2005
Wisconsin Research Report of

STUDIES ON CULTURAL PRACTICES AND MANAGEMENT SYSTEMS FOR CORN

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2005 Wisconsin Research Report of Studies on Cultural Practices and Management Systems for Corn

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The information presented in this report is for the purpose of informing cooperators in industry of the results of research conducted during 2005. The cooperation of other faculty and staff and the support of funding agencies and industry are gratefully acknowledged. The information presented in this report does not constitute recommendation or endorsement. This information is **NOT FOR PUBLICATION** unless prior approval is received.

The assistance of the following people in conducting these studies is acknowledged.

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Cooperating UWEX County Agents and ARS Staff: Jerry Clark, Zen Miller, Mike Rankin, John Zander, Mike Bertram, Jeff Breuer, Tom Drendel, Charles Kostichka, Dwight Mueller, Tim Wood, Bob Rand, Bryan Bowen, Jim Stute

Cooperating Farmers: Ken Congdon, Ed Montsma, Todd Maney, Mike Maass

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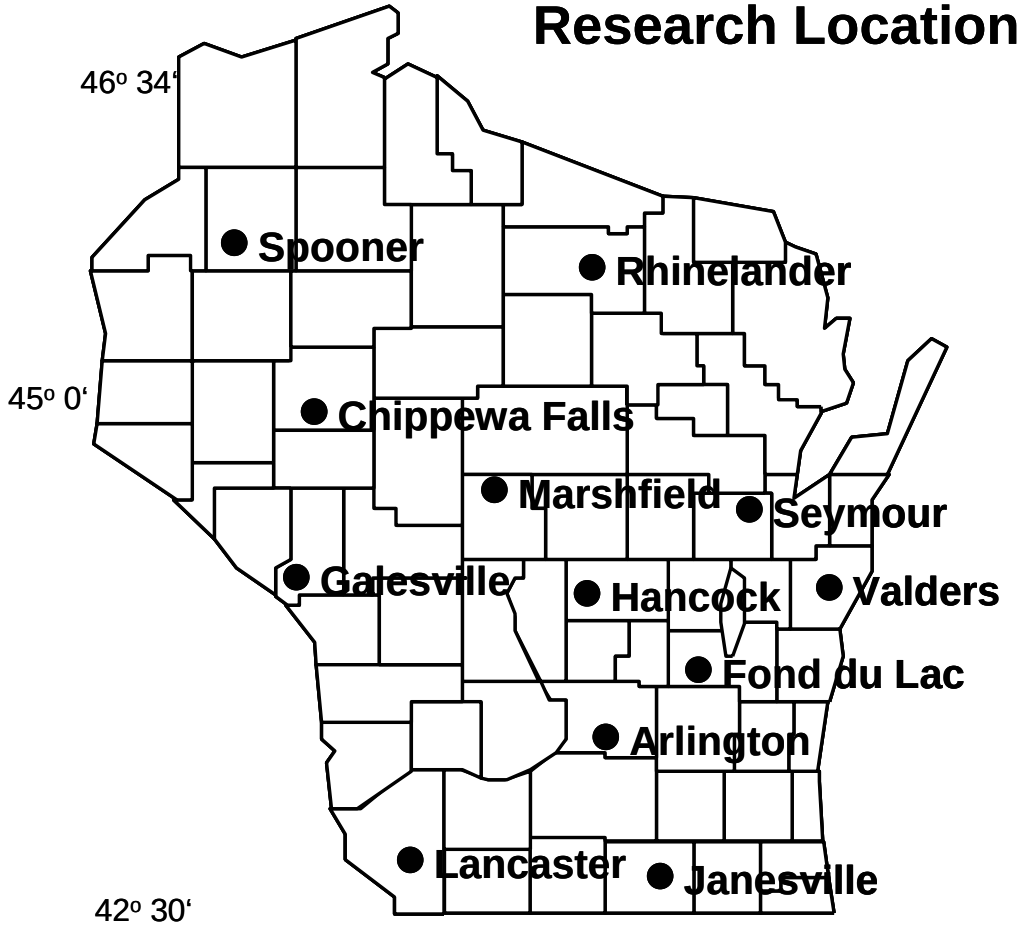
UW Corn Agronomy Research Locations



We wish to thank the following companies and organizations that have generously supported our research through financial and/or material donations.

UW College of Agriculture and Life Sciences – Hatch Program
Ag Reliant Genetics LLC
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Brett-Young Seeds Limited
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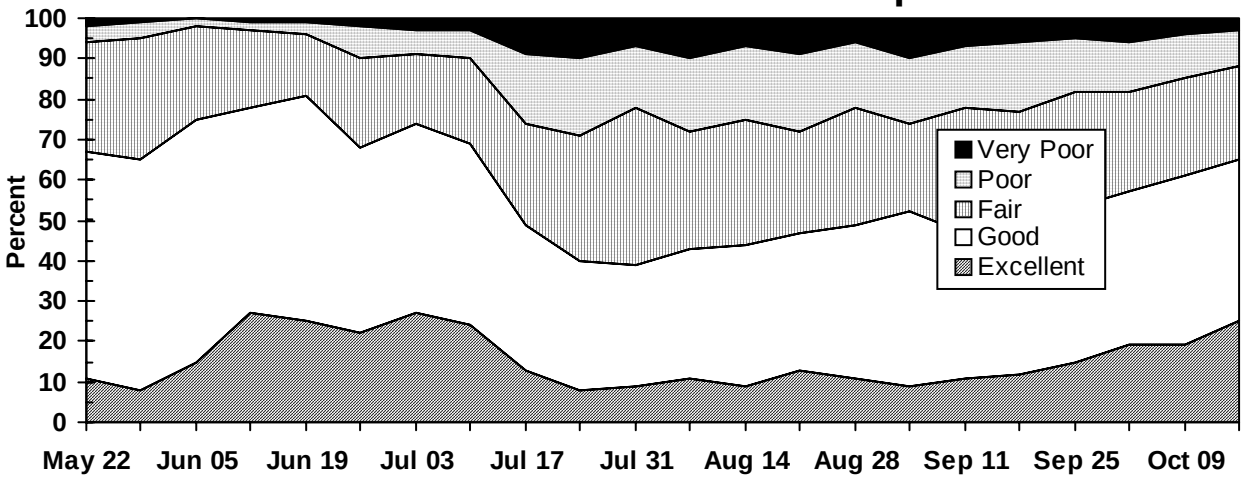
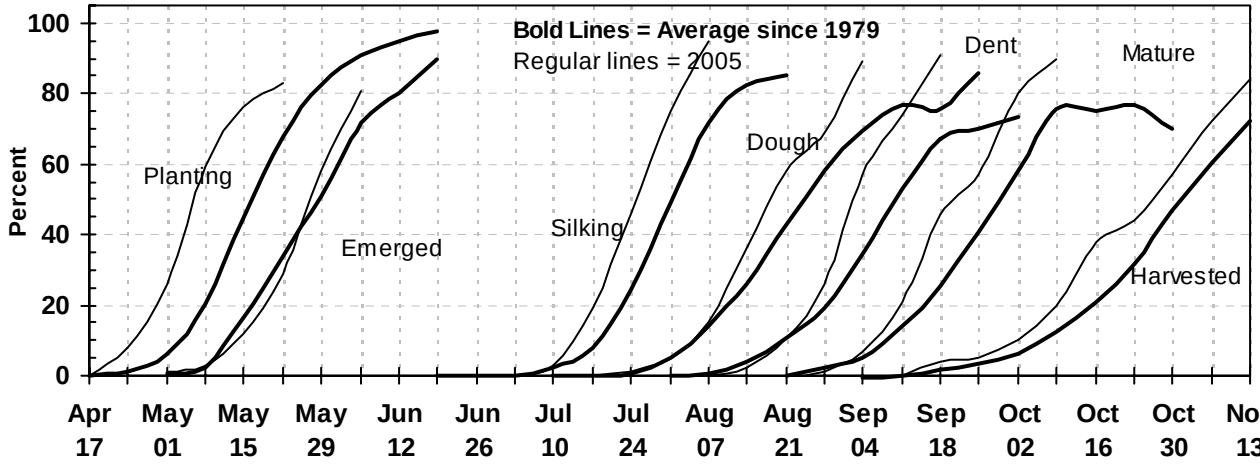
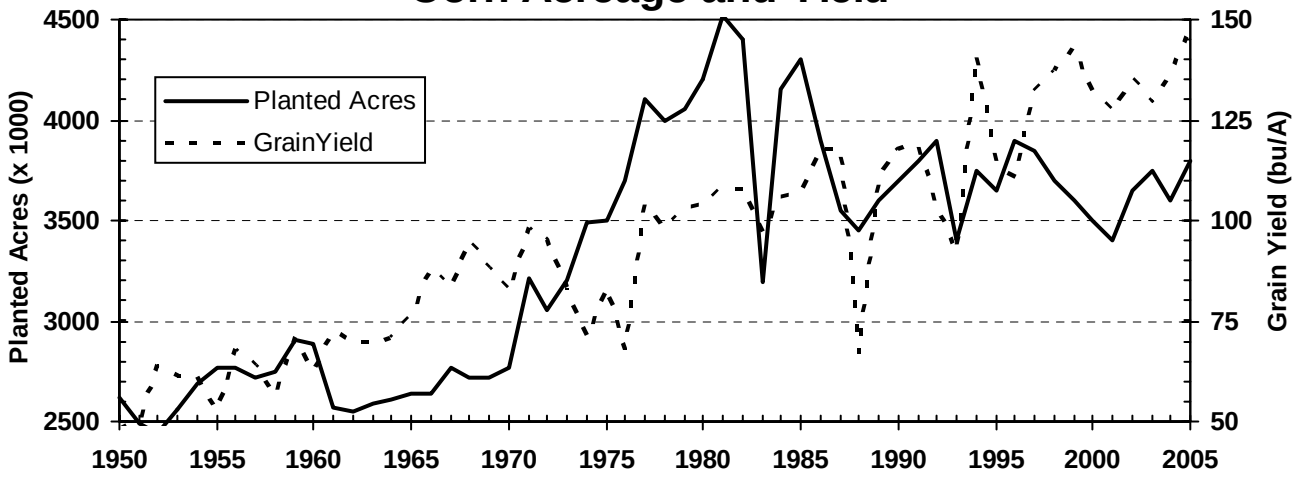
Condition of Corn Crop



Progress of Corn Crop



Corn Acreage and Yield



2005 Wisconsin Growing Season
(derived from USDA weekly reports)

2005 – Hot, Dry Summer
Hot, dry weather dominated the 2005 growing season. Crops matured rapidly with growing degree days significantly higher than normal. Temperatures from June to September averaged 68.1 degrees, while the normal average is 64.7 degrees.

Limited rainfall was a major concern for farmers as crops showed stress over the summer. Total precipitation for April though September was 18.2 inches, compared to a normal total of 22.3. Dry weather was a worry, but sporadic showers came across the state at several critical growing points. Rains during pollination helped turn crop conditions around. Since not all areas received these limited summer rains, crop conditions varied across the state and within counties. However, timely rains and plentiful growing degree days led to many reports of better than anticipated yields.

Fall weather was generally advantageous for harvesting row crops, fruits, and vegetables. A warm September helped crops rapidly mature, and rains only temporarily slowed progress. Rain was a welcomed relief for many as soil moisture, pasture, hay, and wheat conditions improved before winter.

Temperatures in **December** 2004 were 1 to 3 degrees above normal. Precipitation ranged from 0.85 to 2.35 inches. Snowfall was mainly received in the northern areas of the state as rain fell in other areas. Small amounts of snow cover were reported in the state as producers finished harvesting crops. Snow covered most of the state in **January**. Temperatures averaged 1 to 4 degrees above normal and up to 3 inches of precipitation fell in several snow storms. **February's** temperatures averaged 5 to 6 degrees higher than normal. Average high temperatures were in the 30s while average lows were in the upper teens. Light snow cover could be found in northern parts of the state, while warmer temperatures reduced cover elsewhere. The lack of rainfall started early in the year and continued through the growing season. Temperatures were above normal for **March** and precipitation was 0.65 to 0.90 inches below normal. By the end of the month, only trace amounts of snow cover could be found in the state.

April weather was 4.3 degrees warmer than normal with below normal precipitation. Warmer temperatures early in April reduced most frost and allowed for an early start on fieldwork. Temperatures still dipped into the 20s during the month, but reached the 80s by month's end. Much needed rainfall came during the third week of April, just in time for spring planting. At the end of the month, soil moisture conditions were rated as 1 percent very short, 20 percent short, 69 percent adequate, and 10 percent surplus.

Weather in **May** was highlighted by cooler temperatures and the arrival of some rainfall. Temperatures were 4 to 6 degrees below normal during the first week and remained below normal the entire month. Low temperatures were in the 20s and 30s, with only a few locations reaching a high of 80 degrees. While April weather encouraged spring fieldwork, May weather slowed field activity. During the second week of May, between 0.95 and 2.28 inches of rain was received. Rainfall totals ranged from 0.61 to 1.60 in the third week. Monthly rainfall totals remained behind normal, but soil moisture conditions were in good shape. The monthly rainfall for May was 2.59 inches, compared to the normal 3.37. Soil moisture conditions were rated as 2 percent very short, 17 percent short, 75 percent adequate, and 6 percent surplus by May 27.

June's weather was hotter than normal with below average rainfall. Temperatures during the second week of June were 7 to 12 degrees above normal with highs reaching into the 90s in some locations. This weather helped corn and soybeans grow rapidly. Northern areas of the state received significant rainfall during the second and third weeks of the month. Statewide rain totals for June were at 3.81 inches, compared to a normal 4.02. Crop stress from the lack of rain was becoming

apparent by the end of the month. On June 24, soil moisture conditions were rated as 20 percent very short, 36 percent short, 42 percent adequate, and 2 percent surplus.

Temperatures were 1.5 degrees above normal and precipitation was 0.85 inches below average for the month of **July**. The lack of rain impacted crop conditions and decreased soil moisture levels. Soil moisture levels hit the low point of the crop year in mid-July, with the season's largest percentage of soil moisture as short and very short. On July 15, soil moisture conditions were rated at 55 percent very short, 35 percent short, 10 percent adequate, and 0 percent surplus. Rain finally came during the last two weeks of July. Precipitation during the third week ranged from 0.55 to 2.86 inches, and 0.32 to 1.53 inches fell during the fourth week. While soil moisture levels were not fully recharged, the storms brought some relief. On July 29, soil moisture conditions had improved to 15 percent very short, 36 percent short, 48 percent adequate, and 1 percent surplus.

During the first two weeks of **August** limited rain and high temperatures returned. High temperatures hit the mid-90s with lows only in the 50s. This was 1 to 6 degrees above average. Warm weather pushed most crops ahead of schedule as growing degree days were well above normal numbers. South Central Wisconsin was hit hard with tornados, hail, and high winds in mid-August. Some fields in this area were severely damaged or completely leveled. Cooler weather finally arrived towards the end of the month, along with a few showers. The last week saw temperatures 1 to 2 degrees below normal. Most areas received precipitation that provided a much needed boost to crop conditions. Soil moisture levels remained mostly unchanged during August. By August 26 soil moisture conditions were rated as 16 percent very short, 31 percent short, 52 percent adequate, and 1 percent surplus.

Summer-like temperatures maintained their grip on the state through **September**. The average temperature in September was 64 degrees, 5.9 degrees higher than normal. High temperatures caused summer crops to rapidly mature, and harvest started by mid-month. Harvest was temporarily slowed by several storms at the end of September. Given that most of the state was behind on yearly precipitation, this break in harvest activities was well received. Light frost was seen in the northern districts of the state. However, the frost was light enough to leave little damage to field crops. Rain improved soil moisture conditions during the month. Soil moisture conditions as of September 30 were 3 percent very short, 18 percent short, 74 percent adequate, and 5 percent surplus.

October started with high temperatures and humidity. Most areas saw little rainfall the first week, but the northwestern corner of the state received substantial precipitation. High temperatures were in the 70s with averages 6 to 9 degrees above normal. Light amounts of rain came during the remaining weeks in October, which did little to impede harvest progress. In fact, every week had at least 5 days suitable for fieldwork and near normal temperatures. The fourth week was the first week since the end of August with below normal temperatures. The fourth week of October also brought the first statewide frost for the year. Soil moisture conditions were rated at 6 percent very short, 34 percent short, 56 percent adequate, and 4 percent surplus at the end of the month.

During the first two weeks of **November**, temperatures ranged from 6 to 11 degrees above normal. Minimal rainfall allowed farmers to continue the final stages of harvest and fall tillage. Snow fell across much of the state in the third week of November, halting most field activities. Soil moisture conditions greatly improved during the fall. By November 18, soil moisture conditions were 1 percent very short, 15 percent short, 74 percent adequate, and 10 percent surplus

CORN Corn planting started in mid-April in southern counties. On April 24 corn planting was at 8 percent planted, above the 5-year average of 4 percent. Planting progress advanced rapidly in southern districts, while northern producers were starting on light soils. Soil temperatures were a concern for producers. However, these concerns did not keep planters from racing forward. Corn planted progress reached 59 percent by May 8, higher than the 5-year average of 43 percent. The rapid pace can be attributed to higher temperatures and

minimal rainfall. Rain fell during the middle of the month, slowing planting. At the end of May, planting was at 92 percent, compared to the 5-year average of 86 percent. While the corn was in the ground earlier than normal, a cool May impeded emergence and kept it to a near average rate. On May 8, only 3 percent of the crop was emerged, lower than the 5-year average of 5 percent. Soil temperatures continued to be a concern for producers, and the delayed emergence caused some corn to emerge yellow. Rains at the end of May and warmer weather during the first of part of June pushed emergence to 94 percent by June 12, ahead of the 5- year average of 86 percent. A warm June bolstered corn growth. By July 3, the average corn height was at 40 inches, 13 inches taller than the 5-year average. Corn started tasseling by early July in southern Wisconsin. By the 24th of July, 46 percent of the corn was silking. At the same time, 29 percent of the crop was rated in very poor to poor condition. Rain received in the second half of July improved corn conditions. The two week period of July 18 to 31 saw between 0.86 to 4.39 inches across the state. While the precipitation may not have filled the soil profiles, it greatly benefited the crop during the critical pollination period. Pollination occurred earlier than normal. By the first week of August, 95 percent of the crop had silked, 19 percent above the 5-year average. Silage choppers were warmed-up by mid-August in southern reaches of the state, an early start compared to most years. Producers in northern counties started opening up fields by the 1st of September. Silage harvest advanced rapidly during the month of September, as farmers stayed ahead of the maturing crop. At the beginning of October, silage harvest was 90 percent complete, in front of the 5-year average of 63 percent. High moisture corn harvest started in central and southern areas of the state by mid-September. Corn for grain harvest progressed slowly during September, due to rain. By October 2, 10 percent of the crop had been harvested. October provided good harvest weather, with above average temperatures and minimal rainfall. Most high moisture corn was harvested by the middle of October. Dry corn harvest moved ahead, although there were reports of farmers letting the crop dry as much as possible in the field to save on drying costs. Corn harvest progress reached 57 percent by the end of the month, higher than last year's 38 percent and the 5-year average of 50 percent. Some areas experienced lodging due to high winds in November. Another issue for growers this fall was finding storage space for the corn crop. Yields were reported to be variable across the state and within counties. However, many stated that despite the dry summer, yields were better than expected. By November 20, corn harvested for grain was at 90 percent, compared to last year's 74 percent and the 5-year average of 86 percent.

SOYBEANS Soybean planting got started in late April. Warmer than normal temperatures encouraged farmers to get their planters moving. Soybeans planted on May 8 were at 29 percent, significantly over the 5-year average of 11 percent. Cooler weather in mid- May slowed emergence and put it slightly behind average. On May 22, soybeans emerged were at 11 percent, compared to the 5-year average of 13 percent. Soybean planting finished in the southeast district by the end of May, while other areas finished two weeks later. Most soybeans had emerged by the end of June in good condition. Early planted soybeans were blooming by the first of July, faster than recent history. In fact, on July 3 soybeans bloomed were at 17 percent, compared to none bloomed for the 5-year average. Plant stress started to become evident during the first few weeks of July as crop conditions declined. Aphids also became an issue in some areas. During the second week of July, they appeared in northern counties as other parts of the state began spraying for them. Aphids remained a problem for growers into August. Rain hit the state during the end of July, coming at the critical pollination phase. By July 31, soybeans bloomed reached 85 percent complete, ahead of the 5- year average of 65 percent. Soybeans started setting pods in mid- July, ahead of schedule. Pod development continued until August 28 when 97 percent of the crop had set pods. Pod development fared well in most areas, despite the dry weather. Beans on sandy ground showed the worst pod development, causing concern in these areas. Soybeans leaves began to change color in mid-August. Early planted beans started dropping leaves by the first of September. By September 4, soybeans dropping leaves was at 13 percent complete, higher than the 5-year average of 3

percent. September's warm weather helped the soybean crop mature at a rapid pace. Harvest started in southern districts by mid-September. The warm September left dry pods, but the high humidity and rain in October caused concerns over shatter loss in tough green stems. Harvest progressed through October with many farmers surprised with yields given the summer weather. Soybean harvest was rated at 90 percent complete on October 30, compared to the 5-year average of 83 percent. Harvest was completed by mid-November, as warmer than normal temperatures provided an ideal opportunity to get the last beans in the bin.

OATS Oat planting started in early April with slow progress initially. Oats planted were at 31 percent by April 17, behind last year's 37 percent. Most of the opening activity was confined to the southwest district of the state, while only lighter soils could be planted in other areas. Oat planting finished in mid-May, at a near normal pace. Warm April temperatures helped oats get off to a good start with 27 percent emerged by May 1. Comparable to previous years, most oats had emerged by the end of May. Oats began to head during the first week of June. On June 12, oats headed was at 22 percent, above the 5-year average of 11 percent. Oats were completely headed-out by mid-July, and harvesting for grain started. Growers harvested grain at a rapid pace. Harvest was reported at 45 percent, ahead of the 5-year average of 26 percent on July 31. Oat harvest remained ahead of average with most acres cut by the middle of August.

HAY Alfalfa broke winter dormancy in early April with evident winterkill. Damage occurred more frequently in areas where ice formed during winter, in older stands, and in fields that were harvested late the previous fall. Recently established fields and ones without significant ice managed better. Winter damage influenced spring planting decisions for many producers. Producers plowed severely damaged fields to plant other forage crops. Winter freeze damage to alfalfa was rated as 21 percent none, 29 percent light, 31 percent moderate, and 19 percent severe. Freeze damage was more prevalent in the eastern districts. At the end of May, the first cutting of alfalfa was being harvested. Harvest progress was slower than normal, as only 8 percent of the crop had been cut, compared to the 5-year average of 12 percent. Fields that escaped winter damage had good quality, but average yields. By the first of July, most first crop hay had been harvested, and producers with an early harvest were starting on the second cutting. Second crop alfalfa was good quality, but short due to the dry summer. Second cutting hay was 95 percent complete by August 7, compared to the 5- year average of 88 percent. Third crop alfalfa harvest started in late July. Regrowth on the third crop was less than ideal, due to the lack of rain. At that time, leafhoppers and weeds in newer seedings became a problem for many farmers. August rains arrived to help growth on fourth crop alfalfa. Farmers in limited locations were harvesting their fourth cutting of alfalfa by the end of August. Those that caught timely rains were able to harvest a good crop. Temperatures in September were warmer than average allowing for a long harvest window. By October 23, about 80 percent of the fourth crop was harvested, ahead of the 5-year average of 76 percent. Winter freeze damage and dry summer conditions impacted forage production on many farms. Farmers that were fortunate enough to receive timely rains were able to produce adequate forage supplies. At the end of the growing season, hay and roughage supplies were rated at 22 percent short, 64 percent adequate, and 14 percent surplus.

WINTER WHEAT Winter wheat broke dormancy in early April and got off to a good start with warm temperatures and rain. However, winter wheat was damaged by ice during the winter. Winter freeze damage to winter wheat was rated as 25 percent none, 29 percent light, 36 percent moderate, and 10 percent severe. A warm and dry June pushed the wheat crop ahead of an average growing season. Most of the crop was headed-out by mid-July, with many fields turning color by the first of July. Harvest began in July, and by the end of the month 70 percent was done, well in front of last year's 44 percent and the 5-year average of 56 percent. By mid-August wheat harvest was wrapping up in the state.

Source: http://www.nass.usda.gov/Statistics_by_State/Wisconsin/Publications/Crop_Progress_&_Condition/index.asp

2005 Weather Summary for Arlington, WI

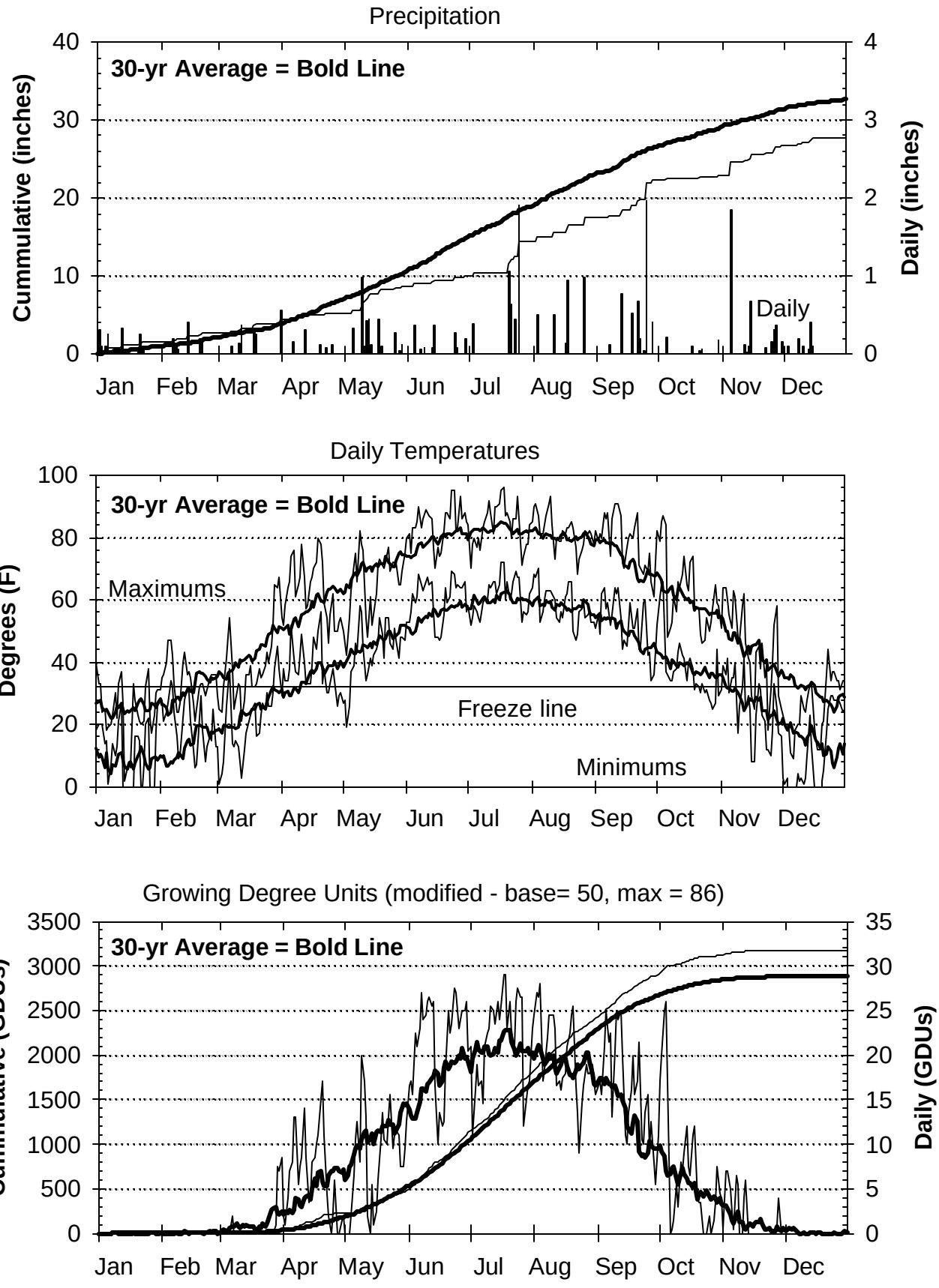


Table A-1. Daily Precipitation, Solar Radiation, Soil and Air Temperatures and Growing Degree Units at the Arlington Research Station during 2005.

Day of year		Daily	Total	Daily Solar Radiation	Soil Temperature Max	Soil Temperature Min	Air Max	Air Min	Growing Degree Daily	Growing Degree Total
		inches		W m^{-2}	°F		°F			
91	1-Apr	0.00	4.5	183	35	32	54	29	2	28
92	2-Apr	0.00	4.5	267	39	32	52	38	1	29
93	3-Apr	0.00	4.5	266	43	32	58	34	4	33
94	4-Apr	0.00	4.5	245	43	32	64	34	7	40
95	5-Apr	0.00	4.5	207	49	34	66	38	8	48
96	6-Apr	0.16	4.6	177	52	39	74	52	13	61
97	7-Apr	0.00	4.6	265	48	37	76	41	13	74
98	8-Apr	0.00	4.6	281	49	34	61	37	6	80
99	9-Apr	0.00	4.6	242	49	37	65	36	8	87
100	10-Apr	0.00	4.6	218	53	39	67	42	9	96
101	11-Apr	0.00	4.6	195	51	45	78	49	14	110
102	12-Apr	0.30	4.9	31	47	40	67	40	9	118
103	13-Apr	0.00	4.9	299	47	38	57	33	4	122
104	14-Apr	0.00	4.9	293	52	37	58	33	4	126
105	15-Apr	0.00	4.9	291	54	37	66	33	8	134
106	16-Apr	0.00	4.9	165	52	40	67	39	9	142
107	17-Apr	0.00	4.9	239	59	46	70	48	10	152
108	18-Apr	0.00	4.9	274	61	47	72	44	11	163
109	19-Apr	0.11	5.0	211	60	49	80	50	15	178
110	20-Apr	0.00	5.0	66	56	49	78	56	17	195
111	21-Apr	0.00	5.0	275	57	45	72	33	11	206
112	22-Apr	0.08	5.1	89	50	45	59	38	5	211
113	23-Apr	0.00	5.1	237	46	41	54	30	2	213
114	24-Apr	0.00	5.1	284	48	39	46	30	0	213
115	25-Apr	0.12	5.2	221	51	41	55	33	3	215
116	26-Apr	0.00	5.2	100	48	43	62	38	6	221
117	27-Apr	0.00	5.2	151	47	39	50	34	0	221
118	28-Apr	0.00	5.2	287	51	37	50	26	0	221
119	29-Apr	0.00	5.2	242	52	38	53	29	2	223
120	30-Apr	0.00	5.2	222	48	38	54	30	2	225
121	1-May	0.00	5.3	122	44	39	50	27	0	225
122	2-May	0.00	5.3	123	43	39	46	28	0	225
123	3-May	0.00	5.3	277	50	36	42	19	0	225
124	4-May	0.00	5.3	329	55	35	54	26	2	227
125	5-May	0.32	5.6	322	57	39	63	37	7	233
126	6-May	0.00	5.6	262	59	45	71	39	11	244
127	7-May	0.00	5.6	152	55	48	75	46	13	256
128	8-May	0.00	5.6	222	62	48	66	43	8	264
129	9-May	0.00	5.6	186	63	54	82	58	20	284
130	10-May	0.98	6.6	303	66	55	78	56	17	301
131	11-May	0.10	6.7	97	56	49	76	45	13	314
132	12-May	0.42	7.1	104	49	47	54	34	2	316
133	13-May	0.45	7.5	78	52	46	48	36	0	316
134	14-May	0.11	7.6	240	56	48	61	41	6	322
135	15-May	0.00	7.6	181	53	48	52	39	1	323
136	16-May	0.00	7.6	248	58	47	55	42	3	325
137	17-May	0.00	7.6	213	59	49	62	44	6	331
138	18-May	0.45	8.1	163	60	51	71	46	11	342
139	19-May	0.10	8.2	125	61	54	73	54	14	355
140	20-May	0.00	8.2	302	66	54	71	49	11	366
141	21-May	0.00	8.2	208	60	50	70	41	10	376
142	22-May	0.00	8.2	331	66	55	72	54	13	389
143	23-May	0.00	8.2	191	61	53	77	54	16	404
144	24-May	0.00	8.2	310	65	51	69	46	10	414

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Day of year		Daily	Total	Daily Solar Radiation	Soil Temperature Max	Soil Temperature Min	Air Max	Air Min	Growing Degree Daily	Growing Degree Total
		inches		W m^{-2}	°F		°F			
145	25-May	0.00	8.2	302	65	51	72	44	11	425
146	26-May	0.27	8.5	304	65	55	72	51	12	436
147	27-May	0.00	8.5	.	61	53	72	47	11	447
148	28-May	0.03	8.5	218	58	50	65	41	8	455
149	29-May	0.12	8.6	235	60	52	65	48	8	462
150	30-May	0.00	8.6	317	64	53	69	48	10	472
151	31-May	0.00	8.6	296	66	52	75	47	13	484
152	1-Jun	0.00	8.6	284	65	53	80	53	17	501
153	2-Jun	0.00	8.6	281	67	56	81	53	17	518
154	3-Jun	0.00	8.6	127	63	57	75	56	16	533
155	4-Jun	0.36	9.0	191	70	60	83	62	23	556
156	5-Jun	0.00	9.0	254	76	63	83	59	21	577
157	6-Jun	0.00	9.0	331	78	62	85	61	23	600
158	7-Jun	0.05	9.0	282	81	64	90	68	27	627
159	8-Jun	0.00	9.0	228	79	67	83	65	24	651
160	9-Jun	0.07	9.1	209	84	68	86	63	25	675
161	10-Jun	0.00	9.1	276	84	68	89	66	26	701
162	11-Jun	0.00	9.1	296	84	70	88	67	27	728
163	12-Jun	0.00	9.1	266	87	71	87	65	26	753
164	13-Jun	0.08	9.2	242	83	70	86	66	26	779
165	14-Jun	0.36	9.5	170	84	68	77	56	17	796
166	15-Jun	0.00	9.5	98	70	62	70	48	10	806
167	16-Jun	0.00	9.5	339	85	58	77	48	14	819
168	17-Jun	0.00	9.5	261	81	59	74	47	12	831
169	18-Jun	0.00	9.5	330	89	59	75	48	13	844
170	19-Jun	0.00	9.5	334	92	61	82	55	19	862
171	20-Jun	0.00	9.5	323	95	64	88	64	25	887
172	21-Jun	0.00	9.5	316	99	70	88	59	23	910
173	22-Jun	0.00	9.5	321	98	69	86	61	24	933
174	23-Jun	0.00	9.5	308	99	70	95	69	28	961
175	24-Jun	0.27	9.8	278	102	72	95	68	27	988
176	25-Jun	0.07	9.9	144	89	74	82	64	23	1011
177	26-Jun	0.00	9.9	158	87	73	83	65	24	1035
178	27-Jun	0.00	9.9	275	92	70	93	64	25	1060
179	28-Jun	0.00	9.9	154	89	72	86	64	25	1085
180	29-Jun	0.20	10.1	232	91	70	88	66	26	1111
181	30-Jun	0.00	10.1	309	94	72	85	56	21	1131
182	1-Jul	0.00	10.1	201	81	61	84	58	21	1152
183	2-Jul	0.00	10.1	321	94	57	70	52	11	1163
184	3-Jul	0.38	10.4	216	83	62	78	54	16	1179
185	4-Jul	0.00	10.5	104	81	68	80	58	19	1198
186	5-Jul	0.00	10.5	254	90	64	77	56	17	1215
187	6-Jul	0.00	10.5	211	88	67	80	54	17	1232
188	7-Jul	0.00	10.5	277	94	63	76	53	15	1246
189	8-Jul	0.00	10.5	284	97	63	83	59	21	1267
190	9-Jul	0.00	10.5	274	99	66	85	60	23	1290
191	10-Jul	0.00	10.5	305	103	67	88	60	23	1313
192	11-Jul	0.00	10.5	255	95	67	92	65	26	1338
193	12-Jul	0.00	10.5	136	87	72	88	64	25	1363
194	13-Jul	0.00	10.5	280	101	70	81	66	24	1387
195	14-Jul	0.00	10.5	263	101	70	90	66	26	1413
196	15-Jul	0.00	10.5	311	107	66	90	62	24	1437
197	16-Jul	0.00	10.5	296	110	68	91	65	26	1462
198	17-Jul	0.00	10.5	271	103	69	95	72	29	1491

Table A-1. Daily Precipitation, Solar Radiation, Soil and Air Temperatures and Growing Degree Units at the Arlington Research Station during 2005.

Day of year		Daily	Total	Daily Solar Radiation	Soil Temperature Max	Soil Temperature Min	Air Max	Air Min	Growing Degree Daily	Growing Degree Total
		inches		W m^{-2}	°F		°F			
199	18-Jul	0.00	10.5	294	108	72	96	72	29	1520
200	19-Jul	0.00	10.5	314	110	65	87	60	23	1543
201	20-Jul	1.06	11.5	175	87	66	88	66	26	1569
202	21-Jul	0.63	12.1	125	86	69	85	60	23	1592
203	22-Jul	0.00	12.1	286	93	67	80	62	21	1613
204	23-Jul	0.45	12.6	101	78	71	86	66	26	1639
205	24-Jul	0.00	12.6	275	98	72	86	69	28	1666
206	25-Jul	1.90	14.5	134	89	74	93	67	27	1693
207	26-Jul	0.00	14.5	85	76	68	86	67	27	1719
208	27-Jul	0.00	14.5	284	87	64	71	53	12	1731
209	28-Jul	0.00	14.5	299	90	64	74	56	15	1746
210	29-Jul	0.00	14.5	269	87	65	78	55	17	1763
211	30-Jul	0.00	14.5	265	87	66	78	56	17	1780
212	31-Jul	0.00	14.5	288	94	72	84	62	23	1803
213	1-Aug	0.00	14.5	291	94	68	85	64	25	1827
214	2-Aug	0.00	14.5	280	91	69	90	68	27	1854
215	3-Aug	0.51	15.0	178	87	74	91	67	27	1881
216	4-Aug	0.00	15.0	235	90	71	87	70	28	1909
217	5-Aug	0.00	15.0	294	89	66	81	53	17	1926
218	6-Aug	0.00	15.0	295	88	63	81	56	19	1944
219	7-Aug	0.00	15.0	293	89	64	84	60	22	1966
220	8-Aug	0.00	15.0	277	89	65	87	63	25	1991
221	9-Aug	0.00	15.0	249	89	68	91	63	25	2015
222	10-Aug	0.00	15.0	240	90	70	93	63	25	2040
223	11-Aug	0.51	15.5	68	75	69	84	62	23	2063
224	12-Aug	0.00	15.5	151	83	68	73	60	17	2079
225	13-Aug	0.00	15.5	106	74	65	80	54	17	2096
226	14-Aug	0.00	15.5	248	82	62	79	53	16	2112
227	15-Aug	0.00	15.5	260	83	60	79	56	18	2130
228	16-Aug	0.00	15.5	269	84	62	82	54	18	2148
229	17-Aug	0.13	15.6	242	82	61	81	61	21	2169
230	18-Aug	0.94	16.6	118	80	69	83	62	23	2191
231	19-Aug	0.00	16.6	214	86	71	83	66	25	2216
232	20-Aug	0.00	16.6	231	86	70	85	66	26	2241
233	21-Aug	0.00	16.6	265	83	66	83	50	17	2258
234	22-Aug	0.00	16.6	173	73	61	77	47	14	2271
235	23-Aug	0.00	16.6	237	75	57	68	49	9	2280
236	24-Aug	0.00	16.6	191	74	59	73	56	15	2295
237	25-Aug	0.00	16.6	156	76	64	76	57	17	2311
238	26-Aug	0.98	17.6	132	75	64	78	60	19	2330
239	27-Aug	0.00	17.6	246	81	68	82	54	18	2348
240	28-Aug	0.00	17.6	247	81	65	81	55	18	2366
241	29-Aug	0.00	17.6	251	81	62	82	56	19	2385
242	30-Aug	0.00	17.6	179	78	64	81	53	17	2402
243	31-Aug	0.00	17.6	236	79	62	78	53	16	2418
244	1-Sep	0.00	17.6	250	80	64	82	51	17	2434
245	2-Sep	0.00	17.6	246	77	60	79	55	17	2451
246	3-Sep	0.00	17.6	239	77	57	81	49	16	2467
247	4-Sep	0.00	17.6	195	75	64	80	62	21	2488
248	5-Sep	0.00	17.6	204	78	62	88	64	25	2513
249	6-Sep	0.00	17.6	165	76	65	86	57	22	2534
250	7-Sep	0.12	17.7	177	80	62	88	59	23	2557
251	8-Sep	0.00	17.7	115	74	65	74	52	13	2570
252	9-Sep	0.00	17.7	209	78	60	86	55	21	2590

Table A-1. Daily Precipitation, Solar Radiation, Soil and Air Temperatures and Growing Degree Units at the Arlington Research Station during 2005.

Day of year		Daily	Total	Daily Solar Radiation	Soil Temperature Max	Soil Temperature Min	Air Max	Air Min	Growing Degree Daily	Growing Degree Total
		inches		W m^{-2}	°F		°F			
253	10-Sep	0.00	17.7	199	80	65	91	64	25	2615
254	11-Sep	0.00	17.7	196	80	66	91	62	24	2639
255	12-Sep	0.00	17.7	187	79	64	91	64	25	2664
256	13-Sep	0.78	18.5	146	80	69	87	54	20	2684
257	14-Sep	0.00	18.5	212	73	58	72	44	11	2695
258	15-Sep	0.00	18.5	123	65	54	70	47	10	2705
259	16-Sep	0.00	18.5	219	71	56	77	45	14	2719
260	17-Sep	0.00	18.5	213	71	53	80	52	16	2735
261	18-Sep	0.52	19.0	154	72	60	81	59	20	2755
262	19-Sep	0.00	19.0	112	72	61	80	51	16	2770
263	20-Sep	0.00	19.0	209	74	57	83	51	17	2787
264	21-Sep	0.68	19.7	200	74	60	88	57	22	2809
265	22-Sep	0.20	19.9	65	70	63	71	44	11	2819
266	23-Sep	0.00	19.9	188	67	59	70	45	10	2829
267	24-Sep	0.03	19.9	49	64	58	68	59	14	2843
268	25-Sep	1.96	21.9	39	68	62	71	60	16	2858
269	26-Sep	0.00	21.9	111	67	57	69	42	10	2868
270	27-Sep	0.00	21.9	194	66	54	75	43	13	2880
271	28-Sep	0.41	22.3	34	62	54	66	34	8	2888
272	29-Sep	0.00	22.3	165	61	52	61	36	6	2894
273	30-Sep	0.00	22.3	188	62	53	72	43	11	2905
274	1-Oct	0.00	22.3	177	67	54	82	52	17	2922
275	2-Oct	0.00	22.3	141	68	58	79	61	20	2942
276	3-Oct	0.00	22.3	111	73	66	85	65	25	2967
277	4-Oct	0.00	22.3	136	75	67	87	66	26	2993
278	5-Oct	0.22	22.5	157	74	65	84	37	17	3010
279	6-Oct	0.00	22.5	72	65	54	48	36	0	3010
280	7-Oct	0.00	22.5	129	57	50	51	34	1	3010
281	8-Oct	0.00	22.5	80	55	48	53	34	2	3012
282	9-Oct	0.00	22.5	164	57	47	61	37	6	3017
283	10-Oct	0.00	22.5	129	56	47	56	38	3	3020
284	11-Oct	0.00	22.5	122	57	46	66	43	8	3028
285	12-Oct	0.00	22.5	53	59	51	64	46	7	3035
286	13-Oct	0.00	22.5	68	60	52	68	42	9	3044
287	14-Oct	0.00	22.5	156	61	49	74	41	12	3056
288	15-Oct	0.00	22.5	165	57	47	65	34	8	3064
289	16-Oct	0.00	22.5	161	56	42	63	40	7	3070
290	17-Oct	0.10	22.6	117	58	47	72	41	11	3081
291	18-Oct	0.00	22.6	153	59	47	74	38	12	3093
292	19-Oct	0.00	22.6	154	55	45	58	31	4	3097
293	20-Oct	0.00	22.6	99	52	42	57	33	4	3101
294	21-Oct	0.03	22.6	140	52	43	57	32	4	3104
295	22-Oct	0.06	22.7	43	50	41	49	30	0	3104
296	23-Oct	0.00	22.7	46	47	42	46	33	0	3104
297	24-Oct	0.00	22.7	.	.	.	47	30	0	3104
298	25-Oct	0.00	22.7	107	49	41	54	31	2	3106
299	26-Oct	0.00	22.7	89	49	38	50	28	0	3106
300	27-Oct	0.00	22.7	131	48	35	53	27	2	3108
301	28-Oct	0.00	22.7	136	49	34	57	25	4	3111
302	29-Oct	0.00	22.7	127	50	35	65	27	8	3119
303	30-Oct	0.18	22.9	71	51	45	59	44	5	3123
304	31-Oct	0.00	22.9	89	54	46	58	29	4	3127

Table A-2. Monthly and total precipitation (inches) data for the Arlington Research Station.

