	10/24/03	Harvest Method:	Kincaid Plot Combine

Planted into very heavy residue and row cleaners worked well.

Experimental Design

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

Factors/Treatments:

Plant Density: (plants/A)

26000
32000
38000
44000
50000

Hybrids:

NK Brand 3030
NK Brand 3030Bt
Pioneer 37R71
Renk RK622

Results: Table C-54, C-55, and C-56.

**Table C-54. Plant Density and Hybrid Influence on Corn Grain.
Seymour, WI - 2003.**

Target Density	Hybrid	Trait	Grain											Plants emerged	Seeds planted
			Yield	Moisture	Test Wt	Grower Return	Lodged			Barren	Ears Dropped	Harvest			
							bu/A	%	lbs/bu			\$/A	Total		
	NK Brand N3030		201	22.1	53	327	7	6	1	3	0	38702	37646	44194	49896
	NK Brand N3030Bt	Bt	204	22.0	54	318	9	6	3	3	0	38623	38544	45276	49896
	Pioneer 37R71	Bt	210	25.2	49	323	6	5	1	2	0	39151	39864	45118	49896
	Renk RK622		200	23.6	51	324	7	7	0	1	0	39046	39415	46992	49896
26000			189	23.6	52	312	1	1	0	1	0	26928	29139	31482	34056
32000			200	23.6	52	323	4	4	0	1	0	33198	34056	38544	41976
38000			213	23.1	52	341	5	4	1	2	0	39270	38874	45243	49896
44000			211	23.0	52	328	9	8	1	2	0	44385	43593	52206	57816
50000			207	22.9	52	312	17	13	4	4	0	50622	48675	59499	65736
26000	NK Brand N3030		185	22.6	53	311	1	1	0	2	0	26796	27456	30096	34056
26000	NK Brand N3030Bt	Bt	189	22.7	53	308	1	1	0	2	0	27456	29040	31548	34056
26000	Pioneer 37R71	Bt	194	25.2	50	313	1	1	0	1	0	26268	30888	31812	34056
26000	Renk RK622		190	24.1	51	317	0	0	0	0	0	27192	29172	32472	34056
32000	NK Brand N3030		202	22.2	53	336	2	2	0	0	0	33000	32868	38808	41976
32000	NK Brand N3030Bt	Bt	199	22.4	53	317	4	4	0	3	0	32868	33792	37884	41976
32000	Pioneer 37R71	Bt	199	25.3	50	313	5	5	0	2	0	33528	35640	37488	41976
32000	Renk RK622		198	24.4	51	325	4	4	0	0	0	33396	33924	39996	41976
38000	NK Brand N3030		206	22.2	53	337	6	5	1	2	0	39600	39204	43824	49896
38000	NK Brand N3030Bt	Bt	219	21.8	55	346	7	7	0	1	0	38940	38808	45672	49896
38000	Pioneer 37R71	Bt	220	25.2	50	341	3	3	0	3	0	39732	38676	43560	49896
38000	Renk RK622		207	23.2	51	338	3	3	0	1	0	38808	38808	47916	49896
44000	NK Brand N3030		214	21.9	54	345	10	9	1	4	0	43824	42108	50556	57816
44000	NK Brand N3030Bt	Bt	208	21.5	54	317	9	7	3	3	0	43428	42504	51480	57816
44000	Pioneer 37R71	Bt	223	25.0	49	338	7	7	0	1	0	44484	44220	53064	57816
44000	Renk RK622		198	23.4	51	313	8	8	0	1	0	45804	45540	53724	57816
50000	NK Brand N3030		197	21.7	54	306	17	15	2	7	0	50292	46596	57684	65736
50000	NK Brand N3030Bt	Bt	207	21.6	54	304	21	11	10	4	0	50424	48576	59796	65736
50000	Pioneer 37R71	Bt	214	25.5	49	312	13	10	3	4	0	51744	49896	59664	65736
50000	Renk RK622		208	22.7	52	328	18	18	1	2	0	50028	49632	60852	65736
Mean			204	23.2	52	323	7	6	1	2	0	38881	38867	45395	49896
Probability(%)															
Plant Density (D)			0.0	0.8	17.3	0.9	0.0	0.0	6.0	0.0	72.5	0.0	0.0	0.0	-
Hybrid (H)			4.5	0.0	0.0	71.0	54.3	92.0	27.6	0.1	4.4	29.4	0.0	0.1	-
D x H			56.2	52.4	27.6	67.9	98.4	95.8	56.0	8.6	89.2	7.2	7.0	56.1	-
LSD (0.10)															
Plant Density (D)			7	0.4	NS	14	4	4	2	1	NS	605	792	1152	-
Hybrid (H)			6	0.4	0	NS	NS	NS	NS	1	0	NS	708	1031	-
D x H			NS	NS	NS	NS	NS	NS	NS	2	NS	1210	1584	NS	-
Contrasts-D (%)															
Linear			0.0	0.0	15.1	76.7	0.0	0.0	1.2	0.0	90.5	0.0	0.0	0.0	-
Quadratic			0.0	68.5	16.8	0.1	2.3	18.2	12.5	2.4	18.1	28.8	85.4	69.0	-
Cubic			63.6	41.7	55.8	58.8	18.1	34.6	54.0	56.9	81.1	10.8	66.3	65.3	-
Quartic			19.5	51.1	13.9	19.7	85.2	70.5	75.5	60.0	72.1	18.9	86.9	89.0	-
CV(%)			5	3	1	6	76	92	310	71	449	2	3	4	-