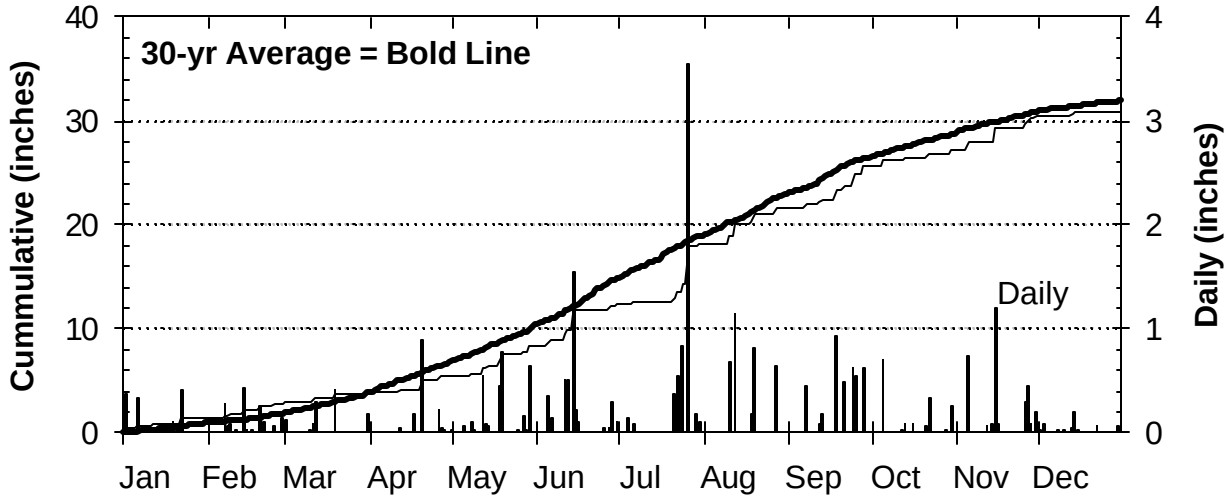
Year	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Annual
1976	0.5	1.5	4.1	4.4	1.3	0.8	4.6	3.3	1.0	1.7	0.1	0.3	23.5
1977	0.5	1.4	3.1	2.6	2.4	2.7	5.4	2.7	2.6	2.3	2.3	1.0	28.9
1978	0.5	0.2	0.2	3.0	7.1	8.0	4.1	1.0	5.3	1.7	3.2	1.0	35.2
1979	1.2	0.7	3.1	1.7	2.7	3.8	2.7	7.7	0.2	2.9	1.8	1.5	29.8
1980	1.2	0.2	0.5	1.8	2.1	3.6	2.1	12.9	9.8	1.1	1.2	0.7	37.2
1981	0.1	2.7	0.6	3.7	0.3	3.6	7.0	4.5	3.4	3.1	1.1	0.9	31.0
1982	1.4	0.1	2.3	3.8	4.0	3.1	2.6	3.2	1.0	1.3	4.8	4.1	31.5
1983	0.4	1.8	2.4	2.0	3.9	2.1	4.5	4.5	3.1	3.6	3.1	2.4	33.8
1984	0.7	1.5	1.2	4.1	3.2	7.6	2.9	1.8	3.6	5.9	2.5	1.5	36.4
1985	1.4	1.8	2.1	2.4	2.8	3.5	5.9	3.6	6.9	3.1	5.3	1.4	40.1
1986	1.2	1.0	1.5	2.7	2.1	4.2	4.6	4.9	10.7	1.9	1.3	0.5	36.7
1987	0.5	0.0	1.9	2.6	4.7	0.6	4.0	4.9	4.9	1.6	4.9	1.4	32.2
1988	2.1	1.0	1.3	3.3	1.0	1.5	1.6	2.9	3.9	2.2	1.5	1.2	23.4
1989	0.7	0.9	1.5	1.4	1.8	2.0	3.8	4.3	3.8	2.4	1.3	0.5	24.3
1990	1.8	0.9	3.7	2.5	4.3	6.3	1.6	5.4	1.2	2.3	1.7	2.4	34.2
1991	1.0	0.4	3.0	4.5	1.9	2.6	3.8	1.8	4.7	6.8	3.6	1.4	35.4
1992	0.5	1.6	1.7	4.0	1.2	1.2	5.8	1.9	7.5	1.3	5.2	2.8	34.6
1993	1.6	1.0	2.3	7.1	4.5	6.1	9.4	3.2	4.2	1.2	1.6	0.2	42.3
1994	0.9	2.0	0.1	2.3	2.0	7.9	6.1	4.0	4.7	0.5	2.8	0.8	34.0
1995	1.3	0.1	2.2	3.4	6.0	2.2	2.8	5.0	1.8	4.2	2.4	0.7	31.9
1996	1.8	0.5	0.3	2.6	3.2	7.8	2.4	2.8	0.9	3.3	0.8	1.6	28.0
1997	0.7	2.8	2.2	2.0	3.3	4.9	6.3	3.2	1.6	1.4	1.0	0.8	30.0
1998	1.2	0.9	3.3	4.0	4.1	6.8	2.1	6.7	3.0	3.4	1.6	0.3	37.4
1999	2.8	1.2	0.6	6.0	3.9	5.3	3.4	2.5	1.4	1.4	1.3	1.0	30.9
2000	1.0	2.3	1.4	3.4	10.5	7.2	3.4	3.3	3.1	0.7	1.5	1.5	39.3
2001	0.8	1.4	0.4	3.1	4.7	7.0	2.9	5.3	5.2	1.7	1.7	1.4	35.8
2002	0.5	1.1	0.8	3.4	3.2	4.3	2.9	3.7	1.9	4.0	2.1	0.6	28.7
2003	0.4	0.2	1.4	2.2	3.8	3.3	3.3	1.8	4.0	1.3	5.3	1.9	28.9
2004	0.3	1.2	2.7	1.9	10.3	4.1	4.3	3.0	0.5	3.3	1.6	1.6	34.8
2005	1.5	1.2	1.8	0.8	3.4	1.5	4.4	3.1	4.7	0.6	3.8	1.0	27.6
30-year Average	1.0	1.1	1.8	3.1	3.7	4.2	4.0	4.0	3.7	2.4	2.4	1.3	32.6

Table A-3. Average monthly and annual temperature (^{o}F) data for the Arlington Research Station.

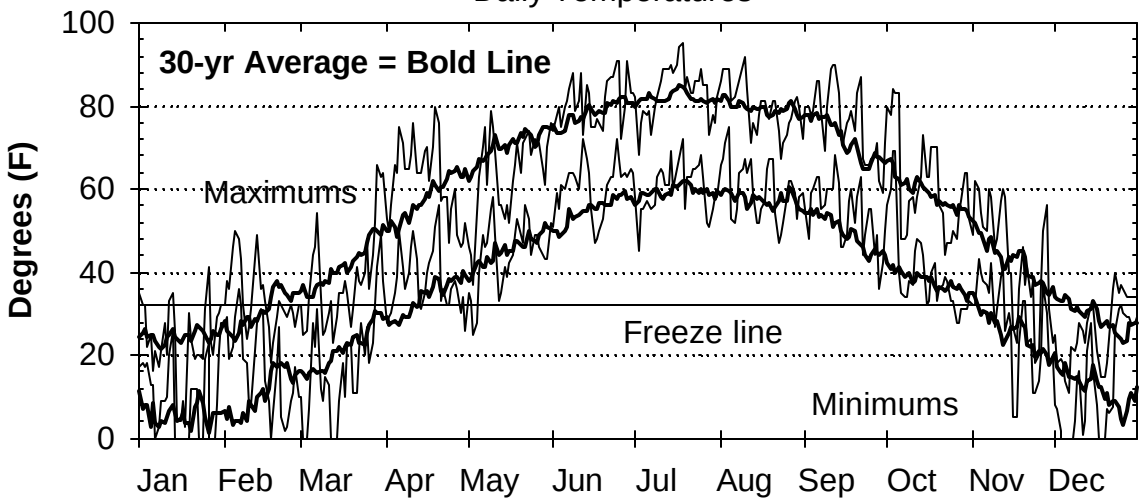
Year	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Annual
1976	15	27	35	49	55	70	73	68	60	45	28	12	45
1977	3	22	40	53	66	66	74	66	62	49	35	18	46
1978	10	12	28	45	58	67	70	70	66	48	35	20	44
1979	6	11	30	42	56	66	70	67	62	48	35	29	44
1980	17	17	28	47	60	66	73	71	61	45	37	22	45
1981	20	25	37	49	56	67	70	69	59	47	38	22	47
1982	8	19	29	41	62	62	72	68	60	52	36	30	45
1983	23	27	34	43	53	67	75	74	62	51	38	10	46
1984	15	30	27	46	55	69	69	72	61	52	36	26	46
1985	12	17	38	52	62	64	71	66	62	50	32	12	45
1986	18	19	36	50	59	66	72	64	62	51	32	25	46
1987	23	31	38	51	61	71	74	68	62	45	40	27	49
1988	13	18	35	47	63	72	75	75	64	45	37	24	47
1989	28	15	30	46	57	66	73	70	60	51	33	13	45
1990	28	26	37	49	55	68	70	69	64	49	40	21	48
1991	14	26	36	50	63	70	71	70	59	49	29	24	47
1992	24	28	33	43	58	64	66	64	59	47	31	22	45
1993	19	19	29	42	57	64	69	69	55	46	33	23	44
1994	6	13	33	46	56	68	67	67	64	53	40	28	45
1995	20	23	37	44	57	72	73	76	60	52	29	21	47
1996	16	22	29	44	55	68	69	70	62	51	30	23	45
1997	17	24	33	42	51	68	69	65	61	50	32	27	45
1998	23	33	33	48	62	66	71	71	65	51	39	30	50
1999	15	30	35	48	60	68	75	67	59	48	43	25	48
2000	20	29	41	45	61	65	69	71	62	54	34	10	47
2001	20	17	30	51	59	67	72	71	59	48	46	31	48
2002	26	27	29	46	54	69	75	70	64	44	34	27	47
2003	17	17	32	44	56	66	71	72	61	49	35	28	46
2004	14	22	37	47	56	65	69	64	65	50	39	24	46
2005	17	27	30	50	54	72	73	70	65	50	36	17	47
30-year Average	17	22	33	47	58	67	71	69	62	49	35	22	46

2005 Weather Summary for Hancock, WI

Precipitation



Daily Temperatures



Growing Degree Units (modified - base= 50, max = 86)

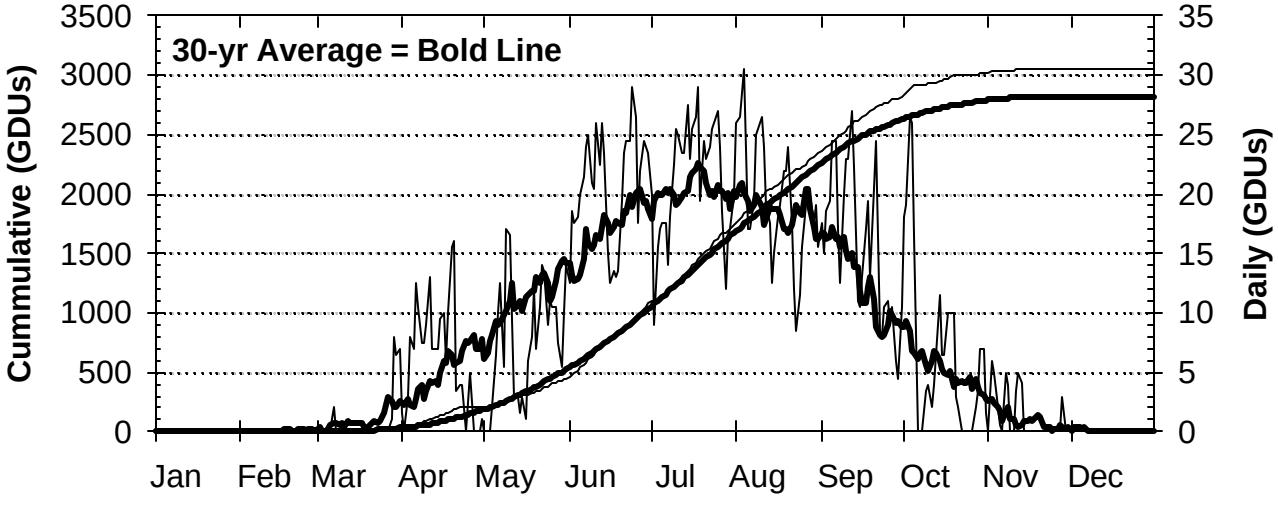


Table A-4. Monthly and total precipitation (inches) data for the Hancock Research Station.

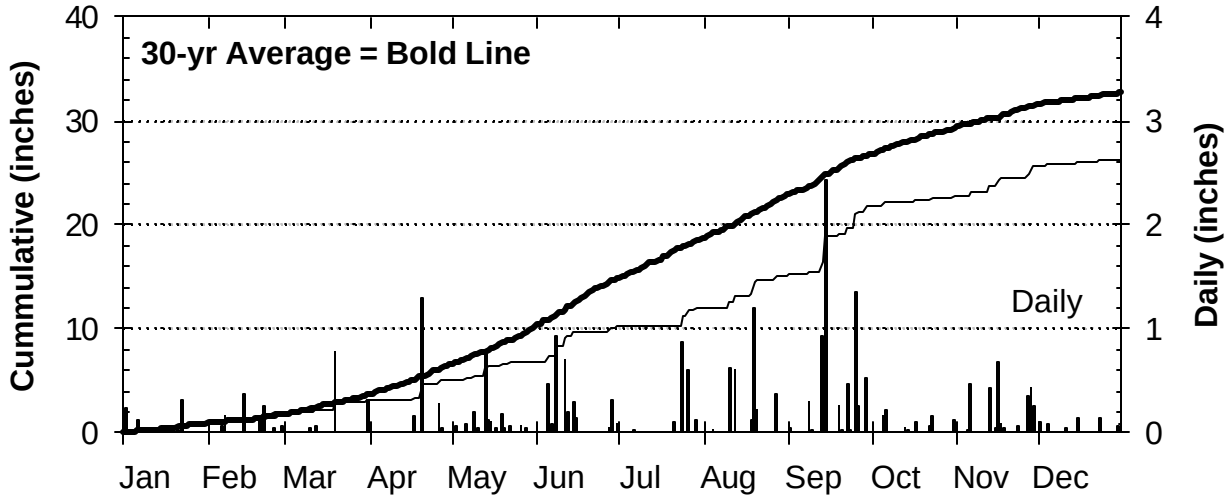
Year	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Annual
1976	0.9	1.2	4.0	3.4	1.4	1.8	3.0	0.8	0.4	1.3	0.1	0.3	18.5
1977	0.4	1.1	3.4	3.0	2.5	2.7	6.0	2.8	4.4	2.2	3.0	2.0	33.5
1978	0.9	0.3	0.2	4.3	2.6	3.7	6.2	4.2	7.4	1.9	2.1	0.9	34.6
1979	1.4	1.1	3.8	1.4	4.3	2.8	3.8	6.5	0.6	2.8	2.7	0.7	32.0
1980	1.6	0.2	0.7	2.0	3.6	5.0	1.9	9.2	3.8	2.1	0.6	0.7	31.4
1981	0.1	2.6	0.6	5.1	0.7	2.4	2.7	2.8	2.5	3.1	0.4	0.7	23.6
1982	1.0	0.1	1.9	3.5	3.3	4.1	5.4	3.6	1.9	1.5	5.4	2.1	33.9
1983	0.7	1.4	2.2	1.0	5.5	1.4	3.2	7.5	5.5	2.5	2.4	1.0	34.3
1984	0.4	1.2	1.4	3.5	2.6	4.7	3.2	4.4	5.4	4.9	3.1	1.5	36.2
1985	0.5	1.5	2.2	1.8	2.3	3.4	4.4	0.1	4.9	1.9	3.8	0.9	27.8
1986	0.3	1.3	2.2	2.2	1.8	4.3	5.1	2.3	10.8	2.0	1.2	0.3	33.7
1987	0.6	0.3	1.5	2.8	2.9	6.7	2.3	1.4	3.1	1.8	3.4	1.2	28.1
1988	1.4	0.3	1.4	1.9	1.0	1.2	5.5	4.0	4.8	1.9	3.3	0.7	27.3
1989	0.3	0.4	1.8	0.5	7.3	2.1	3.0	1.7	1.5	4.3	1.4	0.3	24.6
1990	1.0	0.6	2.9	2.0	4.8	8.1	3.9	6.4	2.9	2.7	1.0	2.1	38.6
1991	0.7	0.4	2.8	4.6	6.5	1.3	3.9	1.8	3.3	3.6	4.4	1.5	34.6
1992	0.7	0.6	2.4	2.8	2.5	1.7	4.2	3.2	8.0	1.4	4.4	2.2	34.0
1993	1.1	0.6	0.9	5.0	5.7	6.9	9.0	5.3	2.7	2.0	2.0	0.3	41.5
1994	1.4	1.1	0.8	5.1	1.5	3.7	6.8	3.8	2.8	0.9	1.6	0.3	29.9
1995	0.7	0.3	2.7	2.8	3.1	2.0	2.3	7.8	2.5	4.7	1.9	0.5	31.2
1996	2.6	1.1	1.2	3.7	1.7	6.9	4.6	2.1	1.2	2.8	1.1	1.3	30.3
1997	1.1	0.9	2.0	0.9	4.5	3.5	8.3	3.6	3.4	1.5	0.4	0.6	30.7
1998	1.7	1.3	4.5	1.6	3.0	6.4	2.5	5.1	2.3	1.8	1.9	0.4	32.5
1999	2.1	1.7	0.3	5.9	3.3	3.7	10.7	4.5	1.3	2.4	1.4	0.6	37.8
2000	1.2	0.9	1.1	3.8	5.1	6.9	2.3	4.6	3.5	0.6	2.6	1.5	34.1
2001	1.3	1.4	0.8	3.6	7.2	4.1	2.7	4.6	4.6	2.1	2.0	0.8	35.1
2002	0.4	2.2	2.2	4.1	2.9	16.5	3.2	4.3	3.0	3.3	0.2	0.4	42.7
2003	0.7	0.6	2.0	1.5	5.3	3.4	2.3	0.7	2.9	1.1	3.6	1.5	25.5
2004	0.9	1.1	3.0	1.5	7.2	7.7	2.7	3.6	0.5	3.3	1.9	1.2	34.5
2005	1.4	1.5	1.1	1.4	3.0	3.9	5.9	3.5	4.0	1.6	3.2	0.6	31.0
30-year Average	1.0	1.0	1.9	2.9	3.6	4.4	4.4	3.9	3.5	2.3	2.2	1.0	32.1

Table A-5. Average monthly and annual temperature (^{o}F) data for the Hancock Research Station.

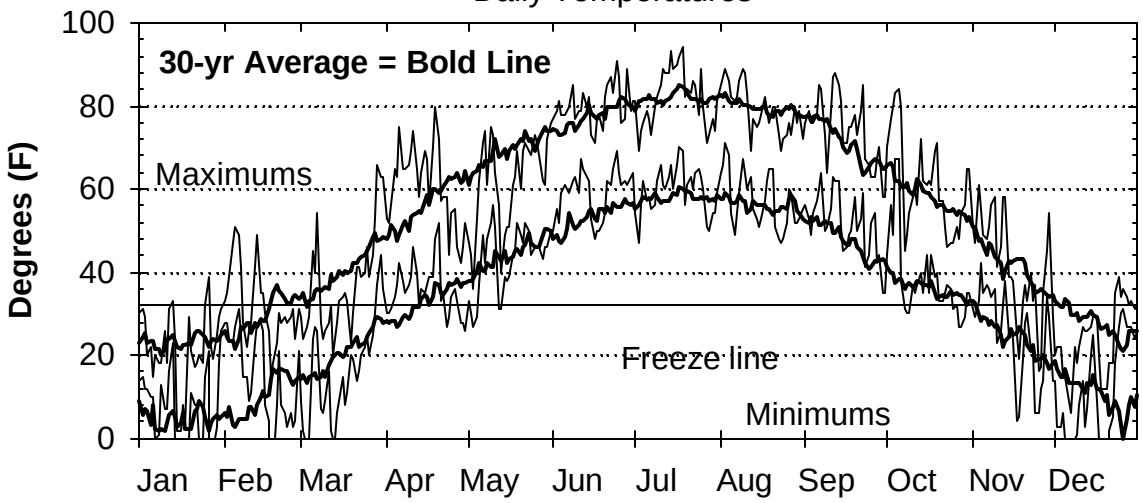
Year	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Annual
1976	12	26	33	48	55	69	72	68	60	45	27	11	44
1977	3	21	39	52	67	65	74	66	61	48	35	16	46
1978	9	10	27	44	59	66	68	69	65	48	34	18	43
1979	6	11	30	42	55	66	70	67	63	48	33	27	43
1980	16	16	27	48	60	66	73	70	60	44	36	21	45
1981	18	24	36	49	56	67	71	69	58	47	38	20	46
1982	6	18	29	42	62	61	71	67	60	50	35	28	44
1983	22	27	33	42	52	68	75	73	62	50	37	9	46
1984	14	30	25	47	55	68	69	71	59	52	35	23	46
1985	13	18	36	51	62	64	70	66	61	49	30	10	44
1986	17	18	35	51	60	67	73	65	61	50	30	24	46
1987	21	29	37	51	62	70	74	68	61	43	38	26	48
1988	12	14	32	46	63	72	74	74	63	44	37	20	46
1989	25	14	27	44	56	66	73	69	60	51	31	11	44
1990	28	24	36	49	55	68	70	69	64	49	40	19	48
1991	13	25	34	49	63	70	70	70	58	49	29	23	46
1992	22	28	31	42	59	64	65	65	59	47	31	21	45
1993	17	18	30	41	58	64	69	70	55	48	32	23	44
1994	6	14	34	47	59	69	68	66	63	52	38	27	45
1995	19	20	34	41	57	71	72	74	59	50	26	18	45
1996	12	19	25	42	54	67	67	69	61	49	26	20	43
1997	14	23	31	43	50	67	68	65	61	49	31	26	45
1998	20	31	31	48	63	64	70	69	66	49	38	26	48
1999	12	27	33	47	59	66	73	66	59	47	41	22	46
2000	15	27	38	43	59	64	68	69	60	53	31	6	44
2001	19	16	29	50	57	66	71	70	58	46	45	28	46
2002	26	25	26	45	52	68	73	69	63	43	32	25	46
2003	14	14	30	43	55	65	70	72	62	48	34	26	45
2004	11	21	35	46	55	64	69	64	65	50	39	23	45
2005	15	26	28	50	54	71	72	70	65	50	36	19	46
30-year Average	15	21	32	46	58	67	71	69	61	48	34	20	45

2005 Weather Summary for Marshfield, WI

Precipitation



Daily Temperatures



Growing Degree Units (modified - base= 50, max = 86)

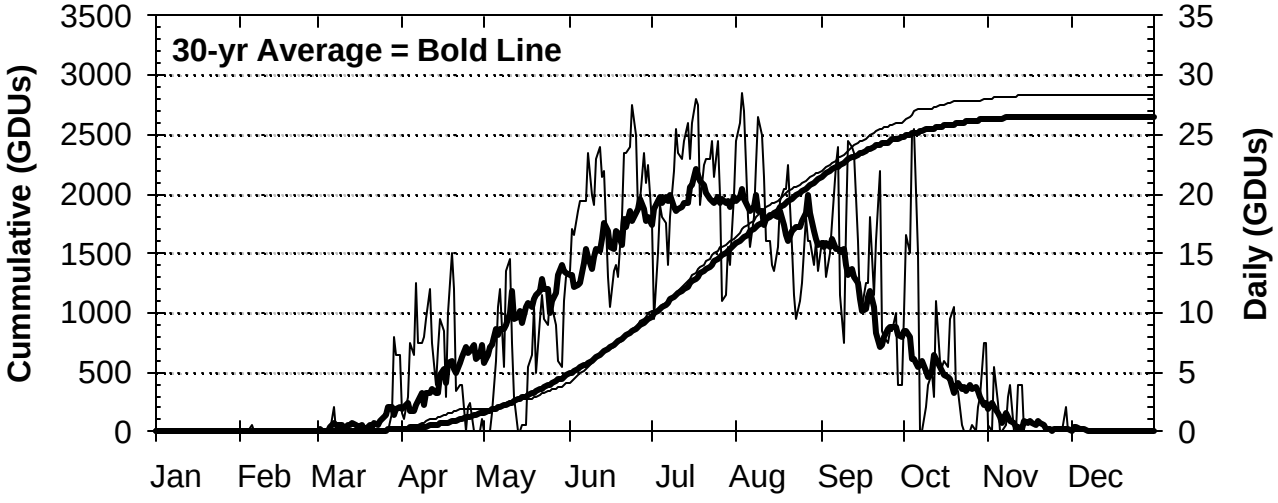


Table A-6. Monthly and total precipitation (inches) data for the Marshfield Research Station.

Year	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Annual
1976	1.1	0.9	3.1	5.3	2.4	1.1	5.5	0.7	0.7	0.7	0.0	0.5	22.1
1977	0.5	0.9	3.3	2.0	3.0	5.2	3.0	3.4	4.1	3.7	3.1	2.3	34.4
1978	0.6	0.1	0.1	4.0	5.5	4.3	6.9	5.0	5.2	1.6	2.1	1.3	36.7
1979	1.1	1.5	3.4	1.1	6.1	5.4	2.7	4.1	0.3	4.9	2.7	0.5	33.8
1980	1.4	0.4	0.6	1.7	3.7	4.7	2.1	9.6	7.6	2.5	0.2	0.7	35.2
1981	0.1	2.4	0.7	4.7	2.4	6.4	3.3	6.3	2.9	3.4	0.6	1.0	34.1
1982	1.4	0.1	1.3	3.4	3.0	3.2	7.4	3.0	6.1	1.9	3.5	2.6	36.9
1983	1.1	1.3	1.6	1.8	4.2	0.7	2.8	5.7	4.7	3.2	5.5	1.3	33.7
1984	0.4	2.0	1.0	4.3	2.1	9.6	4.3	2.5	3.1	5.6	2.5	2.7	40.2
1985	0.3	0.7	4.2	2.5	2.9	3.3	2.1	5.8	6.1	1.8	4.4	1.9	36.1
1986	0.6	1.4	1.9	2.2	1.4	5.4	10.5	3.9	9.8	3.0	0.8	0.6	41.4
1987	0.7	0.0	1.4	1.4	1.9	3.0	6.1	2.6	2.5	1.3	2.8	1.5	25.1
1988	1.1	0.2	1.5	1.9	3.2	1.2	2.4	3.7	3.2	1.4	3.5	0.6	23.8
1989	0.5	0.4	2.5	0.8	7.0	1.9	2.5	3.1	1.1	2.6	1.5	0.3	24.2
1990	0.8	0.6	4.2	3.4	3.9	5.5	2.6	6.9	2.9	2.6	1.0	1.9	36.3
1991	0.4	0.7	2.5	4.4	6.5	2.2	5.7	2.2	5.1	1.8	5.8	1.5	38.6
1992	0.5	0.7	2.1	2.8	3.8	1.8	4.0	2.7	8.0	1.0	4.0	1.5	33.1
1993	1.4	0.2	1.6	4.1	5.2	8.7	3.5	6.5	3.8	2.0	1.7	0.4	39.2
1994	0.8	0.6	0.3	4.4	1.0	2.3	7.7	2.1	4.9	1.5	2.5	0.3	28.3
1995	0.6	0.4	2.5	2.3	2.8	1.1	2.2	8.9	2.2	5.1	1.8	0.5	30.2
1996	2.5	0.5	1.8	3.1	2.6	8.6	2.0	2.0	2.8	3.1	2.8	1.4	33.1
1997	1.8	0.4	2.0	0.5	3.0	3.4	5.1	6.5	3.1	3.2	0.3	0.6	29.9
1998	1.8	1.7	2.2	1.9	3.1	8.6	0.5	3.2	0.6	2.8	1.5	0.3	27.9
1999	1.9	1.0	0.2	5.7	3.5	1.8	8.3	3.7	1.4	1.2	1.8	0.4	30.9
2000	1.4	0.5	2.0	1.9	3.7	7.5	2.3	4.0	4.7	0.3	2.0	1.3	31.5
2001	0.9	1.2	0.6	3.6	5.7	6.1	3.2	3.9	4.1	1.9	2.5	1.1	34.7
2002	0.3	1.9	2.7	3.3	3.1	9.0	2.7	6.0	6.5	3.8	0.1	0.3	39.8
2003	0.4	0.8	1.9	3.1	3.9	2.8	1.5	0.9	2.2	1.1	2.1	1.5	22.3
2004	0.7	1.4	2.8	1.3	8.7	4.2	1.9	2.5	1.6	4.2	1.6	1.8	32.6
2005	0.8	1.2	1.2	1.8	1.9	3.3	1.7	3.2	6.7	0.9	2.9	0.7	26.3
2035	0.9	0.9	1.9	2.8	3.7	4.4	3.9	4.2	3.9	2.5	2.3	1.1	32.4

Table A-7. Average monthly and annual temperature (^{o}F) data for the Marshfield Research Station.

Year	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Annual
1976	11	24	30	46	53	67	71	67	57	43	25	9	42
1977	1	20	37	51	64	64	72	63	59	46	32	16	44
1978	8	12	27	42	58	64	67	68	62	46	30	14	42
1979	3	9	28	41	52	63	68	65	60	44	31	25	41
1980	13	15	24	46	59	65	70	67	58	43	35	19	43
1981	18	22	35	46	55	65	68	67	57	45	37	18	44
1982	4	16	27	40	60	59	70	66	57	48	32	26	42
1983	20	26	32	41	51	65	73	72	60	48	35	8	44
1984	13	28	25	46	54	67	68	70	57	50	33	21	44
1985	12	17	35	49	61	63	69	66	60	49	28	8	43
1986	16	17	34	49	59	66	71	65	60	49	29	23	45
1987	21	28	36	51	60	69	72	68	61	42	38	26	48
1988	12	14	31	46	60	69	74	73	61	43	35	19	45
1989	22	12	26	43	55	65	72	69	59	50	29	9	43
1990	25	21	34	47	54	67	69	68	62	47	38	19	46
1991	12	23	33	49	61	70	69	69	57	47	27	20	45
1992	20	26	30	42	59	64	66	.	59	48	32	21	43
1993	17	19	30	42	57	63	70	70	55	48	32	22	44
1994	6	15	34	46	59	69	69	66	63	52	38	27	46
1995	19	20	35	41	57	71	73	74	59	49	26	18	45
1996	12	18	25	42	54	68	68	70	60	49	27	19	43
1997	13	23	28	42	50	67	68	64	60	48	30	26	43
1998	20	31	32	48	62	64	71	69	64	49	37	25	48
1999	12	26	32	48	59	67	73	67	58	46	40	22	46
2000	15	24	38	43	58	63	68	68	58	51	32	8	44
2001	19	13	27	45	56	63	71	70	57	46	43	27	45
2002	23	26	24	43	51	67	73	67	62	42	32	23	44
2003	13	11	29	43	55	64	69	71	60	46	32	25	43
2004	10	20	32	45	53	62	68	62	64	48	36	19	43
2005	13	24	27	48	53	70	71	68	63	50	33	17	45
2035	14	20	31	45	57	66	70	68	60	47	33	19	44

Observations and Data Collected

STATISTICAL ANALYSIS

All data are analyzed using generally accepted statistical tests. In most cases the probabilities of main effects and interactions are shown. The number listed is a percent probability that the effect difference is due to chance (i.e. not due to treatment). A Fisher's Protected Least Significant Difference (LSD) is calculated for all main effect probabilities of 10 percent or less.

Table B-1.

Corn Measurements		
Grower Return	Units	$/acre
	Formula	(weighted price per bushel x yield) - (yield x (handling + hauling + trucking)) -(storage x 0.02) - (yield x (grain moisture-15.5) x drying).
	Determination	Handling cost = $0.02 per bushel Hauling cost = $0.04 per bushel Trucking cost = $0.11 $ per bushel (100 miles) On-farm drying cost = $0.02 per point per bushel Storage = (yield*0.25 *4) + (yield*0.25*8); On-farm $0.02/bu. 30days Weighted Price per Bushel = $1.86 per bushel = (50% December Average Cash price) + (25% March CBOT Futures price) + (25% July CBOT Futures price). December Average Cash price derived from Wisconsin Ag Statistics; CBOT Futures prices derived from closing price on first business day in December.
Grain Yield	Units	Bu/acre
	Formula	(43560/(plot width * plot length in feet)) * weight of sample in lbs.* ((100-sample moisture)/(100-15.5{moisture standard}))/56 lb/bu
Moisture	Units	%
	Determination	GRAIN: determined by detector on combine or wet weight method15.5% is standard corn moisture WHOLE PLANT: moisture of subsample of chopped whole plant moisture of subsample of chopped stover (whole plant less ears)
Test Weight	Units	lbs/bushel
	Determination	weight of known volume converted to lbs/bushel
Plant Height	Units	inches or centimeters
	Determination	plant height from soil surface to top of canopy.
	Observations	average of several plants in each plot
Ear Height	Units	inches
	Determination	height from soil surface to base of ear
	Observations	average of several plants in each plot
Broken Stalks	Units	%
	Determination	at harvest
	Observations	number of stalks broken below the ear + number of plants lodged at >45% from the whole plot (22' x 2 rows)
	Formula	(broken stalks + lodged plants)/total stalks x 100%
Kernel Weight	Units	mg/seed
	Determination	weight of 100 seeds converted to mg/seed
Plant Density	Units	plants per acre
	Determination	Early = plants at v3-v5 stage Late = just prior to harvest
	Observations	plants counts on whole plot (22' x 2 rows)
Ear Density	Units	Ears per acre
	Determination	Just prior to harvest
	Observations taken	Ear counts are taken from whole plot (22' x 2 rows)
Leaf Development	Units	none
	Determination	count of leaf number
	Observations	LEAF COLLARS: total number of visible leaf collars HAIL ADJUSTERS: total number of drooping leaves TOTAL: total number of leaves visible

Table B-1.

Forage Yield (Whole Plant)	Units	Tons of dry mater per acre
	Formula	weight of sample in lbs.* (43560/(2000*plot width * plot length in feet)).* ((100-sample moisture)/100)
Kernel Milk	Units	%
	Determination	percent milk remaining in kernel at harvest
	Observations	visual average of three ears from a non-harvest row
Kernel Milk Rating (KMR)	Formula	% Kernel Milk x 5
	Scale	0-5
Stover Moisture Rating (SMR)	Formula	% Greenness x Leaf Rating (Leaf Rating scale 1-5, Based on % of upright leaves)
	Scale	0-5
Visual Moisture Rating (VMR)	Formula	KMR + SMR
	Scale	0-10
Crude Protein (CP)	Units	%
	Determination	wet lab or NIRS procedure on plot sub sample
Neutral Detergent Fiber	Units	%
	Determination	wet lab or NIRS procedure on plot sub sample
Neutral Detergent Fiber Digestibility	Units	%
	Determination	wet lab or NIRS procedure on plot sub sample
Acid Detergent Fiber	Units	%
	Determination	wet lab or NIRS procedure on plot sub sample
In Vitro Digestibility	Units	%
	Determination	In vitro wet lab or NIRS procedure on plot sub sample
Starch content	Units	%
	Determination	wet lab or NIRS on plot sub sample
Kernel Rot	Units	none
	Determination	visual average of 5 plants at V2-V4
	Scale	1=deterioration 2=no deterioration
Emergence	Units	%
	Formula	Early stand / late stand count x 100%
Residue cover	Units	%
	Determination	Point transects centered on row.
% Survival	Units	%
	Formula	Early stand / late stand count x 100%
Rind Strength	Units	Load-lb/section
	Determination	Stalk strength of broadside of internodes below the top ear attachment
	Equipment	AMETEK- Accuforce Cadet Force Gauge
Root Rating	Determination	The ISU 0 to 3 node-injury root rating scale was used. A rating of 0.50 or below is considered acceptable economic root protection.
	Scale	0-3

Table B-1.

Soybean Measurements

Grower Return	Units	$/acre
	Formula	(weighted price per bushel x yield) - (yield x (handling + hauling + trucking)) -(storage x 0.02).
	Determination	Handling cost = $0.02 per bushel Hauling cost = $0.04 per bushel Trucking cost = $0.11 $ per bushel (100 miles) Storage = (yield*0.25*4)+(yield*0.25*8); On-farm $0.02/bu. 30days Weighted Price per Bushel = $5.54 per bushel = (50% December Average Cash price) + (25% March CBOT Futures price) + (25% July CBOT Futures price). December Average Cash price derived from Wisconsin Ag Statistics; CBOT Futures prices derived from closing price on first business day in December.
Grain Yield	Units	Bu/acre
	Formula	(43560/(plot width * plot length in feet)) * weight of sample in lbs.* ((100-sample moisture)/(100-13{moisture standard}))/60 lb/bu
Grain Moisture	Units	%
	Determination	determined by detector on combine 13% is standard soybean moisture
Plant Height	Units	inches
	Determination	plant height from soil surface to tip of main stem
	Observations	average of several plants in each plot
Plant Lodging	Units	none
	Determination	based on average erectness of main stem of plant
	Observations	whole plot is assessed
	Scale	1=ALL PLANTS ERECT 2=SLIGHT LODGING 3=PLANTS LODGED AT 45 DEGREE ANGLE 4=PLANTS LODGED AT 60-80 DEGREE ANGLE
Seed Weight	Units	seeds/lb
	Determination	weight of 300 seeds converted to seeds/lb
Plant Density	Units	plants per acre
	Determination	early = plants at V3 to V5 stage late = just prior to harvest
	Observations	plants counts are taken from 5 linear feet of plot X the harvested area
% Survival	Units	%
	Formula	Early stand / late stand count x 100%

Wheat Measurements

Grower Return	Units	$/acre
	Formula	(weighted price per bushel x yield) – (yield x (handling + hauling + trucking)) -(storage x 0.02).
	Determination	Handling cost = $0.02 per bushel Hauling cost = $0.04 per bushel Trucking cost = $0.11 $ per bushel (100 miles) Storage = (yield*0.25*4)+(yield*0.25*8); On-farm $0.02/bu. 30days Weighted Price per Bushel = $3.07 per bushel = (50% December Average Cash price) + (25% March CBOT Futures price) + (25% July CBOT Futures price). December Average Cash price derived from Wisconsin Ag Statistics; CBOT Futures prices derived from closing price on first business day in December.
Grain Yield	Units	Bu/acre
	Formula	(43560/(plot width * plot length in feet)) * weight of sample in lbs.* ((100-sample moisture)/(100-13.5{moisture standard}))/60 lb/bu
Grain Moisture	Units	%
	Determination	Determined by sensor on combine 13.5% is standard wheat moisture

Soils Information

Table B-2.

Location Lat - Long	Soil Series	Soil Family	Soil Subgroup
Arlington ARS 43 ^{o} 18 ’- 89^{o} 21’	Plano silt loam (predominant soil)	Fine-silty, mixed, mesic	Typic Agriudoll
	Ringwood silt loam	Fine-loamy, mixed, mesic	Typic Argiudoll
	Saybrook silt loam	Fine-silty, mixed, mesic	Typic Argiudoll
	Radford silt loam	Fine-silty, mixed, mesic	Fluvaquentic Hapludoll
	Sable silt loam	Fine-silty, mixed, mesic	Typic Haplaquoll
	Huntsville silt loam	Fine-silty, mixed, mesic	Cumulic Hapludoll
	Elburn silt loam	Fine-silty, mixed mesic	Aquic Argiudoll
	Channahon silt loam	Loamy, mixed, mesic	Lithic Argiudoll
Hancock ARS 44 ^{o} 7 ‘ - 89 ^{o} 32 ‘	Plainfield loamy sand (Predominant soil)	Mixed, mesic	Typic Udipsamment
	Sparta loamy sand	Sandy, mixed, mesic	Entic Hapludoll
Lancaster ARS 42 ^{o} 50 ‘ - 90 ^{o} 47 ‘	Fayette silt loam	Fine-silty, mixed, mesic	Typic Hapludalf
	Rozetta silt loam	Fine-silty, mixed, mesic	Typic Hapludalf
	Dubuque silt loam	Fine-silty, mixed, mesic	Typic Hapludalf
Marshfield ARS 44 ^{o} 39 ‘ - 90 ^{o} 8 ‘	Withee silt loam (Predominant soil)	Fine-loamy, mixed	Aquic Glossoboralf
	Marshfield silt loam	Fine-loamy, mixed, frigid	Typic Ochraqualf
Rhinelander ARS 45 ^{o} 39 ‘ - 89 ^{o} 22 ‘	Vilas loamy sand	Sandy, mixed, frigid	Entic Haplorthod
	Au Gres loamy sand	Sandy, mixed, frigid	Entic Haplaquod
Spooner ARS 45 ^{o} 49 ‘ - 91 ^{o} 53 ‘	Chetek sandy loam	Coarse-loamy, mixed	Eutric Glossaboralf
	Pence sandy loam	Sandy, mixed, frigid	Entic Haplorthod
	Omega loamy sand	Sandy, mixed, frigid	Typic Udipsamment
	Antigo silt loam	Well drained silt loam-sandy loam soils	

FIELD EXPERIMENT HISTORY

Title: **Determining Corn Hybrid Maturity**

Experiment: 01 Growth and Development **Trial ID:** 2718 **Year:** 2005

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

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

Supported By: HATCH

Site Information

Field: ARS428 **Previous Crop:** Soybean **Soil Type:** Plano Silt Loam

Soil Test: **Date:** 11/1 /05 **pH** 6.6 **OM (%)** 3.6 **P (ppm)** 65 **K (ppm)** 130

Plot Management

Tillage Operations: Chisel Plow Field Cultivator Cultivated 6/9/05

Fertilizer:

Preplant Analysis:	46-0-0	**Rate lbs/A:** 325 lbs/A	**Date:**	4 /14/05
Starter Analysis:	9-24-24	**Rate lbs/A:** 150 lbs/A	**Date:**	4 /28/05
Post plant Analysis:	N/A	**Rate lbs/A:** N/A	**Date:**	N/A

Manure: N/A

Herbicide: Outlook 20 oz/A
Hornet 4 oz/A
Callisto 3oz/A

Insecticide: None

Hybrid: See Factors

Irrigation: None

Planting Date: 4/28/05 **Planting Depth:** 1.5" **Row Width:** 30"

Target Plant Density: 30000 **plants per acre** **Planting Method:** Kinze Plot Planter

Harvest Date: 10/10/05 **Harvest Method:** Massey Ferguson 8XP

Experimental Design

Design: RCB **Replications:** 3

Plot Size Seeded: 10' x 25' **Experiment Size:** 0.28 Acre

Harvest Plot Size: 5' x 22' **Harvest Plant Density:** 29858 **plants per acre**

Factors/Treatments:

Hybrids:

Brunner S2055RR
NK Brand N17R3
Pioneer 39D82
Renk RK232
NK Brand N2555Bt
Dahlman D4515
Dekalb DKC44-42
NK Brand N32-L9
Pioneer 37R71
Kaltenberg 5151Bt
Pioneer 35R58
AgriGold A6333Bt
Dekalb DKC5878
Pioneer 34N44
Jung 6710RRYGCB
High Cycle 8B524

Results: Table C-1 and C-2.

Table C-1. Determining Corn Hybrid Maturity - Comparison of Hybrids
Arlington, WI - 2005

Brand	Hybrid	Relative maturity	Grain yield	Grain moisture	Test weight	Lodging	Grower return	Silking Date	Early dent	Kernel Milk 75%	Kernel Milk 50%	Kernel Milk 25%	Black layer	Plant end height
			bu/A	%	lb/bu	%	$/A	----------doy----------						inches
Brunner	S2055RR	82	185	17.0	60	3	295	194	229	239	243	249	257	72
NK Brand	N17-R3	82	181	18.0	62	13	286	195	226	233	239	246	255	75
Pioneer	39D82	85	186	17.6	59	7	296	193	228	234	239	246	250	79
Renk	RK232	85	190	16.6	61	8	306	196	234	240	245	249	256	78
NK Brand	N2555Bt	88	185	18.8	58	12	290	196	229	237	241	248	257	80
Dahlman	D4515	90	212	17.5	59	7	337	198	229	237	245	252	258	79
Dekalb	DKC44-42	94	199	18.0	57	19	313	199	233	241	246	250	258	76
NK Brand	NK32-L9	94	216	18.0	58	10	341	195	231	239	244	250	257	79
Pioneer	37R71	97	215	18.2	57	13	339	196	229	238	244	251	260	83
Kaltenberg	K5151Bt	102	233	19.7	58	3	360	200	235	242	248	256	266	88
Pioneer	35R58	105	229	20.4	57	7	350	202	233	239	246	256	263	80
AgriGold	A6333Bt	106	251	24.4	53	9	364	203	241	247	252	261	270	86
Dekalb	DKC58-78	108	242	21.1	56	2	367	201	238	244	252	259	268	81
Pioneer	34N44	109	245	24.4	56	11	356	200	236	244	251	259	269	78
Jung	6710RRYGCB	112	219	25.2	54	24	314	203	240	245	250	261	269	84
High Cycle	8B524	114	204	26.7	52	19	285	205	242	248	253	263	277	83
Mean			212	20.1	57	10	325	198	233	240	246	254	262	80
Probability(%)														
Hybrid (H)			0.0	0.0	0.0	20.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.9
LSD(0.10)														
Hybrid (H)			18	1.9	1	NS	24	1	3	3	2	3	4	6
CV(%)			6	7	1	84	5	0	1	1	1	1	1	6

Table C-2. Determining Corn Hybrid Maturity - Comparison of Hybrids (continued) Arlington, WI - 2005

Brand	Hybrid	Relative maturity	Day of year	Leaf Development: Leaf collars	Leaf Development: Hail adjusters method	Leaf Development: Total leaves	Plant height
				no./plant	no./plant	no./plant	inches
Renk	RK232	85	151	2.0	4.0	4.5	4.5
Renk	RK232	85	165	6.0	8.5	10.0	21.1
Renk	RK232	85	180	9.7	12.2	14.2	49.5
Renk	RK232	85	194	15.2	14.5	16.0	81.2
Renk	RK232	85	208	17.5	17.2	17.5	79.8
NK Brand	N2555Bt	88	151	2.0	3.8	4.5	4.5
NK Brand	N2555Bt	88	165	6.0	8.0	9.3	18.1
NK Brand	N2555Bt	88	180	9.3	11.7	14.3	42.0
NK Brand	N2555Bt	88	194	16.0	15.3	16.8	77.3
NK Brand	N2555Bt	88	208	17.8	17.7	17.8	81.3
Dahlman	D4515	90	151	2.0	3.7	4.3	4.9
Dahlman	D4515	90	165	6.0	8.2	10.0	18.3
Dahlman	D4515	90	180	9.8	11.8	14.7	44.2
Dahlman	D4515	90	194	16.0	15.7	17.5	74.2
Dahlman	D4515	90	208	19.7	19.0	19.7	78.8
Dekalb	DKC44-42	94	151	1.8	3.5	4.3	3.8
Dekalb	DKC44-42	94	165	6.2	9.0	10.7	17.6
Dekalb	DKC44-42	94	180	9.8	12.7	14.8	42.7
Dekalb	DKC44-42	94	194	15.8	15.0	17.0	77.5
Dekalb	DKC44-42	94	208	18.8	18.5	18.8	78.0
NK Brand	NK32-L9	94	151	2.0	4.0	4.7	3.7
NK Brand	NK32-L9	94	165	6.2	8.3	10.2	18.2
NK Brand	NK32-L9	94	180	9.5	11.3	14.3	41.2
NK Brand	NK32-L9	94	194	15.0	14.5	17.2	73.0
NK Brand	NK32-L9	94	208	18.3	18.0	18.3	83.2
Pioneer	37R71	97	151	2.0	3.8	4.0	4.7
Pioneer	37R71	97	165	6.0	8.0	10.0	20.3
Pioneer	37R71	97	180	9.3	11.7	14.3	49.0
Pioneer	37R71	97	194	15.5	15.0	17.0	81.3
Pioneer	37R71	97	208	18.2	18.2	18.2	83.2
Kaltenberg	K5151Bt	102	151	1.8	3.7	4.0	3.8
Kaltenberg	K5151Bt	102	165	5.8	8.7	9.7	18.0
Kaltenberg	K5151Bt	102	180	9.5	12.0	14.3	43.2
Kaltenberg	K5151Bt	102	194	13.8	15.2	16.8	79.5
Kaltenberg	K5151Bt	102	208	18.3	18.3	18.3	87.7
Pioneer	35R58	105	151	2.0	4.0	4.3	3.8
Pioneer	35R58	105	165	6.0	8.5	9.7	20.0
Pioneer	35R58	105	180	9.2	11.7	13.8	44.7
Pioneer	35R58	105	194	14.0	14.2	16.3	73.2
Pioneer	35R58	105	208	19.0	19.0	19.0	81.7

continued

Table C-2. Determining Corn Hybrid Maturity - Comparison of Hybrids (continued) Arlington, WI - 2005

Brand	Hybrid	Relative maturity	Day of year	Leaf Development: Leaf collars	Leaf Development: Hail adjusters method	Leaf Development: Total leaves	Plant height
				no./plant	no./plant	no./plant	inches
AgriGold	A6333Bt	106	151	2.0	3.8	4.2	4.4
AgriGold	A6333Bt	106	165	5.5	8.0	9.5	19.7
AgriGold	A6333Bt	106	180	8.8	10.7	14.0	45.0
AgriGold	A6333Bt	106	194	14.3	14.3	16.8	79.3
AgriGold	A6333Bt	106	208	19.2	19.2	19.2	86.5
Dekalb	DKC58-78	108	151	1.7	3.7	4.2	4.3
Dekalb	DKC58-78	108	165	6.0	8.3	9.7	19.4
Dekalb	DKC58-78	108	180	9.2	11.3	14.3	43.8
Dekalb	DKC58-78	108	194	14.3	15.2	17.3	74.3
Dekalb	DKC58-78	108	208	19.7	19.7	20.0	85.7
Pioneer	34N44	109	151	2.0	3.8	4.2	5.0
Pioneer	34N44	109	165	6.0	7.3	9.0	19.4
Pioneer	34N44	109	180	8.7	9.7	12.8	45.3
Pioneer	34N44	109	194	13.7	13.3	15.7	70.5
Pioneer	34N44	109	208	19.2	18.8	19.2	81.8
Jung	6710RRYGCB	112	151	2.0	3.3	4.0	4.1
Jung	6710RRYGCB	112	165	5.3	7.7	8.8	16.7
Jung	6710RRYGCB	112	180	8.8	10.5	13.5	40.5
Jung	6710RRYGCB	112	194	13.5	14.5	16.8	74.8
Jung	6710RRYGCB	112	208	19.5	19.5	19.5	84.3
High Cycle	8B524	114	151	2.0	3.8	4.0	4.5
High Cycle	8B524	114	165	6.0	8.5	10.0	19.8
High Cycle	8B524	114	180	9.2	11.5	14.0	42.7
High Cycle	8B524	114	194	13.7	14.8	17.2	75.7
High Cycle	8B524	114	208	20.5	20.3	20.5	85.8
Mean				10.2	11.4	12.7	45.3
Probability(%)							
Hybrid (H)				21.0	2.3	4.7	50.0
Day Of Year (D)				0.0	0.0	0.0	0.0
H x D				0.0	0.0	0.0	0.0
LSD(0.10)							
Hybrid (H)				NS	0.5	0.5	NS
Day Of Year (D)				0.1	0.1	0.1	0.9
H x D				0.6	0.6	0.5	3.6
CV(%)				4	4	3	6

Table C-2. Determining Corn Hybrid Maturity - Comparison of Hybrids Arlington, WI - 2005

Brand	Hybrid	Relative maturity	Day of year	Leaf Development: Leaf collars	Leaf Development: Hail adjusters method	Leaf Development: Total leaves	Plant height
				no./plant	no./plant	no./plant	inches
			151	2.0	3.8	4.3	4.3
			165	5.9	8.3	9.8	19.0
			180	9.4	11.6	14.2	44.5
			194	15.0	14.9	16.8	76.8
			208	18.6	18.5	18.6	81.6
Brunner	S2055RR	82		10.3	11.6	12.6	44.2
NK Brand	N17-R3	82		10.2	11.2	12.7	43.1
Pioneer	39D82	85		10.3	11.8	12.7	47.6
Renk	RK232	85		10.1	11.3	12.4	47.2
NK Brand	N2555Bt	88		10.2	11.3	12.6	44.7
Dahlman	D4515	90		10.7	11.7	13.2	44.1
Dekalb	DKC44-42	94		10.5	11.7	13.1	43.9
NK Brand	NK32-L9	94		10.2	11.2	12.9	43.9
Pioneer	37R71	97		10.2	11.3	12.7	47.7
Kaltenberg	K5151Bt	102		9.9	11.6	12.6	46.4
Pioneer	35R58	105		10.0	11.5	12.6	44.7
AgriGold	A6333Bt	106		10.0	11.2	12.7	47.0
Dekalb	DKC58-78	108		10.2	11.6	13.1	45.5
Pioneer	34N44	109		9.9	10.6	12.2	44.4
Jung	6710RRYGCB	112		9.8	11.1	12.5	44.1
High Cycle	8B524	114		10.3	11.8	13.1	45.7
Brunner	S2055RR	82	151	2.0	3.7	4.2	4.5
Brunner	S2055RR	82	165	6.0	9.0	10.0	22.0
Brunner	S2055RR	82	180	10.0	12.8	14.8	48.0
Brunner	S2055RR	82	194	16.7	15.8	16.8	74.7
Brunner	S2055RR	82	208	17.0	16.8	17.0	72.0
NK Brand	N17-R3	82	151	2.0	3.8	4.2	4.1
NK Brand	N17-R3	82	165	6.0	8.7	9.8	14.8
NK Brand	N17-R3	82	180	9.5	11.5	14.3	42.3
NK Brand	N17-R3	82	194	15.5	14.2	16.8	78.8
NK Brand	N17-R3	82	208	18.2	18.0	18.2	75.5
Pioneer	39D82	85	151	2.0	4.0	4.7	4.0
Pioneer	39D82	85	165	5.7	8.7	10.0	21.1
Pioneer	39D82	85	180	9.3	12.7	14.5	48.7
Pioneer	39D82	85	194	17.2	16.7	17.2	84.2
Pioneer	39D82	85	208	17.2	17.2	17.2	79.8

continued

FIELD EXPERIMENT HISTORY

Title: **Determining Corn Hybrid Maturity**

Experiment: 01 Growth and Development **Trial ID:** 2719 **Year:** 2005

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

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

Supported By: HATCH

Site Information

Field: K19 **Previous Crop:** Soybean **Soil Type:** Plainfield Sand

Soil Test: **Date:** 10/15/05 **pH** 6.9 **OM (%)** 0.9 **P (ppm)** 99 **K (ppm)** 67

Plot Management

Tillage Operations: Moldboard Plow Disk

Fertilizer:

Preplant Analysis:	28-0-0	**Rate lbs/A:** 842	**Date:**	N/A
Starter Analysis:	9-24-24	**Rate lbs/A:** 150	**Date:**	4 /21/05
Post plant Analysis:	N/A	**Rate lbs/A:** N/A	**Date:**	N/A
Manure: N/A				

Herbicide: Define 16 oz/A
Atrazine 0.75 lb/A

Insecticide: None

Hybrid: See Factors

Irrigation: 13.4"

Planting Date: 4/21/05 **Planting Depth:** 1.5" **Row Width:** 30"

Target Plant Density: 30000 **plants per acre** **Planting Method:** Kinze Plot Planter

Harvest Date: 10/06/05 **Harvest Method:** Massey Ferguson 8XP

Experimental Design

Design: RCB **Replications:** 3

Plot Size Seeded: 10' x 25' **Experiment Size:** 0.28 Acre

Harvest Plot Size: 5' x 22' **Harvest Plant Density:** 29937 **plants per acre**

Factors/Treatments:

Hybrids:

Brunner S2055RR
NK Brand N17R3
Pioneer 39D82
Renk RK232
NK Brand N2555Bt
Dahlman D4515
Dekalb DKC44-42
NK Brand N32-L9
Pioneer 37R71
Kaltenberg 5151Bt
Pioneer 35R58
AgriGold A6333Bt
Dekalb DKC5878
Pioneer 34N44
Jung 6710RRYGCB
High Cycle 8B524

Results: Table C-3.

Table C-3. Determining Corn Hybrid Maturity - Comparison of Hybrids Hancock, WI - 2005

Brand	Hybrid	Relative maturity	Grain yield	Grain moisture	Test weight	Lodging	Grower return
			bu/A	%	lb/bu	%	$/A
Brunner	S2055RR	82	200	18.0	57	1	317
NK Brand	N17-R3	82	169	19.5	57	0	263
Pioneer	39D82	85	197	17.4	56	0	313
Renk	RK232	85	199	17.5	58	0	316
NK Brand	N2555Bt	88	199	20.4	56	0	305
Dahlman	D4515	90	250	18.5	56	0	392
Dekalb	DKC44-42	94	238	19.2	54	0	371
NK Brand	NK32-L9	94	245	18.9	55	0	383
Pioneer	37R71	97	206	20.2	53	0	317
Kaltenberg	K5151Bt	102	246	20.9	56	0	375
Pioneer	35R58	105	228	24.3	54	0	332
AgriGold	A6333Bt	106	259	26.1	53	0	367
Dekalb	DKC58-78	108	257	25.8	53	0	367
Pioneer	34N44	109	273	26.0	56	0	387
Jung	6710RRYGCB	112	254	29.6	53	0	343
High Cycle	8B524	114	244	29.2	53	0	332
Mean			230	22.0	55	0	343
Probability(%)							
Hybrid (H)			0.0	0.0	0.0	22.1	0.0
LSD(0.10)							
Hybrid (H)			27	1.1	1	NS	42
CV(%)			8	4	1	455	9

FIELD EXPERIMENT HISTORY

Title: **Determining Corn Hybrid Maturity**

Experiment: 01 Growth and Development **Trial ID:** 2720 **Year:** 2005

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

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

Supported By: HATCH

Site Information

Field: 008-05C51 **Previous Crop:** Soybean **Soil Type:** Withee Silt Loam

Soil Test: **Date:** 10/1 /05 **pH** 6.7 **OM (%)** 3.4 **P (ppm)** 94 **K (ppm)** 212

Plot Management

Tillage Operations: Chisel Plow Field Cultivator

Fertilizer:	**Preplant Analysis:**	N/A	**Rate lbs/A:**	N/A	**Date:**	N/A
	Starter Analysis:	9-24-24	**Rate lbs/A:**	150	**Date:**	5 /3 /05
	Post plant Analysis:	28-0-0	**Rate lbs/A:**	15 gal/A	**Date:**	6 /17/05
	Manure: N/A					

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

Irrigation: None **Hybrid:** See Factors

Planting Date: 5/3/05 **Planting Depth:** 1.5" **Row Width:** 30"

Target Plant Density: 30000 **plants per acre** **Planting Method:** Kinze Plot Planter

Harvest Date: 10/18/05 **Harvest Method:** Massey Ferguson 8XP

Experimental Design

Design: RCB **Replications:** 3

Plot Size Seeded: 10' x 25' **Experiment Size:** 0.28 Acre

Harvest Plot Size: 5' x 22' **Harvest Plant Density:** 29700 **plants per acre**

Factors/Treatments:

Hybrids:

Brunner S2055RR	Dekalb DKC44-42	AgriGold A6333Bt
NK Brand N17R3	NK Brand N32-L9	Dekalb DKC5878
Pioneer 39D82	Pioneer 37R71	Pioneer 34N44
Renk RK232	Kaltenberg 5151Bt	Jung 6710RRYGCB
NK Brand N2555Bt	Pioneer 35R58	High Cycle 8B524
Dahlman D4515		

Results: Table C-4.

Table C-4. Determining Corn Hybrid Maturity - Comparison of Hybrids Marshfield, WI - 2005

Brand	Hybrid	Relative maturity	Grain yield	Grain moisture	Test weight	Lodging	Grower return
			bu/A	%	lb/bu	%	$/A
Brunner	S2055RR	82	171	22.6	54	0	254
NK Brand	N17-R3	82	161	20.9	60	0	246
Pioneer	39D82	85	151	19.9	57	0	233
Renk	RK232	85	173	20.4	58	1	265
NK Brand	N2555Bt	88	151	23.5	57	0	221
Dahlman	D4515	90	197	23.5	54	0	290
Dekalb	DKC44-42	94	207	25.4	52	0	296
NK Brand	NK32-L9	94	203	24.3	53	0	295
Pioneer	37R71	97	186	24.7	51	0	269
Kaltenberg	K5151Bt	102	191	27.7	54	0	265
Pioneer	35R58	105	188	32.1	51	0	243
AgriGold	A6333Bt	106	186	34.1	52	0	235
Dekalb	DKC58-78	108	171	36.3	51	0	208
Pioneer	34N44	109	210	34.6	53	0	263
Jung	6710RRYGCB	112	138	36.3	51	0	168
High Cycle	8B524	114	164	36.8	52	0	197
Mean			178	27.7	54	0	247
Probability(%)							
Hybrid (H)			0.0	0.0	0.0	48.0	0.0
LSD(0.10)							
Hybrid (H)			19	1.0	1	NS	26
CV(%)			8	2	1	693	8

FIELD EXPERIMENT HISTORY

Title: **Performance of Corn Hybrids in Organically Certified Fields**

Experiment: 01 Organic Hybrid **Trial ID:** 2672 **Year:** 2005

Personnel: J.G. Lauer, J. Posner, P.J. Flannery, K.D. Kohn and J. Hedtcke

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

Supported By: Seed Companies

Site Information

Field: ARS403E **Previous Crop:** Alfalfa **Soil Type:** Plano Silt Loam

Soil Test: **Date:** 4 /15/04 **pH** 6.8 **OM (%)** 3.9 **P (ppm)** 55 **K (ppm)** 107

Plot Management

Tillage Operations: Chisel Plow; Field Cultivator (3x); Cultivated (3x) 6/9, 6/20, 6/27; Rotary Hoe 5/24; Tine Weed (2x) 6/2, 6/5

Fertilizer:

Preplant Analysis:	N/A	**Rate lbs/A:** N/A	**Date:**	N/A
Starter Analysis:	N/A	**Rate lbs/A:** N/A	**Date:**	N/A
Post plant Analysis:	N/A	**Rate lbs/A:** N/A	**Date:**	N/A
Manure:	Oats fall planted			

Herbicide: None **Insecticide:** None

Irrigation: None **Hybrid:** See Factors

Planting Date: 5/17/05 **Planting Depth:** 1.5" **Row Width** 30"

Target Plant Density: 28000 **plants per acre** **Planting Method:** Kinze Plot Planter

Harvest Date: 10/20/05 **Harvest Method:** Massey Ferguson 8XP

Experimental Design

Design: RCB **Replications:** 4

Plot Size Seeded: 10' x 25' **Experiment Size:** 0.83 Acres

Harvest Plot Size: 5' x 22' **Harvest Plant Density:** 28017 **plants per acre**

Factors/Treatments:

Hybrids:

Brown EX16905
Brunner OR1004
Brunner OR1053
Brunner OR8702
Brunner OR9004
Check
Check-Hand Weeded
Cornelius ORG35
Cornelius ORG494
Cornelius ORG65
Foundation Seeds 8800-O
NC+ 26K21
NC+ 42A32
Prairie Hybrid 0371
Prairie Hybrid 1673
Viking 0.5305
Viking 0.7292

Results: Table C-5.

Table C-5. Performance of corn hybrids grown in organically certified production fields during 2005 at Arlington, WI.

Brand	Hybrid	RM	Yield	Moisture	Test Weight	Lodging	Grower Return $1.86/bu	Grower Return $4.00/bu
			bu/A	%	lbs/bu	%	$/A	$/A
Brunner	OR8702	87	174	17.3	57	5	277	649
NC+	26K21	88	154	17.8	60	2	244	573
Brunner	OR9004	90	182	17.3	59	3	289	678
Prairie Hybrids	371	92	183	17.0	59	6	293	686
Foundation Seeds	8800-O	95	200	18.7	57	5	313	742
Viking	O.7292	96	173	18.9	56	9	271	641
NC+	42A32	98	188	18.5	57	4	295	697
Brunner	OR1004	100	209	22.8	55	5	311	759
Cornelius	ORG35	102	219	22.3	55	8	328	797
Prairie Hybrids	1673	102	218	21.3	55	8	330	797
Check	36B08	103	217	22.5	57	3	323	787
Check-Hand Weeded	36B08	103	222	22.4	56	2	332	808
Viking	O.5305	103	210	22.9	55	4	311	761
Brunner	OR1053	105	208	23.2	53	8	308	753
Brown	EX16905	108	114	30.1	49	54	152	395
Cornelius	ORG494	108	219	22.1	54	4	328	797
Cornelius	ORG65	112	166	27.7	55	3	231	587
Mean			192	21.3	56	8	290	700
Probability(%)								
Hybrid (H)			0.0	0.0	0.0	0.0	0.0	0.0
LSD (0.10)								
Hybrid (H)			26	1.0	1	6.4	40	94
CV(%)			11	4	2	69	12	12

FIELD EXPERIMENT HISTORY

Title: **Performance of Corn Hybrids in Organically Certified Fields**

Experiment: 01 Organic Hybrid **Trial ID:** 2673 **Year:** 2005

Personnel: J.G. Lauer, J. Posner, P.J. Flannery, K.D. Kohn and J. Hedtcke

Location: East Troy, WI **County:** Walworth

Supported By: Seed Companies

Site Information

Field: MF Plot B **Previous Crop:** Wheat **Soil Type:** Warsaw Silt Loam

Soil Test: **Date:** 4 /15/05 **pH** 5.7 **OM (%)** 2.5 **P (ppm)** 94 **K (ppm)** 114

Plot Management

Tillage Operations: Chisel Plow, Cultivated (2x), Tine Weed, Field Cultivator (2x), Rotary Hoe

Fertilizer:

Preplant Analysis:	N/A	**Rate lbs/A:**	N/A	**Date:**	N/A
Starter Analysis:	N/A	**Rate lbs/A:**	N/A	**Date:**	N/A
Post plant Analysis:	N/A	**Rate lbs/A:**	N/A	**Date:**	N/A
Manure:	18 Ton	Dairy (5.4-9.0-14.9)			

Herbicide: None **Insecticide:** None

Irrigation: None **Hybrid:** See Factors

Planting Date: 5/17/05 **Planting Depth:** 1.5" **Row Width** 30"

Target Plant Density: 28000 **plants per acre** **Planting Method:** Kinze Plot Planter

Harvest Date: 10/20/05 **Harvest Method:** Massey Ferguson 8XP

Experimental Design

Design: RCB **Replications:** 4

Plot Size Seeded: 10' x 25' **Experiment Size:** 0.83 Acres

Harvest Plot Size: 5' x 22' **Harvest Plant Density:** 25027 **plants per acre**

Factors/Treatments:

Hybrids:

Brown EX16905
Brunner OR1004
Brunner OR1053
Brunner OR8702
Brunner OR9004
Check
Check-Hand Weeded
Cornelius ORG35
Cornelius ORG494
Cornelius ORG65
Foundation Seeds 8800-O
NC+ 26K21
NC+ 42A32
Prairie Hybrid 0371
Prairie Hybrid 1673
Viking 0.5305
Viking 0.7292

Results: Table C-6.

Table C-6. Performance of corn hybrids grown in organically certified production fields during 2005 at East Troy, WI.

Brand	Hybrid	RM	Yield	Moisture	Test Weight	Lodging	Grower Return $1.86/bu	Grower Return $4.00/bu
			bu/A	%	lbs/bu	%	$/A	$/A
Brunner	OR8702	87	153	14.9	59	1	249	576
NC+	26K21	88	147	15.3	61	1	239	553
Brunner	OR9004	90	154	16.7	60	2	245	574
Prairie Hybrids	371	92	171	16.0	61	3	275	641
Foundation Seeds	8800-O	95	169	17.7	59	1	266	628
Viking	O.7292	96	159	16.6	59	1	254	593
NC+	42A32	98	170	14.7	59	0	277	641
Brunner	OR1004	100	187	18.2	58	1	296	697
Cornelius	ORG35	102	187	18.4	58	1	294	694
Prairie Hybrids	1673	102	184	17.4	57	1	292	685
Check	36B08	103	183	18.2	60	1	289	681
Check-Hand Weeded	36B08	103	165	17.5	60	2	262	614
Viking	O.5305	103	183	18.9	59	2	286	677
Brunner	OR1053	105	180	16.9	57	1	288	673
Brown	EX16905	108	86	23.7	54	29	126	309
Cornelius	ORG494	108	159	17.5	57	2	252	592
Cornelius	ORG65	112	157	19.4	58	3	245	582
Mean			164	17.5	58	3	261	612
Probability(%)								
Hybrid (H)			0.0	0.0	0.0	0.0	0.0	0.0
LSD (0.10)								
Hybrid (H)			18	2.4	1	3	32	71
CV(%)			9	12	1	74	10	10

FIELD EXPERIMENT HISTORY

Title: **Corn Silage and Grain Evaluation of Hybrids Grown in the Same Plot.**

Experiment: 01 Silage vs Grain **Trial ID:** 2712 **Year:** 2005

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

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

Supported By: HATCH

Site Information

Field: ARS428 **Previous Crop:** Soybean **Soil Type:** Plano Silt Loam

Soil Test: **Date:** 11/1 /05 **pH** 6.6 **OM (%)** 3.6 **P (ppm)** 65 **K (ppm)** 130

Plot Management

Tillage Operations: Chisel Plow Field Cultivator Soil Finisher Cultivated 6/9/05

		Analysis:	Rate lbs/A:	Date:
Fertilizer:	**Preplant :**	46-0-0	325 lbs/A	4 /14/05
	Starter :	9-24-24	150	4 /28/05
	Post plant :	N/A	N/A	N/A
	Manure:	N/A	N/A	N/A

Herbicide: Outlook 20 oz/A
Hornet 4.0 oz/A
Callisto 3.0 oz/A

Insecticide: None

Hybrid: See Factors

Irrigation: None

Planting Date: 4/28/05 **Planting Depth:** 1.5" **Row Width:** 30"

Target Plant Density: 30000 **plants per acre** **Planting Method:** Kinze Plot Planter

Harvest Date: S: 9/14/05
G: 10/10/05

Harvest Method: G: Massey Ferguson 8XP
S: NH 707 Plot Chopper

Experimental Design

Design: RCB **Replications:** 3

Plot Size Seeded: 25' x 5' **Experiment Size:** 0.21 A

Harvest Plot Size: G: 22' x 5'
S: 22' x 2.5'

Harvest Plant Density: 30888 **plants per acre**

Factors/Treatments:

Hybrids:

AgriGold 6333Bt
Dekalb DKC57-81(RR2YGRW)
Garst 8590IT
Jung 6545HX
Kaltenberg K8112LF
Mycogen F2F797

Results: Table C-7.

Table C-7. Corn Silage and Grain Evaluation of Hybrids Grown in the Same Plot.
Arlington, WI - 2005

			Grain					Whole Plant													
					Test	Broken	Grower			Kernel	KMR	SMR	VMR	Crude			In Vitro			Milk per	
Brand	Hybrid	Traits	Yield	Moist	weight	stalks	return	Yield	Moist	milk	0-5	0-5	0-10	protein	ADF	NDF	Digest	NDFD	Starch	Ton	Acre
			bu/A	%	lbs/bu	%	$/A	tons/A	%	%	#	#	#	%	%	%	%	%	%	lbs/T	lbs/A
AgriGold	6333Bt	Bt	228	23.2	54	11	335	9.7	48.0	36.7	1.8	1.4	3.3	6.6	18.0	38.6	83.2	56.4	38.4	3325	32104
Dekalb	DKC57-81(RR2YGRW)	Bt,RR	240	27.2	53	30	335	8.4	48.1	56.7	2.8	1.7	4.5	6.3	18.8	40.9	83.4	59.3	38.4	3370	28267
Garst	8590IT	IMI	234	22.1	53	7	350	10.5	49.8	45.0	2.3	1.5	3.8	6.3	20.0	41.4	82.0	56.6	36.2	3265	34303
Jung	6545HX	Bt,LL	217	22.6	55	9	323	9.8	42.2	48.3	2.4	1.3	3.8	6.3	18.7	40.4	82.6	56.8	38.1	3293	32198
Kaltenberg	K8112LF	Leafy	165	33.6	52	62	210	7.7	54.1	56.7	2.8	1.9	4.7	6.5	22.4	46.9	81.0	59.5	29.0	3300	25043
Mycogen	F2F797	BMR	130	35.7	52	25	159	6.1	62.4	90.0	4.5	2.7	7.2	7.3	21.8	44.8	83.4	63.0	24.1	3472	21589
Mean			202	27.4	53	24	285	8.9	50.8	55.6	2.8	1.8	4.5	6.5	19.9	42.2	82.6	58.6	34.1	3337	29617
Probability(%)																					
Hybrid (H)			0.0	0.0	1.0	0.1	0.0	22.1	0.0	0.0	0.0	7.2	0.1	1.8	1.0	0.4	12.6	0.5	0.0	11.4	36.9
LSD(0.10)																					
Hybrid (H)			26	2.2	1.2	16	31	NS	4.6	9.8	0.5	0.7	1.1	0.5	2.0	3.0	NS	2.5	2.5	NS	NS
CV(%)			9	5	2	47	7	21	6	12	12	29	16	5	7	5	1	3	5	3	23

FIELD EXPERIMENT HISTORY

Title: **Corn Silage and Grain Evaluation of Hybrids Grown in the Same Plot.**

Experiment: 01 Silage vs Grain **Trial ID:** 2713 **Year:** 2005

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

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

Supported By: HATCH

Site Information

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

Soil Test: **Date:** 10/15/04 **pH** 6.9 **OM (%)** 3.6 **P (ppm)** 38 **K (ppm)** 127

Plot Management

Tillage Operations: Field Cultivator Cultivated 6/14/05

		Analysis:	Rate lbs/A:	Date:
Fertilizer:	**Preplant :**	N/A	N/A	N/A
	Starter :	9-24-24	150	4 /29/05
	Post plant :	28-0-0	40 gal/A	5 /4 /05
	Manure:	N/A	N/A	N/A

Herbicide: Basis 0.33 oz/A
Lumax 2.5 qt/A

Insecticide: None

Hybrid: See Factors

Irrigation: None

Planting Date: 4/29/05 **Planting Depth:** 1.5" **Row Width:** 30"

Target Plant Density: 30000 **plants per acre** **Planting Method:** Kinze Plot Planter

Harvest Date: S: 9/8/05
G: 10/17/05

Harvest Method: G: Massey Ferguson 8XP
S: NH 707 Plot Chopper

Experimental Design

Design: RCB **Replications:** 3

Plot Size Seeded: 25' x 5' **Experiment Size:** 0.21 A

Harvest Plot Size: G: 22' x 5'
S: 22' x 2.5'

Harvest Plant Density: 30757 **plants per acre**

Factors/Treatments:

Hybrids:

Garst 8590IT
Mycogen F2F581
NK Brand N48-V8
NK Brand N51-C1
Pioneer 36B08
Spangler 575+

Results: Table C-8.

Table C-8. Corn Silage and Grain Evaluation of Hybrids Grown in the Same Plot.
Fond du Lac, WI - 2005

			Grain					Whole Plant													
					Test	Broken	Grower			Kernel	KMR	SMR	VMR	Crude		In Vitro				Milk per	
Brand	Hybrid	Traits	Yield	Moist	weight	stalks	return	Yield	Moist	milk	0-5	0-5	0-10	protein	ADF	NDF	Digest	NDFD	Starch	Ton	Acre
			bu/A	%	lbs/bu	%	$/A	tons/A	%	%	#	#	#	%	%	%	%	%	%	lbs/T	lbs/A
Garst	8590IT	IMI	223	23.1	55	0	330	10.8	58.5	66.7	3.3	2.7	6.0	6.0	22.5	42.7	80.8	55.2	34.8	3338	36028
Mycogen	F2F581	BMR	184	23.9	57	3	269	9.2	60.5	73.3	3.7	2.7	6.3	7.5	22.7	44.8	83.4	62.9	28.7	3635	33464
NK Brand	N48-V8	Bt,LL	181	25.0	54	16	260	10.6	56.8	76.7	3.8	2.4	6.2	6.9	24.7	48.3	79.7	58.1	26.1	3264	34550
NK Brand	N51-C1	Bt,IMI,LL	219	21.4	55	0	331	10.7	56.7	65.0	3.3	2.8	6.1	6.5	22.2	42.9	80.4	54.2	34.1	3252	34668
Pioneer	36B08		206	21.5	57	1	310	10.0	55.5	75.0	3.8	2.2	6.0	7.3	21.8	43.0	81.8	57.7	32.3	3361	33481
Spangler	575+	Bt	228	20.3	55	0	350	10.6	57.4	65.0	3.3	2.7	5.9	6.1	23.5	45.1	79.7	54.9	32.4	3232	34214
Mean			207	22.5	55	3	308	10.3	57.6	70.3	3.5	2.6	6.1	6.7	22.9	44.5	81.0	57.2	31.4	3347	34401
Probability(%)																					
Hybrid (H)			2.6	0.2	1.8	0.1	0.4	35.0	5.9	5.3	5.3	6.1	65.8	2.1	64.1	32.6	15.3	0.0	7.4	0.7	94.7
LSD(0.10)																					
Hybrid (H)			26	1.6	1	5	35	NS	2.5	7.6	0.4	0.3	NS	0.8	NS	NS	NS	2.1	5.1	157	NS
CV(%)			8	5	2	104	8	9	3	7	7	9	6	8	10	7	2	3	11	3	10

FIELD EXPERIMENT HISTORY

Title: **Corn Silage and Grain Evaluation of Hybrids Grown in the Same Plot.**

Experiment: 01 Silage vs Grain **Trial ID:** 2714 **Year:** 2005

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

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

Supported By: HATCH

Site Information

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

Soil Test: **Date:** 10/15/04 **pH** 6.1 **OM (%)** 3.8 **P (ppm)** 68 **K (ppm)** 229

Plot Management

Tillage Operations: Fall Zone Cultivated 6/16/05

		Analysis:	Rate lbs/A:	Date:
Fertilizer:	**Preplant :**	46-0-0 21-0-0	217 lbs/A 238 lbs/A	4 /29/05
	Starter :	9-24-24	150	5 /2 /05
	Post plant :	N/A	N/A	N/A
	Manure:	N/A	N/A	N/A

Herbicide: Cinch 2.0 pt/A
Callisto 3.0 oz/A

Insecticide: None

Hybrid: See Factors

Irrigation: None

Planting Date: 5/2/05 **Planting Depth:** 1.5" **Row Width:** 30"

Target Plant Density: 30000 **plants per acre** **Planting Method:** Kinze Plot Planter

Harvest Date: S: 9/12/05
G: 10/14/05

Harvest Method: G: Massey Ferguson 8XP
S: NH 707 Plot Chopper

Experimental Design

Design: RCB **Replications:** 3

Plot Size Seeded: 25' x 5' **Experiment Size:** 0.21 A

Harvest Plot Size: G: 22' x 5'
S: 22' x 2.5'

Harvest Plant Density: 31482 **plants per acre**

Factors/Treatments:

Hybrids:

Garst 8590IT
Mycogen F2F581
NK Brand N48-V8
NK Brand N51-C1
Pioneer 36B08
Spangler 575+

Results: Table C-9.

Table C-9. Corn Silage and Grain Evaluation of Hybrids Grown in the Same Plot.
Galesville, WI - 2005

			Grain					Whole Plant													
					Test	Broken	Grower			Kernel	KMR	SMR	VMR	Crude			In Vitro			Milk per	
Brand	Hybrid	Traits	Yield	Moist	weight	stalks	return	Yield	Moist	milk	0-5	0-5	0-10	protein	ADF	NDF	Digest	NDFD	Starch	Ton	Acre
			bu/A	%	lbs/bu	%	$/A	tons/A	%	%	#	#	#	%	%	%	%	%	%	lbs/T	lbs/A
Garst	8590IT	IMI	260	23.7	53	5	381	11.2	64.3	51.7	2.6	2.4	5.0	6.1	23.4	44.2	79.3	53.1	36.3	3337	37382
Mycogen	F2F581	BMR	200	21.8	55	8	301	10.0	66.0	55.0	2.8	2.4	5.2	7.1	22.1	44.5	81.4	58.3	34.3	3533	37418
NK Brand	N48-V8	Bt,LL	243	26.2	52	6	344	11.7	66.5	55.0	2.8	2.4	5.2	6.8	25.7	49.9	78.0	56.2	28.9	3274	38136
NK Brand	N51-C1	Bt,IMI,LL	270	21.0	53	2	411	11.2	64.0	61.7	3.1	3.1	6.2	7.2	22.4	43.1	79.6	52.6	35.4	3343	37581
Pioneer	36B08		246	21.9	56	3	369	10.6	63.1	53.3	2.7	2.8	5.5	7.6	23.3	45.8	79.8	55.9	32.6	3382	35390
Spangler	575+	Bt	250	21.4	54	21	379	10.0	65.0	50.0	2.5	2.7	5.2	7.1	23.0	43.8	79.9	54.1	36.8	3393	33819
Mean			245	22.7	54	7	364	10.8	64.8	54.4	2.7	2.6	5.3	7.0	23.4	45.3	79.6	54.8	34.0	3368	36648
Probability(%)																					
Hybrid (H)			0.0	0.0	0.0	0.1	0.0	8.9	30.9	11.3	11.3	0.0	0.4	0.4	59.7	30.3	77.9	33.2	29.8	78.6	51.0
LSD(0.10)																					
Hybrid (H)			14	1.4	1	5	22	1.1	NS	NS	NS	0.2	0.4	0.5	NS	NS	NS	NS	NS	NS	NS
CV(%)			4	4	1	49	4	7	3	8	8	5	5	5	10	8	3	5	12	6	8

FIELD EXPERIMENT HISTORY

Title: **Corn Silage and Grain Evaluation of Hybrids Grown in the Same Plot.**

Experiment: 01 Silage vs Grain **Trial ID:** 2715 **Year:** 2005

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

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

Supported By: HATCH

Site Information

Field: 008-05C51 **Previous Crop:** Soybean **Soil Type:** Withee Silt Loam

Soil Test: **Date:** 10/1 /05 **pH** 6.7 **OM (%)** 3.4 **P (ppm)** 94 **K (ppm)** 212

Plot Management

Tillage Operations: Chisel Plow Field Cultivator

		Analysis:	Rate lbs/A:	Date:
Fertilizer:	**Preplant :**	N/A	N/A	N/A
	Starter :	9-24-24	150	5 /3 /05
	Post plant :	28-0-0	15 gal/A	6 /17/05
	Manure:	N/A	N/A	N/A

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

Irrigation: None **Hybrid:** See Factors

Planting Date: 5/3/05 **Planting Depth:** 1.5" **Row Width:** 30"

Target Plant Density: 30000 **plants per acre** **Planting Method:** Kinze Plot Planter

Harvest Date: S: 9/20/05
G: 10/18/05

Harvest Method: G: Massey Ferguson 8XP
S: NH 707 Plot Chopper

Experimental Design

Design: RCB **Replications:** 3

Plot Size Seeded: 25' x 5' **Experiment Size:** 0.21 Acre

Harvest Plot Size: G: 22' x 5'
S: 22' x 2.5'

Harvest Plant Density: 32076 **plants per acre**

Factors/Treatments:

Hybrids:

NK Brand N51-C1
Pioneer 36B08
Spangler 575+
NK Brand N3030Bt
Renk RK282
Spangler 324+

Results: Table C-10.

Table C-10. Corn Silage and Grain Evaluation of Hybrids Grown in the Same Plot.
Marshfield, WI - 2005

			Grain					Whole Plant													
					Test	Broken	Grower			Kernel	KMR	SMR	VMR	Crude			In Vitro			Milk per	
Brand	Hybrid	Traits	Yield	Moist	weight	stalks	return	Yield	Moist	milk	0-5	0-5	0-10	protein	ADF	NDF	Digest	NDFD	Starch	Ton	Acre
			bu/A	%	lbs/bu	%	$/A	tons/A	%	%	#	#	#	%	%	%	%	%	%	lbs/T	lbs/A
Dairyland	7191	Bt,RR	148	22.0	54	0	221	7.3	55.7	48.3	2.4	2.3	4.8	7.7	20.4	44.0	82.0	58.9	34.7	3360	24659
Golden Harvest	H6155RR	RR	134	18.9	57	0	209	7.0	52.7	40.0	2.0	1.6	3.6	8.6	21.6	46.1	80.3	57.2	31.4	3180	22253
Mycogen	F2F444	BMR	110	28.4	54	0	151	8.5	61.7	70.0	3.5	3.2	6.7	8.6	22.5	47.7	83.7	65.7	26.1	3688	31250
NK Brand	N3030Bt	Bt,LL	166	22.9	56	1	246	10.0	56.2	50.0	2.5	2.3	4.8	8.0	21.4	44.5	80.7	56.8	32.3	3274	32827
Renk	RK282		178	20.4	56	0	274	9.0	51.5	50.0	2.5	1.8	4.3	8.5	22.1	46.8	80.2	57.8	31.5	3176	28701
Spangler	324+	Bt	189	23.4	54	1	278	9.8	59.1	51.7	2.6	2.3	4.9	7.6	22.4	45.6	80.9	58.1	32.7	3360	32755
Mean			154	22.7	55	0	230	8.6	56.2	51.7	2.6	2.3	4.9	8.2	21.7	45.8	81.3	59.1	31.4	3340	28741
Probability(%)																					
Hybrid (H)			0.2	0.0	0.1	58.3	0.2	0.9	0.2	3.2	3.2	0.1	0.2	0.4	64.2	66.2	5.1	0.0	14.5	0.0	0.7
LSD(0.10)																					
Hybrid (H)			26	1.6	1	NS	41	1.4	3.5	13.0	13.0	0.5	0.9	0.4	NS	NS	1.9	1.4	NS	100	4655
CV(%)			11	5	1	303	12	11	4	17	17	14	12	4	7	6	2	2	11	2	11

FIELD EXPERIMENT HISTORY

Title: **Corn Silage and Grain Evaluation of Hybrids Grown in the Same Plot.**

Experiment: 01 Silage vs Grain **Trial ID:** 2716 **Year:** 2005

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

Location: Rhinelander, WI **County:** Oneida

Supported By: HATCH

Site Information

Field: **Previous Crop:** Potato **Soil Type:** Vilas Loamy Sand

Soil Test: **Date:** 10/15/04 **pH** 6.4 **OM (%)** 2.3 **P (ppm)** 284 **K (ppm)** 138

Plot Management

Tillage Operations: Chisel Plow Disk

		Analysis:	Rate lbs/A:	Date:
Fertilizer:	**Preplant :**	46-0-0	325 lbs/A	5 /9 /05
	Starter :	9-24-24	150	5 /11/05
	Post plant :	N/A	N/A	N/A
	Manure:	N/A	N/A	N/A

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

Irrigation: 5.8" **Hybrid:** See Factors

Planting Date: 5/11/05 **Planting Depth:** 1.5" **Row Width:** 30"

Target Plant Density: 30000 **plants per acre** **Planting Method:** Kinze Plot Planter

Harvest Date: S: 9/23/05
G: 10/18/05

Harvest Method: G: Massey Ferguson 8XP
S: NH 707 Plot Chopper

Experimental Design

Design: RCB **Replications:** 2

Plot Size Seeded: 25' x 5' **Experiment Size:** 0.18 A

Harvest Plot Size: G: 22' x 5'
S: 22' x 2.5'

Harvest Plant Density: 29106 **plants per acre**

Factors/Treatments:

Hybrids:

Dahlman D4215
Dairyland 1685
Dekalb DKC33-11(RR2YGCB)
Kussmaul SB2983RRTGRW
Mycogen F2F357
Pioneer 39D80

Results: Table C-11.

Table C-11. Corn Silage and Grain Evaluation of Hybrids Grown in the Same Plot.
Rhinelander, WI - 2005

			Grain					Whole Plant													
					Test	Broken	Grower			Kernel	KMR	SMR	VMR	Crude			In Vitro			Milk per	
Brand	Hybrid	Traits	Yield	Moist	weight	stalks	return	Yield	Moist	milk	0-5	0-5	0-10	protein	ADF	NDF	Digest	NDFD	Starch	Ton	Acre
			bu/A	%	lbs/bu	%	$/A	tons/A	%	%	#	#	#	%	%	%	%	%	%	lbs/T	lbs/A
Dahlman	D4215	Bt	230	25.2	54	0	330	10.8	58.5	50.0	2.5	2.5	5.0	7.7	21.5	44.0	81.7	58.3	31.9	3408	36661
Dairyland	1685		168	21.2	55	7	255	8.8	55.6	20.0	1.0	0.9	1.9	7.3	22.9	46.4	80.4	57.7	30.6	3256	28555
Dekalb	DKC33-11(RR2YGCB)	Bt,RR	202	22.6	57	0	301	9.8	56.3	22.5	1.1	1.8	2.9	8.5	20.5	43.2	81.6	57.4	31.5	3343	32695
Kussmaul	SB2983RRYGRW	Bt,RR	221	26.0	54	0	314	10.5	61.4	55.0	2.8	2.7	5.4	8.0	23.2	47.1	80.8	59.3	28.9	3413	35878
Mycogen	F2F357	BMR	112	21.8	55	6	170	4.2	60.4	25.0	1.3	0.7	2.0	8.9	22.6	48.9	83.2	65.7	27.0	3630	15122
Pioneer	39D80	RR	163	21.0	56	4	247	8.4	53.8	17.5	0.9	0.9	1.8	7.7	21.6	44.9	80.5	56.8	32.6	3204	26858
Mean			183	23.0	55	3	270	8.7	57.7	31.7	1.6	1.6	3.2	8.0	22.0	45.7	81.4	59.2	30.4	3375	29295
Probability(%)																					
Hybrid (H)			5.1	0.6	14.9	0.7	9.1	0.0	7.4	1.0	1.0	0.7	0.5	2.2	83.2	64.7	64.6	0.3	70.1	6.2	0.0
LSD(0.10)																					
Hybrid (H)			56	1.6	NS	3	88	0.9	4.1	14.2	0.7	0.7	1.2	0.6	NS	NS	NS	2.1	NS	201	3129
CV(%)			15	3	2	45	16	5	4	22	22	22	19	4	10	8	2	2	13	3	5

FIELD EXPERIMENT HISTORY

Title: **Corn Silage and Grain Evaluation of Hybrids Grown in the Same Plot.**

Experiment: 01 Silage vs Grain **Trial ID:** 2717 **Year:** 2005

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

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

Supported By: HATCH

Site Information

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

Soil Test: **Date:** 10/15/05 **pH** 7.3 **OM (%)** 3.3 **P (ppm)** 53 **K (ppm)** 305

Plot Management

Tillage Operations: Chisel Plow Field Cultivator Cultivated 6/20/05

		Analysis:	Rate lbs/A:	Date:
Fertilizer:	**Preplant :**	N/A	N/A	N/A
	Starter :	9-24-24	150	5 /4 /05
	Post plant :	34-0-0	150 lbs/A	6 /20/05
	Manure:	Dairy	20 Ton	Fall

Herbicide: Steadfast 0.5 oz/A
Distinct 2.0 oz/A
Permit 0.2 oz/A

Insecticide: Force 4.4 lb/A
Hybrid: See Factors

Irrigation: None

Planting Date: 5/4/05 **Planting Depth:** 1.5" **Row Width:** 30"

Target Plant Density: 30000 **plants per acre** **Planting Method:** Kinze Plot Planter

Harvest Date: S: 9/16/05
G: 10/11/05

Harvest Method: G: Massey Ferguson 8XP
S: NH 707 Plot Chopper

Experimental Design

Design: RCB **Replications:** 3

Plot Size Seeded: 25' x 5' **Experiment Size:** 0.21 A

Harvest Plot Size: G: 22' x 5'
S: 22' x 2.5'

Harvest Plant Density: 30412 **plants per acre**

Factors/Treatments:

Hybrids:

NK Brand N51-C1
Pioneer 36B08
Spangler 575+
NK Brand N3030Bt
Renk RK282
Spangler 324+

Results: Table C-12.