**Table C-55. Plant Density and Hybrid Influence on Yield Components.
Seymour, WI - 2003.**

Target Density	Hybrid	Trait	Ear Size			1000 Kernel weight
			Kernels/Ear no./ear	Kernels/Row no./row	Rows/Ear no./ear	
	Pioneer 37R71	Bt	400	25	16	253.3
	Renk RK622		439	27	16	241.7
26000			434	27	16	270.1
32000			443	29	15	256.8
38000			439	27	16	246.9
44000			401	26	16	236.5
50000			379	24	16	227.7
26000	Pioneer 37R71	Bt	419	26	16	276.1
26000	Renk RK622		449	27	16	264.2
32000	Pioneer 37R71	Bt	405	26	15	261.1
32000	Renk RK622		482	31	16	254.0
38000	Pioneer 37R71	Bt	433	26	16	258.2
38000	Renk RK622		446	27	16	235.7
44000	Pioneer 37R71	Bt	390	25	16	244.9
44000	Renk RK622		413	27	16	228.1
50000	Pioneer 37R71	Bt	355	23	15	228.9
50000	Renk RK622		403	25	16	226.5
Mean			419	26	16	247.3
Probability(%)						
Plant Density (D)			13.1	11.2	2.3	0.0
Hybrid (H)			4.2	7.4	12.9	0.0
D x H			80.3	73.4	67.1	9.4
LSD (0.10)						
Plant Density (D)			NS	NS	0	4.9
Hybrid (H)			30	2	NS	4.4
D x H			NS	NS	NS	9.8
Contrasts-D (%)						
Linear			2.5	3.1	27.5	0.0
Quadratic			20.1	18.9	68.8	37.4
Cubic			64.0	37.7	34.7	64.4
Quartic			67.1	45.5	0.2	65.4
CV(%)						
			11	11	3	3

**Table C-56. Plant Density and Hybrid Influence on Rind Strength.
Seymour, WI - 2003.**

Target Density	Hybrid	Trait	Rind Strength load-lbs/section
	NK Brand N3030		6.81
	NK Brand N3030Bt	Bt	6.78
	Pioneer 37R71	Bt	7.59
	Renk RK622		7.95
26000			7.17
32000			7.22
38000			7.16
44000			7.66
50000			7.20
26000	NK Brand N3030		6.51
26000	NK Brand N3030Bt	Bt	7.18
26000	Pioneer 37R71	Bt	7.29
26000	Renk RK622		7.68
32000	NK Brand N3030		6.76
32000	NK Brand N3030Bt	Bt	6.66
32000	Pioneer 37R71	Bt	7.34
32000	Renk RK622		8.13
38000	NK Brand N3030		6.71
38000	NK Brand N3030Bt	Bt	6.78
38000	Pioneer 37R71	Bt	7.27
38000	Renk RK622		7.89
44000	NK Brand N3030		7.08
44000	NK Brand N3030Bt	Bt	6.78
44000	Pioneer 37R71	Bt	8.39
44000	Renk RK622		8.38
50000	NK Brand N3030		6.97
50000	NK Brand N3030Bt	Bt	6.52
50000	Pioneer 37R71	Bt	7.64
50000	Renk RK622		7.68
Mean			7.28
<u>Probability(%)</u>			
Plant Density (D)			33.4
Hybrid (H)			0.0
D x H			87.1
<u>LSD (0.10)</u>			
Plant Density (D)			NS
Hybrid (H)			0.41
D x H			NS
<u>Contrasts-D (%)</u>			
Linear			41.3
Quadratic			53.3
Cubic			18.2
Quartic			18.8
<u>CV(%)</u>			
			9