Table C-12. Corn Silage and Grain Evaluation of Hybrids Grown in the Same Plot.
Valders, WI - 2005

			Grain					Whole Plant													
					Test	Broken	Grower			Kernel	KMR	SMR	VMR	Crude			In Vitro			Milk per	
Brand	Hybrid	Traits	Yield	Moist	weight	stalks	return	Yield	Moist	milk	0-5	0-5	0-10	protein	ADF	NDF	Digest	NDFD	Starch	Ton	Acre
			bu/A	%	lbs/bu	%	$/A	tons/A	%	%	#	#	#	%	%	%	%	%	%	lbs/T	lbs/A
Dairyland	7191	Bt,RR	179	19.5	57	0	278	8.0	40.2	16.7	0.8	0.7	1.6	7.3	16.7	38.4	83.6	57.2	40.3	3344	26656
Golden Harvest	H6155RR	RR	157	18.7	58	0	246	7.1	42.9	16.7	0.8	0.6	1.4	8.4	16.7	38.4	82.9	55.5	37.3	3290	23336
Mycogen	F2F444	BMR	157	29.8	55	0	211	8.4	52.7	55.0	2.8	1.7	4.5	8.3	17.8	40.9	85.8	65.1	31.9	3638	30432
NK Brand	N3030Bt	Bt,LL	199	21.4	56	0	301	8.7	47.7	38.3	1.9	1.4	3.3	7.5	17.4	38.5	83.8	58.0	37.0	3387	29500
Renk	RK282		190	19.5	58	1	294	8.4	43.4	31.7	1.6	1.0	2.6	8.7	16.5	39.4	84.3	60.2	37.0	3438	28757
Spangler	324+	Bt	181	23.3	54	0	266	9.6	47.4	43.3	2.2	1.5	3.7	7.7	16.2	37.4	85.0	59.9	38.4	3479	33510
Mean			177	22.0	56	0	266	8.4	45.7	33.6	1.7	1.2	2.8	8.0	16.9	38.8	84.2	59.3	37.0	3429	28699
Probability(%)																					
Hybrid (H)			0.2	0.0	0.0	6.7	0.0	1.3	0.0	0.0	0.0	0.6	0.0	0.0	64.3	56.2	1.1	0.0	5.8	0.0	0.5
LSD(0.10)																					
Hybrid (H)			15	1.0	1	1	22	1.0	3.0	10.6	0.5	0.5	0.9	0.3	NS	NS	1.2	2.0	4.1	74	3461
CV(%)			6	3	1	250	6	8	5	22	22	27	20	3	7	6	1	2	8	1	8

FIELD EXPERIMENT HISTORY

Title: **AgReliant Hybrid Corn Silage Trial**

Experiment: Private Silage Evaluation **Trial ID** 2616 **Year:** 2005

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

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

Supported By: AgReliant Genetics, LLC

Site Information

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

Soil Test: **Date:** 10/1 /05 **pH** 6.4 **OM (%)** 3.7 **P (ppm)** 66 **K (ppm)** 131

Plot Management

Tillage Operations: Chisel Plow Field Cultivator Soil Finisher Cultivated

Fertilizer:

	Analysis	Rate	Date
Preplant	46-0-0	325	N/A
Starter	9-24-24	150	4 /28/05
Post plant	N/A	N/A	N/A
Manure:	N/A	N/A	N/A

Herbicide: Outlook 20 oz/A
Hornet 4.0 oz/A
Callisto 3.0 oz/A

Insecticide: None

Irrigation: None

Planting Date: 4/28/05 **Planting Depth:** 1.5" **Row Width** 30"

Target Plant Density: 32000 **plants per acre** **Planting Method:** Kinze Plot Planter

Harvest Date: 9/14/05 **Harvest Method:** New Holland 707 Plot Chopper

Notes: Planted adjacent to public silage trial

Experimental Design

Design: RCB **Replications:** 3

Plot Size Seeded: 25' x 5' **Experiment Size:** 0.07 A

Harvest Plot Size: 22' x 2.5' **Harvest Plant Density:** 30730 **plants per acre**

Factors/Treatments:

Hybrid	
S510	S514
S511	S516
S512	S517
S513	S525

Results: Table C-13.

Table C-13. AgReliant Hybrid Corn Silage Evaluation Study - Late. Arlington, WI 2005.

Genotype	Dry Matter Yield	Moisture	Kernel Milk	CP	ADF	NDF	IVD	NDFD	Starch	Milk Per Ton	Milk Per Acre
	T/A	%	%	%	%	%	%	%	%	lbs/T	lbs/A
S510	9.3	54.6	52	6.6	19	38	82	54	40	3328	30828
S511	8.5	53.1	57	6.8	18	39	83	57	39	3412	28902
S512	9.1	54.4	57	6.4	19	40	83	56	39	3389	30740
S513	9.3	58.5	50	6.9	20	41	82	56	38	3439	32046
S514	6.9	58.1	50	6.5	23	45	80	55	32	3261	22653
S516	10.1	59.3	58	5.9	23	46	80	57	32	3334	33778
S517	8.7	57.9	47	6.4	20	42	81	54	36	3313	29079
S525	9.1	59.7	73	7.2	23	47	80	57	29	3327	30237
Mean	8.8	56.8	55	6.6	20	42	81	56	36	3351	29609
Probability (%)											
Genotype	33.5	16.8	0.6	0.4	7.0	5.3	5.9	28.8	9.2	22.6	32.0
LSD (0.10)											
Genotype	NS	NS	10	0.4	3.2	5.3	2.2	NS	6.7	NS	NS
CV (%)	16	6	12	4	10	8	2	3	12	2	17

FIELD EXPERIMENT HISTORY

Title: **AgReliant Hybrid Corn Silage Trial**

Experiment: Private Silage Evaluation **Trial ID** 2617 **Year:** 2005

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

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

Supported By: AgReliant Genetics, LLC

Site Information

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

Soil Test: **Date:** N/A **pH** 7.1 **OM (%)** **P (ppm)** 35 **K (ppm)** 62

Plot Management

Tillage Operations: Disk Soil Finisher Cultivate

Fertilizer:

	Analysis	Rate	Date
Preplant	46-0-0	392	N/A
Starter	9-24-24	150	4 /25/05
Post plant	N/A	N/A	N/A
Manure:	N/A	N/A	N/A

Herbicide: Aatrex 4L 1.0 qt/A
Harness 1.0 qt/A

Insecticide: Force 4.4 lb/A

Irrigation: None

Planting Date: 4/25/05 **Planting Depth:** 1.5" **Row Width** 30"

Target Plant Density: 32000 **plants per acre** **Planting Method:** Kinze Plot Planter

Harvest Date: 9/7/05 **Harvest Method:** New Holland 707 Plot Chopper

Notes: Planted adjacent to public silage trial

Experimental Design

Design: RCB **Replications:** 3

Plot Size Seeded: 25' x 5' **Experiment Size:** 0.07 A

Harvest Plot Size: 22' x 2.5' **Harvest Plant Density:** 31680 **plants per acre**

Factors/Treatments:

Hybrid	
S510	S514
S511	S516
S512	S517
S513	S525

Results: Table C-14.

Table C-14. AgReliant Hybrid Corn Silage Evaluation Study - Late. Lancaster, WI 2005.

	Dry Matter		Kernel							Milk Per	
Genotype	Yield	Moisture	Milk	CP	ADF	NDF	IVD	NDFD	Starch	Ton	Acre
	T/A	%	%	%	%	%	%	%	%	lbs/T	lbs/A
S510	9.1	65.3	52	7.5	25	47	77	52	30	3218	29263
S511	9.8	61.2	53	6.9	23	44	79	51	34	3248	31863
S512	9.5	64.0	57	6.5	25	47	78	52	32	3240	30899
S513	10.1	64.4	53	7.0	23	44	79	51	35	3310	33429
S514	10.4	63.6	58	6.9	24	46	78	52	33	3260	34017
S516	10.2	64.5	67	6.7	24	47	77	51	31	3202	32699
S517	10.7	66.7	53	6.9	25	47	77	50	30	3155	33970
S525	9.9	64.4	77	6.9	29	54	75	52	22	3018	29864
Mean	10.0	64.3	59	6.9	25	47	77	52	31	3207	32001
Probability (%)											
Genotype	18.9	2.1	0.1	1.3	0.8	1.0	3.1	14.0	0.7	4.7	29.5
LSD (0.10)											
Genotype	NS	2.2	9	0.4	2.3	3.8	1.9	NS	4.7	136	NS
CV (%)	7	2	10	4	6	5	2	2	10	3	9

FIELD EXPERIMENT HISTORY

Title: **AgReliant Hybrid Corn Silage Trial**

Experiment: Private Silage Evaluation **Trial ID** 2618 **Year:** 2005

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

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

Supported By: AgReliant Genetics, LLC

Site Information

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

Soil Test: **Date:** 10/1 /04 **pH** 6.9 **OM (%)** 3.6 **P (ppm)** 38 **K (ppm)** 127

Plot Management

Tillage Operations: Field Cultivator Cultivate

Fertilizer:

	Analysis	Rate	Date
Preplant	N/A	N/A	N/A
Starter	9-24-24	150	4-29-05
Post plant	28-0-0	429	N/A
Manure:	N/A	N/A	N/A

Herbicide: Basis 0.33 oz/A
Lumax 2.5 qt/A

Insecticide: None

Irrigation: None

Planting Date: 4-29-05 **Planting Depth:** 1.5" **Row Width** 30"

Target Plant Density: 32000 **plants per acre** **Planting Method:** Kinze Plot Planter

Harvest Date: 9/8/05 **Harvest Method:** New Holland 707 Plot Chopper

Notes: Planted adjacent to public silage trial

Experimental Design

Design: RCB **Replications:** 3

Plot Size Seeded: 25' x 5' **Experiment Size:** 0.06 A

Harvest Plot Size: 22' x 2.5' **Harvest Plant Density:** 30492 **plants per acre**

Factors/Treatments:

Hybrid	
S504	S509
S505	S510
S507	S511
S508	

Results: Table C-15.

Table C-15. AgReliant Hybrid Corn Silage Evaluation Study - Mid. Fond du Lac, WI 2005.

Genotype	Dry Matter Yield	Moisture	Kernel Milk	CP	ADF	NDF	IVD	NDFD	Starch	Milk Per Ton	Milk Per Acre
	T/A	%	%	%	%	%	%	%	%	lbs/T	lbs/A
S504	8.1	54.3	48	6.2	22	44	79	52	34	3115	25289
S505	7.9	57.9	48	6.6	22	43	80	54	37	3288	25881
S507	8.5	62.3	57	6.5	23	45	80	57	35	3429	29155
S508	8.6	58.9	63	6.4	20	40	82	56	39	3465	29800
S509	8.9	62.6	77	6.4	24	46	79	55	31	3325	29632
S510	8.3	64.0	70	6.3	25	49	79	57	29	3319	27469
S511	9.3	62.3	65	6.1	22	43	81	56	35	3457	32011
Mean	8.5	60.3	61	6.3	22	44	80	55	34	3343	28463
Probability (%)											
Genotype	27.9	0.6	2.5	96.0	4.6	4.1	11.0	7.6	0.9	1.9	11.8
LSD (0.10)											
Genotype	NS	3.9	15	NS	2.7	4.0	NS	2.6	4.2	161	NS
CV (%)	8	4	16	10	8	6	2	3	8	3	10

FIELD EXPERIMENT HISTORY

Title: **AgReliant Hybrid Corn Silage Trial**

Experiment: Private Silage Evaluation **Trial ID:** 2619 **Year:** 2005

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

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

Supported By: AgReliant Genetics, LLC

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)** 68 **K (ppm)** 229

Plot Management

Tillage Operations: Fall Zone Builder Cultivated 6 /16/05

Fertilizer:

	Analysis	Rate	Date
Preplant	46-0-0	218	N/A
	21-0-0	238	N/A
Starter	9-24-24	150	5 /2 /05
Post plant	N/A	N/A	N/A
Manure:	N/A	N/A	N/A

Herbicide: Cinch 2.0 pt/A
Callisto 3.0 oz/A

Insecticide: None

Irrigation: None

Planting Date: 5/2/05 **Planting Depth:** 1.5" **Row Width** 30"

Target Plant Density: 32000 **plants per acre** **Planting Method:** Kinze Plot Planter

Harvest Date: 9/12/05 **Harvest Method:** New Holland 707 Plot Chopper

Notes: Planted adjacent to public silage trial

Experimental Design

Design: RCB **Replications:** 3

Plot Size Seeded: 25' x 5' **Experiment Size:** 0.06 A

Harvest Plot Size: 22' x 2.5' **Harvest Plant Density:** 31680 **plants per acre**

Factors/Treatments:

Hybrid	
S504	S509
S505	S510
S507	S511
S508	

Results: Table C-16.

Table C-16. AgReliant Hybrid Corn Silage Evaluation Study - Mid. Galesville, WI 2005.

	Dry Matter		Kernel							Milk Per	
Genotype	Yield	Moisture	Milk	CP	ADF	NDF	IVD	NDFD	Starch	Ton	Acre
	T/A	%	%	%	%	%	%	%	%	lbs/T	lbs/A
S504	7.4	57.1	43	7.9	23	46	78	53	31	3123	23229
S505	8.1	60.1	37	7.8	22	43	80	54	35	3326	27085
S507	10.0	62.3	43	7.3	21	43	82	57	35	3542	35286
S508	9.9	61.3	50	6.8	22	43	80	54	35	3387	33532
S509	9.8	66.8	50	7.8	22	43	79	52	35	3341	32770
S510	10.2	65.0	53	7.4	22	42	81	54	35	3424	35044
S511	9.6	63.2	52	6.7	23	45	80	55	33	3392	32468
Mean	9.3	62.3	47	7.4	22	44	80	54	34	3362	31345
Probability (%)											
Genotype	0.6	0.7	8.5	1.0	78.4	59.0	8.1	0.4	42.1	0.0	0.1
LSD (0.10)											
Genotype	1.2	3.7	10.0	0.6	NS	NS	1.9	1.7	NS	90	4252
CV (%)	8	4	14	5	8	6	2	2	8	2	9

FIELD EXPERIMENT HISTORY

Title: **AgReliant Hybrid Corn Silage Trial**

Experiment: Private Silage Evaluation **Trial ID** 2620 **Year:** 2005

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

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

Supported By: AgReliant Genetics, LLC

Site Information

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

Soil Test: **Date:** 10/1 /04 **pH** 6.1 **OM (%)** 2.4 **P (ppm)** 47 **K (ppm)** 142

Plot Management

Tillage Operations: Field Cultivator Cultivate

Fertilizer:

	Analysis	Rate	Date
Preplant	28-0-0	535	N/A
Starter	9-24-24	150	5 /2 /05
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

Irrigation: None

Planting Date: 5/2/05 **Planting Depth:** 1.5" **Row Width** 30"

Target Plant Density: 32000 **plants per acre** **Planting Method:** Kinze Plot Planter

Harvest Date: 8/30/05 **Harvest Method:** New Holland 707 Plot Chopper

Notes: Planted adjacent to public silage trial

Experimental Design

Design: RCB **Replications:** 3

Plot Size Seeded: 25' x 5' **Experiment Size:** 0.05 A

Harvest Plot Size: 22' x 2.5' **Harvest Plant Density:** 30413 **plants per acre**

Factors/Treatments:

Hybrid	
S501	S504
S502	S505
S503	S506

Results: Table C-17.

Table C-17. AgReliant Hybrid Corn Silage Evaluation Study - Early. Chippewa Falls, WI 2005.

Genotype	Dry Matter Yield	Moisture	Kernel Milk	CP	ADF	NDF	IVD	NDFD	Starch	Milk Per Ton	Milk Per Acre
	T/A	%	%	%	%	%	%	%	%	lbs/T	lbs/A
S501	5.5	64.9	90	7.5	26	50	78	56	26	3225	17691
S502	7.0	65.6	73	7.5	28	53	77	57	25	3199	22386
S503	7.0	64.7	65	6.7	27	53	78	58	27	3297	23212
S504	6.1	63.8	85	6.9	31	58	73	53	19	2844	17378
S505	6.9	65.5	70	7.4	27	51	77	54	27	3152	21625
S507	6.6	67.6	87	6.8	29	55	76	56	24	3118	20700
Mean	6.5	65.3	78	7.1	28	53	76	56	25	3139	20499
Probability (%)											
Genotype	18.8	23.2	19.9	14.5	7.0	10.8	1.0	0.3	20.0	0.6	7.9
LSD (0.10)											
Genotype	NS	NS	NS	NS	3.1	NS	2.2	1.9	NS	164	3925
CV (%)	12	3	17	6	7	6	2	2	15	3	12

FIELD EXPERIMENT HISTORY

Title: **AgReliant Hybrid Corn Silage Trial**

Experiment: Private Silage Evaluation **Trial ID** 2621 **Year:** 2005

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

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

Supported By: AgReliant Genetics, LLC

Site Information

Field: **Previous Crop:** **Soil Type:** Loyal Silt Loam

Soil Test: **Date:** 10/1 /04 **pH** 6.7 **OM (%)** 3.4 **P (ppm)** 94 **K (ppm)** 212

Plot Management

Tillage Operations: Chisel Plow Field Cultivator Cultivate

Fertilizer:

	Analysis	Rate	Date
Preplant	N/A	N/A	N/A
Starter	9-24-24	150	5 /3 /05
Post plant	28-0-0	160	N/A
Manure:	Dairy	6832 gal/A	Fall

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

Irrigation: None

Planting Date: 5/3/05 **Planting Depth:** 1.5" **Row Width** 30"

Target Plant Density: 32000 **plants per acre** **Planting Method:** Kinze Plot Planter

Harvest Date: 9/20/05 **Harvest Method:** New Holland 707 Plot Chopper

Notes: Planted adjacent to public silage trial

Experimental Design

Design: RCB **Replications:** 3

Plot Size Seeded: 25' x 5' **Experiment Size:** 0.05 A

Harvest Plot Size: 22' x 2.5' **Harvest Plant Density:** 31086 **plants per acre**

Factors/Treatments:

Hybrid	
S501	S504
S502	S505
S503	S506

Results: Table C-18.

Table C-18. AgReliant Hybrid Corn Silage Evaluation Study - Early. Marshfield, WI 2005.

	Dry Matter		Kernel							Milk Per	
Genotype	Yield	Moisture	Milk	CP	ADF	NDF	IVD	NDFD	Starch	Ton	Acre
	T/A	%	%	%	%	%	%	%	%	lbs/T	lbs/A
S501	7.5	60.7	53	8.6	21	46	82	61	28	3489	26076
S502	6.8	62.7	33	8.0	26	52	78	57	23	3208	21986
S503	7.5	61.8	45	7.7	23	47	79	56	33	3283	24716
S504	7.2	62.4	57	9.0	22	47	80	57	27	3316	23880
S505	7.3	63.7	53	9.0	23	47	80	57	27	3373	24794
S507	8.8	64.6	63	7.8	24	49	80	60	27	3434	30307
Mean	7.5	62.7	51	8.4	23	48	80	58	28	3350	25293
Probability (%)											
Genotype	12.3	75.8	0.9	0.2	36.0	50.9	28.3	2.0	34.9	14.1	12.2
LSD (0.10)											
Genotype	NS	NS	12	0.5	NS	NS	NS	2.4	NS	NS	NS
CV (%)	10	5	15	4	11	8	3	3	18	4	13

FIELD EXPERIMENT HISTORY

Title: **AgReliant Hybrid Corn Silage Trial**

Experiment: Private Silage Evaluation **Trial ID** 2622 **Year:** 2005

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

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

Supported By: AgReliant Genetics, LLC

Site Information

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

Soil Test: **Date:** N/A **pH** 7.3 **OM (%)** 3.3 **P (ppm)** 53 **K (ppm)** 305

Plot Management

Tillage Operations: Chisel Plow Field Cultivator Cultivate

Fertilizer:

	Analysis	Rate	Date
Preplant	N/A	N/A	N/A
Starter	9-24-24	150	5 /4 /05
Post plant	34-0-0	147	N/A
Manure:	Dairy	20 Ton/A	Fall

Herbicide: Steadfast 0.5 oz/A
Distinct 2.0 oz/A
Permit 0.2 oz/A

Insecticide: Force 4.4 lb/A

Irrigation: None

Planting Date: 5/4/05 **Planting Depth:** 1.5" **Row Width** 30"

Target Plant Density: 32000 **plants per acre** **Planting Method:** Kinze Plot Planter

Harvest Date: 9/16/05 **Harvest Method:** New Holland 707 Plot Chopper

Notes: Planted adjacent to public silage trial

Experimental Design

Design: RCB **Replications:** 3

Plot Size Seeded: 25' x 5' **Experiment Size:** 0.05 A

Harvest Plot Size: 22' x 2.5' **Harvest Plant Density:** 28776 **plants per acre**

Factors/Treatments:

Hybrid	
S501	S504
S502	S505
S503	S506

Results: Table C-19.

Table C-19. AgReliant Hybrid Corn Silage Evaluation Study - Early. Valders, WI 2005.

Genotype	Dry Matter Yield	Moisture	Kernel Milk	CP	ADF	NDF	IVD	NDFD	Starch	Milk Per Ton	Milk Per Acre
	T/A	%	%	%	%	%	%	%	%	lbs/T	lbs/A
S501	7.5	45.5	22	7.8	16	38	84	57	40	3378	25152
S502	5.5	50.0	20	7.5	18	39	83	56	40	3290	18745
S503	7.7	49.1	22	6.7	17	38	84	58	42	3368	26095
S504	7.2	46.3	37	7.8	16	37	84	56	41	3365	24271
S505	7.1	49.1	25	7.5	18	39	83	56	40	3326	23461
S507	8.1	54.4	53	7.2	20	44	83	60	33	3396	27454
Mean	7.2	49.0	30	7.4	17	39	83	57	39	3358	24517
Probability (%)											
Genotype	0.3	1.0	2.0	1.3	7.4	8.1	58.6	2.9	9.8	44.6	0.7
LSD (0.10)											
Genotype	0.8	3.5	16	0.5	2.2	3.8	NS	1.9	5.0	NS	2945
CV (%)	7	5	36	4	8	6	1	2	8	2	8

FIELD EXPERIMENT HISTORY

Title: **BASF Hybrid Corn Silage Trial**

Experiment: Private Silage Evaluation **Trial ID** 2623 **Year:** 2005

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

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

Supported By: BASF Plant Science

Site Information

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

Soil Test: **Date:** 10/1 /05 **pH** 6.4 **OM (%)** 3.7 **P (ppm)** 66 **K (ppm)** 131

Plot Management

Tillage Operations: Chisel Plow Field Cultivator Soil Finisher Cultivated

Fertilizer:

	Analysis	Rate	Date
Preplant	46-0-0	325	N/A
Starter	9-24-24	150	4 /28/05
Post plant	N/A	N/A	N/A
Manure:	N/A	N/A	N/A

Herbicide: Outlook 20 oz/A
Hornet 4.0 oz/A
Callisto 3.0 oz/A

Insecticide: None

Irrigation: None

Planting Date: 4/28/05 **Planting Depth:** 1.5" **Row Width** 30"

Target Plant Density: 32000 **plants per acre** **Planting Method:** Kinze Plot Planter

Harvest Date: 9/14/05 **Harvest Method:** New Holland 707 Plot Chopper

Notes: Planted adjacent to public silage trial

Experimental Design

Design: RCB **Replications:** 3

Plot Size Seeded: 25' x 5' **Experiment Size:** 0.18 A

Harvest Plot Size: 22' x 2.5' **Harvest Plant Density:** 31600 **plants per acre**

Factors/Treatments:

Hybrid		
243	263	308
244	266	318
245	273	323
247	274	326
248	290	336
251	295	349
257	299	367

Results: Table C-20.

Table C-20. BASF Hybrid Corn Silage Evaluation Study - Late. Arlington, WI 2005.

Genotype	Dry Matter Yield	Moisture	Kernel Milk	CP	ADF	NDF	IVD	NDFD	Starch	Milk Per Ton	Milk Per Acre
	T/A	%	%	%	%	%	%	%	%	lbs/T	lbs/A
243	9.2	55.4	52	7.5	20	41	82	56	36	3345	30931
244	9.3	56.4	53	7.2	19	41	83	57	37	3430	32060
245	8.7	57.9	48	7.2	20	41	82	55	36	3372	29169
247	7.9	54.0	53	7.9	21	45	79	54	33	3149	24793
248	8.5	59.0	63	6.9	20	42	82	56	35	3422	29244
251	8.8	58.5	63	6.9	19	41	82	56	35	3432	30291
257	8.1	61.0	60	7.6	21	42	82	56	35	3465	27955
263	8.4	58.3	63	7.3	19	41	82	56	36	3408	28420
266	9.1	57.9	70	7.5	19	40	83	58	38	3496	31975
273	6.4	51.3	8	7.8	20	43	81	55	35	3199	20286
274	6.3	60.6	53	7.6	22	45	81	57	31	3391	21102
290	7.8	53.4	48	6.8	19	39	83	56	39	3327	25942
295	8.1	57.1	57	7.0	18	38	83	56	40	3476	27992
299	8.5	55.7	68	7.0	20	43	82	58	33	3399	28815
308	9.8	55.9	53	6.7	22	44	80	55	30	3237	31567
318	9.1	58.8	52	6.3	19	40	82	54	37	3396	30937
323	9.1	57.1	52	6.4	19	40	82	55	38	3364	30825
326	9.1	61.3	70	6.9	21	43	82	57	34	3499	32023
336	7.4	53.5	57	7.0	19	40	82	56	38	3360	24951
349	8.2	57.8	53	7.1	20	41	82	55	37	3381	27753
367	8.1	46.6	10	7.0	17	37	83	53	42	3260	26467
Mean	8.4	56.6	53	7.1	20	41	82	56	36	3372	28262
Probability (%)											
Genotype	8.6	0.0	0.0	0.0	7.0	5.4	5.1	1.1	0.1	0.0	2.6
LSD (0.10)											
Genotype	1.7	3.1	10	0.5	2.3	3.6	1.7	2.0	3.9	112	5703
CV (%)	15	4	14	5	8	6	1	3	8	2	14

FIELD EXPERIMENT HISTORY

Title: **BASF Hybrid Corn Silage Trial**

Experiment: Private Silage Evaluation **Trial ID** 2624 **Year:** 2005

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

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

Supported By: BASF Plant Science

Site Information

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

Soil Test: **Date:** N/A **pH** 7.1 **OM (%)** **P (ppm)** 35 **K (ppm)** 62

Plot Management

Tillage Operations: Disk Soil Finisher Cultivate

Fertilizer:

	Analysis	Rate	Date
Preplant	46-0-0	392	N/A
Starter	9-24-24	150	4 /25/05
Post plant	N/A	N/A	N/A
Manure:	N/A	N/A	N/A

Herbicide: Aatrex 4L 1.0 qt/A
Harness 1.0 qt/A

Insecticide: Force 4.4 lb/A

Irrigation: None

Planting Date: 4/25/05 **Planting Depth:** 1.5" **Row Width** 30"

Target Plant Density: 32000 **plants per acre** **Planting Method:** Kinze Plot Planter

Harvest Date: 9/7/05 **Harvest Method:** New Holland 707 Plot Chopper

Notes: Planted adjacent to public silage trial

Experimental Design

Design: RCB **Replications:** 3

Plot Size Seeded: 25' x 5' **Experiment Size:** 0.18 A

Harvest Plot Size: 22' x 2.5' **Harvest Plant Density:** 31114 **plants per acre**

Factors/Treatments:

Hybrid		
243	263	308
244	266	318
245	273	323
247	274	326
248	290	336
251	295	349
257	299	367

Results: Table C-21.

Table C-21. BASF Hybrid Corn Silage Evaluation Study - Late. Lancaster, WI 2005.

Genotype	Dry Matter Yield	Moisture	Kernel Milk	CP	ADF	NDF	IVD	NDFD	Starch	Milk Per Ton	Milk Per Acre
	T/A	%	%	%	%	%	%	%	%	lbs/T	lbs/A
243	10.2	61.7	55	8.4	22	43	79	51	34	3251	33028
244	8.9	65.4	62	7.6	26	48	76	51	30	3120	27945
245	9.4	66.1	55	7.7	24	46	77	51	31	3197	30151
247	9.3	60.6	58	8.2	23	45	79	52	33	3238	30161
248	10.2	65.5	67	7.7	25	47	77	51	29	3177	32325
251	9.0	68.0	70	7.3	25	47	77	52	29	3185	28650
257	9.3	69.4	70	8.2	25	48	78	53	26	3228	30008
263	9.9	66.8	73	7.4	25	48	78	54	24	3232	31872
266	10.5	65.8	67	7.0	26	49	78	54	26	3253	34255
273	8.5	59.8	22	7.8	23	45	79	53	32	3250	27735
274	9.7	69.0	70	7.4	26	49	76	51	26	3113	30291
290	9.4	62.1	63	6.7	24	47	79	55	30	3301	31204
295	9.7	63.7	58	7.1	22	43	80	53	35	3380	32750
299	10.1	58.4	42	6.6	24	46	78	53	31	3182	32248
308	11.0	61.9	53	7.0	25	47	78	53	28	3212	35387
318	10.3	65.3	57	6.7	23	44	79	52	33	3299	33945
323	10.7	64.9	60	6.7	24	45	78	52	33	3252	34694
326	9.5	66.4	60	6.7	25	48	78	53	31	3233	30831
336	10.5	65.0	65	7.4	25	48	78	53	27	3222	34017
349	10.5	65.2	67	7.7	26	49	79	57	27	3351	35273
367	7.8	61.7	48	7.2	21	42	80	52	36	3301	25617
Mean	9.7	64.4	59	7.4	24	46	78	53	30	3237	31542
Probability (%)											
Genotype	1.5	0.0	0.0	0.0	1.1	1.5	5.0	0.2	0.0	15.8	5.7
LSD (0.10)											
Genotype	1.3	3.5	10	0.7	2.3	3.3	1.8	2.1	3.8	NS	4827
CV (%)	9	4	12	7	7	5	2	3	9	3	11

FIELD EXPERIMENT HISTORY

Title: **BASF Hybrid Corn Silage Trial**

Experiment: Private Silage Evaluation **Trial ID** 2625 **Year:** 2005

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

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

Supported By: BASF Plant Science

Site Information

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

Soil Test: **Date:** 10/1 /04 **pH** 6.9 **OM (%)** 3.6 **P (ppm)** 38 **K (ppm)** 127

Plot Management

Tillage Operations: Field Cultivator Cultivate

Fertilizer:

	Analysis	Rate	Date
Preplant	N/A	N/A	N/A
Starter	9-24-24	150	4-29-05
Post plant	28-0-0	429	N/A
Manure:	N/A	N/A	N/A

Herbicide: Basis 0.33 oz/A
Lumax 2.5 qt/A

Insecticide: None

Irrigation: None

Planting Date: 4-29-05 **Planting Depth:** 1.5" **Row Width** 30"

Target Plant Density: 32000 **plants per acre** **Planting Method:** Kinze Plot Planter

Harvest Date: 9/8/05 **Harvest Method:** New Holland 707 Plot Chopper

Notes: Planted adjacent to public silage trial

Experimental Design

Design: RCB **Replications:** 3

Plot Size Seeded: 25' x 5' **Experiment Size:** 0.18 A

Harvest Plot Size: 22' x 2.5' **Harvest Plant Density:** 31001 **plants per acre**

Factors/Treatments:

Hybrid		
243	263	308
244	266	318
245	273	323
247	274	326
248	290	336
251	295	349
257	299	367

Results: Table C-22.

Table C-22. BASF Hybrid Corn Silage Evaluation Study - Early. Fond du Lac, WI 2005.

Genotype	Dry Matter Yield	Moisture	Kernel Milk	CP	ADF	NDF	IVD	NDFD	Starch	Milk Per Ton	Milk Per Acre
	T/A	%	%	%	%	%	%	%	%	lbs/T	lbs/A
243	9.1	62.2	55	6.5	23	46	79	55	31	3328	30453
244	10.1	62.1	58	6.7	21	43	80	53	34	3369	34095
245	7.5	65.6	68	6.7	23	45	80	56	31	3394	25392
247	7.5	62.2	70	7.8	22	46	81	59	31	3502	26222
248	8.5	65.1	67	6.7	23	46	80	57	30	3445	29324
251	8.0	65.3	72	6.7	23	46	80	57	31	3421	27224
257	9.2	66.4	75	6.6	23	45	81	59	30	3505	32260
263	9.4	64.5	78	6.6	22	45	81	57	30	3444	32502
266	8.7	67.3	82	7.4	24	48	79	56	27	3291	28764
273	8.4	58.6	33	7.3	21	43	80	55	36	3304	27844
274	9.3	68.4	82	7.1	25	48	78	56	28	3280	30539
290	9.0	57.7	70	6.5	20	40	82	56	38	3432	30922
295	8.7	62.6	70	6.0	23	45	81	56	35	3401	29738
299	9.4	58.6	67	6.5	22	43	80	55	36	3306	31213
308	9.4	63.2	70	6.8	24	47	80	56	29	3353	31341
318	10.2	63.5	73	5.7	23	45	80	55	33	3373	34232
323	9.3	65.2	73	5.9	24	46	79	55	31	3332	31064
326	9.6	65.6	78	6.4	22	44	81	58	33	3520	33673
336	8.7	64.7	92	6.2	25	47	79	56	31	3326	28986
349	8.5	67.0	82	7.0	25	48	79	57	27	3340	28487
367	8.4	56.6	55	6.9	20	42	82	56	37	3364	28272
Mean	8.9	63.4	70	6.7	23	45	80	56	32	3382	30121
Probability (%)											
Genotype	7.5	0.0	0.0	0.0	3.9	6.3	1.7	0.5	1.0	7.5	18.8
LSD (0.10)											
Genotype	1.3	3.1	9	0.5	2.5	4.0	2.0	2.1	5.1	134	NS
CV (%)	11	3	9	6	8	6	9	3	11	3	12

FIELD EXPERIMENT HISTORY

Title: **BASF Hybrid Corn Silage Trial**

Experiment: Private Silage Evaluation **Trial ID:** 2626 **Year:** 2005

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

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

Supported By: BASF Plant Science

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)** 68 **K (ppm)** 229

Plot Management

Tillage Operations: Fall Zone Builder Cultivated 6 /16/05

Fertilizer:

	Analysis	Rate	Date
Preplant	46-0-0	218	N/A
	21-0-0	238	N/A
Starter	9-24-24	150	5 /2 /05
Post plant	N/A	N/A	N/A
Manure:	N/A	N/A	N/A

Herbicide: Cinch 2.0 pt/A
Callisto 3.0 oz/A

Insecticide: None

Irrigation: None

Planting Date: 5/2/05 **Planting Depth:** 1.5" **Row Width** 30"

Target Plant Density: 32000 **plants per acre** **Planting Method:** Kinze Plot Planter

Harvest Date: 9/12/05 **Harvest Method:** New Holland 707 Plot Chopper

Notes: Planted adjacent to public silage trial

Experimental Design

Design: RCB **Replications:** 3

Plot Size Seeded: 25' x 5' **Experiment Size:** 0.18 A

Harvest Plot Size: 22' x 2.5' **Harvest Plant Density:** 31918 **plants per acre**

Factors/Treatments:

Hybrid		
243	263	308
244	266	318
245	273	323
247	274	326
248	290	336
251	295	349
257	299	367

Results: Table C-23.

Table C-23. BASF Hybrid Corn Silage Evaluation Study - Early. Galesville, WI 2005.

Genotype	Dry Matter Yield	Moisture	Kernel Milk	CP	ADF	NDF	IVD	NDFD	Starch	Milk Per Ton	Milk Per Acre
	T/A	%	%	%	%	%	%	%	%	lbs/T	lbs/A
243	10.6	64.1	48	8.3	21	42	81	55	37	3469	36825
244	10.5	65.8	53	8.0	22	44	80	54	33	3406	35616
245	9.9	66.2	53	7.7	22	44	79	53	33	3333	32895
247	11.0	60.2	48	8.1	20	42	81	56	35	3436	37965
248	9.0	71.3	68	8.3	23	46	80	55	32	3369	30273
251	9.2	68.6	67	7.9	22	43	80	55	34	3425	31511
257	9.7	70.1	68	8.7	24	47	79	56	30	3364	30493
263	10.3	69.3	75	8.1	24	47	79	54	29	3286	33881
266	10.5	68.2	63	8.0	23	45	80	55	31	3379	35668
273	9.3	58.3	32	8.1	21	43	81	56	34	3364	31316
274	10.6	71.9	68	8.9	25	47	79	55	30	3296	34928
290	9.8	62.1	55	7.3	22	44	81	57	33	3475	34084
295	9.3	67.1	60	7.9	23	45	80	56	31	3399	31555
299	11.0	60.6	57	7.1	24	47	79	56	30	3309	36454
308	11.2	63.5	58	6.7	25	49	79	56	26	3304	36901
318	8.8	69.7	63	7.1	24	46	79	55	33	3346	29291
323	9.8	68.6	62	6.8	22	44	80	53	34	3358	32763
326	10.2	69.7	67	7.1	25	47	79	56	31	3369	34338
336	10.9	66.0	70	7.3	22	44	81	56	31	3444	37476
349	10.9	69.2	58	8.0	23	44	80	56	34	3441	37445
367	9.2	57.3	42	7.8	21	43	81	56	33	3331	30526
Mean	10.1	66.1	59	7.8	23	45	80	55	32	3377	33970
Probability (%)											
Genotype	0.9	0.0	0.0	0.0	1.4	8.4	12.4	0.4	5.3	23.7	0.7
LSD (0.10)											
Genotype	1.2	2.7	9	0.5	2.3	3.6	NS	1.5	4.4	NS	4177
CV (%)	8	3	11	5	7	6	2	2	10	3	9

FIELD EXPERIMENT HISTORY

Title: **Garst Seed Company**

Experiment: Private Silage Evaluation **Trial ID** 2627 **Year:** 2005

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

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

Supported By: Garst Seed Company

Site Information

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

Soil Test: **Date:** 10/1 /04 **pH** 6.9 **OM (%)** 3.6 **P (ppm)** 38 **K (ppm)** 127

Plot Management

Tillage Operations: Field Cultivator Cultivate

Fertilizer:

	Analysis	Rate	Date
Preplant	N/A	N/A	N/A
Starter	9-24-24	150	4-29-05
Post plant	28-0-0	429	N/A
Manure:	N/A	N/A	N/A

Herbicide: Basis 0.33 oz/A
Lumax 2.5 qt/A

Insecticide: None

Irrigation: None

Planting Date: 4-29-05 **Planting Depth:** 1.5" **Row Width** 30"

Target Plant Density: 32000 **plants per acre** **Planting Method:** Kinze Plot Planter

Harvest Date: 9/8/05 **Harvest Method:** New Holland 707 Plot Chopper

Notes: Planted adjacent to public silage trial

Experimental Design

Design: RCB **Replications:** 3

Plot Size Seeded: 25' x 5' **Experiment Size:** 0.05 A

Harvest Plot Size: 22' x 2.5' **Harvest Plant Density:** 31680 **plants per acre**

Factors/Treatments:

Hybrid	
8590IT	NF647
8676IT	NF691
8689IT	NF635IT

Results: Table C-24.

Table C-24. Garst Hybrid Corn Silage Evaluation Study - Mid. Fond du Lac, WI 2005.

	Dry Matter		Kernel							Milk Per	
Genotype	Yield	Moisture	Milk	CP	ADF	NDF	IVD	NDFD	Starch	Ton	Acre
	T/A	%	%	%	%	%	%	%	%	lbs/T	lbs/A
8590IT	8.7	61.9	63	5.9	23	44	81	57	35	3464	30009
8676IT	9.7	64.6	70	6.6	23	44	80	54	31	3362	32446
8689IT	9.1	59.1	67	5.5	21	42	82	56	36	3450	31552
NF647	8.8	63.0	70	6.4	24	45	79	53	31	3314	29195
NF691	9.6	64.9	78	5.9	24	45	79	53	32	3298	31610
NX635IT	9.3	61.4	65	5.6	23	45	79	54	34	3314	30653
Mean	9.2	62.5	69	6.0	23	44	80	55	33	3367	30911
Probability (%)											
Genotype	32.2	1.1	28.1	6.0	57.0	74.1	12.5	1.1	47.4	20.3	56.8
LSD (0.10)											
Genotype	NS	2.5	NS	0.7	NS	NS	NS	1.8	NS	NS	NS
CV (%)	7	3	11	7	8	6	2	2	12	3	7

FIELD EXPERIMENT HISTORY

Title: **Garst Seed Company**

Experiment: Private Silage Evaluation **Trial ID:** 2628 **Year:** 2005

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

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

Supported By: Garst Seed Company

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)** 68 **K (ppm)** 229

Plot Management

Tillage Operations: Fall Zone Builder Cultivated 6 /16/05

Fertilizer:

	Analysis	Rate	Date
Preplant	46-0-0	218	N/A
	21-0-0	238	N/A
Starter	9-24-24	150	5 /2 /05
Post plant	N/A	N/A	N/A
Manure:	N/A	N/A	N/A

Herbicide: Cinch 2.0 pt/A
Callisto 3.0 oz/A

Insecticide: None

Irrigation: None

Planting Date: 5/2/05 **Planting Depth:** 1.5" **Row Width** 30"

Target Plant Density: 32000 **plants per acre** **Planting Method:** Kinze Plot Planter

Harvest Date: 9/12/05 **Harvest Method:** New Holland 707 Plot Chopper

Notes: Planted adjacent to public silage trial

Experimental Design

Design: RCB **Replications:** 3

Plot Size Seeded: 25' x 5' **Experiment Size:** 0.05 A

Harvest Plot Size: 22' x 2.5' **Harvest Plant Density:** 31800 **plants per acre**

Factors/Treatments:

Hybrid	
8590IT	NF647
8676IT	NF691
8689IT	NF635IT

Results: Table C-25.

Table C-25. Garst Hybrid Corn Silage Evaluation Study - Mid. Galesville, WI 2005.

Genotype	Dry Matter Yield	Moisture	Kernel Milk	CP	ADF	NDF	IVD	NDFD	Starch	Milk Per Ton	Milk Per Acre
	T/A	%	%	%	%	%	%	%	%	lbs/T	lbs/A
8590IT	9.7	63.6	52	6.1	24	45	79	55	33	3369	32669
8676IT	10.1	66.4	47	6.9	23	43	79	52	35	3357	33914
8689IT	10.7	65.7	53	7.0	22	43	80	53	35	3397	36371
NF647	10.7	63.3	32	7.1	21	41	81	53	37	3429	36543
NF691	11.1	65.3	52	7.2	21	41	80	52	37	3423	38028
NX635IT	11.1	61.2	55	6.3	19	38	83	55	41	3550	39540
Mean	10.6	64.3	48	6.7	22	42	80	53	36	3421	36177
Probability (%)											
Genotype	11.3	13.8	0.6	0.0	1.6	2.7	2.6	21.3	8.4	6.5	3.6
LSD (0.10)											
Genotype	NS	NS	9	0.3	2.1	3.2	1.6	NS	4.2	107	3518
CV (%)	6	4	12	3	6	5	1	3	8	2	6

FIELD EXPERIMENT HISTORY

Title: **Garst Seed Company**

Experiment: Private Silage Evaluation **Trial ID** 2629 **Year:** 2005

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

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

Supported By: Garst Seed Company

Site Information

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

Soil Test: **Date:** 10/1 /04 **pH** 6.1 **OM (%)** 2.4 **P (ppm)** 47 **K (ppm)** 142

Plot Management

Tillage Operations: Field Cultivator Cultivate

Fertilizer:

	Analysis	Rate	Date
Preplant	28-0-0	535	N/A
Starter	9-24-24	150	5 /2 /05
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

Irrigation: None

Planting Date: 5/2/05 **Planting Depth:** 1.5" **Row Width** 30"

Target Plant Density: 32000 **plants per acre** **Planting Method:** Kinze Plot Planter

Harvest Date: 8/30/05 **Harvest Method:** New Holland 707 Plot Chopper

Notes: Planted adjacent to public silage trial

Experimental Design

Design: RCB **Replications:** 3

Plot Size Seeded: 25' x 5' **Experiment Size:** 0.02 A

Harvest Plot Size: 22' x 2.5' **Harvest Plant Density:** 30413 **plants per acre**

Factors/Treatments:

Hybrid

8774PL
NF802CBLL

Results: Table C-26.

Table C-26. Garst Hybrid Corn Silage Evaluation Study - Early. Chippewa Falls, WI 2005.

Genotype	Dry Matter Yield	Moisture	Kernel Milk	CP	ADF	NDF	IVD	NDFD	Starch	Milk Per Ton	Milk Per Acre
	T/A	%	%	%	%	%	%	%	%	lbs/T	lbs/A
8744PL	6.7	65.9	88	6.5	29	55	76	57	23	3137	21134
NF802CBLL	6.8	63.6	77	6.8	24	48	79	56	31	3292	22566
Mean	6.8	64.7	83	6.6	26	52	77	56	27	3214	21850
Probability (%)											
Genotype	70.7	13.8	11.8	51.7	1.7	1.4	9.0	34.7	2.3	12.5	38.0
LSD (0.10)											
Genotype	NS	NS	NS	NS	1.4	1.8	1.7	NS	3.0	NS	NS
CV (%)	5	2	7	6	3	2	1	2	6	2	7

FIELD EXPERIMENT HISTORY

Title: **Garst Seed Company**

Experiment: Private Silage Evaluation **Trial ID** 2630 **Year:** 2005

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

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

Supported By: Garst Seed Company

Site Information

Field: **Previous Crop:** **Soil Type:** Loyal Silt Loam

Soil Test: **Date:** 10/1 /04 **pH** 6.7 **OM (%)** 3.4 **P (ppm)** 94 **K (ppm)** 212

Plot Management

Tillage Operations: Chisel Plow Field Cultivator Cultivate

Fertilizer:

	Analysis	Rate	Date
Preplant	N/A	N/A	N/A
Starter	9-24-24	150	5 /3 /05
Post plant	28-0-0	160	N/A
Manure:	Dairy	6832 gal/A	Fall

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

Irrigation: None

Planting Date: 5/3/05 **Planting Depth:** 1.5" **Row Width** 30"

Target Plant Density: 32000 **plants per acre** **Planting Method:** Kinze Plot Planter

Harvest Date: 9/20/05 **Harvest Method:** New Holland 707 Plot Chopper

Notes: Planted adjacent to public silage trial

Experimental Design

Design: RCB **Replications:** 3

Plot Size Seeded: 25' x 5' **Experiment Size:** 0.02 A

Harvest Plot Size: 22' x 2.5' **Harvest Plant Density:** 31086 **plants per acre**

Factors/Treatments:

Hybrid

8774PL
NF802CBLL

Results: Table C-27.

Table C-27. Garst Hybrid Corn Silage Evaluation Study - Early. Marshfield, WI 2005.

Genotype	Dry Matter Yield	Moisture	Kernel Milk	CP	ADF	NDF	IVD	NDFD	Starch	Milk Per Ton	Milk Per Acre
	T/A	%	%	%	%	%	%	%	%	lbs/T	lbs/A
8744PL	7.7	63.6	53	7.8	24	48	80	58	29	3361	25904
NF802CBLL	7.4	62.6	55	8.8	21	46	81	58	31	3442	25633
Mean	7.6	63.1	54	8.3	23	47	80	58	30	3401	25768
Probability (%)											
Genotype	77.2	41.0	80.8	15.0	4.1	5.9	9.1	50.8	2.7	18.6	92.8
LSD (0.10)											
Genotype	NS	NS	NS	NS	1.5	1.6	1.1	NS	1.0	NS	NS
CV (%)	13	2	14	7	3	2	1	2	2	1	13

FIELD EXPERIMENT HISTORY

Title: **Garst Seed Company**

Experiment: Private Silage Evaluation **Trial ID** 2631 **Year:** 2005

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

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

Supported By: Garst Seed Company

Site Information

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

Soil Test: **Date:** N/A **pH** 7.3 **OM (%)** 3.3 **P (ppm)** 53 **K (ppm)** 305

Plot Management

Tillage Operations: Chisel Plow Field Cultivator Cultivate

Fertilizer:

	Analysis	Rate	Date
Preplant	N/A	N/A	N/A
Starter	9-24-24	150	5 /4 /05
Post plant	34-0-0	147	N/A
Manure:	Dairy	20 Ton/A	Fall

Herbicide: Steadfast 0.5 oz/A
Distinct 2.0 oz/A
Permit 0.2 oz/A

Insecticide: Force 4.4 lb/A

Irrigation: None

Planting Date: 5/4/05 **Planting Depth:** 1.5" **Row Width** 30"

Target Plant Density: 32000 **plants per acre** **Planting Method:** Kinze Plot Planter

Harvest Date: 9/16/05 **Harvest Method:** New Holland 707 Plot Chopper

Notes: Planted adjacent to public silage trial

Experimental Design

Design: RCB **Replications:** 3

Plot Size Seeded: 25' x 5' **Experiment Size:** 0.02 A

Harvest Plot Size: 22' x 2.5' **Harvest Plant Density:** 28776 **plants per acre**

Factors/Treatments:

Hybrid

8774PL
NF802CBLL

Results: Table C-28.

Table C-28. Garst Hybrid Corn Silage Evaluation Study - Early. Valders, WI 2005.

Genotype	Dry Matter Yield	Moisture	Kernel Milk	CP	ADF	NDF	IVD	NDFD	Starch	Milk Per Ton	Milk Per Acre
	T/A	%	%	%	%	%	%	%	%	lbs/T	lbs/A
8744PL	7.3	48.7	45	6.9	18	41	83	57	37	3328	24324
NF802CBLL	7.7	46.4	38	7.1	15	34	85	56	45	3423	26334
Mean	7.5	47.6	42	7.0	16	37	84	57	41	3376	25329
Probability (%)											
Genotype	46.6	47.4	38.3	43.0	1.3	0.7	1.2	33.0	0.8	9.5	34.3
LSD (0.10)											
Genotype	NS	NS	NS	NS	1.0	1.3	0.6	NS	1.6	74	NS
CV (%)	7	7	18	3	3	2	0	3	2	1	8

FIELD EXPERIMENT HISTORY

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

Experiment: 02 Plant Density **Trial ID:** 2708 **Year:** 2005

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: ARS428 **Previous Crop:** Soybean **Soil Type:** Plano Silt Loam

Soil Test: **Date:** 11/1 /05 **pH** 6.6 **OM (%)** 3.6 **P (ppm)** 65 **K (ppm)** 130

Plot Management

Tillage Operations: Chisel Plow Field Cultivator Soil Finisher Cultivated 6/9/05

		Analysis:	Rate lbs/A:	Date:
Fertilizer:	**Preplant :**	46-0-0	324 lbs/A	4 /14/05
	Starter :	9-24-24	150 lbs/A	4 /27/05
	Post plant :	N/A	N/A	N/A
	Manure:	N/A	N/A	N/A

Herbicide: Outlook 20 oz/A
Hornet 4 oz/A
Callisto 3oz/A

Insecticide: None
Hybrid: See Factors

Irrigation: None

Planting Date: 4/28/05 **Planting Depth:** 1.5" **Row Width:** 30"

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

Harvest Date: 10/10/05 **Harvest Method:** Massey Ferguson 8XP

Notes:

Experimental Design

Design: RCB **Replications:** 3

Plot Size Seeded: 10' x 25' **Experiment Size:** 0.55 Acre

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

Factors/Treatments:

Target Plant Density: (plants/A)

14000 20000 26000
32000 38000 44000
50000 56000

Hybrids:

Pioneer 34M94
Pioneer 34M95

Results: Tables C-29, C-30, C-31 and C-32.

Table C-29. Plant Density and Hybrid Influence on Corn Grain. Arlington, WI - 2005.

Target Density	Hybrid	Trait	Grain Yield	Moisture	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
	Pioneer 34M94		201	24.5	55	291	28	11	17	5	0	34304	32621	44385	47421
	Pioneer 34M95	Bt	208	26.5	55	294	38	1	37	5	0	34733	32703	45144	47421
14000			155	25.5	54	222	2	2	0	1	0	14454	15246	17919	19008
20000			194	27.3	54	270	8	2	6	0	0	20064	20262	25311	26928
26000			218	27.3	54	304	13	3	9	1	0	25740	25476	34221	35640
32000			222	26.1	54	314	26	6	20	1	0	31020	30558	41613	43560
38000			223	25.7	55	317	30	4	27	7	0	37686	35574	48906	51480
44000			203	24.3	55	295	65	10	55	5	0	43560	41250	55935	59400
50000			213	24.5	55	309	52	5	47	10	0	48642	43956	63294	67320
56000			208	23.3	56	306	67	13	54	11	0	54978	48972	70917	76032
14000	Pioneer 34M94		159	25.5	54	227	3	3	0	1	0	14652	16236	17688	19008
14000	Pioneer 34M95	Bt	152	25.4	55	218	2	2	0	1	0	14256	14256	18150	19008
20000	Pioneer 34M94		190	26.4	54	268	4	4	0	0	0	19932	20196	25146	26928
20000	Pioneer 34M95	Bt	197	28.2	54	272	11	0	11	0	1	20196	20328	25476	26928
26000	Pioneer 34M94		214	25.7	54	305	9	5	4	0	0	25476	25608	34188	35640
26000	Pioneer 34M95	Bt	223	29.0	54	303	16	1	15	2	0	26004	25344	34254	35640
32000	Pioneer 34M94		213	23.9	55	311	22	12	11	1	0	30492	30228	41250	43560
32000	Pioneer 34M95	Bt	230	28.3	54	317	29	0	29	2	0	31548	30888	41976	43560
38000	Pioneer 34M94		208	25.1	55	299	32	6	26	11	0	37884	34980	48180	51480
38000	Pioneer 34M95	Bt	237	26.3	55	335	28	1	27	4	0	37488	36168	49632	51480
44000	Pioneer 34M94		201	24.0	55	292	59	19	40	6	0	44088	41448	54582	59400
44000	Pioneer 34M95	Bt	206	24.5	55	299	71	1	70	5	0	43032	41052	57288	59400
50000	Pioneer 34M94		221	23.0	56	326	36	9	27	8	0	48444	44484	63030	67320
50000	Pioneer 34M95	Bt	206	26.1	55	292	68	0	68	11	0	48840	43428	63558	67320
56000	Pioneer 34M94		201	22.6	56	298	56	26	30	11	0	53460	47784	71016	76032
56000	Pioneer 34M95	Bt	215	24.0	56	314	78	1	77	11	0	56496	50160	70818	76032
Mean			205	25.5	55	292	33	6	27	5	0	34518	32662	44765	47421
Probability(%)															
Plant Density (D)			0.0	0.0	0.0	0.0	0.0	31.8	0.0	0.0	52.2	0.0	0.0	0.0	-
Hybrid (H)			45.9	37.2	85.6	73.6	0.6	17.4	5.0	79.5	6.7	46.2	81.8	13.5	-
D x H			44.4	17.8	11.1	54.3	36.4	28.7	20.1	11.4	52.2	23.1	55.9	52.6	-
LSD (0.10)															
Plant Density (D)			16	1.4	0	26	13	NS	17	3	NS	1247	1762	1179	-
Hybrid (H)			NS	NS	NS	NS	4	NS	15	NS	0	NS	NS	NS	-
D x H			NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	-
CV(%)			8	6	1	9	41	159	65	64	372	4	5	3	-

Table C-30. Plant Density and Hybrid Influence on Silage Preformance. Arlington, WI - 2005.

			Whole Plant																
Target			Dry Matter		Kernel	Crude			*In Vitro*			Milk per		Forage Harvest		Visual Moisture Ratings		
Density	Hybrid	Trait	Yield	Moisture	Milk	Protein	ADF	NDF	Digest	NDFD	Starch	Ton	Acre	plants	ears	Leaf	Greenness	Husk
plants/A			tons/A	%	%	%	%	%	%	%	%	lbs/T	lbs/T	plants/A	ears/A	1 to 5	0 to 10	Tan/Green
	Pioneer 34M94		8.9	52.2	51	6.6	20.9	44.0	82.0	59.2	35.5	3336	29853	34518	32637	3	5	T
	Pioneer 34M95	Bt	9.6	56.3	60	6.5	22.1	45.7	81.7	60.0	33.0	3375	32381	35013	31218	3	6	T
14000			8.5	57.2	61	7.3	22.2	46.7	81.7	60.8	29.2	3406	28860	14916	15444	4	6	T
20000			9.3	55.1	57	7.0	20.7	44.7	83.3	62.7	33.1	3495	32612	20592	20196	4	6	T
26000			9.7	55.3	58	6.6	21.1	44.3	82.0	59.5	34.2	3391	32960	26400	26004	3	6	G
32000			9.6	55.2	54	6.4	21.5	44.7	81.8	59.3	35.0	3361	32269	31416	31020	3	5	T
38000			10.0	51.8	48	6.2	20.4	43.0	82.3	58.8	37.8	3314	33393	39072	37752	3	5	T
44000			8.7	52.4	54	6.2	22.2	45.6	80.9	58.1	34.7	3248	28367	44088	40392	3	5	T
50000			9.1	53.9	52	6.0	22.3	45.9	81.3	59.2	34.2	3316	30337	48180	41580	3	5	T
56000			9.1	53.2	58	6.3	21.5	44.2	81.7	58.6	35.7	3311	30137	53460	43032	3	5	T
14000	Pioneer 34M94		8.5	55.7	58	7.2	21.6	45.8	82.1	60.9	30.8	3405	28954	15576	15576	4	6	T
14000	Pioneer 34M95	Bt	8.4	58.6	63	7.4	22.7	47.6	81.2	60.6	27.7	3407	28766	14256	15312	4	6	T
20000	Pioneer 34M94		9.1	54.4	57	7.2	19.4	43.0	83.9	62.6	34.7	3522	31946	20592	19800	3	5	T
20000	Pioneer 34M95	Bt	9.6	55.9	57	6.8	22.1	46.3	82.7	62.8	31.5	3468	33277	20592	20592	4	6	T
26000	Pioneer 34M94		9.5	52.9	53	6.6	21.1	44.5	81.6	58.9	34.5	3330	31642	26928	26136	2	5	T
26000	Pioneer 34M95	Bt	9.9	57.7	62	6.7	21.1	44.0	82.4	60.0	33.9	3452	34278	25872	25872	4	6	G
32000	Pioneer 34M94		9.2	52.8	47	6.6	20.4	43.0	82.2	58.5	37.1	3333	30784	31680	31416	2	4	T
32000	Pioneer 34M95	Bt	10.0	57.6	62	6.3	22.5	46.5	81.5	60.1	32.9	3389	33754	31152	30624	4	6	T
38000	Pioneer 34M94		9.0	49.9	43	6.4	20.7	43.6	81.4	57.4	37.5	3236	29308	38016	37224	3	4	T
38000	Pioneer 34M95	Bt	11.0	53.7	52	5.9	20.1	42.4	83.1	60.2	38.0	3391	37478	40128	38280	3	6	T
44000	Pioneer 34M94		7.9	50.3	45	6.2	22.6	45.7	80.3	57.0	35.2	3193	25621	43032	41448	3	4	T
44000	Pioneer 34M95	Bt	9.4	54.5	63	6.2	21.9	45.5	81.5	59.2	34.3	3304	31112	45144	39336	3	6	T
50000	Pioneer 34M94		9.0	51.5	52	6.1	21.8	45.4	81.7	59.7	34.8	3323	29912	48576	45144	3	4	T
50000	Pioneer 34M95	Bt	9.3	56.4	52	6.0	22.9	46.4	80.9	58.7	33.7	3309	30761	47784	38016	3	6	T
56000	Pioneer 34M94		9.2	50.2	50	6.2	19.4	41.2	82.9	58.5	39.5	3346	30653	51744	44352	2	4	T
56000	Pioneer 34M95	Bt	9.0	56.3	67	6.3	23.6	47.2	80.5	58.6	31.9	3277	29620	55176	41712	3	5	T
Mean			9.3	54.3	55	6.5	21.5	44.9	81.9	59.6	34.2	3355	31117	34766	31928	3	5	T
Probability(%)																		
Plant Density (D)			31.5	0.6	19.4	0.0	70.3	62.3	40.5	1.3	1.4	1.8	35.9	0.0	0.0	0	1	6
Hybrid (H)			30.9	27.7	38.8	28.8	1.2	1.3	64.1	45.0	0.4	63.9	30.5	19.3	3.8	13	28	12
D x H			73.5	76.9	37.2	63.9	51.6	55.0	47.0	71.3	53.3	49.2	66.1	5.7	3.3	1	12	13
LSD (0.10)																		
Plant Density (D)			NS	2.2	NS	0.3	NS	NS	NS	2.0	3.3	105	NS	1428	1959	0	1	0
Hybrid (H)			NS	NS	NS	NS	0.6	0.9	NS	NS	0.9	NS	NS	NS	987	NS	NS	NS
D x H			NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	2019	2770	1	NS	NS
CV(%)			13	4	15	5	10	7	2	3	10	3	14	4	6	12	11	196

Table C-31. Plant Density and Hybrid Influence on Yield Components. Arlington, WI - 2005.

Target Density	Hybrid	Trait	Ear Size			1000 Kernel weight
			Kernels/Ear	Kernels/Row	Rows/Ear	
plants/A			no./ear	no./row	no./ear	grams
	Pioneer 34M94		518	31	17	282.5
	Pioneer 34M95	Bt	585	37	16	292.0
14000			576	33	17	325.2
20000			556	34	16	315.7
26000			556	34	16	307.3
32000			507	32	16	292.3
38000			790	48	17	278.4
44000			510	32	16	264.1
50000			455	29	16	259.6
56000			459	29	16	255.3
14000	Pioneer 34M94		562	32	18	321.0
14000	Pioneer 34M95	Bt	589	34	17	329.4
20000	Pioneer 34M94		548	33	17	312.6
20000	Pioneer 34M95	Bt	564	35	16	318.7
26000	Pioneer 34M94		563	34	17	304.9
26000	Pioneer 34M95	Bt	550	34	16	309.7
32000	Pioneer 34M94		494	30	16	288.2
32000	Pioneer 34M95	Bt	521	33	16	296.5
38000	Pioneer 34M94		540	32	17	276.2
38000	Pioneer 34M95	Bt	1041	65	16	280.7
44000	Pioneer 34M94		516	32	16	260.7
44000	Pioneer 34M95	Bt	505	33	16	267.5
50000	Pioneer 34M94		440	28	16	252.8
50000	Pioneer 34M95	Bt	471	30	16	266.3
56000	Pioneer 34M94		482	30	16	243.5
56000	Pioneer 34M95	Bt	436	28	15	267.0
Mean			551	34	16	287.2
Probability(%)						
Plant Density (D)			37.2	46.9	1.8	0.0
Hybrid (H)			40.5	28.9	3.4	44.2
D x H			60.4	55.5	99.2	61.6
LSD (0.10)						
Plant Density (D)			NS	NS	1	8.7
Hybrid (H)			NS	NS	0	NS
D x H			NS	NS	NS	NS
CV(%)			44	44	5	3

Table C-32. Plant Density and Hybrid Influence on Corn Growth and Development. Arlington, WI - 2005.

Target Density	Hybrid	Trait	Observation Day of Year	Leaf Development: Leaf Collars	Hail Adjusters Method	Total Leaves	Plant Height
plants/A				no./plant	no./plant	no./plant	inches
			151	2.0	3.7	4.0	3.9
			165	5.3	7.7	8.6	16.7
			180	8.3	11.4	12.7	41.2
			194	12.9	15.0	16.2	66.0
			208	19.6	19.5	19.6	79.3
			234	19.6	19.5	19.6	82.7
	Pioneer 34M94			11.4	13.0	13.6	48.2
	Pioneer 34M95	Bt		11.2	12.7	13.4	48.4
	Pioneer 34M94		151	2.0	3.8	4.0	3.7
	Pioneer 34M94		165	5.3	7.8	8.6	17.2
	Pioneer 34M94		180	8.4	11.7	12.9	41.9
	Pioneer 34M94		194	13.0	15.1	16.4	65.6
	Pioneer 34M94		208	19.8	19.7	19.8	78.7
	Pioneer 34M94		234	19.8	19.7	19.8	81.8
	Pioneer 34M95	Bt	151	2.0	3.6	4.0	4.0
	Pioneer 34M95	Bt	165	5.2	7.7	8.6	16.1
	Pioneer 34M95	Bt	180	8.2	11.2	12.5	40.5
	Pioneer 34M95	Bt	194	12.9	14.9	16.1	66.3
	Pioneer 34M95	Bt	208	19.5	19.4	19.5	79.9
	Pioneer 34M95	Bt	234	19.5	19.4	19.5	83.5
14000				11.8	13.5	14.1	51.2
20000				11.7	13.2	13.8	51.4
26000				11.3	12.8	13.5	50.7
32000				11.5	12.9	13.6	49.7
38000				11.2	12.8	13.4	48.5
44000				11.2	12.6	13.3	44.6
50000				10.7	12.3	12.9	46.6
56000				11.0	12.5	13.2	43.5
14000	Pioneer 34M94			12.0	13.9	14.3	51.2
14000	Pioneer 34M95	Bt		11.6	13.1	13.8	51.2
20000	Pioneer 34M94			11.6	13.2	13.8	50.9
20000	Pioneer 34M95	Bt		11.8	13.3	13.9	51.9
26000	Pioneer 34M94			11.3	12.9	13.5	50.1
26000	Pioneer 34M95	Bt		11.3	12.7	13.5	51.3
32000	Pioneer 34M94			11.6	13.1	13.8	48.3
32000	Pioneer 34M95	Bt		11.3	12.8	13.5	51.2
38000	Pioneer 34M94			11.5	13.1	13.7	48.7
38000	Pioneer 34M95	Bt		10.9	12.5	13.1	48.2
44000	Pioneer 34M94			11.3	12.6	13.3	43.8
44000	Pioneer 34M95	Bt		11.2	12.6	13.3	45.4
50000	Pioneer 34M94			10.9	12.5	13.1	47.0
50000	Pioneer 34M95	Bt		10.6	12.1	12.7	46.2
56000	Pioneer 34M94			11.0	12.5	13.3	45.3
56000	Pioneer 34M95	Bt		10.9	12.4	13.1	41.8

(continued)

Table C-32. Plant Density and Hybrid Influence on Corn Growth and Development.
(continued) **Arlington, WI - 2005.**

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
14000			151	2.0	3.8	4.0	3.8
14000			165	5.5	8.1	9.0	16.7
14000			180	9.0	12.7	13.8	41.6
14000			194	14.0	16.1	17.2	71.0
14000			208	20.2	20.2	20.2	86.8
14000			234	20.2	20.2	20.2	87.4
20000			151	2.0	3.6	4.0	3.6
20000			165	5.6	7.9	8.7	15.8
20000			180	8.9	12.1	13.5	42.3
20000			194	13.6	15.7	16.9	69.8
20000			208	20.0	20.0	20.0	87.7
20000			234	20.0	20.0	20.0	89.3
26000			151	2.0	3.8	4.0	3.6
26000			165	5.4	7.8	8.6	17.3
26000			180	8.5	11.6	13.1	41.6
26000			194	13.2	15.1	16.3	69.4
26000			208	19.4	19.3	19.4	85.3
26000			234	19.4	19.3	19.4	87.0
32000			151	2.0	3.7	4.0	4.0
32000			165	5.3	7.6	8.7	16.6
32000			180	8.5	11.6	12.9	42.0
32000			194	13.0	15.0	16.2	67.5
32000			208	20.0	19.9	20.0	81.8
32000			234	20.0	19.9	20.0	86.4
38000			151	2.0	3.8	4.0	3.9
38000			165	5.3	7.8	8.7	16.4
38000			180	8.2	11.4	12.5	41.3
38000			194	12.7	14.8	16.0	65.0
38000			208	19.6	19.5	19.6	80.3
38000			234	19.6	19.5	19.6	83.8
44000			151	2.0	3.7	4.0	4.3
44000			165	5.3	7.3	8.5	16.5
44000			180	8.3	11.0	12.1	40.3
44000			194	12.5	14.7	15.8	61.5
44000			208	19.7	19.5	19.7	71.0
44000			234	19.7	19.5	19.7	74.3
50000			151	2.0	3.8	3.9	3.9
50000			165	4.8	7.7	8.3	16.9
50000			180	7.6	10.7	11.8	40.3
50000			194	12.3	14.6	15.8	64.1
50000			208	18.8	18.5	18.8	74.5
50000			234	18.8	18.5	18.8	80.0
56000			151	2.0	3.5	4.0	3.8
56000			165	5.0	7.5	8.5	17.2
56000			180	7.6	10.6	11.9	40.3
56000			194	12.3	14.3	15.8	59.3
56000			208	19.5	19.5	19.5	67.3
56000			234	19.5	19.5	19.5	73.2

(continued)

Table C-32. Plant Density and Hybrid Influence on Corn Growth and Development.
(continued) **Arlington, WI - 2005.**

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
14000	Pioneer 34M94		151	2.0	4.0	4.0	3.5
14000	Pioneer 34M94		165	5.7	8.2	9.0	17.5
14000	Pioneer 34M94		180	9.0	13.3	14.3	42.0
14000	Pioneer 34M94		194	14.3	16.7	17.5	71.7
14000	Pioneer 34M94		208	20.5	20.5	20.5	86.0
14000	Pioneer 34M94		234	20.5	20.5	20.5	86.3
14000	Pioneer 34M95	Bt	151	2.0	3.5	4.0	4.0
14000	Pioneer 34M95	Bt	165	5.3	8.0	9.0	15.8
14000	Pioneer 34M95	Bt	180	9.0	12.0	13.3	41.2
14000	Pioneer 34M95	Bt	194	13.7	15.5	16.8	70.3
14000	Pioneer 34M95	Bt	208	19.8	19.8	19.8	87.7
14000	Pioneer 34M95	Bt	234	19.8	19.8	19.8	88.5
20000	Pioneer 34M94		151	2.0	3.5	4.0	3.7
20000	Pioneer 34M94		165	5.3	8.0	8.5	16.1
20000	Pioneer 34M94		180	8.8	12.0	13.3	43.2
20000	Pioneer 34M94		194	13.3	15.5	16.8	70.5
20000	Pioneer 34M94		208	20.0	20.0	20.0	85.2
20000	Pioneer 34M94		234	20.0	20.0	20.0	87.0
20000	Pioneer 34M95	Bt	151	2.0	3.7	4.0	3.5
20000	Pioneer 34M95	Bt	165	5.8	7.8	8.8	15.5
20000	Pioneer 34M95	Bt	180	9.0	12.2	13.7	41.3
20000	Pioneer 34M95	Bt	194	13.8	15.8	17.0	69.2
20000	Pioneer 34M95	Bt	208	20.0	20.0	20.0	90.2
20000	Pioneer 34M95	Bt	234	20.0	20.0	20.0	91.5
26000	Pioneer 34M94		151	2.0	4.0	4.0	3.7
26000	Pioneer 34M94		165	5.5	7.8	8.7	18.7
26000	Pioneer 34M94		180	8.5	11.5	13.0	43.0
26000	Pioneer 34M94		194	13.0	15.0	16.2	68.3
26000	Pioneer 34M94		208	19.5	19.5	19.5	82.7
26000	Pioneer 34M94		234	19.5	19.5	19.5	84.3
26000	Pioneer 34M95	Bt	151	2.0	3.7	4.0	3.5
26000	Pioneer 34M95	Bt	165	5.3	7.8	8.5	15.9
26000	Pioneer 34M95	Bt	180	8.5	11.7	13.2	40.2
26000	Pioneer 34M95	Bt	194	13.3	15.2	16.5	70.5
26000	Pioneer 34M95	Bt	208	19.3	19.0	19.3	87.8
26000	Pioneer 34M95	Bt	234	19.3	19.0	19.3	89.7
32000	Pioneer 34M94		151	2.0	3.7	4.0	3.5
32000	Pioneer 34M94		165	5.3	7.5	8.7	17.2
32000	Pioneer 34M94		180	8.7	12.0	13.3	43.3
32000	Pioneer 34M94		194	13.2	15.2	16.3	66.3
32000	Pioneer 34M94		208	20.2	20.2	20.2	77.3
32000	Pioneer 34M94		234	20.2	20.2	20.2	82.0
32000	Pioneer 34M95	Bt	151	2.0	3.7	4.0	4.5
32000	Pioneer 34M95	Bt	165	5.2	7.7	8.7	16.0
32000	Pioneer 34M95	Bt	180	8.3	11.2	12.5	40.7
32000	Pioneer 34M95	Bt	194	12.8	14.8	16.0	68.7
32000	Pioneer 34M95	Bt	208	19.8	19.7	19.8	86.3
32000	Pioneer 34M95	Bt	234	19.8	19.7	19.8	90.8

(continued)

Table C-32. (continued) **Plant Density and Hybrid Influence on Corn Growth and Development. Arlington, WI - 2005.**

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
38000	Pioneer 34M94		151	2.0	3.8	4.0	3.9
38000	Pioneer 34M94		165	5.3	7.8	8.7	16.1
38000	Pioneer 34M94		180	8.3	11.7	12.8	40.8
38000	Pioneer 34M94		194	13.0	15.2	16.5	64.8
38000	Pioneer 34M94		208	20.2	20.0	20.2	81.2
38000	Pioneer 34M94		234	20.2	20.0	20.2	85.5
38000	Pioneer 34M95	Bt	151	2.0	3.8	4.0	3.9
38000	Pioneer 34M95	Bt	165	5.2	7.7	8.7	16.6
38000	Pioneer 34M95	Bt	180	8.0	11.2	12.2	41.8
38000	Pioneer 34M95	Bt	194	12.3	14.5	15.5	65.2
38000	Pioneer 34M95	Bt	208	19.0	19.0	19.0	79.3
38000	Pioneer 34M95	Bt	234	19.0	19.0	19.0	82.2
44000	Pioneer 34M94		151	2.0	3.7	4.0	4.1
44000	Pioneer 34M94		165	5.5	7.5	8.5	16.5
44000	Pioneer 34M94		180	8.3	11.0	12.0	39.8
44000	Pioneer 34M94		194	12.5	14.7	15.7	59.5
44000	Pioneer 34M94		208	19.7	19.3	19.7	69.8
44000	Pioneer 34M94		234	19.7	19.3	19.7	73.3
44000	Pioneer 34M95	Bt	151	2.0	3.7	4.0	4.5
44000	Pioneer 34M95	Bt	165	5.0	7.2	8.5	16.5
44000	Pioneer 34M95	Bt	180	8.2	11.0	12.2	40.7
44000	Pioneer 34M95	Bt	194	12.5	14.7	15.8	63.5
44000	Pioneer 34M95	Bt	208	19.7	19.7	19.7	72.2
44000	Pioneer 34M95	Bt	234	19.7	19.7	19.7	75.3
50000	Pioneer 34M94		151	2.0	3.8	4.0	3.8
50000	Pioneer 34M94		165	4.8	7.8	8.5	17.8
50000	Pioneer 34M94		180	7.8	10.8	12.0	41.8
50000	Pioneer 34M94		194	12.5	14.7	15.8	64.5
50000	Pioneer 34M94		208	19.2	18.8	19.2	75.8
50000	Pioneer 34M94		234	19.2	18.8	19.2	78.5
50000	Pioneer 34M95	Bt	151	2.0	3.7	3.8	3.9
50000	Pioneer 34M95	Bt	165	4.8	7.5	8.2	16.1
50000	Pioneer 34M95	Bt	180	7.3	10.5	11.5	38.8
50000	Pioneer 34M95	Bt	194	12.2	14.5	15.7	63.7
50000	Pioneer 34M95	Bt	208	18.5	18.2	18.5	73.2
50000	Pioneer 34M95	Bt	234	18.5	18.2	18.5	81.5
56000	Pioneer 34M94		151	2.0	3.5	4.0	3.7
56000	Pioneer 34M94		165	4.8	7.3	8.3	18.0
56000	Pioneer 34M94		180	7.8	11.0	12.2	41.3
56000	Pioneer 34M94		194	12.3	14.3	16.2	59.2
56000	Pioneer 34M94		208	19.5	19.5	19.5	71.8
56000	Pioneer 34M94		234	19.5	19.5	19.5	77.7
56000	Pioneer 34M95	Bt	151	2.0	3.5	4.0	3.9
56000	Pioneer 34M95	Bt	165	5.2	7.7	8.7	16.4
56000	Pioneer 34M95	Bt	180	7.3	10.2	11.7	39.3
56000	Pioneer 34M95	Bt	194	12.2	14.2	15.5	59.5
56000	Pioneer 34M95	Bt	208	19.5	19.5	19.5	62.7
56000	Pioneer 34M95	Bt	234	19.5	19.5	19.5	68.7
Mean				11.3	12.8	13.5	48.3

Table C-32. Plant Density and Hybrid Influence on Corn Growth and Development. (continued) **Arlington, WI - 2005.**

	Leaf Development			
	Leaf Collars	Hail Adjusters Method	Total Leaves	Plant Height
	no./plant	no./plant	no./plant	inches
Probability(%)				
Hybrid (H)	0.0	0.0	0.1	63.5
Plant Density (D)	0.0	0.0	0.0	0.0
H x D	6.9	10.6	3.7	3.8
DOY (T)	2.5	3.9	3.4	0.6
T x D	5.2	4.7	2.4	0.0
T x H	17.0	27.3	18.1	27.4
T x H x D	100.0	100.0	100.0	58.0
LSD (0.10)				
Hybrid (H)	0.1	0.1	0.1	NS
Plant Density (D)	0.2	0.3	0.2	1.5
H x D	0.3	NS	0.3	2.2
DOY (T)	2.2	3.0	2.5	2.2
T x D	0.5	0.6	0.6	3.7
T x H	NS	NS	NS	NS
T x H x D	NS	NS	NS	NS
CV(%)	5	5	4	8

FIELD EXPERIMENT HISTORY

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

Experiment: 02 Plant Density **Trial ID:** 2725 **Year:** 2005

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

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 /04 **pH** 6.1 **OM (%)** 2.4 **P (ppm)** 47 **K (ppm)** 142

Plot Management

Tillage Operations: Field Cultivator Cultivate 6/16/05

		Analysis:	Rate lbs/A:	Date:
Fertilizer:	**Preplant :**	28-0-0	535	N/A
	Starter :	9-24-24	150	5 /2 /05
	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: NK Brand N3030Bt

Irrigation: None

Planting Date: 5/2/05 **Planting Depth:** 1.5" **Row Width:** 30"

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

Harvest Date: 10/6/05 **Harvest Method:** Massey Ferguson 8XP

Notes:

Experimental Design

Design: RCB **Replications:** 3

Plot Size Seeded: 10' x 25' **Experiment Size:** 0.55 Acre

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

Factors/Treatments:

Target Plant Density: (plants/A)	
14000	38000
20000	44000
26000	50000
32000	56000

Results: Tables C-33.

Table C-33. Plant Density and Hybrid Influence on Corn Grain. Chippewa Falls, WI - 2005.

Target Density	Yield	Moisture	Test Weight	Grower Return	Lodged			Barren	Ears Dropped	Harvest		Plants emerged	Seeds planted
					Total	Stalk	Root			plants	ears		
plants/A	bu/A	%	lbs/bu	$/A	%	%	%	%	%	plants/A	ears/A	plants/A	seeds/A
14000	131	21.6	56	198	0	0	0	0	0	15708	17028	17424	19008
20000	168	22.8	55	249	3	3	0	0	0	20856	20856	24684	26928
26000	139	22.0	57	208	2	0	2	0	0	27984	27852	32472	35640
32000	133	23.0	55	197	7	1	5	0	0	32340	32208	38808	43560
38000	135	22.3	55	202	5	1	3	4	0	39204	37488	47388	51480
44000	93	22.8	56	139	13	5	9	19	0	47520	38544	54384	59400
50000	103	23.0	56	153	16	10	6	20	0	52800	42240	62700	67320
56000	82	25.2	57	119	38	10	27	32	0	57816	39600	68376	76032
Mean	123	22.8	56	183	10	4	7	9	0	36779	31977	43280	47421
Probability(%)													
Density (D)	4.2	12.5	57.8	4.7	0.0	14.3	0.0	0.0	-	0.0	0.0	0.0	-
LSD (0.10)													
Density (D)	41	NS	NS	63	11	NS	6	4	-	3485	5379	1750	-
CV(%)	23	6	3	24	70	136	59	31	-	7	9	3	-

FIELD EXPERIMENT HISTORY

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

Experiment: 02 Plant Density **Trial ID:** 2724 **Year:** 2005

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

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

Supported By: HATCH

Site Information

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

Soil Test: **Date:** 10/01/04 **pH** 6.9 **OM (%)** 3.6 **P (ppm)** 38 **K (ppm)** 127

Plot Management

Tillage Operations: Field Cultivator Cultivated 6/14/05

		Analysis:	Rate lbs/A:	Date:
Fertilizer:	**Preplant :**	28-0-0	421	N/A
	Starter :	9-24-24	150	4 /29/05
	Post plant :	N/A	N/A	N/A
	Manure:	N/A	N/A	N/A

Herbicide: Basis 0.33 oz/A
Lumax 2.5 qt/A

Insecticide: N/A

Hybrid: Pioneer 37R71

Irrigation: None

Planting Date: 4/29/05 **Planting Depth:** 1.5" **Row Width:** 30"

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

Harvest Date: 10/17/05 **Harvest Method:** Massey Ferguson 8XP

Notes:

Experimental Design

Design: RCB **Replications:** 3

Plot Size Seeded: 10' x 25' **Experiment Size:** 0.14 Acre

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

Factors/Treatments:

Target Plant Density: (plants/A)

14000	38000
20000	44000
26000	50000
32000	56000

Results: Tables C-34.

Table C-34. Plant Density and Hybrid Influence on Corn Grain.
Fond du Lac, WI - 2005.

Target Density	Yield	Moisture	Test Weight	Grower Return	Lodged			Barren	Ears Dropped	Harvest		Plants emerged	Seeds planted
					Total	Stalk	Root			plants	ears		
plants/A	bu/A	%	lbs/bu	$/A	%	%	%	%	%	plants/A	ears/A	plants/A	seeds/A
14000	155	18.5	57	244	0	0	0	0	0	16236	19800	20460	19008
20000	167	17.9	58	265	0	0	0	1	0	19668	21912	26268	26928
26000	194	17.4	58	309	0	0	0	3	0	29304	29040	34584	35640
32000	202	17.7	58	321	0	0	0	5	0	32472	31416	41184	43560
38000	209	18.0	57	330	0	0	0	6	0	37620	35508	50688	51480
44000	215	18.1	58	339	0	0	0	2	0	42240	41448	55572	59400
50000	203	17.7	58	322	0	0	0	2	0	53856	53988	65208	67320
56000	207	17.9	57	328	1	1	0	4	0	54252	52272	72600	76032
	194	17.9	58	307	0	0	0	3	0	35706	35673	45821	47421
Probability(%)													
Density (D)	0.2	6.4	2.8	0.2	30.3	14.6	47.1	8.4	-	0.0	0.0	0.0	-
LSD (0.10)													
Density (D)	22	0.5	1	34	NS	NS	NS	3	-	5500	5851	2272	-
CV(%)	8	2	1	8	235	261	489	79	-	11	11	3	-

FIELD EXPERIMENT HISTORY

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

Experiment: 02 Plant Density **Trial ID:** 2726 **Year:** 2005

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

Location: Galesville, WI **County:** Trempeleau

Supported By: HATCH

Site Information

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

Soil Test: **Date:** 10/01/04 **pH** 6.1 **OM (%)** 3.8 **P (ppm)** 68 **K (ppm)** 229

Plot Management

Tillage Operations: Zone-Builder Cultivated 6/16/05

		Analysis:	Rate lbs/A:	Date:
Fertilizer:	**Preplant :**	46-0-0, 21-0-0	217, 238	N/A
	Starter :	9-24-24	150	5 /02/05
	Post plant :	N/A	N/A	N/A
	Manure:	N/A	N/A	N/A

Herbicide: Cinch 2.0 pt/A
Callisto 3.0 oz/A

Insecticide: N/A

Hybrid: Pioneer 37R71

Irrigation: None

Planting Date: 5/02/05 **Planting Depth:** 1.5" **Row Width:** 30"

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

Harvest Date: 10/14/05 **Harvest Method:** Massey Ferguson 8XP

Notes:

Experimental Design

Design: RCB **Replications:** 3

Plot Size Seeded: 10' x 25' **Experiment Size:** 0.14 Acre

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

Factors/Treatments:

Target Plant Density: (plants/A)	
14000	38000
20000	44000
26000	50000
32000	56000

Results: Tables C-35.

Table C-35. Plant Density and Hybrid Influence on Corn Grain. Galesville, WI - 2005.

Target Density	Yield	Moisture	Test Weight	Grower Return	Lodged			Barren	Ears Dropped	Harvest		Plants emerged	Seeds planted
					Total	Stalk	Root			plants	ears		
plants/A	bu/A	%	lbs/bu	$/A	%	%	%	%	%	plants/A	ears/A	plants/A	seeds/A
14000	150	18.8	55	234	0	0	0	0	0	14652	18480	18348	19008
20000	180	19.2	55	281	0	0	0	0	0	20460	21252	25608	26928
26000	209	19.4	55	324	3	1	2	0	0	26004	27060	35112	35640
32000	220	19.3	55	342	14	1	13	0	0	31680	31680	42240	43560
38000	223	18.9	54	348	17	11	6	0	0	37752	37752	50292	51480
44000	219	19.1	54	341	50	4	46	1	0	43428	42900	57684	59400
50000	195	19.5	54	302	62	10	51	4	0	48444	46464	66660	67320
56000	175	19.8	53	270	82	14	68	11	0	55044	48972	73128	76032
Mean	196	19.2	54	305	29	5	23	2	0	34683	34320	46134	47421
Probability(%)													
Density (D)	0.0	31.0	0.4	0.0	0.0	16.4	0.0	0.0	-	0.0	0.0	0.0	-
LSD (0.10)													
Density (D)	17	NS	1	26	15	NS	18	2	-	816	1669	2364	-
CV(%)	6	2	1	6	37	145	54	80	-	2	3	4	-

FIELD EXPERIMENT HISTORY

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

Experiment: 02 Plant Density **Trial ID:** 2727 **Year:** 2005

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

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

Supported By: HATCH

Site Information

Field: K19 **Previous Crop:** Soybean **Soil Type:** Plainfield Sand

Soil Test: **Date:** 10/15/05 **pH** 6.9 **OM (%)** 0.9 **P (ppm)** 99 **K (ppm)** 67

Plot Management

Tillage Operations: Moldboard Plow Disk

		Analysis:	Rate lbs/A:	Date:
Fertilizer:	**Preplant :**	28-0-0	842	N/A
	Starter :	9-24-24	150	4 /21/05
	Post plant :	N/A	N/A	N/A
	Manure:	N/A	N/A	N/A

Herbicide: Define 16 oz/A
Atrazine 0.75 lb/A

Insecticide: None

Hybrid: Pioneer 37R71

Irrigation: 13.4"

Planting Date: 4/21/05 **Planting Depth:** 1.5" **Row Width:** 30"

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

Harvest Date: 10/06/05 **Harvest Method:** Massey Ferguson 8XP

Notes:

Experimental Design

Design: RCB **Replications:** 3

Plot Size Seeded: 10' x 25' **Experiment Size:** 0.14 Acre

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

Factors/Treatments:

Target Plant Density: (plants/A)	
14000	38000
20000	44000
26000	50000
32000	56000

Results: Tables C-36.

Table C-36. Plant Density and Hybrid Influence on Corn Grain. Hancock, WI - 2005.

Target Density	Yield	Moisture	Test Weight	Grower Return	Lodged			Barren	Ears Dropped	Harvest		Plants emerged	Seeds planted
					Total	Stalk	Root			plants	ears		
plants/A	bu/A	%	lbs/bu	$/A	%	%	%	%	%	plants/A	ears/A	plants/A	seeds/A
14000	178	19.3	55	276	0	0	0	0	0	14652	20196	18216	19008
20000	196	19.6	54	304	1	1	0	1	0	21120	23100	24948	26928
26000	225	19.9	54	347	0	0	0	1	0	26136	26532	33264	35640
32000	251	20.2	54	386	0	0	0	0	0	31944	32208	39996	43560
38000	264	20.9	54	402	0	0	0	1	0	37224	36960	49500	51480
44000	276	20.5	54	422	0	0	0	1	0	44352	44220	56232	59400
50000	273	21.3	54	413	0	0	0	2	0	49500	48708	63360	67320
56000	279	20.8	54	425	0	0	0	2	0	56760	55440	70620	76032
Mean	243	20.3	54	372	0	0	0	1	0	35211	35921	44517	47421
Probability(%)													
Density (D)	0.0	0.7	31.9	0.0	47.1	47.1	-	35.5	-	0.0	0.0	0.0	-
LSD (0.10)													
Density (D)	12	0.8	NS	20	NS	NS	-	NS	-	1613	1607	1811	-
CV(%)	3	3	1	4	403	403	-	126	-	3	3	3	-

FIELD EXPERIMENT HISTORY

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

Experiment: 02 Plant Density **Trial ID:** 2728 **Year:** 2005

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

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

Supported By: HATCH

Site Information

Field: R-5C **Previous Crop:** Soybean **Soil Type:** Plano Silt Loam

Soil Test: **Date:** 10/01/04 **pH** 6.7 **OM (%)** 3.3 **P (ppm)** 62 **K (ppm)** 188

Plot Management

Tillage Operations: Fall Chisel Plow Field Cultivator Cultivated 6/13/05

		Analysis:	Rate lbs/A:	Date:
Fertilizer:	**Preplant :**	28-0-0	572	N/A
	Starter :	9-24-24	150	4 /25/05
	Post plant :	N/A	N/A	N/A
	Manure:	N/A	N/A	N/A

Herbicide: Dual II 1.8 pt/A
Hornet 4.0 oz/A
Steadfast 0.75 oz/A
Callisto 3.0 oz/A
Atrazine 0.75 lb/A

Insecticide: Force 3G 4.4 lbs/A

Hybrid: See Factors

Irrigation: None

Planting Date: 4/25/05 **Planting Depth:** 1.5" **Row Width:** 30"

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

Harvest Date: 10/03/05 **Harvest Method:** Massey Ferguson 8XP

Notes:

Experimental Design

Design: RCB **Replications:** 3

Plot Size Seeded: 5' x 25' **Experiment Size:** 0.3 Acre

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

Factors/Treatments:

Target Plant Density: (plants/A)

14000 20000 26000
32000 38000 44000
50000 56000

Hybrids:

Pioneer 34M94
Pioneer 34M95

Results: Tables C-37.

Table C-37. Plant Density and Hybrid Influence on Corn Grain. Janesville, WI - 2005.