FIELD EXPERIMENT HISTORY

Title: Plant Density and Hybrid Influence on Corn Grain
Experiment: 02PD **Trial ID** 2471 **Year:** 2003
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:** 10/3 /03 **pH** 6.8 **OM (%)** 3.6 **P (ppm)** 102 **K (ppm)** 110

Plot Management

Tillage Operations: Fall Chisel Plow Field Cultivator Cultivated 5/26/03
Analysis: Rate lbs/A: Date:
Fertilizer: **Preplant :** 46-0-0 150 lbs/A N/A
Starter : 6-24-24 9 lbs/A 5 /2 /03
Post plant : N/A N/A N/A
Manure: Dairy Spring: 20 t/A; Fall: 7200 gal/A N/A
Herbicide: Dual II Magnum 1.0 pt/A **Insecticide:** Force 4.4 lbs/A
Accent Gold 2.0 oz/A **Hybrid:**
Banvel 2.0 oz/A
Irrigation: None
Planting Date: 5/2/03 **Planting Depth:** 1.5" **Row Width:** 30"
Target Plant Density: See Factors **Planting Method:** Kinze Plot Planter
Harvest Date: 10/24/03 **Harvest Method:** Kincaid Plot Combine

Poor emergence

Experimental Design

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

Factors/Treatments:

Plant Density: (plants/A)

26000
32000
38000
44000
50000

Hybrids:

NK Brand 3030
NK Brand 3030Bt
Pioneer 37R71
Renk RK622

Results: Table C-57 and C-58.