Target Density	Hybrid	Trait	Grain Yield	Moisture	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	seeds/A	plants/A
	Pioneer 34M94		194	22.9	56	288	2	2	0	6	0	34386	31730	45029	47421
	Pioneer 34M95	Bt	202	22.0	57	303	4	1	3	7	0	35393	31977	44814	47421
14000			144	25.3	55	206	0	0	0	1	0	14718	15576	18348	19008
20000			192	25.1	55	277	1	1	0	2	0	20658	20196	25806	26928
26000			214	24.1	56	311	2	2	0	2	0	26730	26334	34056	35640
32000			218	21.5	57	328	1	1	0	3	0	32010	31020	41118	43560
38000			225	22.2	57	336	2	2	0	5	0	37620	35838	49104	51480
44000			208	20.6	58	317	2	1	1	8	0	44022	40458	56628	59400
50000			200	20.9	57	303	8	3	5	14	0	48642	41514	63954	67320
56000			184	20.1	58	283	9	2	7	20	0	54714	43890	70356	76032
14000	Pioneer 34M94		144	25.9	54	204	1	1	0	0	0	14652	15972	18084	19008
14000	Pioneer 34M95	Bt	144	24.7	55	207	0	0	0	2	0	14784	15180	18612	19008
20000	Pioneer 34M94		182	25.5	55	260	3	3	0	2	0	20064	19668	26532	26928
20000	Pioneer 34M95	Bt	203	24.6	56	294	0	0	0	2	0	21252	20724	25080	26928
26000	Pioneer 34M94		213	25.4	55	305	3	3	0	2	0	26532	26136	33660	35640
26000	Pioneer 34M95	Bt	215	22.7	57	318	1	1	0	1	0	26928	26532	34452	35640
32000	Pioneer 34M94		223	22.8	56	330	1	1	0	5	0	31680	30360	42240	43560
32000	Pioneer 34M95	Bt	212	20.2	59	326	2	2	0	2	0	32340	31680	39996	43560
38000	Pioneer 34M94		220	22.4	56	328	2	2	0	5	0	37752	35772	48708	51480
38000	Pioneer 34M95	Bt	230	22.0	57	345	1	1	0	4	0	37488	35904	49500	51480
44000	Pioneer 34M94		194	20.3	57	297	2	2	0	9	0	43692	39732	56496	59400
44000	Pioneer 34M95	Bt	221	20.9	59	337	2	1	1	7	0	44352	41184	56760	59400
50000	Pioneer 34M94		196	21.4	57	296	4	4	0	11	0	47388	42372	63624	67320
50000	Pioneer 34M95	Bt	203	20.4	57	310	13	2	11	18	0	49896	40656	64284	67320
56000	Pioneer 34M94		182	19.6	57	282	4	4	0	18	1	53328	43824	70884	76032
56000	Pioneer 34M95	Bt	187	20.5	58	285	15	1	14	22	0	56100	43956	69828	76032
Mean			198	22.5	56	295	3	2	2	7	0	34889	31853	44921	47421
Probability(%)															
Plant Density (D)			0.0	0.0	0.0	0.0	3.1	21.9	12.3	0.0	55.8	0.0	0.0	0.0	-
Hybrid (H)			3.2	9.3	0.0	0.2	29.3	0.4	3.9	34.0	18.5	1.6	57.0	46.4	-
D x H			18.1	58.3	61.4	20.9	22.5	73.0	12.1	31.8	55.8	47.1	60.1	7.2	-
LSD (0.10)															
Plant Density (D)			8	1.8	1	15	5	NS	NS	4	NS	1334	1464	981	-
Hybrid (H)			6	0.9	0	7	NS	1	3	NS	NS	667	NS	NS	-
D x H			NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	1387	-
CV(%)			6	8	2	5	164	103	320	55	510	4	5	2	-

FIELD EXPERIMENT HISTORY

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

Experiment: 02 Plant Density **Trial ID:** 2729 **Year:** 2005

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

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

Supported By: HATCH

Site Information

Field: 008-05C51 **Previous Crop:** Soybean **Soil Type:** Withee Silt Loam

Soil Test: **Date:** 10/1 /05 **pH** 6.7 **OM (%)** 3.4 **P (ppm)** 94 **K (ppm)** 212

Plot Management

Tillage Operations: Chisel Plow Field Cultivator

Fertilizer:		**Analysis:**	**Rate lbs/A:**	**Date:**
	Preplant :	N/A	N/A	N/A
	Starter :	9-24-24	150	5 /3 /05
	Post plant :	28-0-0	15 gal/A	6 /17/05
	Manure:	N/A	N/A	N/A

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

Irrigation: None **Hybrid:** NK Brand N3030Bt

Planting Date: 5/3/05 **Planting Depth:** 1.5" **Row Width:** 30"

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

Harvest Date: 10/18/05 **Harvest Method:** Massey Ferguson 8XP

Notes:

Experimental Design

Design: RCB **Replications:** 3

Plot Size Seeded: 10' x 25' **Experiment Size:** 0.14 Acre

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

Factors/Treatments:

Target Plant Density: (plants/A)

14000	38000
20000	44000
26000	50000
32000	56000

Results: Tables C-38.

Table C-38. Plant Density and Hybrid Influence on Corn Grain. Marshfield, WI - 2005.

Target Density	Yield	Moisture	Test Weight	Grower Return	Lodged			Barren	Ears Dropped	Harvest		Plants emerged	Seeds planted
					Total	Stalk	Root			plants	ears		
plants/A	bu/A	%	lbs/bu	$/A	%	%	%	%	%	plants/A	ears/A	plants/A	seeds/A
14000	122	23.6	55	180	0	0	0	2	0	14784	15312	18612	19008
20000	158	24.0	55	230	0	0	0	1	0	20592	20856	25608	26928
26000	148	25.5	54	212	0	0	0	1	0	26532	26136	33132	35640
32000	155	25.2	54	224	0	0	0	2	0	26796	31020	41448	43560
38000	152	26.6	53	215	0	0	0	4	0	38808	37356	48576	51480
44000	139	27.8	53	193	0	0	0	10	0	43428	39072	55968	59400
50000	133	26.8	53	187	1	0	1	16	0	49236	41448	63756	67320
56000	142	27.2	52	199	0	0	0	13	0	55308	48048	69432	76032
Mean	144	25.8	54	205	0	0	0	6	0	34436	32406	44567	47421
Probability(%)													
Density (D)	4.3	0.0	0.1	5.4	41.3	-	41.3	0.0	47.1	0.0	0.0	0.0	-
LSD (0.10)													
Density (D)	17	1.2	1	27	NS	-	NS	4	NS	4453	1598	1439	-
CV(%)	8	3	1	9	233	-	233	49	490	9	3	2	-

FIELD EXPERIMENT HISTORY

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

Experiment: 02 Plant Density **Trial ID:** 2730 **Year:** 2005

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

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

Supported By: HATCH

Site Information

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

Soil Test: **Date:** 10/1 /06 **pH** 7.7 **OM (%)** 2.8 **P (ppm)** 38 **K (ppm)** 106

Plot Management

Tillage Operations: Field Cultivator

		Analysis:	Rate lbs/A:	Date:
Fertilizer:	**Preplant :**	46-0-0	150	N/A
	Starter :	9-24-24	150	5 /4 /05
	Post plant :	34-0-0	150	6 /20/05
	Manure:	N/A	N/A	N/A

Herbicide: Harness Xtra @ 1.5qt/A
Hornet 3.0 oz/A

Insecticide: N/A

Hybrid: NK Brand N3030Bt

Irrigation: None

Planting Date: 5/4/05 **Planting Depth:** 1.5" **Row Width:** 30"

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

Harvest Date: 10/11/05 **Harvest Method:** Massey Ferguson 8XP

Notes:

Experimental Design

Design: RCB **Replications:** 3

Plot Size Seeded: 10' x 25' **Experiment Size:** 0.14 Acre

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

Factors/Treatments:

Target Plant Density: (plants/A)	
14000	38000
20000	44000
26000	50000
32000	56000

Results: Tables C-39.

Table C-39. Plant Density and Hybrid Influence on Corn Grain. Seymour, WI - 2005.

Target Density	Yield	Moisture	Test Weight	Grower Return	Lodged			Barren	Ears Dropped	Harvest		Plants emerged	Seeds planted
					Total	Stalk	Root			plants	ears		
plants/A	bu/A	%	lbs/bu	$/A	%	%	%	%	%	plants/A	ears/A	plants/A	seeds/A
14000	138	23.2	55	203	0	0	0	3	0	14388	14784	18084	19008
20000	173	22.3	56	258	0	0	0	1	0	20592	20592	24684	26928
26000	173	22.9	56	257	1	0	1	2	0	26268	25872	34320	35640
32000	171	22.6	56	254	4	0	4	2	0	32340	31680	41316	43560
38000	146	22.7	57	217	5	0	5	11	0	39336	34848	48444	51480
44000	131	23.5	55	192	5	0	5	19	0	43956	35376	55704	59400
50000	122	24.1	55	178	11	1	10	19	0	48840	39468	62172	67320
56000	96	24.5	55	139	6	1	5	36	0	54384	34716	69432	76032
Mean	144	23.2	56	212	4	0	4	12	0	35013	29667	44270	47421
Probability(%)													
Density (D)	0.0	0.7	2.5	0.0	0.7	13.1	0.7	0.0	64.4	0.0	0.0	0.0	-
LSD (0.10)													
Density (D)	17	0.9	1	26	4	NS	4	5	NS	1158	2085	1801	-
CV(%)	8	3	1	9	73	189	72	27	282	2	5	3	-

FIELD EXPERIMENT HISTORY

Title: **Date of Planting and Hybrid Influence on Corn Forage and Corn Grain Yield**

Experiment: 03 DOP **Trial ID:** 2732 **Year:** 2005

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

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

Supported By: HATCH

Site Information

Field: ARS368S **Previous Crop:** Soybean **Soil Type:** Plano Silt Loam

Soil Test: **Date:** 10/1 /05 **pH** 6.4 **OM (%)** 3.1 **P (ppm)** 22 **K (ppm)** 131

Plot Management

Tillage Operations: Fall Chisel Plow Field Cultivator Soil Finisher prior to each DOP

		Analysis:	Rate lbs/A:	Date:
Fertilizer:	**Preplant :**	46-0-0	325	4 /14/05
	Starter :	9-24-24	150	Each DOP
	Post plant :	N/A	N/A	N/A
	Manure:	N/A	N/A	N/A

Herbicide: Outlook 20 oz/A
Hornet 4.0 oz/A

Insecticide: None

Hybrid: See Factors

Irrigation: none

Planting Date: See Factors **Planting Depth:** 1.5" **Row Width:** 30"

Target Plant Density: 30000 **plants per acre** **Planting Method:** Kinze Plot Planter

Harvest Date: S: 9/9, 9/21 & 10/5
G: 10/26

Harvest Method: S:NH Plot Chopper
G:Massey Ferguson 8XP

Experimental Design

Design: RCB split plot **Replications:** 3

Plot Size Seeded: 25' x 20' **Experiment Size:** 0.69 A

Harvest Plot Size: S: 22' x 2.5'
G: 22' x 5'

Harvest Plant Density: S: 30316 **plants per acre**
G: 32197

Factors/Treatments:

Date of Planting:

April 15, April 29,
May 10, May 23,
June 1 & June 15

Hybrids:

Dekalb DKC58-78(YGCB)
NK Brand N32-L9
NK Brand N17-R3

Results: Tables C-40 and C-41.

Table C-40. Planting Date And Hybrid Influence On Corn Grain And Silage Performance
Arlington, WI - 2005.

			Grain															
Planting					Test		Grower	Harvest	Harvest	Seeds	Plants	Flag leaf	Silking	Early	Kernel Milk			Black
Date	Brand	Hybrid	Yield	Moisture	weight	Lodged	return	pop	ear pop	planted	emerged	height	Date	dent	75%	50%	25%	layer
			bu/A	%	lbs/bu	%	$/A	plants/A	ears/A	seeds/A	plants/A	inches	----------doy----------					
	Dekalb	DKC58-78(YGCB)	208	18.3	58	15	328	30987	31482	41184	36160	78	204	241	247	253	262	270
	NK Brand	N32-L9	190	19.2	57	19	298	32472	32736	41184	38462	83	204	241	247	253	260	269
	NK Brand	N17-R3	136	21.0	58	18	210	33792	33924	41184	36284	82	214	245	252	260	270	278
April 15			210	17.4	59	8	334	31020	31218	41184	36482	77	198	236	242	249	256	263
April 29			208	17.2	59	14	332	31218	31548	41184	36597	77	200	238	243	249	255	265
May 10			192	17.4	58	23	305	29502	30294	41184	35987	81	202	240	246	251	259	267
May 23			203	17.8	57	24	322	32208	32538	41184	39897	80	205	241	246	252	260	268
June 01			197	17.9	59	33	311	37554	37620	41184	39666	80	207	239	246	252	259	268
June 15			114	27.6	54	3	156	31680	31878	41184	35360	92	221	256	264	273	284	292
April 15	Dekalb	DKC58-78(YGCB)	218	18.1	58	4	344	30492	30756	41184	35376	77	201	238	244	250	260	268
April 15	NK Brand	N32-L9	202	16.6	59	12	325	31548	31680	41184	37587	78	195	234	240	247	251	259
April 29	Dekalb	DKC58-78(YGCB)	218	17.9	58	10	344	31680	32076	41184	35475	75	202	240	246	253	259	268
April 29	NK Brand	N32-L9	198	16.6	59	18	319	30756	31020	41184	37719	79	197	236	240	245	251	262
May 10	Dekalb	DKC58-78(YGCB)	201	18.3	57	15	316	29832	30756	41184	34749	81	205	244	249	254	265	271
May 10	NK Brand	N32-L9	183	16.5	59	30	294	29172	29832	41184	37224	81	199	235	243	248	252	263
May 23	Dekalb	DKC58-78(YGCB)	196	19.0	57	32	305	31944	32340	41184	39039	80	207	244	249	255	265	272
May 23	NK Brand	N32-L9	210	16.6	58	15	338	32472	32736	41184	40755	81	202	238	244	248	256	263
June 01	NK Brand	N32-L9	210	17.9	57	36	331	37884	37884	41184	40491	83	207	242	248	252	258	268
June 01	NK Brand	N17-R3	183	17.9	61	30	290	37224	37356	41184	38841	76	207	237	244	253	260	268
June 15	NK Brand	N32-L9	138	31.2	52	2	182	33000	33264	41184	36993	96	222	259	268	278	288	297
June 15	NK Brand	N17-R3	89	24.0	56	5	130	30360	30492	41184	33726	88	220	253	260	268	280	288
Mean			187	19.2	58	18	293	32197	32516	41184	37331	81	205	242	248	254	262	271
Probability(%)																		
Date of Planting (D)			0.0	0.0	0.0	11.5	0.0	0.3	0.3	-	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Hybrid (H)			0.1	0.0	0.0	75.3	0.9	27.7	27.8	-	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0
D x H			14.5	0.0	93.9	25.1	19.8	66.3	61.1	-	55.8	93.4	1.8	7.3	29.8	0.1	6.6	22.1
LSD (0.10)																		
Date of Planting (D)			16	1.1	1	NS	23	2377	2305	-	1083	5	1	2	1	2	2	3
Hybrid (H)			11	0.5	0	NS	18	NS	NS	-	708	3	0	1	1	1	2	3
D x H			NS	0.9	NS	NS	NS	NS	NS	-	NS	NS	1	2	NS	2	4	NS
CV(%)			7	3	1	69	8	5	5	-	2	4	0	1	1	1	1	1

continued

Table C-40. Planting Date And Hybrid Influence On Corn Grain And Silage Performance

(continued) **Arlington, WI - 2005.**

			Whole Plant														
Planting			Dry Matter		Kernel	KMR	SMR	VMR	Harvest		Crude			*In Vitro*			Milk per
Date	Brand	Hybrid	yield	Moisture	milk	0-5	0-5	0-10	plants	ears	protein	ADF	NDF	Digest	NDFD	Starch	Ton	Acre
			tons/A	%	%	#	#	#	plants/A	ears/A	%	%	%	%	%	%	lbs/T	lbs/A
	Dekalb	DKC58-78(YGCB)	9.4	56.7	63.8	3.2	2.2	5.3	30162	31944	6.8	20.9	43.3	81.4	57.1	34.2	1110	10381
	NK Brand	N32-L9	8.3	52.8	31.7	1.6	1.9	3.5	30624	32032	7.2	21.9	44.7	80.5	56.3	32.7	1138	9177
	NK Brand	N17-R3	6.7	51.5	32.5	1.6	1.6	3.2	29700	30492	8.0	23.4	47.6	79.3	56.5	26.8	1459	9013
April 15			8.9	53.4	41.7	2.1	1.9	4.0	29964	31020	6.9	18.7	39.6	82.9	56.8	38.3	914	8082
April 29			9.4	54.5	41.7	2.1	2.0	4.1	30360	31680	7.0	21.2	43.7	81.1	56.9	33.8	1116	10467
May 10			9.4	54.7	42.5	2.1	2.1	4.2	29832	32340	6.9	21.2	44.0	81.3	57.5	33.6	1145	10633
May 23			8.8	56.3	57.5	2.9	1.9	4.8	31020	32472	6.9	22.3	45.2	80.1	56.0	32.5	1126	9858
June 01			8.2	43.9	18.3	0.9	0.9	1.7	32736	33792	7.3	20.1	41.9	81.3	55.5	37.7	833	7059
June 15			5.7	60.4	53.3	2.7	2.7	5.4	27984	29172	8.3	27.6	53.8	76.9	57.1	17.4	1961	11207
April 15	Dekalb	DKC58-78(YGCB)	9.2	55.5	61.7	3.1	2.1	5.2	29040	30360	6.6	19.0	39.9	82.9	57.1	38.2	924	8442
April 15	NK Brand	N32-L9	8.5	51.4	21.7	1.1	1.7	2.8	30888	31680	7.2	18.4	39.4	82.9	56.6	38.4	904	7722
April 29	Dekalb	DKC58-78(YGCB)	10.0	56.3	61.7	3.1	2.3	5.4	29568	31416	6.8	20.6	43.1	81.4	56.9	34.4	1095	10904
April 29	NK Brand	N32-L9	8.8	52.8	21.7	1.1	1.8	2.9	31152	31944	7.1	21.8	44.3	80.9	56.8	33.2	1137	10030
May 10	Dekalb	DKC58-78(YGCB)	9.7	57.5	61.7	3.1	2.3	5.4	30360	33000	6.9	21.9	45.1	80.9	57.5	31.8	1248	11931
May 10	NK Brand	N32-L9	9.1	51.9	23.3	1.2	1.8	3.0	29304	31680	7.0	20.5	42.8	81.7	57.4	35.5	1042	9336
May 23	Dekalb	DKC58-78(YGCB)	8.8	57.6	70.0	3.5	1.9	5.4	31680	33000	6.8	22.1	45.2	80.5	57.1	32.4	1175	10249
May 23	NK Brand	N32-L9	8.8	55.0	45.0	2.3	1.9	4.2	30360	31944	7.1	22.5	45.2	79.6	54.9	32.6	1076	9467
June 01	NK Brand	N32-L9	8.4	44.7	21.7	1.1	1.2	2.1	33000	34584	7.0	20.6	42.8	81.1	55.8	37.9	805	7164
June 01	NK Brand	N17-R3	8.0	43.1	15.0	0.8	0.7	1.4	32472	33000	7.5	19.5	41.1	81.5	55.2	37.5	862	6955
June 15	NK Brand	N32-L9	6.1	61.0	56.7	2.8	2.9	5.8	29040	30360	8.1	27.9	53.5	76.7	56.5	18.7	1866	11344
June 15	NK Brand	N17-R3	5.4	59.8	50.0	2.5	2.5	5.0	26928	27984	8.4	27.3	54.2	77.1	57.8	16.2	2057	11070
Mean			8.4	53.9	42.5	2.1	2.0	4.1	30316	31746	7.2	21.8	44.7	80.6	56.6	32.2	1183	9551
Probability(%)																		
Date of Planting (D)			6.9	0.0	0.0	0.0	0.0	0.0	0.3	0.5	0.0	0.3	0.3	1.7	27.9	0.0	0.0	4.0
Hybrid (H)			9.3	0.2	0.0	0.0	6.1	0.0	58.0	38.7	0.4	61.3	81.7	81.5	40.1	54.5	13.4	10.5
D x H			74.8	78.3	55.3	55.3	68.1	45.1	58.3	85.1	37.6	63.1	54.3	77.8	43.0	58.0	43.6	71.4
LSD (0.10)																		
Date of Planting (D)			1	3	5.3	0.3	0.4	0.6	1418	1532	0.3	2.7	4.2	2.2	NS	5.0	220	2147
Hybrid (H)			1	2	7.0	0.4	0.3	0.6	NS	NS	0	NS	1.6	NS	NS	NS	NS	NS
D x H			NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
CV(%)			9	4	20	20	19	17	7	8	3	7	5	2	2	9	11	14

Table C-41. Planting Date And Hybrid Influence On Corn Leaf Development Arlington, WI - 2005.

Date of Planting	Brand	Hybrid	Observation Day of year	Leaf Development: Leaf collars	Leaf Development: Hail adjusters method	Leaf Development: Total leaves	Plant height
			day of year	no./plant	no./plant	no./plant	inches
			151	1.7	3.3	4.0	3.7
			165	4.8	7.0	8.0	12.4
			180	7.3	9.4	11.8	30.9
			194	11.6	12.4	14.6	58.5
			208	17.0	17.3	18.7	69.1
			222	16.7	16.4	16.9	83.9
	Dekalb	DKC58-78(YGCB)		10.1	11.2	12.7	42.0
	NK Brand	N32-L9		9.6	11.0	12.8	41.0
	NK Brand	N17-R3		8.9	10.4	11.5	38.7
	Dekalb	DKC58-78(YGCB)	151	1.7	3.2	3.8	4.0
	Dekalb	DKC58-78(YGCB)	165	5.2	7.6	8.5	14.4
	Dekalb	DKC58-78(YGCB)	180	8.8	10.5	13.5	39.6
	Dekalb	DKC58-78(YGCB)	194	13.0	13.6	16.1	67.4
	Dekalb	DKC58-78(YGCB)	208	19.5	19.0	19.5	75.3
	Dekalb	DKC58-78(YGCB)	222	-	-	-	-
	NK Brand	N32-L9	151	1.7	3.4	4.2	3.5
	NK Brand	N32-L9	165	4.9	7.1	8.1	12.1
	NK Brand	N32-L9	180	7.2	9.7	11.9	30.1
	NK Brand	N32-L9	194	11.8	12.3	14.8	59.4
	NK Brand	N32-L9	208	16.6	16.9	19.2	68.9
	NK Brand	N32-L9	222	16.5	16.2	17.0	85.7
	NK Brand	N17-R3	151	-	-	-	-
	NK Brand	N17-R3	165	2.8	4.2	5.0	5.6
	NK Brand	N17-R3	180	4.4	6.3	7.9	16.0
	NK Brand	N17-R3	194	8.0	10.0	11.3	37.8
	NK Brand	N17-R3	208	13.5	14.8	15.8	57.3
	NK Brand	N17-R3	222	16.8	16.7	16.8	82.2
April 15				10.1	11.3	13.8	39.7
April 29				10.0	11.1	12.6	41.1
May 10				9.5	10.7	12.1	40.6
May 23				10.6	12.0	13.5	46.8
June 01				9.0	10.4	11.7	38.4
June 15				8.8	10.3	11.6	40.0
April 15			151	2.0	4.2	4.8	4.1
April 15			165	6.2	8.8	9.7	16.3
April 15			180	9.4	11.2	14.1	40.5
April 15			194	13.9	13.9	16.4	68.5
April 15			208	18.8	18.7	23.9	69.3
April 15			222	-	-	-	-
April 29			151	2.0	3.6	4.2	4.0
April 29			165	5.9	8.4	9.5	15.6
April 29			180	9.0	11.3	14.0	40.3
April 29			194	14.3	13.7	16.5	71.1
April 29			208	18.8	18.4	18.8	74.4
April 29			222	-	-	-	-

continued

Table C-41. Planting Date And Hybrid Influence On Corn Leaf Development
(continued) **Arlington, WI - 2005.**

Date of Planting	Brand	Hybrid	Observation Day of year	Leaf Development: Leaf collars	Leaf Development: Hail adjusters method	Leaf Development: Total leaves	Plant height
			day of year	no./plant	no./plant	no./plant	inches
May 10			151	1.1	2.3	3.2	3.1
May 10			165	5.0	7.5	8.4	12.6
May 10			180	8.6	10.8	13.8	38.8
May 10			194	13.4	13.8	16.0	68.8
May 10			208	19.3	19.0	19.3	79.8
May 10			222	-	-	-	-
May 23			151	-	-	-	-
May 23			165	4.0	6.3	7.2	11.7
May 23			180	7.8	10.3	12.8	34.6
May 23			194	11.8	13.0	15.5	64.4
May 23			208	18.6	18.3	18.6	76.7
May 23			222	-	-	-	-
June 01			151	-	-	-	-
June 01			165	2.9	4.1	5.0	5.8
June 01			180	6.2	8.8	10.8	25.0
June 01			194	9.8	11.8	13.5	51.8
June 01			208	17.1	16.8	17.4	70.9
June 01			222	-	-	-	-
June 15			151	-	-	-	-
June 15			165	-	-	-	-
June 15			180	2.7	4.1	5.1	6.4
June 15			194	6.2	8.0	9.8	26.3
June 15			208	9.7	12.5	14.4	43.5
June 15			222	16.7	16.4	16.9	83.9
April 15	Dekalb	DKC58-78(YGCB)		10.1	11.3	12.7	39.8
April 15	NK Brand	N32-L9		10.0	11.3	14.8	39.6
April 29	Dekalb	DKC58-78(YGCB)		10.1	11.0	12.6	41.1
April 29	NK Brand	N32-L9		9.9	11.1	12.5	41.1
May 10	Dekalb	DKC58-78(YGCB)		9.6	10.7	12.3	41.4
May 10	NK Brand	N32-L9		9.4	10.6	12.0	39.8
May 23	Dekalb	DKC58-78(YGCB)		10.5	11.8	13.4	46.9
May 23	NK Brand	N32-L9		10.6	12.2	13.6	46.8
June 01	NK Brand	N32-L9		9.2	10.5	11.9	39.4
June 01	NK Brand	N17-R3		8.8	10.3	11.5	37.4
June 15	NK Brand	N32-L9		8.5	10.0	11.7	40.0
June 15	NK Brand	N17-R3		9.1	10.5	11.5	40.1
April 15	Dekalb	DKC58-78(YGCB)	151	2.0	4.0	4.5	4.6
April 15	Dekalb	DKC58-78(YGCB)	165	5.8	8.2	9.2	16.1
April 15	Dekalb	DKC58-78(YGCB)	180	9.5	11.0	14.0	39.7
April 15	Dekalb	DKC58-78(YGCB)	194	13.7	14.2	16.5	66.0
April 15	Dekalb	DKC58-78(YGCB)	208	19.5	19.3	19.5	72.8
April 15	Dekalb	DKC58-78(YGCB)	222	-	-	-	-
April 15	NK Brand	N32-L9	151	2.0	4.3	5.0	3.5
April 15	NK Brand	N32-L9	165	6.5	9.3	10.2	16.5
April 15	NK Brand	N32-L9	180	9.3	11.3	14.2	41.3
April 15	NK Brand	N32-L9	194	14.2	13.7	16.3	71.0
April 15	NK Brand	N32-L9	208	18.2	18.0	28.3	65.8
April 15	NK Brand	N32-L9	222	-	-	-	-

continued

Table C-41. Planting Date And Hybrid Influence On Corn Leaf Development
(continued) **Arlington, WI - 2005.**

Date of Planting	Brand	Hybrid	Observation Day of year	Leaf Development			Plant height
				Leaf collars	Hail adjusters method	Total leaves	
			day of year	no./plant	no./plant	no./plant	inches
April 29	Dekalb	DKC58-78(YGCB)	151	2.0	3.5	4.0	4.3
April 29	Dekalb	DKC58-78(YGCB)	165	6.0	8.2	9.3	16.3
April 29	Dekalb	DKC58-78(YGCB)	180	9.2	11.2	13.8	41.8
April 29	Dekalb	DKC58-78(YGCB)	194	14.0	13.5	16.7	69.5
April 29	Dekalb	DKC58-78(YGCB)	208	19.3	18.8	19.3	73.5
April 29	Dekalb	DKC58-78(YGCB)	222	-	-	-	-
April 29	NK Brand	N32-L9	151	2.0	3.7	4.3	3.8
April 29	NK Brand	N32-L9	165	5.8	8.7	9.7	14.8
April 29	NK Brand	N32-L9	180	8.8	11.3	14.2	38.7
April 29	NK Brand	N32-L9	194	14.5	13.8	16.3	72.7
April 29	NK Brand	N32-L9	208	18.2	18.0	18.2	75.3
April 29	NK Brand	N32-L9	222	-	-	-	-
May 10	Dekalb	DKC58-78(YGCB)	151	1.0	2.2	3.0	3.1
May 10	Dekalb	DKC58-78(YGCB)	165	5.0	7.7	8.5	13.2
May 10	Dekalb	DKC58-78(YGCB)	180	8.7	10.2	13.7	42.2
May 10	Dekalb	DKC58-78(YGCB)	194	13.0	13.7	16.0	68.7
May 10	Dekalb	DKC58-78(YGCB)	208	20.2	19.7	20.2	79.7
May 10	Dekalb	DKC58-78(YGCB)	222	-	-	-	-
May 10	NK Brand	N32-L9	151	1.2	2.3	3.3	3.1
May 10	NK Brand	N32-L9	165	5.0	7.3	8.3	12.1
May 10	NK Brand	N32-L9	180	8.5	11.3	13.8	35.3
May 10	NK Brand	N32-L9	194	13.8	13.8	16.0	68.8
May 10	NK Brand	N32-L9	208	18.5	18.3	18.5	79.8
May 10	NK Brand	N32-L9	222	-	-	-	-
May 23	Dekalb	DKC58-78(YGCB)	151	-	-	-	-
May 23	Dekalb	DKC58-78(YGCB)	165	4.0	6.3	7.0	12.1
May 23	Dekalb	DKC58-78(YGCB)	180	7.8	9.5	12.5	34.8
May 23	Dekalb	DKC58-78(YGCB)	194	11.5	13.0	15.3	65.5
May 23	Dekalb	DKC58-78(YGCB)	208	18.8	18.3	18.8	75.0
May 23	Dekalb	DKC58-78(YGCB)	222	-	-	-	-
May 23	NK Brand	N32-L9	151	-	-	-	-
May 23	NK Brand	N32-L9	165	4.0	6.3	7.3	11.2
May 23	NK Brand	N32-L9	180	7.8	11.2	13.0	34.3
May 23	NK Brand	N32-L9	194	12.2	13.0	15.7	63.3
May 23	NK Brand	N32-L9	208	18.3	18.3	18.3	78.3
May 23	NK Brand	N32-L9	222	-	-	-	-
June 01	NK Brand	N32-L9	151	-	-	-	-
June 01	NK Brand	N32-L9	165	3.0	4.0	5.0	6.0
June 01	NK Brand	N32-L9	180	6.3	9.2	11.0	25.0
June 01	NK Brand	N32-L9	194	10.0	12.0	14.0	52.8
June 01	NK Brand	N32-L9	208	17.3	16.8	17.5	73.8
June 01	NK Brand	N32-L9	222	-	-	-	-
June 01	NK Brand	N17-R3	151	-	-	-	-
June 01	NK Brand	N17-R3	165	2.8	4.2	5.0	5.6
June 01	NK Brand	N17-R3	180	6.0	8.5	10.7	25.0
June 01	NK Brand	N17-R3	194	9.5	11.7	13.0	50.8
June 01	NK Brand	N17-R3	208	16.8	16.8	17.3	68.0
June 01	NK Brand	N17-R3	222	-	-	-	-

continued

Table C-41. Planting Date And Hybrid Influence On Corn Leaf Development

(continued) **Arlington, WI - 2005.**

Date of Planting	Brand	Hybrid	Observation Day of year	Leaf Development: Leaf collars	Leaf Development: Hail adjusters method	Leaf Development: Total leaves	Plant height
			day of year	no./plant	no./plant	no./plant	inches
June 15	NK Brand	N32-L9	151	-	-	-	-
June 15	NK Brand	N32-L9	165	-	-	-	-
June 15	NK Brand	N32-L9	180	2.5	4.0	5.0	5.8
June 15	NK Brand	N32-L9	194	5.8	7.7	10.2	28.0
June 15	NK Brand	N32-L9	208	9.2	12.2	14.5	40.5
June 15	NK Brand	N32-L9	222	16.5	16.2	17.0	85.7
June 15	NK Brand	N17-R3	151	-	-	-	-
June 15	NK Brand	N17-R3	165	-	-	-	-
June 15	NK Brand	N17-R3	180	2.8	4.2	5.2	7.0
June 15	NK Brand	N17-R3	194	6.5	8.3	9.5	24.7
June 15	NK Brand	N17-R3	208	10.2	12.8	14.3	46.5
June 15	NK Brand	N17-R3	222	16.8	16.7	16.8	82.2
Mean				9.7	11.0	12.6	41.0
Probability(%)							
Date of Planting (D)				0.0	0.0	0.0	0.0
Hybrid (H)				61.8	46.5	59.4	69.4
D x H				3.9	17.7	37.0	72.0
Sample DOY (S)				0.0	0.0	0.0	0.0
D x S				0.0	0.0	50.2	0.2
H x S				0.0	0.2	99.5	83.1
D x H x S				94.2	37.3	36.7	51.5
LSD(0.10)							
Date of Planting (D)				0.5	0.6	1.2	3.1
Hybrid (H)				NS	NS	NS	NS
D x H				0.3	NS	NS	NS
Sample DOY (S)				0.2	0.2	1.0	1.8
D x S				0.5	0.6	NS	4.5
H x S				0.4	0.5	NS	NS
D x H x S				NS	NS	NS	NS
CV(%)				6	6	20	11

FIELD EXPERIMENT HISTORY

Title: **Date of Planting and Hybrid Influence on Corn Forage**

Experiment: 03 DOP-Silage **Trial ID:** 2685 **Year:** 2005

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

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

Supported By: HATCH

Site Information

Field: ARS 368 **Previous Crop:** Soybean **Soil Type:** Plano Silt Loam

Soil Test: **Date:** 11/1 /05 **pH** 6.4 **OM (%)** 3.1 **P (ppm)** 22 **K (ppm)** 131

Plot Management

Tillage Operations: Fall Chisel Plow Field Cultivator Soil Finisher prior to each DOP

		Analysis:	Rate lbs/A:	Date:
Fertilizer:	**Preplant :**	46-0-0	325	4 /14/05
	Starter :	9-24-24	150	Each DOP
	Post plant :	N/A	N/A	N/A
	Manure:	N/A	N/A	N/A

Herbicide: Outlook 20 oz/A
Hornet 4 oz/A

Insecticide: None

Hybrid: See Factors

Irrigation: None

Planting Date: See Factors **Planting Depth:** 1.5" **Row Width:** 30"

Target Plant Density: 32000 **plants per acre** **Planting Method:** Kinze Plot Planter

Harvest Date: 9/9, 9/21 &11/1 **Harvest Method:** New Holland 707 Plot Chopper

Experimental Design

Design: RCB Split Plot **Replications:** 3

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

Harvest Plot Size: 2.5' x 22' **Harvest Plant Density:** 29885 **plants per acre**

Factors/Treatments:

Date of Planting:

April 29
June 1
June 30
July 15
August 1

Hybrids:

Dekalb DKC 58-78 (YGCB)
NK Brand N32-L9
Mycogen F697

Results: Tables C-42.

Table C-42. Planting Date And Hybrid Influence On Corn Silage Performance
Arlington, WI - 2005.

		Whole Plant															
Planting		Dry Matter		Kernel	KMR	SMR	VMR	Silking	Harvest		Crude			*In Vitro*			Milk per
Date	Hybrid	yield	Moisture	milk	0-5	0-5	0-10	Date	plants	ears	protein	ADF	NDF	Digest	NDFD	Starch	Ton	Acre
		tons/A	%	%	#	#	#	doy	plants/A	ears/A	%	%	%	%	%	%	lbs/T	lbs/A
April 29		9.5	57.0	54.4	2.7	2.1	4.8	201	30096	33088	7.4	20.2	42.5	82.9	59.7	34.2	3420	32434
June 1		10.0	51.7	39.4	2.0	1.7	3.6	210	29920	32912	7.0	21.8	45.5	81.6	59.4	31.9	3276	32831
June 30		7.7	58.0	45.0	2.3	1.6	3.9	237	29832	32472	7.7	25.4	50.8	80.5	61.5	19.8	3238	24835
July 15		5.6	68.5	100.0	5.0	2.5	7.5	255	29920	30976	8.2	27.3	54.2	81.7	66.2	11.9	3210	18106
August 1		2.8	76.5	-	-	1.7	-	273	29656	0	9.6	29.7	59.2	84.2	73.3	0.9	3109	8706
	Dekalb DKC58-78	7.9	62.3	73.3	3.7	2.0	5.7	236	30254	25872	7.8	25.2	51.2	81.0	62.5	19.9	3198	25546
	Mycogen F697	6.2	67.0	63.3	3.2	2.0	5.4	238	29304	24235	8.0	25.9	52.0	83.8	68.4	15.8	3378	21342
	NK Brand N32-L9	7.3	57.6	42.5	2.1	1.8	3.8	231	30096	27562	8.1	23.6	48.1	81.7	61.2	23.5	3175	23260
April 29	Dekalb DKC58-78	9.8	57.3	63.3	3.2	1.9	5.0	201	30888	32208	7.1	20.5	43.2	82.0	58.4	33.8	3356	33016
April 29	Mycogen F697	9.0	62.5	65.0	3.3	2.6	5.9	204	30096	31152	7.6	21.7	45.0	83.7	63.7	29.5	3599	32327
April 29	NK Brand N32-L9	9.7	51.1	35.0	1.8	1.8	3.6	197	29304	35904	7.3	18.4	39.2	83.1	57.0	39.3	3304	31957
June 1	Dekalb DKC58-78	10.8	50.4	51.7	2.6	1.6	4.2	210	29832	32736	6.7	22.1	46.3	80.8	58.7	32.5	3173	34726
June 1	Mycogen F697	9.1	59.1	46.7	2.3	2.3	4.6	213	30096	30624	7.1	23.8	48.6	82.3	63.6	25.9	3485	31910
June 1	NK Brand N32-L9	10.0	45.4	20.0	1.0	1.1	2.1	206	29832	35376	7.2	19.5	41.7	81.7	56.0	37.5	3169	31857
June 30	Dekalb DKC58-78	8.6	57.9	78.3	3.9	1.9	5.8	238	30360	32736	7.4	26.3	53.4	79.7	61.9	17.5	3218	27594
June 30	Mycogen F697	6.5	63.1	41.7	2.1	1.6	3.7	241	29040	30624	7.5	25.7	50.5	82.4	65.1	18.2	3380	22096
June 30	NK Brand N32-L9	8.0	53.0	15.0	0.8	1.5	2.2	232	30096	34056	8.1	24.0	48.5	79.5	57.6	23.8	3115	24814
July 15	Dekalb DKC58-78	6.8	68.2	100.0	5.0	2.8	7.8	255	30096	31680	8.2	26.9	53.8	79.9	62.7	14.8	3224	22018
July 15	Mycogen F697	4.3	72.5	100.0	5.0	2.4	7.4	257	28512	28776	8.0	28.3	56.4	84.5	72.6	5.6	3154	13440
July 15	NK Brand N32-L9	5.8	64.8	100.0	5.0	2.3	7.3	252	31152	32472	8.5	26.7	52.6	80.7	63.3	15.2	3250	18862
August 1	Dekalb DKC58-78	3.4	77.8	-	-	1.7	-	274	30096	0	9.5	29.9	59.5	82.7	70.9	1.2	3017	10376
August 1	Mycogen F697	2.1	78.0	-	-	1.4	-	276	28776	0	9.8	29.8	59.5	86.4	77.2	0.0	3270	6935
August 1	NK Brand N32-L9	2.9	73.7	-	-	2.1	-	269	30096	0	9.5	29.3	58.5	83.6	72.0	1.5	3038	8808
Mean		7.1	62.3	59.7	3.0	1.9	5.0	235	29885	25890	8.0	24.9	50.4	82.2	64.0	19.7	3250	23382
Probability(%)																		
Date of Planting (D)		0.0	0.0	0.0	0.0	38.2	0.3	0.0	99.4	63.4	0.0	0.0	0.0	7.5	0.0	0.0	7.2	0.5
Hybrid (H)		0.0	0.0	0.0	0.0	11.4	0.0	0.0	24	0.3	3.9	0.2	0.1	0.0	0.0	0.0	0.0	0.1
D x H		0.3	0.6	0.0	0.0	0.5	0.0	0.0	73.3	96.2	22.2	49.8	30.3	25.6	3.1	12.4	7.4	41.2
LSD (0.10)																		
Date of Planting (D)		2.4	4.0	6.7	0.3	NS	1.2	1	NS	NS	0.5	2.1	2.9	2.1	2.3	2.7	164.5	2833.9
Hybrid (H)		0.4	2.3	17.3	0.9	NS	1.1	1	NS	835.0	0.3	1.0	1.9	1.0	1.8	3.1	111.9	1876.6
D x H		1.1	2.5	8.5	0.4	0.5	0.6	1	NS	NS	NS	NS	NS	NS	2.2	NS	156.8	NS
CV(%)		11	3	10	10	18	9	0	5	8	4	6	5	1	2	17	3	11

FIELD EXPERIMENT HISTORY

Title: **Plant Density, Planting Date, and Hybrid Influence on Corn Grain and Silage**

Experiment: 04 PD x DOP **Trial ID** 2733 **Year:** 2005

Personnel: J. G. Lauer, K.D. Kohn, P.J. Flannery

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

Supported By: HATCH

Site Information

Field: ARS357 **Previous Crop:** Soybean **Soil Type:** Plano Silt Loam

Soil Test: **Date:** 10/1 /05 **pH:** 6.1 **OM (%)** 3.4 **P (ppm)** 28 **K (ppm)** 78

Plot Management

Tillage Operations: Fall Chisel Plow Field Cultivator Soil Finisher

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

Herbicide: Outlook 20.0 oz/A
Hornet 4.0 oz/A
Accent 0.66 oz/A
Callisto 3.0 oz/A

Insecticide: None

Hybrid: See Factors

Irrigation: None

Planting Date: See Factors **Planting Depth:** 1.5" **Row Width:** 30"

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

Harvest Date: S: 9/21/05
G: 10/25/05

Harvest Method: S:New Holland Plot Chopper
G:Massey Ferguson 8XP

Experimental Design

Design: RCB split plot **Replications:** 3

Plot Size Seeded 20' x 25' **Experiment Size:** 1.19 Acre

Harvest Plot Size: S: 2.5' x 22' **Harvest Plant Density:** Varies

Factors/Treatments:

Planting Dates:
April 29, May 23,
and June 10

Plant Densities: (plants/A)
15000, 30000,
and 45000

Hybrids:
Dekalb DKC5878(YGCB)
Pioneer 37R71

Results: Table C-43.