**Table C-57. Plant Density and Hybrid Influence on Corn Grain.
Valders, WI - 2003.**

Target Density	Hybrid	Trait	Grain											Plants emerged	Seeds planted
			Yield	Moisture	Test Wt	Grower Return	Lodged			Barren	Ears Dropped	Harvest			
							bu/A	%	lbs/bu			\$/A	Total		
	NK Brand N3030		180	22.9	54	285	3	3	0	4	0	31601	31786	34056	49896
	NK Brand N3030Bt	Bt	191	22.6	54	291	1	1	0	1	0	32472	34267	35614	49896
	Pioneer 37R71	Bt	186	24.5	51	282	2	2	0	1	0	32393	34346	35508	49896
	Renk RK622		182	21.9	54	296	5	5	0	1	0	33158	34056	37488	49896
26000			163	23.7	52	263	1	1	0	2	0	21087	25080	23430	34056
32000			178	23.0	53	284	2	2	0	2	0	26334	28446	29271	41976
38000			192	22.9	53	302	2	2	0	2	0	33198	33957	37092	49896
44000			197	22.4	54	305	3	3	0	2	0	37917	37950	40920	57816
50000			194	22.9	53	289	5	5	0	3	0	43494	42636	47619	65736
26000	NK Brand N3030		157	23.3	53	257	3	3	0	3	0	20592	22968	22308	34056
26000	NK Brand N3030Bt	Bt	166	23.8	52	260	0	0	0	2	0	21516	26532	23892	34056
26000	Pioneer 37R71	Bt	168	25.0	51	265	0	0	0	1	0	20724	26400	23628	34056
26000	Renk RK622		161	22.6	54	269	1	1	0	0	0	21516	24420	23892	34056
32000	NK Brand N3030		171	22.3	54	279	4	4	0	4	1	25608	26664	26268	41976
32000	NK Brand N3030Bt	Bt	189	21.8	55	301	0	0	0	0	0	27060	30228	30492	41976
32000	Pioneer 37R71	Bt	170	24.8	51	262	1	1	0	1	0	25212	27852	29304	41976
32000	Renk RK622		180	23.1	53	295	2	2	0	1	0	27456	29040	31020	41976
38000	NK Brand N3030		189	22.7	54	303	2	2	0	2	0	32736	32868	37092	49896
38000	NK Brand N3030Bt	Bt	191	22.6	54	291	2	2	0	2	0	32604	33264	36168	49896
38000	Pioneer 37R71	Bt	200	24.8	50	306	1	1	0	0	0	33660	35244	34452	49896
38000	Renk RK622		188	21.7	54	309	4	4	0	1	0	33792	34452	40656	49896
44000	NK Brand N3030		195	23.0	54	306	2	2	0	4	0	36696	35772	38940	57816
44000	NK Brand N3030Bt	Bt	209	22.5	55	315	1	1	0	1	0	37620	38016	40920	57816
44000	Pioneer 37R71	Bt	192	23.4	52	289	3	3	0	1	0	37620	38280	41052	57816
44000	Renk RK622		191	20.7	55	310	7	7	0	2	1	39732	39732	42768	57816
50000	NK Brand N3030		188	23.3	54	282	3	3	0	5	0	42372	40656	45672	65736
50000	NK Brand N3030Bt	Bt	200	22.2	55	289	3	3	0	1	0	43560	43296	46596	65736
50000	Pioneer 37R71	Bt	201	24.6	50	290	7	7	0	2	0	44748	43956	49104	65736
50000	Renk RK622		188	21.4	54	296	9	9	0	2	0	43296	42636	49104	65736
Mean			185	23.0	53	289	3	3	0	2	0	32406	33614	35666	49896
Probability(%)															
Plant Density (D)			0.0	0.4	0.1	0.0	0.1	0.1	-	13.2	55.7	0.0	0.0	0.0	-
Hybrid (H)			1.1	0.0	0.0	15.5	0.6	0.6	-	0.0	21.7	0.4	0.0	0.2	-
D x H			41.3	3.5	2.7	49.9	33.2	33.2	-	50.0	9.2	15.0	23.3	38.6	-
LSD (0.10)															
Plant Density (D)			6	0.5	1	12	2	2	-	NS	NS	742	983	1563	-
Hybrid (H)			6	0.5	0	NS	2	2	-	1	NS	664	879	1398	-
D x H			NS	1.0	1	NS	NS	NS	-	NS	1	NS	NS	NS	-
Contrasts-D (%)															
Linear			0.0	0.3	0.1	0.0	0.0	0.0	-	2.8	44.4	0.0	0.0	0.0	-
Quadratic			0.0	2.7	1.0	0.0	15.8	15.8	-	17.2	28.7	21.0	47.1	35.9	-
Cubic			41.1	54.4	19.8	33.5	44.8	44.8	-	63.3	66.5	44.5	27.2	67.0	-
Quartic			61.9	15.1	14.1	80.7	99.1	99.1	-	72.4	30.2	1.3	9.7	2.5	-
CV(%)			5	3	1	6	98	98	-	74	329	3	4	6	-

**Table C-58. Plant Density and Hybrid Influence on Rind Strength.
Valders, WI - 2003.**

Target Density	Hybrid	Trait	Rind Strength load-lbs/section
	NK Brand N3030		8.03
	NK Brand N3030Bt	Bt	7.92
	Pioneer 37R71	Bt	9.12
	Renk RK622		9.47
26000			8.85
32000			8.82
38000			8.63
44000			8.69
50000			8.16
26000	NK Brand N3030		8.55
26000	NK Brand N3030Bt	Bt	7.50
26000	Pioneer 37R71	Bt	9.35
26000	Renk RK622		10.01
32000	NK Brand N3030		8.09
32000	NK Brand N3030Bt	Bt	8.11
32000	Pioneer 37R71	Bt	9.17
32000	Renk RK622		9.93
38000	NK Brand N3030		8.18
38000	NK Brand N3030Bt	Bt	8.08
38000	Pioneer 37R71	Bt	9.17
38000	Renk RK622		9.09
44000	NK Brand N3030		8.11
44000	NK Brand N3030Bt	Bt	8.53
44000	Pioneer 37R71	Bt	9.07
44000	Renk RK622		9.07
50000	NK Brand N3030		7.20
50000	NK Brand N3030Bt	Bt	7.37
50000	Pioneer 37R71	Bt	8.83
50000	Renk RK622		9.25
Mean			8.63
<u>Probability(%)</u>			
Plant Density (D)			9.2
Hybrid (H)			0.0
D x H			48.7
<u>LSD (0.10)</u>			
Plant Density (D)			0.45
Hybrid (H)			0.40
D x H			NS
<u>Contrasts-D (%)</u>			
Linear			1.6
Quadratic			29.4
Cubic			48.0
Quartic			42.7
<u>CV(%)</u>			
			8