Table C-43. Plant Density, Planting Date, and Hybrid Influence on Corn Silage Yield and Quality and Corn Grain Arlington, WI - 2005

Brand	Hybrid	Date of planting	Target plant density	Grain				Grower return	Seeds planted	Stand		Harvest ears	Silking Date	Flag leaf height
				Yield	Moisture	Test Wt	Lodging			Emerged	Harvest			
				bu/A	%	lbs/bu	%	$/A	seeds/A	seeds/A	plants/A	ears/A	doy	inches
			15000	179	21.7	56	0	268	23760	23683	16456	16475	206	86
			30000	217	21.2	57	4	327	43560	40942	30712	30714	206	86
			45000	212	21.0	56	22	321	59400	54417	44946	44947	207	85
		April 29		197	17.1	59	7	314	42240	39309	29832	29839	199	81
		May 23		205	18.9	58	9	320	42240	40530	30800	30807	204	83
		June 10		205	27.9	52	11	283	42240	39204	31482	31489	216	94
		April 29	15000	174	17.2	59	1	276	23760	23678	15378	15397	198	83
		April 29	30000	206	17.1	59	5	329	43560	40277	29634	29637	199	82
		April 29	45000	211	17.1	59	15	337	59400	53972	44484	44485	200	78
		May 23	15000	184	19.0	57	0	285	23760	25047	16632	16650	204	84
		May 23	30000	223	19.0	58	3	348	43560	41663	30954	30955	204	82
		May 23	45000	208	18.7	58	23	326	59400	54879	44814	44815	205	83
		June 10	15000	180	28.9	53	0	244	23760	22325	17358	17378	215	92
		June 10	30000	221	27.6	53	5	305	43560	40887	31548	31549	216	93
		June 10	45000	216	27.2	52	27	301	59400	54401	45540	45541	217	96
Dekalb	DKC58-78(YGCB)			214	24.0	56	9	312	42240	39094	30727	30735	209	87
Pioneer	37R71			191	18.6	57	9	299	42240	40267	30683	30688	204	84
Dekalb	DKC58-78(YGCB)		15000	201	24.7	56	0	291	23760	24002	17072	17095	208	87
Dekalb	DKC58-78(YGCB)		30000	232	23.8	56	3	340	43560	40216	30316	30319	209	87
Dekalb	DKC58-78(YGCB)		45000	209	23.3	56	24	306	59400	53064	44792	44793	209	88
Pioneer	37R71		15000	158	18.6	57	1	246	23760	23364	15840	15855	203	85
Pioneer	37R71		30000	201	18.6	57	6	315	43560	41668	31108	31109	204	84
Pioneer	37R71		45000	215	18.7	57	20	336	59400	55770	45100	45101	205	83
Dekalb	DKC58-78(YGCB)	April 29		213	18.6	59	9	333	42240	38192	29128	29136	201	82
Dekalb	DKC58-78(YGCB)	May 23		217	20.6	57	9	331	42240	40821	30800	30809	207	83
Dekalb	DKC58-78(YGCB)	June 10		213	32.7	52	9	273	42240	38269	32252	32261	218	97
Pioneer	37R71	April 29		181	15.7	59	6	295	42240	40425	30536	30542	196	80
Pioneer	37R71	May 23		194	17.2	58	8	309	42240	40238	30800	30804	201	83
Pioneer	37R71	June 10		198	23.1	53	12	293	42240	40139	30712	30718	214	90

continued

Table C-43. **Plant Density, Planting Date, and Hybrid Influence on Corn Silage Yield and Quality and Corn Grain**
(continued) **Arlington, WI - 2005**

Brand	Hybrid	Date of planting	Target plant density	Grain				Grower return	Seeds planted	Stand		Harvest ears	Silking Date	Flag leaf height
				Yield	Moisture	Test Wt	Lodging			Emerged	Harvest			
				bu/A	%	lbs/bu	%	$/A	seeds/A	seeds/A	plants/A	ears/A	doy	inches
Dekalb	DKC58-78(YGCB)	April 29	15000	197	19	58.7	0	308	23760	24057	15444	15464	201	81
Dekalb	DKC58-78(YGCB)	April 29	30000	229	19	58.9	4	358	43560	38841	28512	28517	201	87
Dekalb	DKC58-78(YGCB)	April 29	45000	212	18	59.1	21	333	59400	51678	43428	43428	202	78
Dekalb	DKC58-78(YGCB)	May 23	15000	214	21	57.1	1	327	23760	26202	17556	17581	207	83
Dekalb	DKC58-78(YGCB)	May 23	30000	234	21	57.4	3	357	43560	41646	30360	30362	206	79
Dekalb	DKC58-78(YGCB)	May 23	45000	201	20	57.5	22	308	59400	54615	44484	44485	208	85
Dekalb	DKC58-78(YGCB)	June 10	15000	190	35	51.5	0	237	23760	21747	18216	18238	217	95
Dekalb	DKC58-78(YGCB)	June 10	30000	234	32	52.0	0	304	43560	40161	32076	32078	219	96
Dekalb	DKC58-78(YGCB)	June 10	45000	213	31	51.4	28	278	59400	52899	46464	46465	219	100
Pioneer	37R71	April 29	15000	151	16	58.9	2	245	23760	23298	15312	15329	195	84
Pioneer	37R71	April 29	30000	184	16	59.1	6	299	43560	41712	30756	30757	196	78
Pioneer	37R71	April 29	45000	210	16	58.8	9	340	59400	56265	45540	45541	198	78
Pioneer	37R71	May 23	15000	153	17	57.0	0	244	23760	23892	15708	15718	201	84
Pioneer	37R71	May 23	30000	213	17	58.9	2	339	43560	41679	31548	31549	201	84
Pioneer	37R71	May 23	45000	215	17	58.2	23	344	59400	55143	45144	45145	202	80
Pioneer	37R71	June 10	15000	169	23	54.0	0	250	23760	22902	16500	16518	213	88
Pioneer	37R71	June 10	30000	207	23	53.4	10	306	43560	41613	31020	31020	214	90
Pioneer	37R71	June 10	45000	219	23	52.7	26	323	59400	55902	44616	44616	215	92
Mean				203	21	56.4	9	306	42240	39681	30705	30712	206	86
Probability(%)														
Hybrid (H)				10.8	1.3	9.2	98.4	30.3	-	2.2	83.3	82.1	0.0	32.3
Date of Planting (P)				13.1	0.0	0.0	36.4	0.2	-	2.4	1.0	1.0	0.0	0.0
H x P				19.8	0.0	4.6	53.2	1.1	-	2.0	1.8	1.8	5.6	10.7
Plant Density (D)				0.0	2.4	26.2	0.0	0.0	-	0.0	0.0	0.0	0.0	89.0
P x D				64.5	5.7	13.3	73.0	56.7	-	8.0	72.9	73.0	1.7	8.5
H x D				0.0	2.3	65.2	68.6	0.0	-	0.0	2.3	2.2	0.6	50.1
H x P x D				35.1	12.4	28.3	88.2	16.1	-	25.9	52.3	52.0	0.3	5.3
LSD(0.10)														
Hybrid (H)				NS	2	1	NS	NS	-	518	NS	NS	0	NS
Date of Planting (P)				NS	1	1	NS	14	-	778	740	739	0	3
H x P				NS	1	1	NS	19	-	1100	1047	1046	1	NS
Plant Density (D)				9	0	NS	7	13	-	612	607	607	0	NS
P x D				NS	1	NS	NS	NS	-	1060	NS	NS	0	4
H x D				13	1	NS	NS	18	-	865	858	858	0	NS
H x P x D				NS	NS	NS	NS	NS	-	NS	NS	NS	1	5
CV(%)				8	3	1	144	7	-	3	3	3	0	5

continued

Table C-43. Plant Density, Planting Date, and Hybrid Influence on Corn Silage Yield and Quality and Corn Grain
(continued) **Arlington, WI - 2005**

			Target	Whole Plant															
		Date	plant	Dry Matter		Kernel	KMR	SMR	VMR	Harvest		*In Vitro*						Milk per	
Brand	Hybrid	of planting	density	yield	Moisture	milk	0-5	0-5	0-10	plants	ears	CP	ADF	NDF	Digest	NDFD	Starch	Ton	Acre
				tons/A	%	%	#	#	#	plants/A	ears/A	%	%	%	%	%	%	lbs/T	lbs/A
			15000	7.5	54.1	32.5	1.6	2.5	4.1	15356	25960	7.7	19.6	42.2	82.1	57.5	32.6	1272	9570
			30000	9.0	51.6	33.3	1.7	1.9	3.6	30140	31416	7.0	20.0	42.1	81.7	56.4	34.5	1101	9957
			45000	9.0	49.1	32.2	1.6	1.5	3.1	42460	43296	6.8	19.5	40.8	81.3	54.2	37.2	860	7751
		April 29		8.3	53.8	37.2	1.9	2.3	4.2	29612	33484	7.1	18.2	39.6	83.0	57.1	36.3	1075	8902
		May 23		8.5	46.8	27.2	1.4	1.4	2.7	28820	32912	7.1	19.7	42.2	81.4	55.9	34.5	1072	9099
		June 10		8.6	54.2	33.6	1.7	2.2	3.8	29524	34276	7.2	21.2	43.2	80.6	55.1	33.5	1086	9278
		April 29	15000	7.3	55.2	36.7	1.8	2.8	4.6	15312	25344	7.6	18.3	40.1	83.1	57.8	34.7	1195	8806
		April 29	30000	8.4	53.9	38.3	1.9	2.3	4.3	29832	31020	6.8	18.9	40.7	82.7	57.5	35.6	1104	9333
		April 29	45000	9.2	52.2	36.7	1.8	1.9	3.7	43692	44088	7.0	17.3	38.0	83.3	56.0	38.5	926	8566
		May 23	15000	7.7	49.2	28.3	1.4	1.9	3.3	15180	25476	7.5	18.8	41.6	82.6	58.1	33.7	1233	9521
		May 23	30000	9.1	47.3	26.7	1.3	1.4	2.8	29700	30492	7.1	20.0	42.7	81.2	55.8	34.1	1091	10040
		May 23	45000	8.6	43.9	26.7	1.3	0.8	2.2	41580	42768	6.8	20.2	42.4	80.4	53.7	35.8	894	7737
		June 10	15000	7.5	58.0	32.5	1.6	2.8	4.4	15576	27060	7.9	21.6	44.8	80.7	56.7	29.5	1388	10383
		June 10	30000	9.3	53.6	35.0	1.8	2.1	3.8	30888	32736	7.0	21.0	42.9	81.1	55.9	33.8	1109	10499
		June 10	45000	9.1	51.0	33.3	1.7	1.7	3.3	42108	43032	6.7	20.9	42.0	80.2	52.8	37.3	762	6951
Dekalb	DKC58-78(YGCB)			9.2	53.7	48.3	2.4	2.1	4.5	29304	33939	7.1	20.7	43.2	81.4	56.8	33.5	1155	10579
Pioneer	37R71			7.8	49.4	17.0	0.9	1.8	2.6	29333	33176	7.2	18.6	40.2	82.0	55.2	36.0	1000	7606
Dekalb	DKC58-78(YGCB)		15000	8.6	55.9	47.2	2.4	2.7	5.1	15136	26664	7.5	20.3	43.0	82.1	58.4	32.4	1299	11135
Dekalb	DKC58-78(YGCB)		30000	9.5	54.2	48.3	2.4	2.0	4.5	29744	31240	6.9	21.5	44.6	81.0	57.3	32.1	1235	11818
Dekalb	DKC58-78(YGCB)		45000	9.5	51.2	49.4	2.5	1.6	4.0	43032	43912	7.0	20.3	42.0	81.0	54.8	36.0	932	8784
Pioneer	37R71		15000	6.5	52.3	17.8	0.9	2.2	3.1	15576	25256	7.8	18.8	41.3	82.1	56.7	32.9	1244	8005
Pioneer	37R71		30000	8.4	49.1	18.3	0.9	1.8	2.8	30536	31592	7.1	18.4	39.6	82.3	55.4	36.9	968	8096
Pioneer	37R71		45000	8.5	46.9	15.0	0.8	1.4	2.1	41888	42680	6.7	18.6	39.6	81.6	53.5	38.4	789	6719
Dekalb	DKC58-78(YGCB)	April 29		9.0	55.9	54.4	2.7	2.4	5.2	29920	33440	7.1	19.3	41.1	82.5	57.3	35.0	1133	10123
Dekalb	DKC58-78(YGCB)	May 23		8.9	49.6	42.2	2.1	1.7	3.8	28336	33176	7.0	20.8	43.9	81.1	56.9	33.0	1170	10456
Dekalb	DKC58-78(YGCB)	June 10		9.7	55.8	48.3	2.4	2.2	4.6	29656	35200	7.2	22.0	44.7	80.5	56.4	32.5	1163	11158
Pioneer	37R71	April 29		7.7	51.7	20.0	1.0	2.2	3.2	29304	33528	7.2	17.1	38.2	83.5	56.9	37.5	1017	7680
Pioneer	37R71	May 23		8.1	44.0	12.2	0.6	1.1	1.7	29304	32648	7.2	18.5	40.5	81.7	54.8	36.1	974	7742
Pioneer	37R71	June 10		7.6	52.6	18.9	0.9	2.1	3.0	29392	33352	7.2	20.3	41.8	80.7	53.9	34.5	1009	7397

continued

Table C-43. Plant Density, Planting Date, and Hybrid Influence on Corn Silage Yield and Quality and Corn Grain
(continued) **Arlington, WI - 2005**

			Target	Whole Plant															
		Date	plant	Dry Matter		Kernel	KMR	SMR	VMR	Harvest		*In Vitro*						Milk per	
Brand	Hybrid	of planting	density	yield	Moisture	milk	0-5	0-5	0-10	plants	ears	CP	ADF	NDF	Digest	NDFD	Starch	Ton	Acre
				tons/A	%	%	#	#	#	plants/A	ears/A	%	%	%	%	%	%	lbs/T	lbs/A
Dekalb	DKC58-78(YGCB)	April 29	15000	8.4	57.1	53.3	2.7	3.1	5.7	15312	24288	7.5	19.2	41.2	82.7	58.0	33.8	1238	10413
Dekalb	DKC58-78(YGCB)	April 29	30000	8.9	56.5	53.3	2.7	2.5	5.1	29568	31152	6.6	20.5	43.1	81.8	57.6	33.5	1195	10724
Dekalb	DKC58-78(YGCB)	April 29	45000	9.5	54.0	56.7	2.8	1.8	4.6	44880	44880	7.1	18.1	39.0	82.9	56.2	37.6	965	9233
Dekalb	DKC58-78(YGCB)	May 23	15000	8.3	51.3	41.7	2.1	2.2	4.3	14520	26400	7.2	19.3	42.0	82.6	58.5	33.9	1225	10142
Dekalb	DKC58-78(YGCB)	May 23	30000	9.7	50.6	43.3	2.2	1.7	3.9	28776	29832	7.0	21.3	44.7	81.1	57.8	32.0	1253	12142
Dekalb	DKC58-78(YGCB)	May 23	45000	8.8	46.7	41.7	2.1	1.1	3.2	41712	43296	7.0	21.9	45.0	79.5	54.4	33.0	1033	9083
Dekalb	DKC58-78(YGCB)	June 10	15000	9.0	59.1	46.7	2.3	2.9	5.3	15576	29304	7.8	22.4	46.0	80.9	58.5	29.4	1436	12850
Dekalb	DKC58-78(YGCB)	June 10	30000	10.0	55.5	48.3	2.4	1.9	4.3	30888	32736	7.0	22.8	46.0	80.0	56.6	30.8	1255	12589
Dekalb	DKC58-78(YGCB)	June 10	45000	10.1	52.8	50.0	2.5	1.8	4.3	42504	43560	6.8	20.8	42.0	80.6	54.0	37.4	797	8036
Pioneer	37R71	April 29	15000	6.3	53.2	20.0	1.0	2.5	3.5	15312	26400	7.7	17.5	39.1	83.4	57.5	35.6	1152	7199
Pioneer	37R71	April 29	30000	7.8	51.4	23.3	1.2	2.2	3.4	30096	30888	7.0	17.3	38.4	83.6	57.3	37.7	1013	7942
Pioneer	37R71	April 29	45000	8.9	50.4	16.7	0.8	2.0	2.8	42504	43296	6.9	16.5	37.0	83.7	55.8	39.4	886	7899
Pioneer	37R71	May 23	15000	7.2	47.0	15.0	0.8	1.5	2.3	15840	24552	7.9	18.3	41.2	82.6	57.6	33.5	1241	8899
Pioneer	37R71	May 23	30000	8.6	44.0	10.0	0.5	1.1	1.6	30624	31152	7.2	18.7	40.6	81.3	53.9	36.1	928	7937
Pioneer	37R71	May 23	45000	8.5	41.0	11.7	0.6	0.6	1.2	41448	42240	6.6	18.5	39.8	81.3	53.1	38.6	754	6390
Pioneer	37R71	June 10	15000	6.0	56.8	18.3	0.9	2.6	3.5	15576	24816	7.9	20.8	43.6	80.4	55.0	29.6	1340	7917
Pioneer	37R71	June 10	30000	8.7	51.7	21.7	1.1	2.2	3.3	30888	32736	7.0	19.1	39.8	82.1	55.2	36.7	962	8408
Pioneer	37R71	June 10	45000	8.2	49.3	16.7	0.8	1.5	2.3	41712	42504	6.5	20.9	42.0	79.7	51.6	37.2	726	5866
Mean				8.5	51.6	32.7	1.6	2.0	3.6	29319	33557	7.2	19.7	41.7	81.7	56.0	34.8	1078	9093
Probability(%)																			
Hybrid (H)				0.0	11.6	0.3	0.3	4.7	0.6	95.5	34.0	35.0	9.0	8.1	25.0	0.0	12.7	8.5	1.4
Date of Planting (P)				48.0	0.0	0.4	0.4	0.1	0.0	5.5	5.9	43.6	0.0	0.2	0.0	0.5	1.5	94.3	81.9
H x P				12.4	17.8	45.9	45.9	34.0	44.5	6.5	17.9	15.2	74.2	92.1	20.8	8.3	75.3	65.4	52.4
Plant Density (D)				0.0	0.0	68.6	68.6	0.0	0.0	0.0	0.0	0.0	63.5	21.0	12.1	0.0	0.1	0.0	0.0
P x D				4.8	22.3	75.7	75.7	78.1	93.2	3.3	34.4	16.0	27.4	33.7	7.6	18.2	22.2	13.0	11.4
H x D				1.5	55.8	13.9	13.9	17.4	44.1	2.2	31.4	2.2	24.9	15.2	22.7	86.0	12.3	17.5	25.3
H x P x D				38.5	98.8	31.1	31.1	36.7	36.4	77.9	13.9	56.3	46.5	45.7	18.7	30.1	51.4	72.8	39.5
LSD(0.10)																			
Hybrid (H)				0.0	NS	4.7	0.2	0.2	0.4	NS	NS	NS	2.0	2.7	NS	0.1	NS	141	1053
Date of Planting (P)				NS	1.1	3.9	0.2	0.3	0.4	553	888	NS	0.7	1.3	0.4	0.8	1.3	NS	NS
H x P				NS	NS	NS	NS	NS	NS	782	NS	NS	NS	NS	NS	1.1	NS	NS	NS
Plant Density (D)				0.3	1.3	NS	NS	0.2	0.2	586	1063	0.2	NS	NS	NS	0.8	1.7	94	841
P x D				0.6	NS	NS	NS	NS	NS	1016	NS	NS	NS	NS	1.1	NS	NS	NS	NS
H x D				0.5	NS	NS	NS	NS	NS	829	NS	0.3	NS	NS	NS	NS	NS	NS	NS
H x P x D				NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
CV(%)				7	4	12	12	17	11	4	6	5	8	6	1	3	9	15	16

FIELD EXPERIMENT HISTORY

Title: **Plant Density and Row Spacing Effects on Corn Grain and Silage**

Experiment: 06 RS x PD **Trial ID:** 2734 **Year:** 2005

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

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

Supported By: HATCH

Site Information

Field: ARS372 **Previous Crop:** Soybean **Soil Type:** Plano Silt Loam

Soil Test: **Date:** 10/1 /05 **pH** 6.8 **OM (%)** 2.9 **P (ppm)** 23 **K (ppm)** 128

Plot Management

Tillage Operations: Fall Chisel Plow Field Cultivator Soil Finisher

		Analysis:	Rate lbs/A:	Date:
Fertilizer:	**Preplant :**	46-0-0	325	4 /14/05
	Starter :	N/A	N/A	N/A
	Post plant :	N/A	N/A	N/A
	Manure:	N/A	N/A	N/A

Herbicide: Outlook 20.0 oz/A
Hornet 4.0 oz/A

Insecticide: None

Hybrid: NK Brand N50-P5

Irrigation: None

Planting Date: 4/28/05 **Planting Depth:** 1.5" **Row Width:** See Factors

Target Plant Density: See Factors **Planting Method:** Kinze Inter-Row Planter

Harvest Date: S: 9/21/05
G: 10/25/05

Harvest Method: S: NH 707
G: Massey Ferguson 8XP

Experimental Design

Design: See Factors **Replications:** 4

Plot Size Seeded: 10' x 80' **Experiment Size:** 0.65 Acre

Harvest Plot Size: S: 5' x 8.75'
G: 5' x 71.25'

Harvest Plant Density: See Factors

Factors/Treatments:

Row Spacing:	Plant Density: (plants/A)
15 inch	15000, 25000,
30 inch	35000 and 45000

Results: Table C-44.

Table C-44. Plant Density and Row Spacing Effects on Corn Grain and Silage Yield and Quality
Arlington, WI - 2005

		Grain									
									Yield Components @ 0% moisture		
Row spacing	Density	Harvest population	Broken stalks	Yield	Moisture	Test weight	Grower return	Silk	Ear number	Kernels number	100 Kernel wt
inches	plants/A	plants/A	%	bu/A	%	lbs/bu	$/A	doy	ears/A	no./ear	grams
	15000	17424	0	163	16.9	58	260	200	22527	598	26.2
	25000	28874	0	177	16.7	58	283	201	28874	548	24.1
	35000	38955	1	181	16.5	58	291	202	38955	448	22.3
	45000	46671	9	167	16.6	58	268	202	46671	355	21.6
15 inches		33355	3	163	16.6	58	262	201	34786	458	23.5
30 inches		32608	2	181	16.7	58	290	202	33728	516	23.6
15 inches	15000	17424	0	161	17.0	58	258	200	23149	575	26.4
15 inches	25000	29372	0	166	16.6	58	266	202	29372	502	24.2
15 inches	35000	39080	2	179	16.6	58	286	202	39080	450	21.9
15 inches	45000	47543	11	147	16.4	58	237	201	47543	306	21.4
30 inches	15000	17424	0	164	16.9	58	263	201	21904	620	26.0
30 inches	25000	28376	0	188	16.9	58	300	201	28376	593	23.9
30 inches	35000	38831	1	184	16.4	57	295	202	38831	446	22.7
30 inches	45000	45800	6	187	16.9	58	300	202	45800	403	21.8
Mean		32981	2	172	16.7	58	276	201	34257	487	23.6
Probability(%)											
Row Space (S)		34.7	30.5	0.3	35.0	74.1	0.3	14.0	19.8	0.4	73.0
Plant Density (D)		0.0	0.0	7.5	3.5	76.7	6.4	0.3	0.0	0.0	0.0
S x D		85.6	62.4	6.5	9.2	52.0	7.6	15.0	92.7	18.3	58.7
LSD(0.10)											
Row Space (S)		NS	NS	9	NS	NS	14	NS	NS	30	NS
Plant Density (D)		1891	3	12	0.2	NS	20	1	1935	43	0.9
S x D		NS	NS	18	0.3	NS	28	NS	NS	NS	NS
CV(%)		7	150	8	2	1	8	0	7	10	4

continued

Table C-44. Plant Density and Row Spacing Effects on Corn Grain and Silage Yield and Quality
(continued) **Arlington, WI - 2005**

		Whole Plant											
Row spacing	Density	Harvest population	Yield	Moisture	Kernel milk	Crude protein	ADF	NDF	In Vitro Digest	NDFD	Starch	Milk per Ton	Milk per Acre
inches	plants/A	plants/A	tons/A	%	%	%	%	%	%	%	%	lbs/T	lbs/A
	15000	17125	8.1	40.7	6	7.4	16.5	38.8	83.4	57.2	40.6	3362	27378
	25000	27250	8.0	38.9	6	6.9	17.2	39.2	82.4	55.1	41.7	3270	26357
	35000	38125	8.4	41.0	13	6.6	18.5	40.3	81.6	54.4	40.6	3230	27124
	45000	41750	8.2	37.8	6	6.7	17.4	38.8	82.2	54.0	42.7	3240	26660
15 inches		30125	8.2	39.6	9	6.9	18.0	40.5	82.0	55.7	40.1	3268	26829
30 inches		32000	8.2	39.6	7	6.9	16.7	38.1	82.8	54.6	42.8	3283	26931
15 inches	15000	15750	8.2	40.8	5	7.4	16.0	38.3	83.6	57.3	41.1	3378	27818
15 inches	25000	26250	7.7	39.6	6	7.1	18.3	40.9	81.7	55.3	39.8	3237	24945
15 inches	35000	36250	8.5	41.1	18	6.6	19.5	42.2	81.0	55.1	38.6	3226	27486
15 inches	45000	42250	8.4	36.9	6	6.5	18.3	40.7	81.8	55.1	40.7	3232	27065
30 inches	15000	18500	8.0	40.6	6	7.4	17.0	39.4	83.1	57.1	40.1	3347	26937
30 inches	25000	28250	8.4	38.2	6	6.8	16.0	37.5	83.1	54.8	43.7	3304	27770
30 inches	35000	40000	8.3	40.9	9	6.5	17.4	38.5	82.1	53.6	42.6	3233	26762
30 inches	45000	41250	8.1	38.6	5	7.0	16.5	36.9	82.7	53.0	44.7	3248	26254
Mean		31063	8.2	39.6	8	6.9	17.4	39.3	82.4	55.2	41.4	3276	26880
Probability(%)													
Row Space (S)		3.4	96.9	97.1	44.6	92.8	2.5	0.7	12.2	14.1	0.3	60.8	90.6
Plant Density (D)		0.0	65.6	15.7	20.1	0.1	10.7	51.6	7.0	1.4	21.7	1.5	83.4
S x D		23.7	27.9	80.7	60.1	14.7	14.2	12.9	45.9	72.3	10.3	69.1	35.9
LSD(0.10)													
Row Space (S)		1425	NS	NS	NS	NS	0.9	1.4	NS	NS	1.4	NS	NS
Plant Density (D)		2015	NS	NS	NS	0.3	NS	NS	1.1	1.6	NS	70	NS
S x D		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
CV(%)		8	7	8	104	5	9	6	2	3	6	2	9

FIELD EXPERIMENT HISTORY

Title: **Twin Row Corn Strip Trial**

Experiment: 06 RS x PD **Trial ID:** 05C53 **Year:** 2005

Personnel: M.G. Bertram

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

Supported by: Marshfield Ag. Research Station

Site Information

Field: W5 **Soil Type:** Withee silt loam

Soil Test : **Date:** 10/13/04 **pH** 6.8 **SOM (%)** 3.4 **P (ppm)** 64 **K (ppm)** 125

Plot Management

Tillage Operations: Chisel Plow Field Cultivator

Fertilizer:

	Analysis	Rate	Date
Preplant	46-0-0	200	5/3/2005
Starter	9-11-31	200	5/3/2005
Post plant	none	N/A	N/A
Manure	none	N/A	N/A

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

Irrigation: None **Hybrid:** Pioneer 38K06

Planting Date: 5/3/2005 **Planting Depth:** 1.5" **Row Width:** Varies

Target Plant Density: Varies **plants per acre** **Planting Method:** John Deere 1750 planter

Harvest Date: 10/31/2005 **Harvest Method:** John Deere combine

Notes:

Experimental Design

Design: RCB **Replications:** 3

Plot Size Seeded: 537' x 15' **Experiment Size:** 3.33 A

Harvest Plot size: 537' x 15'

Factors/Treatments:

Row Spacing	Target Population
Single 30"	30,000
Twin 6" on 30" centers	45,000
	60,000

Results: Table C-45.

Table C-45. Twin Row Corn Strip Trial
Marshfield, WI

Row Spacing	Target population	Grain population	Broken Stalks	Test Weight	Grain Moisture	Grain Yield
	K ppa	ppa	%	lb/bu	%	bu/A
Single		43560	3	56	19.1	156
Twin		43676	3	56	19.2	158
	30	30028	3	56	19.3	150
	45	43153	2	56	19.3	163
	60	57674	3	57	18.9	159
Single	30	29272	3	56	19.2	148
Single	45	42979	3	57	19.2	163
Single	60	58429	2	57	18.8	158
Twin	30	30783	2	56	19.3	151
Twin	45	43327	1	56	19.4	164
Twin	60	56918	5	57	18.9	160
Mean		43618	3	56	19.1	157
Probability (%)						
Row Spacing (S)		>50	>50	22.5	36.8	>50
Population (P)		<0.1	>50	30.1	4.6	<0.1
S x P		20	10.9	22.6	>50	>50
LSD 10%						
Row Spacing (S)		NS	NS	NS	NS	NS
Population (P)		1428	NS	NS	0.3	3
S x P		NS	4	NS	NS	NS
C.V. (%)		3	61	47	1	2

FIELD EXPERIMENT HISTORY

Title: **Date of Planting and Row Spacing Influence on Grain Yield**

Experiment: 07 Date of Planting and Row Space **Trial ID** 2735 **Year:** 2005

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

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

Supported By: HATCH

Site Information

Field: ARS 372 **Previous Crop:** Soybean **Soil Type:** Plano Silt Loam

Soil Test: **Date:** 10/01/05 **pH:** 6.8 **OM (%)** 2.8 **P (ppm)** 23 **K (ppm)** 120

Plot Management

Tillage Operations: Fall Chisel Plow Field Cultivator Soil Finisher prior to each DOP

		Analysis:	Rate lbs/A:	Date:
Fertilizer:	**Preplant :**	46-0-0	325	N/A
	Starter :	N/A	N/A	N/A
	Post plant :	N/A	N/A	N/A
	Manure:	N/A	N/A	N/A

Herbicide: Outlook 20.0 oz/A
Hornet 4.0 oz/A

Insecticide: None

Hybrid: See Factors

Irrigation: None

Planting Date: See Factors **Planting Depth:** 1.5" **Row Width:** See Factors

Target Plant Density: 35000 **Planting Method:** Kinze Inter-Row Planter

Harvest Date: 10/25/05 **Harvest Method:** Massey Ferguson 8XP

Experimental Design

Design: RCB Split-Plot **Replications:** 4

Plot Size Seeded 10' x 80' **Experiment Size:** 1.1 Acre

Harvest Plot Size: 5' x 80' **Harvest Plant Density:** 34350

Factors/Treatments:

Date of Planting:	Row Spacing:	Hybrid:
April 29	15 inch	NK Brand N32-L9
May 23	30 inch	NK Brand N50-P5
June 10		

Results: Table C-46.

Table C-46. Date of Planting and Row Spacing Influence on Grain Yield
Arlington, WI - 2005

Planting date	Row spacing	Hybrid	Yield	Moisture	Test weight	Grower return	Lodged	Yield Components @ 0% moisture: Plant number	Ear number	100 Kernel wt.	Kernel no./ear
			bu/A	%	lbs/bu	$/A	%	plants/A	ears/A	grams	kernels/ear
		NK N32-L9	172	17.9	56	273	43.6	34765	34516	21.7	508
		NK N50-P5	169	18.8	56	265	23.8	33935	33728	22.2	503
	15 inches		169	18.3	56	266	29.8	29372	29289	21.9	572
	30 inches		172	18.4	55	271	37.6	39328	38955	22.0	439
	15 inches	NK N32-L9	169	17.9	56	266	41.3	30865	30616	21.7	555
	15 inches	NK N50-P5	170	18.6	56	266	18.2	27878	27961	22.2	590
	30 inches	NK N32-L9	176	17.8	55	279	46.0	38665	38416	21.8	461
	30 inches	NK N50-P5	169	19.0	56	263	29.3	39992	39494	22.2	416
April 29			170	16.3	58	274	17.7	33603	33479	23.2	483
May 23			178	17.1	57	285	41.6	36030	35844	21.7	504
June 10			164	21.6	52	248	41.8	33417	33043	21.0	530
April 29		NK N32-L9	165	16.5	58	265	23.8	33355	33230	23.5	462
April 29		NK N50-P5	175	16.1	58	283	11.5	33852	33728	22.9	504
May 23		NK N32-L9	182	16.5	56	293	39.4	37337	36964	22.1	490
May 23		NK N50-P5	175	17.7	57	276	43.8	34724	34724	21.3	518
June 10		NK N32-L9	170	20.6	53	260	67.8	33603	33355	19.6	573
June 10		NK N50-P5	158	22.6	51	235	15.9	33230	32732	22.4	486
April 29	15 inches		161	16.2	58	261	11.8	28252	28127	22.5	551
April 29	30 inches		178	16.4	58	288	23.5	38955	38831	23.9	415
May 23	15 inches		179	17.1	57	286	33.9	31239	30990	22.2	567
May 23	30 inches		177	17.1	56	283	49.3	40822	40697	21.3	441
June 10	15 inches		167	21.5	52	252	43.6	28625	28750	21.2	599
June 10	30 inches		162	21.8	52	243	40.1	38208	37337	20.8	460

continued

Table C-46. Date of Planting and Row Spacing Influence on Grain Yield

(continued) **Arlington, WI - 2005**

Planting date	Row spacing	Hybrid	Yield	Moisture	Test weight	Grower return	Lodged	Yield Components @ 0% moisture: Plant number	Ear number	100 Kernel wt.	Kernel no./ear
			bu/A	%	lbs/bu	$/A	%	plants/A	ears/A	grams	kernels/ear
April 29	15 inches	NK N32-L9	154	16.4	58	248	10.7	27878	27878	23.3	512
April 29	15 inches	NK N50-P5	169	16.1	58	273	13.0	28625	28376	21.7	590
April 29	30 inches	NK N32-L9	175	16.6	58	282	36.9	38831	38582	23.7	412
April 29	30 inches	NK N50-P5	181	16.2	59	293	10.1	39080	39080	24.0	418
May 23	15 inches	NK N32-L9	182	16.6	57	292	40.1	33852	33106	22.1	545
May 23	15 inches	NK N50-P5	177	17.6	57	280	27.7	28625	28874	22.3	589
May 23	30 inches	NK N32-L9	182	16.4	56	293	38.6	40822	40822	22.1	434
May 23	30 inches	NK N50-P5	172	17.7	57	273	60.0	40822	40573	20.4	448
June 10	15 inches	NK N32-L9	170	20.8	53	259	73.1	30865	30865	19.7	608
June 10	15 inches	NK N50-P5	164	22.2	52	245	14.1	26385	26634	22.7	589
June 10	30 inches	NK N32-L9	171	20.5	52	261	62.4	36341	35844	19.6	537
June 10	30 inches	NK N50-P5	153	23.1	51	225	17.7	40075	38831	22.1	383
Mean			171	18.3	56	269	33.7	34350	34122	22.0	506
Probability(%)											
Planting Date (D)			40.4	0.2	0.0	7.8	7.4	2.4	2.4	21.4	5.6
Row Spacing (R)			28.6	68.0	20.4	28.2	8.0	0.0	0.0	88.4	0.0
Hybrid (H)			31.4	0.4	92.3	8.1	0.0	47.2	47.1	20.6	78.6
R x D			0.7	88.5	78.8	0.4	18.3	89.8	72.8	3.2	95.9
R x H			13.4	42.7	33.8	9.0	46.5	6.9	9.5	85.2	4.5
D x H			0.8	1.3	0.9	0.1	0.0	52.3	58.7	0.0	1.8
R x D x H			88.2	63.8	52.3	81.8	1.8	29.9	40.4	11.0	54.2
LSD (0.10)											
Planting Date (D)			NS	1.8	1	26.0	18.7	1479	1526	NS	29
Row Spacing (R)			NS	NS	NS	NS	7.3	1937	1835	NS	32
Hybrid (H)			NS	0.5	NS	7.4	7.3	NS	NS	NS	NS
R x D			8.4	NS	NS	12.8	NS	NS	NS	1.0	NS
R x H			NS	NS	NS	10.4	NS	2739	2595	NS	46
D x H			8.4	0.7	1	12.8	12.7	NS	NS	1.0	56
R x D x H			NS	NS	NS	NS	17.9	NS	NS	NS	NS
CV(%)			6	6	2	6	44	11	11	6	13

FIELD EXPERIMENT HISTORY

Title: **Tryon Seed Treatment Trial**

Experiment: 08 Seed Treatment **Trial ID:** 2739 **Year:** 2005

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

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

Supported By: Tryon Group

Site Information

Field: ARS428 **Previous Crop:** Soybean **Soil Type:** Plano Silt Loam

Soil Test: **Date:** 10/15/05 **pH** 6.6 **OM (%)** 3.4 **P (ppm)** 49 **K (ppm)** 91

Plot Management

Tillage Operations: Chisel Plow Field Cultivator Soil Finisher Cultivated 6/09/05

Fertilizer:

	Analysis	Rate	Date
Preplant	46-0-0	325	4 /14/05
Starter	9-24-24	150	5 /9 /05
Post plant	N/A	N/A	N/A
Manure:	N/A	N/A	N/A

Herbicide: Outlook 20 oz/A (4/22/05)
Hornet 4.0 oz/A (4/22/05

Insecticide: N/A

Irrigation: None

Hybrid: Unknown

Planting Date: 4/28/05 **Planting Depth:** 1.5" **Row Width:** 30"

Target Plant Density: 30000 **plants per acre** **Planting Method:** Kinze Plot Planter

Harvest Date: 10/24/05 **Harvest Method:** Massey Ferguson 8XP

Experimental Design

Design: RCB **Replications:** 2

Plot Size Seeded: 5' x 25' **Experiment Size:** 0.7 Acre

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

Treatments :

Untreated Check
Captan 400
Captan 400 +Allegiance
MaximXL
MaximXL + ApronXL
MaximXL + ApronXL + Dynasty
MaximXL + ApronXL + Trilex
MaximXL + ApronXL + TG 500.05A
MaximXL + ApronXL + TG 500.05B
MaximXL + ApronXL + TG 510.20
MaximXL + ApronXL + TG 516.30
Vortex AT
Vortex - Metalaxyl
TG 595.05 + Metalaxyl
Charter + Metalaxyl
TG 595.05 + Metalaxyl + TG 516.30
TG 595.05 + Metalaxyl + TG 500.05A
TG 595.05 + Metalaxyl + TG 510.20
TG 500.05A + Metalaxyl
TG 500.10A + Metalaxyl
TG 516.30 + Metalaxyl
TG 510.20 + Metalaxyl
MaximXL + ApronXL + Baytan 30
MaximXL + ApronXL + TGAB 1
MaximXL + ApronXL + TGAB 2
TGN1500C250S2
MaximXL + ApronXL + TGN150C250S2
MaximXL + ApronXL + TGN250GREN1
MaximXL + ApronXL + Dynasty + Poncho 1250
MaximXL + ApronXL + Dynasty + TG8100-6.2
MaximXL + ApronXL + Dynasty + TG8100-500
MaximXL + ApronXL + Dynasty + Gaucho
MaximXL + ApronXL + Dynasty + TG8150.34-Gaucho.38

Results: TableC-47.

Table C-47. Tryon Seed Treatment Study
Arlington, WI - 2005

Trt	Seed Treatment	Grain yield	Grain moisture	Test weight	Grower return
		bu/A	%	lb/bu	$/A
1	Untreated Check	206	21.3	55	313
2	Captan 400	230	21.2	55	350
3	Captan 400 +Allegiance	208	20.7	56	317
4	MaximXL	222	20.6	55	339
5	MaximXL + ApronXL	238	20.1	56	365
6	MaximXL + ApronXL + Dynasty	215	20.4	56	330
7	MaximXL + ApronXL + Trilex	215	21.5	56	325
8	MaximXL + ApronXL + TG 500.05A	214	20.8	56	326
9	MaximXL + ApronXL + TG 500.05B	228	21.0	55	347
10	MaximXL + ApronXL + TG 510.20	217	20.4	56	333
11	MaximXL + ApronXL + TG 516.30	215	19.9	56	332
12	Vortex AT	228	21.3	55	346
13	Vortex - Metalaxyl	221	19.8	55	340
14	TG 595.05 + Metalaxyl	224	20.5	56	343
15	Charter + Metalaxyl	229	20.2	56	351
16	TG 595.05 + Metalaxyl + TG 516.30	223	20.6	55	341
17	TG 595.05 + Metalaxyl + TG 500.05A	218	20.3	56	335
18	TG 595.05 + Metalaxyl + TG 510.20	218	21.0	56	332
19	TG 500.05A + Metalaxyl	196	20.6	56	300
20	TG 500.10A + Metalaxyl	209	20.7	55	319
21	TG 516.30 + Metalaxyl	231	20.5	57	353
22	TG 510.20 + Metalaxyl	232	20.0	55	358
23	MaximXL + ApronXL + Baytan 30	244	20.5	56	374
24	MaximXL + ApronXL + TGAB 1	208	19.6	57	322
25	MaximXL + ApronXL + TGAB 2	222	20.3	56	341
26	TGN1500C250S2	224	20.5	55	343
27	MaximXL + ApronXL + TGN150C250S2	237	20.8	56	362
28	MaximXL + ApronXL + TGN250GREN1	214	21.0	55	325
29	MaximXL + ApronXL + TGN350C2C	204	20.2	56	313
30	MaximXL + ApronXL + TGN465B1	230	20.1	56	354
31	MaximXL + ApronXL + TGN565B2	238	20.6	56	363
32	MaximXL + ApronXL + ZN8CWT	218	20.5	55	334
33	MaximXL + ApronXL + Dynasty + Cruiser (L)	239	19.2	57	372
34	MaximXL + ApronXL + Dynasty + Cruiser (H)	218	20.1	56	335
35	MaximXL + ApronXL + Dynasty + Poncho 250	228	19.6	57	354
36	MaximXL + ApronXL + Dynasty + Poncho 1250	229	20.0	55	352
37	MaximXL + ApronXL + Dynasty + TG8100-6.2	206	19.6	56	319
38	MaximXL + ApronXL + Dynasty + TG8100-500	209	20.4	56	321
39	MaximXL + ApronXL + Dynasty + Gaucho	189	21.0	57	287
40	MaximXL + ApronXL + Dynasty + TG8150.34-Gaucho.38	237	20.1	55	364
Mean		221	20.4	56	338
Probability(%)					
Treatment		45.4	60.2	89.5	47.0
LSD(0.10)					
Treatment		NS	NS	NS	NS
CV(%)		8	4	2	8

FIELD EXPERIMENT HISTORY

Title: **Corn Inoculant Trial**

Experiment: 08 Corn Inoculant Trial **Trial ID:** 2676 **Year:** 2005

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

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

Supported By: Brett-Young Seeds Limited

Site Information

Field: ARS428 **Previous Crop:** Soybean **Soil Type:** Plano Silt Loam

Soil Test: **Date:** 10/15/05 **pH** 6.6 **OM (%)** 3.6 **P (ppm)** 65 **K (ppm)** 130

Plot Management

Tillage Operations: Chisel Plow Field Cultivator Soil Finisher N/A N/A

Fertilizer:

Preplant Analysis:	46-0-0	**Rate lbs/A:** 325	**Date:**	4 /14/05
Starter Analysis:	9-24-24	**Rate lbs/A:** 150	**Date:**	4 /28/05
Post plant Analysis:	N/A	**Rate lbs/A:** N/A	**Date:**	N/A
Manure:	N/A			

Herbicide: Outlook 20 oz/A (4/22/05)
Hornet 4.0 oz/A (4/22/05
Callisto 3.0 oz/A (6/02/05)

Insecticide: N/A

Hybrid: Dekalb DKC53-34

Irrigation: None

Planting Date: 4/28/05 **Planting Depth:** 1.5" **Row Width** 30"

Target Plant Density: 30000 **plants per acre** **Planting Method:** Kinze Plot Planter

Harvest Date: 10/10/05 **Harvest Method:** Massey Ferguson 8XP

Notes: Seed treated with Apron XL and Maxim

Experimental Design

Design: RCB **Replications:** 3

Plot Size Seeded: 5' x 25' **Experiment Size:** 0.99 Acre

Harvest Plot Size: 5' x 22' **Harvest Plant Density:** 30551 **plants per acre**

Treatments (Inoculant):

CORN01
CORN02
Untreated Check

Results: Table C-48.

Table C-48. Performance of corn inoculants. Arlington, WI.-2005.

Treatment	Yield	Moisture	Test Weight	Lodging	*Grower Return
	bu/A	%	lbs/bu	%	$/A
CORN01	211	20.9	57	2	321
CORN02	198	20.8	57	9	301
Untreated Check	231	21.4	57	5	349
Mean	214	21.1	57	6	324
Probability(%)					
Treatment	12.7	87.8	88.5	31.1	11.3
LSD (0.10)					
Treatment	NS	NS	NS	NS	NS
CV(%)	7	7	2	90	6

FIELD EXPERIMENT HISTORY

Title: **Corn Inoculant Trial**

Experiment: 08 Corn Inoculant Trial **Trial ID:** 2679 **Year:** 2005

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

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

Supported By: Brett-Young Seeds Limited

Site Information

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

Soil Test: **Date:** 10/01/04 **pH** 6.9 **OM (%)** 3.6 **P (ppm)** 38 **K (ppm)** 127

Plot Management

Tillage Operations: Field Cultivator Cultivated 6/14/05

Fertilizer:	**Preplant Analysis:**	28-0-0	**Rate lbs/A:**	421	**Date:**	N/A
	Starter Analysis:	9-24-24	**Rate lbs/A:**	150	**Date:**	4 /29/05
	Post plant Analysis:	N/A	**Rate lbs/A:**	N/A	**Date:**	N/A
	Manure: N/A					

Herbicide: Basis 0.33 oz/A
Lumax 2.5 qt/A

Insecticide: N/A

Hybrid: Dekalb DKC53-34

Irrigation: None

Planting Date: 4/29/05 **Planting Depth:** 1.5" **Row Width** 30"

Target Plant Density: 30000 **plants per acre** **Planting Method:** Kinze Plot Planter

Harvest Date: 10/17/05 **Harvest Method:** Massey Ferguson 8XP

Notes: Seed treated with Apron XL and Maxim

Experimental Design

Design: RCB **Replications:** 3

Plot Size Seeded: 5' x 25' **Experiment Size:** 0.92 Acre

Harvest Plot Size: 5' x 22' **Harvest Plant Density:** 30136 **plants per acre**

Treatments (Inoculant):

CORN01
CORN02
Untreated Check

Results: Table C-49.

Table C-49. Performance of corn inoculants. Fond du Lac, WI.-2005.

Treatment	Yield	Moisture	Test Weight	Lodging	*Grower Return
	bu/A	%	lbs/bu	%	$/A
CORN01	205	20.8	58	0	313
CORN02	207	21.0	58	0	315
Untreated Check	200	21.8	57	0	300
Mean	204	21.2	58	0	309
Probability(%)					
Treatment	47.5	2.4	18.5	-	28.5
LSD (0.10)					
Treatment	NS	0.5	NS	-	NS
CV(%)	4	1	1	-	3

FIELD EXPERIMENT HISTORY

Title: **Corn Inoculant Trial**

Experiment: 08 Corn Inoculant Trial **Trial ID:** 2680 **Year:** 2005

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

Location: Galesville, WI **County:** Trempeleau

Supported By: Brett-Young Seeds Limited

Site Information

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

Soil Test: **Date:** 10/01/04 **pH** 6.1 **OM (%)** 3.8 **P (ppm)** 68 **K (ppm)** 229

Plot Management

Tillage Operations: Zone-Builder Cultivated 6/16/05

Fertilizer:

Preplant Analysis:	46-0-0, 21-0-0	**Rate lbs/A:** 217, 238	**Date:**	N/A
Starter Analysis:	9-24-24	**Rate lbs/A:** 150	**Date:**	5 /02/05
Post plant Analysis:	N/A	**Rate lbs/A:** N/A	**Date:**	N/A
Manure: N/A				

Herbicide: Cinch 2.0 pt/A
Callisto 3.0 oz/A

Insecticide: N/A

Hybrid: Dekalb DKC53-34

Irrigation: None

Planting Date: 5/02/05 **Planting Depth:** 1.5" **Row Width** 30"

Target Plant Density: 30000 **plants per acre** **Planting Method:** Kinze Plot Planter

Harvest Date: 10/14/05 **Harvest Method:** Massey Ferguson 8XP

Notes: Seed treated with Apron XL and Maxim

Experimental Design

Design: RCB **Replications:** 3

Plot Size Seeded: 5' x 25' **Experiment Size:** 0.95 Acre

Harvest Plot Size: 5' x 22' **Harvest Plant Density:** 30254 **plants per acre**

Treatments (Inoculant):

CORN01
CORN02
Untreated Check

Results: Table C-50.

Table C-50. Performance of corn inoculants. Galesville, WI.-2005.

Treatment	Yield	Moisture	Test Weight	Lodging	*Grower Return
	bu/A	%	lbs/bu	%	$/A
CORN01	240	23.1	54	1	355
CORN02	243	22.4	54	2	363
Untreated Check	243	22.7	53	1	361
Mean	242	22.7	54	1	359
Probability(%)					
Treatment	91.4	58.6	74.5	76.6	81.7
LSD (0.10)					
Treatment	NS	NS	NS	NS	NS
CV(%)	4	4	2	108	4

FIELD EXPERIMENT HISTORY

Title: **Corn Inoculant Trial**

Experiment: 08 Corn Inoculant Trial **Trial ID:** 2681 **Year:** 2005

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

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

Supported By: Brett-Young Seeds Limited

Site Information

Field: K18 **Previous Crop:** Soybean **Soil Type:** Plainfield Sand

Soil Test: **Date:** 10/15/05 **pH** 6.9 **OM (%)** 0.9 **P (ppm)** 99 **K (ppm)** 67

Plot Management

Tillage Operations: Moldboard Plow Disk

Fertilizer:

Preplant Analysis:	28-0-0	**Rate lbs/A:** 842	**Date:**	N/A
Starter Analysis:	9-24-24	**Rate lbs/A:** 150	**Date:**	4 /21/05
Post plant Analysis:	N/A	**Rate lbs/A:** N/A	**Date:**	N/A
Manure:	N/A			

Herbicide: Define 16 oz/A
Atrazine 0.75 lb/A

Insecticide: N/A

Hybrid: Dekalb DKC53-34

Irrigation: 13.4"

Planting Date: 4/21/05 **Planting Depth:** 1.5" **Row Width** 30"

Target Plant Density: 30000 **plants per acre** **Planting Method:** Kinze Plot Planter

Harvest Date: 10/06/05 **Harvest Method:** Massey Ferguson 8XP

Notes: Seed treated with Apron XL and Maxim

Experimental Design

Design: RCB **Replications:** 3

Plot Size Seeded: 5' x 25' **Experiment Size:** 1.01 Acre

Harvest Plot Size: 5' x 22' **Harvest Plant Density:** 30116 **plants per acre**

Treatments (Inoculant):

CORN01
CORN02
Untreated Check

Results: Table C-51.

Table C-51. Performance of corn inoculants. Hancock, WI.-2005.

Treatment	Yield	Moisture	Test Weight	Lodging	*Grower Return
	bu/A	%	lbs/bu	%	$/A
CORN01	240	23.8	55	0	352
CORN02	248	23.2	54	0	367
Mean	244	23.5	54	0	360
Probability(%)					
Treatment	62.2	25.4	55.7	-	57.1
LSD (0.10)					
Treatment	NS	NS	NS	-	NS
CV(%)	8	2	2	-	8

FIELD EXPERIMENT HISTORY

Title: **Corn Inoculant Trial**

Experiment: 08 Corn Inoculant Trial **Trial ID:** 2677 **Year:** 2005

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

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

Supported By: Brett-Young Seeds Limited

Site Information

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

Soil Test: **Date:** 10/01/04 **pH** 6.7 **OM (%)** 3.3 **P (ppm)** 62 **K (ppm)** 188

Plot Management

Tillage Operations: Fall Chisel Plow Field Cultivator Cultivated 6/13/05

Fertilizer:

Preplant Analysis:	28-0-0	**Rate lbs/A:** 572	**Date:**	N/A
Starter Analysis:	9-24-24	**Rate lbs/A:** 150	**Date:**	4 /25/05
Post plant Analysis:	N/A	**Rate lbs/A:** N/A	**Date:**	N/A
Manure: N/A				

Herbicide: Dual II 1.8 pt/A
Hornet 4.0 oz/A
Steadfast 0.75 oz/A
Callisto 3.0 oz/A
Atrazine 0.75 lb/A

Insecticide: Force 3G 4.4 lbs/A

Hybrid: Dekalb DKC53-34

Irrigation: None

Planting Date: 4/25/05 **Planting Depth:** 1.5" **Row Width** 30"

Target Plant Density: 30000 **plants per acre** **Planting Method:** Kinze Plot Planter

Harvest Date: 10/03/05 **Harvest Method:** Massey Ferguson 8XP

Notes: Seed treated with Apron XL and Maxim

Experimental Design

Design: RCB **Replications:** 3

Plot Size Seeded: 5' x 25' **Experiment Size:** 0.93

Harvest Plot Size: 5' x 22' **Harvest Plant Density:** 30195 **plants per acre**

Treatments (Inoculant):

CORN01
CORN02
Untreated Check

Results: Table C-52.

Table C-52. Performance of corn inoculants. Janesville, WI.-2005.

Treatment	Yield	Moisture	Test Weight	Lodging	*Grower Return
	bu/A	%	lbs/bu	%	$/A
CORN01	209	21.4	58	0	316
CORN02	206	21.1	58	0	313
Untreated Check	191	20.4	58	0	293
Mean	202	21.0	58	0	307
Probability(%)					
Treatment	11.8	23.9	99.9	44.4	16.2
LSD (0.10)					
Treatment	NS	NS	NS	NS	NS
CV(%)	4	3	2	300	4

FIELD EXPERIMENT HISTORY

Title: **Corn Inoculant Trial**

Experiment: 08 Corn Inoculant Trial **Trial ID:** 2678 **Year:** 2005

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

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

Supported By: Brett-Young Seeds Limited

Site Information

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

Soil Test: **Date:** 10/01/04 **pH** 6.9 **OM (%)** 3.2 **P (ppm)** 39 **K (ppm)** 112

Plot Management

Tillage Operations: No-Till Cultivated 6/13/05

Fertilizer:

Preplant Analysis:	46-0-0	**Rate lbs/A:** 304	**Date:**	N/A
Starter Analysis:	9-24-24	**Rate lbs/A:** 150	**Date:**	4 /25/05
Post plant Analysis:	N/A	**Rate lbs/A:** N/A	**Date:**	N/A
Manure: N/A				

Herbicide: Aatrex 4L 1.0 qt/A
Harness 10 qt/A
Glyphosate 1.5 qt/A

Insecticide: N/A

Hybrid: Dekalb DKC53-34

Irrigation: None

Planting Date: 4/25/05 **Planting Depth:** 1.5" **Row Width** 30"

Target Plant Density: 30000 **plants per acre** **Planting Method:** Kinze Plot Planter

Harvest Date: 10/04/05 **Harvest Method:** Massey Ferguson 8XP

Notes: Seed treated with Apron XL and Maxim

Experimental Design

Design: RCB **Replications:** 3

Plot Size Seeded: 5' x 25' **Experiment Size:** 0.96 Acre

Harvest Plot Size: 5' x 22' **Harvest Plant Density:** 29878 **plants per acre**

Treatments (Inoculant):

CORN01
CORN02
Untreated Check

Results: Table C-53.

Table C-53. Performance of corn inoculants. Lancaster, WI.-2005.

Treatment	Yield	Moisture	Test Weight	Lodging	*Grower Return
	bu/A	%	lbs/bu	%	$/A
CORN01	225	25.5	54	0	322
CORN02	239	24.2	55	0	348
Untreated Check	240	24.5	54	0	347
Mean	235	24.8	54	0	339
Probability(%)					
Treatment	10.5	5.2	41.5	-	7.1
LSD (0.10)					
Treatment	NS	0.8	NS	-	19
CV(%)	3	2	1	-	3

FIELD EXPERIMENT HISTORY

Year: **2005**
Title: **Corn/Soybean/Wheat Rotation Study**
Experiment: **2591**
Personnel: **J.G. Lauer, R. Borges, J.M. Gaska, M. Martinka, K.D. Kohn, P.J. Flannery, and T.F. Stanger**
Organization: **UW Madison, Dept. of Agronomy**
Location: **Arlington Agricultural Research Station, Arlington, WI**

FIELD INFORMATION

Field:	ARS 335
Soil Type:	Plano Silt Loam
Soil Test Results:	Date:5/04 pH: 6.9 O.M.(%): 2.9 P(ppm): 32 K(ppm): 150
Fertilizer Applied:	Soybean: None
	Wheat: see Treatments below
	Corn: 210 lb/A N as 28-0-0 pre-emerge
Tillage Operations:	No-till
Previous Crop:	Corn/Soybean/Wheat
Previous Herbicide:	Roundup
Irrigation:	None

EXPERIMENTAL PROCEDURE

Exp. Design: RCB Split plot
Replicates: 3
Variables: Factors/Treatments:

System	Rotation
Continuous	Corn, Soybean or Winter Wheat
Alternating	Corn/Soybean
Grain system I	Corn/Soybean(early)/Winter Wheat(red clover)
Grain system II	Corn(early)/Winter Wheat(red clover)/Soybean
Livestock system	Corn(silage)/Winter Wheat(straw removed)/Soybean

	Corn	Soybean	Wheat
Area Planted:	60' x 60'	60' x 60'	60' x 60'
Area Harvested:	5' x 56'	5' x 56'	5' x 56'
Row Spacing:	30"	30"	7.5"
Seeding Rate:	32,500 seeds/acre	150,000 seeds/acre	150 lb/acre
Hybrid/Variety:	Trelay 7693 RR2	Kaltenberg KB192 RR	Kaskaskia
Planting Date:	28-Apr-05	2-May-05	11-Oct-04
Planting Equip:	Kinze 2000 Interplant planter	Kinze 2000 Interplant planter	JD 750 No-Till Drill
Harvesting Date:	15-Sept (S), 5-Oct (G), and 13-Oct (G)	16-Sep-05	28-Jul-05
Harvesting Equip:	707 silage harvester, Kinkaid plot combine	Almaco plot combine	Almaco plot combine

Treatments:	Fungicide:	Fungicide:	Nitrogen (lbs/A)
	Maxim XL	UTC	0
	Maxim + Apron XL	SoyGard	25
	Maxim + Azoxystrobin	Rival/Alleg	50
	Captan + Apron XL	ApronMaxx	75
			100
			125

Herbicides:	Material	Crop	Rate	Timing	Date
	2,4-D Ester	All	0.67 pt/A	preplant	25-Apr-05
	Dual	Corn	2 pt/A	pre-emerge	2-May-05
	Dual	Soybean	2 pt/A	pre-emerge	3-May-05
	Roundup	Corn/Soybean	21 oz/A	post-emerge	2-Jun-05
	Roundup	Corn/Soybean	22 oz/A	post-emerge	22-Jun-05
Insecticides:	Force 3G	Continuous Corn	4.4 lbs/A	at planting	28-Apr-05
Rodenticide:	Prozap	Corn	10 lbs/A	at planting	28-Apr-05

Results: Tables C-54, C-55, C-56, C-57, C-58, C-59, and C-60.

Table C-54. Corn, Soybean, and Wheat Rotation.
Arlington, WI - 2005.

Crop	Rotation	Fungicide	Residue cover	Grain Yield	Grain Moisture	Grain Test Weight	Grain Grower Return	Lodged Total	Lodged Stalk	Lodged Root	Barren	Ears Dropped	Harvest plants	Harvest ears
			%	bu/A	%	lbs/bu	$/A	%	%	%	%	%	plants/A	ears/A
Corn		Captan + Apron XL	-	176	21.3	54	265	1	1	0	5	0	32691	30948
Corn		Maxim + Apron XL	-	185	21.9	54	278	2	1	1	5	0	32857	31363
Corn		Maxim + Azoxystrobin	-	186	21.7	54	280	3	2	1	6	0	33852	31944
Corn		Maxim XL	-	183	21.5	54	275	7	3	4	5	0	33520	31778
Corn	Continuous		80	171	24.1	53	249	7	2	5	5	0	30285	28791
Corn	Alternating		67	186	19.4	56	288	3	3	0	5	0	34682	33106
Corn	Grain System I		66	164	20.9	53	250	2	2	1	9	0	33106	30202
Corn	Grain System II		54	209	22.1	56	312	1	1	0	3	0	34848	33935
Corn	Continuous	Captan + Apron XL	-	174	23.8	53	255	1	0	1	4	0	30533	29206
Corn	Continuous	Maxim + Apron XL	-	163	24.0	53	238	2	0	2	6	0	26551	24891
Corn	Continuous	Maxim + Azoxystrobin	-	176	24.8	53	255	7	5	2	6	0	32525	30533
Corn	Continuous	Maxim XL	-	170	23.8	53	250	18	4	14	4	0	31529	30533
Corn	Alternating	Captan + Apron XL	-	186	19.3	56	289	2	2	0	3	0	33520	32525
Corn	Alternating	Maxim + Apron XL	-	187	19.7	56	288	4	4	0	5	0	35512	33520
Corn	Alternating	Maxim + Azoxystrobin	-	187	19.3	56	289	2	2	0	6	0	34184	32525
Corn	Alternating	Maxim XL	-	184	19.2	56	286	4	4	0	5	0	35512	33852
Corn	Grain System I	Captan + Apron XL	-	147	21.1	52	222	0	0	0	12	0	30865	27215
Corn	Grain System I	Maxim + Apron XL	-	182	21.4	53	275	2	1	1	6	0	33852	31861
Corn	Grain System I	Maxim + Azoxystrobin	-	164	20.8	53	249	3	3	0	9	1	33189	30202
Corn	Grain System I	Maxim XL	-	165	20.2	53	252	5	3	2	9	0	34516	31529
Corn	Grain System II	Captan + Apron XL	-	195	21.0	57	296	1	1	0	3	0	35844	34848
Corn	Grain System II	Maxim + Apron XL	-	209	22.6	55	310	1	1	0	1	0	35512	35180
Corn	Grain System II	Maxim + Azoxystrobin	-	218	21.9	56	327	0	0	0	3	0	35512	34516
Corn	Grain System II	Maxim XL	-	212	22.8	55	314	2	2	0	4	0	32525	31197
Mean			67	182	21.6	54	275	3	2	1	5	0	33230	31508
Probability(%)														
Rotation (R)			6.2	4.8	6.4	3.5	3.7	20.6	51.4	46.9	17.7	45.5	2.8	4.8
Fungicide (F)			-	48.3	62.4	96.2	57.9	5.0	13.1	29.7	81.1	41.0	45.0	60.4
R x F			-	62.0	77.2	70.8	68.6	29.9	50.8	52.6	69.0	46.6	1.7	0.4
LSD (0.10)														
Rotation (R)			4	17	1.9	1	25	NS	NS	NS	NS	NS	1636	2132
Fungicide (F)			-	NS	NS	NS	NS	3	NS	NS	NS	NS	NS	NS
R x F			-	NS	NS	NS	NS	NS	NS	NS	NS	NS	1965	1926
CV(%)			13	10	6	2	10	156	133	366	71	693	6	6

Table C-55. Corn, Soybean, and Wheat Rotation.
Arlington, WI - 2005.

			Whole Plant										
		Dry Matter		Kernel	Crude			*In Vitro*			Milk per		Plant
Crop	Fungicide	Yield	Moisture	Milk	Protein	ADF	NDF	Digest	NDFD	Starch	Ton	Acre	population
		tons/A	%	%	%	%	%	%	%	%	lbs/T	lbs/T	plants/A
Silage	Captan + Apron XL	8.2	47.3	33.3	6.9	17.6	38.3	81.3	51.1	41.3	3182	26104	33852
Silage	Maxim + Apron XL	8.4	48.0	35.0	6.7	20.1	42.0	79.9	52.1	37.2	3125	26284	33189
Silage	Maxim + Azoxystrobin	8.3	49.0	35.0	6.7	19.0	40.1	80.4	51.3	39.7	3138	26085	32193
Silage	Maxim XL	8.5	50.8	38.3	6.7	19.9	41.6	80.4	52.9	37.9	3163	26988	34516
Mean		8.4	48.8	35.4	6.8	19.2	40.5	80.5	51.8	39.0	3152	26365	33437
Probability(%)													
Fungicide (F)		76.1	40.6	68.8	9.4	11.2	8.4	58.7	65.0	12.6	87.0	90.7	59.0
LSD (0.10)													
Fungicide (F)		NS	NS	NS	0.1	NS	1.7	NS	NS	NS	NS	NS	NS
CV(%)		5	5	14	1	6	4	1	4	5	3	7	6

Table C-56. Corn, Soybean, and Wheat Rotation.
Arlington, WI - 2005.

Crop	Rotation	Fungicide	Residue cover	Yield	Moisture	Grower return	Height	Lodging	Seed Composition			Protein	Oil	Protein + Oil
									Oil	Protein	Fiber			
			%	bu/A	%	$/A	inches	1 to 5	%	%	%	lbs/A	lbs/A	lbs/A
Soybean		Untreated	-	54	10.7	288	31	1	19.8	34.0	4.8	1104	646	1751
Soybean		SoyGard	-	55	10.6	293	32	1	19.8	34.1	4.7	1128	657	1784
Soybean		Rival/Alleg	-	54	10.7	289	31	1	19.8	34.1	4.7	1112	647	1759
Soybean		ApronMaxx	-	54	10.8	287	31	1	19.9	34.0	4.7	1103	645	1748
Soybean	Continuous		53	38	10.4	200	29	1	19.6	34.7	4.7	779	444	1223
Soybean	Alternating		78	62	10.9	327	32	1	19.8	33.9	4.8	1252	732	1983
Soybean	Grain System I		81	58	11.0	308	32	1	19.8	33.9	4.8	1177	688	1865
Soybean	Grain System II		80	59	10.8	314	30	1	19.9	33.9	4.8	1205	706	1911
Soybean	Livestock System		52	56	10.6	298	33	1	20.0	34.0	4.7	1146	674	1820
Soybean	Continuous	Untreated	-	37	10.4	196	29	1	19.5	34.7	4.7	763	433	1196
Soybean	Continuous	SoyGard	-	38	10.3	201	29	1	19.6	34.8	4.7	790	448	1238
Soybean	Continuous	Rival/Alleg	-	37	10.3	199	29	1	19.7	34.6	4.7	777	442	1219
Soybean	Continuous	ApronMaxx	-	38	10.4	203	29	1	19.8	34.4	4.7	786	453	1239
Soybean	Alternating	Untreated	-	61	11.0	325	32	1	19.8	34.0	4.8	1248	726	1974
Soybean	Alternating	SoyGard	-	61	10.7	325	33	1	19.8	33.8	4.8	1239	727	1966
Soybean	Alternating	Rival/Alleg	-	61	11.0	326	32	1	19.8	33.8	4.8	1245	730	1975
Soybean	Alternating	ApronMaxx	-	63	10.7	332	32	1	19.8	34.0	4.7	1274	744	2018
Soybean	Grain System I	Untreated	-	60	10.7	318	32	1	19.8	33.8	4.8	1213	711	1924
Soybean	Grain System I	SoyGard	-	58	10.8	307	33	1	20.0	33.5	4.8	1162	693	1855
Soybean	Grain System I	Rival/Alleg	-	56	11.1	300	34	1	19.8	34.0	4.7	1152	670	1822
Soybean	Grain System I	ApronMaxx	-	58	11.2	306	32	1	19.6	34.2	4.8	1181	679	1860
Soybean	Grain System II	Untreated	-	60	10.8	320	30	1	20.0	33.6	4.8	1214	725	1939
Soybean	Grain System II	SoyGard	-	60	10.7	318	29	1	19.8	34.3	4.7	1230	710	1940
Soybean	Grain System II	Rival/Alleg	-	59	10.7	316	29	1	19.7	34.1	4.8	1217	704	1921
Soybean	Grain System II	ApronMaxx	-	57	10.8	304	29	1	19.9	33.7	4.8	1158	684	1842
Soybean	Livestock System	Untreated	-	53	10.6	282	32	1	20.0	34.0	4.7	1083	637	1720
Soybean	Livestock System	SoyGard	-	59	10.5	315	34	1	19.9	34.2	4.7	1216	706	1923
Soybean	Livestock System	Rival/Alleg	-	57	10.5	305	33	1	20.0	33.9	4.7	1169	689	1858
Soybean	Livestock System	ApronMaxx	-	55	10.6	292	33	1	20.1	33.8	4.7	1115	664	1780
Mean			69	55	10.7	289	31	1	19.8	34.1	4.7	1112	649	1760
Probability(%)														
Rotation (R)			0.0	0.2	1.0	0.2	19.2	-	57.7	22.9	20.0	0.1	0.2	0.1
Fungicide (F)			-	83.6	46.1	83.6	65.0	-	84.4	82.3	70.9	72.6	88.1	79.2
R x F			-	77.9	63.5	77.9	89.1	-	40.3	41.3	88.3	59.6	85.1	72.2
LSD (0.10)														
Rotation (R)			2	5	0.2	27	NS	-	NS	NS	NS	96	64	158
Fungicide (F)			-	NS	NS	NS	NS	-	NS	NS	NS	NS	NS	NS
R x F			-	NS	NS	NS	NS	-	NS	NS	NS	NS	NS	NS
CV(%)			8	6	2	6	5	-	1	1	1	6	7	6

Table C-57. Corn, Soybean, and Wheat Rotation. Arlington, WI - 2005.

Crop	Rotation	Nitrogen	Yield	Moisture	Test Weight	Grower return	Height	Lodging
		lbs/A	bu/A	%	lbs/bu	$/A	inches	1 to 5
Wheat		0	51	13.4	55	144	33	1
Wheat		25	60	13.2	55	171	34	1
Wheat		50	64	12.8	54	181	34	1
Wheat		75	65	12.9	54	184	34	1
Wheat		100	66	13.0	55	186	34	1
Wheat		125	65	12.8	54	184	34	1
Wheat	Grain System I		72	13.2	55	204	35	1
Wheat	Grain System II		51	12.8	54	145	33	1
Wheat	Livestock System		62	13.0	55	176	33	1
Wheat	Grain System I	0	65	13.5	55	183	33	1
Wheat	Grain System I	25	72	13.4	55	205	35	1
Wheat	Grain System I	50	74	13.2	54	209	35	1
Wheat	Grain System I	75	71	13.0	54	201	35	1
Wheat	Grain System I	100	77	13.3	55	217	36	1
Wheat	Grain System I	125	73	13.2	55	207	35	2
Wheat	Grain System II	0	40	13.3	54	114	33	1
Wheat	Grain System II	25	52	13.1	55	146	34	1
Wheat	Grain System II	50	52	12.3	53	149	33	1
Wheat	Grain System II	75	57	12.7	54	161	33	1
Wheat	Grain System II	100	53	12.8	54	151	32	1
Wheat	Grain System II	125	53	12.5	53	151	33	1
Wheat	Livestock System	0	48	13.5	55	135	32	1
Wheat	Livestock System	25	56	13.3	55	160	33	1
Wheat	Livestock System	50	66	12.9	54	186	33	1
Wheat	Livestock System	75	67	13.0	54	190	34	1
Wheat	Livestock System	100	67	12.8	55	191	33	1
Wheat	Livestock System	125	68	12.8	54	195	34	1
Mean			62	13.0	54	175	34	1
Probability(%)								
Rotation (R)			0.0	10.2	0.8	0.0	7.1	31.2
Nitrogen (N)			0.0	0.0	0.0	0.0	1.0	1.5
R x N			14.9	2.6	77.3	14.9	18.9	0.3
LSD (0.10)								
Rotation (R)			2	NS	0	7	1.3	NS
Nitrogen (N)			4	0.2	0	10	0.7	0
R x N			NS	0.3	NS	NS	NS	0
CV(%)			10	2	1	10	4	26

Table C-58. Corn, Soybean, and Wheat Rotation.
Arlington, WI - 2005.

Crop	Rotation	Residue cover	Yield	Moisture	Test Weight	Grower return	Height	Lodging	Harvest Density	Soil NO_3^--N (0-1')	(1-2')	(2-3')	(0-2')	(0-3')
		%	bu/A	%	lbs/bu	$/A	inches	1 to 5	heads/m^2			lbs/A		
Wheat	Continuous	100	42	11.9	52	119	33	1	562	-	-	-	-	-
Wheat	Grain System I	97	77	13.3	55	217	36	1	687	27	17	13	44	57
Wheat	Grain System II	91	53	12.8	54	151	32	1	621	22	15	9	37	46
Wheat	Livestock System	31	67	12.8	55	191	33	1	599	23	13	6	36	43
Means		80	62	12.8	54	177	34	1	617	24	15	9	39	49
Probability(%)														
Rotation (R)		0.0	0.0	0.8	0.0	0.0	0.1	46.0	23.1	34.7	39.0	0.1	29.5	6.2
LSD (0.10)														
Rotation (R)		2	6	0.5	1	16	1	NS	NS	NS	NS	2	NS	10
CV(%)		6	9	4	1	9	3	40	11	23	32	26	23	20

Table C-59. Crop Rotation Influence on Corn Growth and Development. Arlington, WI - 2005.

Rotation	Observation Day of Year	Leaf Development: Leaf Collars	Leaf Development: Hail Adjusters Method	Leaf Development: Total Leaves	Plant Height
		no./plant	no./plant	no./plant	inches
	151	1.8	3.0	3.8	4.2
	165	5.3	7.4	8.4	16.8
	180	8.5	9.7	12.7	44.1
	194	12.6	12.7	15.6	69.6
	208	18.0	17.8	18.0	74.1
Continuous		9.0	10.0	11.6	38.7
Alternating		9.4	10.1	11.9	42.4
Grain System I		8.8	9.7	11.2	39.9
Grain System II		8.8	9.8	11.2	40.8
Livestock System		9.4	10.2	11.8	42.8
Continuous	151	1.3	2.8	3.7	3.6
Continuous	165	5.0	6.7	7.7	16.1
Continuous	180	8.3	9.7	12.7	42.2
Continuous	194	12.2	13.2	15.7	63.7
Continuous	208	18.2	17.8	18.2	68.0
Alternating	151	2.0	2.8	4.0	4.2
Alternating	165	5.5	7.8	8.8	17.1
Alternating	180	8.5	9.5	13.0	43.7
Alternating	194	13.0	12.5	16.0	71.3
Alternating	208	17.8	17.8	17.8	75.5
Grain System I	151	1.5	2.7	3.3	4.1
Grain System I	165	5.0	6.8	7.7	15.2
Grain System I	180	8.0	9.3	12.0	41.8
Grain System I	194	11.5	12.3	15.2	66.0
Grain System I	208	18.0	17.3	18.0	72.2
Grain System II	151	2.0	3.5	4.2	4.7
Grain System II	165	5.7	8.0	9.2	18.4
Grain System II	180	9.0	10.3	13.0	50.0
Grain System II	194	13.5	12.8	15.8	79.3
Grain System II	208	18.5	18.3	18.5	80.8
Livestock System	151	2.0	3.0	4.0	4.5
Livestock System	165	5.5	7.5	8.5	17.3
Livestock System	180	8.8	10.0	13.0	45.0
Livestock System	194	13.0	12.7	15.7	71.2
Livestock System	208	17.8	17.7	17.8	76.3
Mean		9.1	10.0	11.6	40.9
Probability(%)					
Rotation (R)		16.6	22.3	25.0	13.6
DOY (D)		0.0	0.0	0.0	0.0
R x D		7.7	53.9	0.8	44.1
LSD (0.10)					
Rotation (R)		NS	NS	NS	NS
DOY (D)		0.2	0.3	0.2	2.4
R x D		0.5	NS	0.4	NS
CV(%)		4	5	3	9

Table C-60. Crop Rotation Influence on Corn Biomass Accumulation. Arlington, WI - 2005.

Rotation	Observation Day of Year	Dry Matter Yield	Plant Yield	Moisture	Plant population
		tons/A	ounces/plant	%	plants/A
	152	0.01	0.01	73.3	33891
	161	0.04	0.03	90.0	34581
	172	0.35	0.32	88.7	34916
	182	1.01	0.92	89.2	35130
	194	2.18	1.95	86.0	35839
	213	3.94	3.62	80.9	34852
	271	8.57	7.85	50.3	35654
Continuous		2.08	1.97	80.3	34042
Alternating		2.28	2.12	79.0	35469
Grain System I		2.54	2.22	80.1	35431
Continuous	152	0.01	0.01	70.7	33946
Continuous	161	0.02	0.02	89.9	30922
Continuous	172	0.30	0.27	88.5	35250
Continuous	182	0.87	0.80	88.7	34796
Continuous	194	1.71	1.55	86.8	35418
Continuous	213	3.06	3.14	81.1	31920
Continuous	271	8.62	7.98	56.2	36039
Alternating	152	0.01	0.01	78.2	35733
Alternating	161	0.05	0.04	90.3	36924
Alternating	172	0.42	0.38	88.6	35534
Alternating	182	1.10	1.03	89.3	34268
Alternating	194	2.53	2.26	84.6	35888
Alternating	213	4.01	3.58	79.9	35897
Alternating	271	7.82	7.52	41.9	34036
Grain System I	152	0.01	0.01	71.0	31995
Grain System I	161	0.04	0.03	89.8	35897
Grain System I	172	0.34	0.32	88.8	33963
Grain System I	182	1.07	0.94	89.5	36326
Grain System I	194	2.30	2.03	86.8	36212
Grain System I	213	4.76	4.14	81.8	36740
Grain System I	271	9.29	8.05	52.7	36886
Mean		2.30	2.10	79.8	34980
Probability(%)					
Rotation (R)		26.2	79.0	29.1	48.4
DOY (D)		0.0	0.0	0.0	71.7
R x D		40.7	99.1	3.2	14.1
LSD (0.10)					
Rotation (R)		NS	NS	NS	NS
DOY (D)		0.57	0.66	3.2	NS
R x D		NS	NS	5.5	NS
CV(%)		31	39	5	7

FIELD EXPERIMENT HISTORY

Year: 2005

Expt. Number:	**2490**
Title:	**Corn and Soybean Rotation Study** **Est. 1983**
Personnel:	**J.G. Lauer, R. Borges, J.M. Gaska, K.D. Kohn, and T.F. Stanger**
Organization:	**UW Madsion, Dept. of Agronomy**
Location:	**Arlington Agricultural Research Station, Arlington, WI**

FIELD INFORMATION

Field:	334W
Soil Type:	Plano Silt Loam
Soil Test Results:	pH: 6.4 O.M.(%): 3.6 P(ppm): 27 K(ppm): 172 Date: 4/19/03
Fertilizer Applied:	Soybean: None Corn: 210 lb/a N preemerge
Tillage Operations:	No-till and fall chisel plowed Spring field cultivated and cultimulched
Previous Crop:	Corn and soybean
Previous Herbicide:	Roundup
Irrigation:	None

EXPERIMENTAL PROCEDURE

Exp. Design:	RCB Split-Split Plot	
Replicates:	4	
Variables:	A: Tillage, B: Rotation Sequence, C: Insecticide Seed Treatment	
	Corn	**Soybean**
Area Planted:	10' x 35'	10' x 35'
Area Harvested:	5' x 31'	5' x 31'
Row Spacing:	30"	30"
Seeding Rate (spa)	1.8 viable seeds per foot of row	7.4 viable seeds per foot of row
Hybrid/Variety:	Trelay 7693 RR2	NK S24-K4
Planting Date:	27-Apr-05	2-May-05
Planting Equip:	Kinze 2000 Interplant planter	Kinze 2000 Interplant planter
Harvesting Date:	13-Oct-05	3-Oct-05
Harvesting Equip:	Kincaid plot combine	Almaco plot combine #1

Aphid rating scale:

Rating	Description
0	no aphids present
1	few aphids present, none on stems
2	new trifoliate has many aphids, few on stems and petioles (no leaf cupping)
3	many aphids present on stems and petioles, leaves may or may not have cupping
4	many aphids and extreme leaf cupping present
5	many aphids, extreme leaf cupping, and sooty mold present

	Date	Material	Rate	Notes
Herbicides:	4/25/2005	2,4-D Ester	0.67 pt/A	no till plots only
	5/2/2005	Dual	2 pts/A	Corn
	5/3/2005	Dual	2 pts/A	Soybeans
	6/17/2005	Round-Up Weathermax	21 oz/A	all plots

	Corn	Rate	Soybean	Rate	Fungicide	Rate
Seed Applied Insecticides:	Force 3G	4.4 lbs/A	Gaucho	2 fl oz/cwt	SoyGard	0.32 oz/cwt
	Prescribe		Cruiser	1 oz/cwt	SoyGard	0.32 oz/cwt
	Poncho		Untreated check		SoyGard	0.32 oz/cwt

Rodenticides:	4/27/2005	Prozap	10 lbs/A	All Corn

Results: Table C-61 and C-62.

Table C-61. Corn/Soybean Rotation and Tillage Study - Corn.
Arlington, WI - 2005.

Tillage	Rotation	Insecticide	Yield	Moisture	Test Weight	Grower return	Lodged			Barren	Ears Dropped	Harvest	
							Total	Stalk	Root			plants	ears
			bu/A	%	lbs/bu	$/A	%	%	%	%	%	plants/A	ears/A
		Force	183	23.3	54	298	6	5	1	3	0	32536	31429
		Poncho	178	23.1	54	289	10	10	0	4	0	33804	32589
		Prescribe	177	23.6	53	289	6	4	2	4	0	32839	31661
	1st Year Corn		217	21.2	55	354	6	6	0	2	0	34250	33667
	2nd Year Corn		160	22.4	54	260	9	7	2	4	0	32583	31250
	3rd Year Corn		160	24.0	53	261	8	5	3	4	0	31625	30417
	4th Year Corn		178	25.2	53	290	5	5	1	3	0	32833	31750
	5th Year Corn		173	23.5	53	282	7	6	1	4	0	33167	31792
	Continuous Corn		165	24.4	53	269	8	8	0	5	0	33417	31875
	Rotated Corn		201	22.6	54	328	7	7	0	3	0	33542	32500
	1st Year Corn	Force	219	21.3	55	357	4	4	0	2	0	34000	33250
	1st Year Corn	Poncho	216	21.1	56	352	9	9	0	2	0	35125	34250
	1st Year Corn	Prescribe	216	21.1	55	352	4	4	0	0	0	33625	33500
	2nd Year Corn	Force	174	22.1	54	283	7	6	1	5	0	32125	30375
	2nd Year Corn	Poncho	156	22.0	54	255	12	12	0	4	0	34625	33250
	2nd Year Corn	Prescribe	149	23.2	54	243	8	4	4	3	0	31000	30125
	3rd Year Corn	Force	160	23.9	53	261	6	6	1	3	0	30250	29375
	3rd Year Corn	Poncho	161	24.2	53	262	8	7	1	4	0	31375	30250
	3rd Year Corn	Prescribe	160	23.8	53	260	9	2	7	5	0	33250	31625
	4th Year Corn	Force	177	25.7	52	288	3	2	1	2	0	31750	31125
	4th Year Corn	Poncho	176	24.5	53	287	8	8	0	4	0	33500	32000
	4th Year Corn	Prescribe	181	25.6	52	294	4	4	0	3	0	33250	32125
	5th Year Corn	Force	176	23.3	54	286	5	5	1	4	0	33000	31750
	5th Year Corn	Poncho	173	23.4	53	281	11	10	1	3	0	34625	33500
	5th Year Corn	Prescribe	171	24.0	53	279	3	3	0	5	0	31875	30125
	Continuous Corn	Force	169	24.6	53	275	4	4	0	4	0	33375	32000
	Continuous Corn	Poncho	162	24.0	53	265	15	15	0	5	0	34000	32250
	Continuous Corn	Prescribe	164	24.5	53	268	5	5	0	5	0	32875	31375
	Rotated Corn	Force	205	22.2	54	333	9	9	0	3	0	33250	32125
	Rotated Corn	Poncho	198	22.6	54	323	8	8	0	2	0	33375	32625
	Rotated Corn	Prescribe	201	23.1	54	328	5	5	0	4	0	34000	32750
Conv			175	22.0	54	286	9	7	2	4	0	33488	32274
NoTill			183	24.7	53	298	6	6	0	3	0	32631	31512
Conv		Force	178	22.0	54	290	6	5	1	3	0	32643	31500
Conv		Poncho	175	21.8	54	286	13	12	1	3	0	34321	33143
Conv		Prescribe	173	22.2	54	281	7	4	3	4	0	33500	32179
NoTill		Force	187	24.5	53	306	5	5	0	3	0	32429	31357
NoTill		Poncho	180	24.5	53	293	8	8	0	4	0	33286	32036
NoTill		Prescribe	182	25.0	53	297	4	4	0	3	0	32179	31143

(continued)

Table C-61. Corn/Soybean Rotation and Tillage Study - Corn.

(continued) **Arlington, WI - 2005.**

						Grower	Lodged				Ears	Harvest	
Tillage	Rotation	Insecticide	Yield	Moisture	Test Wt.	return	Total	Stalk	Root	Barren	Dropped	plants	ears
			bu/A	%	lbs/bu	$/A	%	%	%	%	%	plants/A	ears/A
Conv	1st Year Corn		203	21.1	55	332	7	7	0	2	0	34000	33250
Conv	2nd Year Corn		168	21.7	54	274	10	7	3	4	0	33833	32500
Conv	3rd Year Corn		161	21.8	54	263	10	5	6	4	0	33250	32000
Conv	4th Year Corn		182	23.4	53	297	7	6	1	5	0	33250	31667
Conv	5th Year Corn		167	21.5	54	272	9	7	1	4	0	33500	32333
Conv	Continuous Corn		153	22.6	53	250	11	11	0	4	0	33333	32000
Conv	Rotated Corn		191	21.8	54	312	7	7	0	3	0	33250	32167
NoTill	1st Year Corn		231	21.2	55	376	6	6	0	1	0	34500	34083
NoTill	2nd Year Corn		151	23.1	53	246	8	8	0	5	0	31333	30000
NoTill	3rd Year Corn		159	26.1	52	259	6	5	0	4	0	30000	28833
NoTill	4th Year Corn		174	27.1	52	283	4	3	1	2	0	32417	31833
NoTill	5th Year Corn		180	25.6	52	293	5	4	0	5	0	32833	31250
NoTill	Continuous Corn		177	26.2	52	288	5	5	0	5	0	33500	31750
NoTill	Rotated Corn		211	23.5	53	344	8	8	0	3	0	33833	32833
Conv	1st Year Corn	Force	202	21.3	55	328	5	5	0	2	0	33500	32750
Conv	1st Year Corn	Poncho	207	20.7	56	338	11	11	0	4	0	35250	34000
Conv	1st Year Corn	Prescribe	201	21.4	55	328	4	4	0	1	0	33250	33000
Conv	2nd Year Corn	Force	187	21.6	54	304	10	8	3	5	0	32500	30750
Conv	2nd Year Corn	Poncho	164	21.5	55	267	10	10	0	4	0	35000	33500
Conv	2nd Year Corn	Prescribe	155	22.0	54	252	11	4	7	2	0	34000	33250
Conv	3rd Year Corn	Force	163	22.3	54	266	3	1	2	4	0	32750	31500
Conv	3rd Year Corn	Poncho	165	21.7	55	269	11	9	2	2	0	33500	32750
Conv	3rd Year Corn	Prescribe	156	21.5	54	255	17	4	13	5	0	33500	31750
Conv	4th Year Corn	Force	179	23.5	53	292	4	2	2	2	0	31500	31000
Conv	4th Year Corn	Poncho	182	23.0	54	297	10	10	0	6	0	34500	32250
Conv	4th Year Corn	Prescribe	185	23.6	53	302	7	7	0	6	0	33750	31750
Conv	5th Year Corn	Force	169	21.3	54	276	7	5	2	2	0	33000	32250
Conv	5th Year Corn	Poncho	164	21.4	54	267	14	13	2	3	0	34000	33000
Conv	5th Year Corn	Prescribe	167	22.0	55	272	4	4	0	5	0	33500	31750
Conv	Continuous Corn	Force	152	22.8	53	248	5	5	0	5	0	32750	31250
Conv	Continuous Corn	Poncho	155	22.4	54	253	22	22	0	3	0	35000	34000
Conv	Continuous Corn	Prescribe	153	22.6	54	249	7	6	1	5	0	32250	30750
Conv	Rotated Corn	Force	193	21.7	55	314	9	9	0	4	0	32500	31000
Conv	Rotated Corn	Poncho	190	21.8	54	310	11	11	0	2	0	33000	32500
Conv	Rotated Corn	Prescribe	191	22.1	54	312	1	1	0	4	0	34250	33000

(continued)

Table C-61. Corn/Soybean Rotation and Tillage Study - Corn.

(continued) **Arlington, WI - 2005.**

						Grower	Lodged				Ears	Harvest	
Tillage	Rotation	Insecticide	Yield	Moisture	Test Wt.	return	Total	Stalk	Root	Barren	Dropped	plants	ears
			bu/A	%	lbs/bu	$/A	%	%	%	%	%	plants/A	ears/A
NoTill	1st Year Corn	Force	236	21.3	55	385	4	4	0	2	1	34500	33750
NoTill	1st Year Corn	Poncho	225	21.5	55	367	8	8	0	1	0	35000	34500
NoTill	1st Year Corn	Prescribe	231	20.8	56	377	5	5	0	0	0	34000	34000
NoTill	2nd Year Corn	Force	160	22.6	53	261	4	4	0	6	0	31750	30000
NoTill	2nd Year Corn	Poncho	149	22.5	53	243	14	14	0	3	0	34250	33000
NoTill	2nd Year Corn	Prescribe	143	24.3	53	233	5	5	0	5	0	28000	27000
NoTill	3rd Year Corn	Force	157	25.5	52	256	10	10	0	3	0	27750	27250
NoTill	3rd Year Corn	Poncho	157	26.7	52	256	6	6	0	5	0	29250	27750
NoTill	3rd Year Corn	Prescribe	163	26.2	52	265	1	1	1	4	0	33000	31500
NoTill	4th Year Corn	Force	175	27.9	52	285	2	1	1	2	0	32000	31250
NoTill	4th Year Corn	Poncho	170	26.0	52	277	7	7	0	2	0	32500	31750
NoTill	4th Year Corn	Prescribe	176	27.5	51	287	2	1	1	1	0	32750	32500
NoTill	5th Year Corn	Force	182	25.3	53	297	4	4	0	5	0	33000	31250
NoTill	5th Year Corn	Poncho	181	25.4	52	296	8	7	1	3	0	35250	34000
NoTill	5th Year Corn	Prescribe	175	26.0	52	286	2	2	0	6	0	30250	28500
NoTill	Continuous Corn	Force	185	26.4	52	301	4	4	0	4	0	34000	32750
NoTill	Continuous Corn	Poncho	169	25.7	52	276	8	8	0	8	0	33000	30500
NoTill	Continuous Corn	Prescribe	176	26.5	52	287	4	4	0	4	0	33500	32000
NoTill	Rotated Corn	Force	216	22.8	53	352	9	9	0	2	1	34000	33250
NoTill	Rotated Corn	Poncho	206	23.5	54	336	6	6	0	3	0	33750	32750
NoTill	Rotated Corn	Prescribe	211	24.1	53	344	8	8	0	4	0	33750	32500
Mean			179	23.3	54	292	7	6	1	4	0	33060	31893
Probability(%)													
Tillage (T)			1.2	0.2	0.3	1.2	2.8	5.4	8.6	75.9	35.6	3.8	7.0
Rotation (R)			0.0	0.1	0.0	0.0	55.7	54.8	2.1	1.2	44.0	14.8	1.4
T x R			2.7	16.1	40.9	2.7	77.9	62.3	2.5	14.9	44.0	24.7	11.3
Insecticide (I)			6.9	7.2	25.3	6.9	0.0	0.0	3.5	94.6	14.2	3.0	5.6
T x I			49.5	70.4	28.4	49.5	25.0	8.6	5.6	74.2	14.2	50.5	56.6
R x I			48.7	55.3	84.1	48.7	31.4	29.6	1.4	57.4	61.6	23.2	44.0
T x R x I			90.3	83.5	50.1	90.3	2.3	19.2	5.3	32.7	61.6	28.1	17.4
LSD(0.10)													
Tillage (T)			4	1.0	1	7	2	1	1	NS	NS	628	671
Rotation (R)			13	1.5	1	20	NS	NS	2	1	NS	NS	1362
T x R			18	2.1	NS	29	NS	NS	2	NS	NS	NS	NS
Insecticide (I)			4	0.4	NS	7	2	2	1	NS	NS	814	835
T x I			NS	NS	NS	NS	NS	2	1	NS	NS	NS	NS
R x I			NS	NS	NS	NS	NS	NS	2	NS	NS	NS	NS
T x R x I			NS	NS	NS	NS	7	NS	3	NS	NS	NS	NS
CV(%)			8	5	1	8	82	83	324	88	917	8	8

Table C-62. Corn/Soybean Rotation and Tillage Study - Soybean.
Arlington, WI - 2005.

Tillage	Rotation	Insecticide	Yield	Moisture	Grower return	Height	Lodging	Soybean Aphids	SCN	Seed Composition					Protein + Oil
										Protein	Oil	Fiber	Protein	Oil	
			bu/A	%	$/A	inches	1 to 5	0 to 5	eggs/100cc	%	%	%	lbs/A	lbs/A	lbs/A
		Crusier	39	13.6	209	29	1	2	-	34.7	19.5	4.8	816	464	1279
		Gaucho	39	13.5	208	29	1	2	-	34.8	19.5	4.8	812	461	1273
		Untreated	39	13.6	205	29	1	2	-	34.8	19.6	4.8	800	455	1255
	1st Year Soybean		57	13.7	304	32	1	2	4400	34.7	19.5	4.8	1194	668	1861
	2nd Year Soybean		45	13.8	241	31	1	2	3758	34.9	19.7	4.8	947	537	1484
	3rd Year Soybean		41	13.7	218	29	1	2	1792	34.5	19.6	4.8	841	485	1326
	4th Year Soybean		36	13.6	194	28	1	2	4522	34.4	19.7	4.8	743	435	1179
	5th Year Soybean		27	13.5	141	25	1	2	5310	34.9	19.6	4.8	551	315	866
	Continuous Soybean		19	13.0	103	24	1	2	2890	35.3	19.2	4.8	409	223	632
	Rotated Soybean		48	13.9	252	32	1	2	4612	34.6	19.5	4.8	979	557	1535
	1st Year Soybean	Crusier	58	13.7	306	31	1	2	-	34.8	19.4	4.8	1204	670	1874
	1st Year Soybean	Gaucho	59	13.6	312	32	1	2	-	34.6	19.4	4.8	1220	684	1904
	1st Year Soybean	Untreated	56	13.7	295	34	1	2	-	34.8	19.5	4.8	1158	649	1807
	2nd Year Soybean	Crusier	43	13.8	231	30	1	2	-	34.8	19.6	4.8	902	513	1415
	2nd Year Soybean	Gaucho	46	13.7	244	31	1	2	-	34.9	19.7	4.8	957	543	1500
	2nd Year Soybean	Untreated	47	13.8	249	32	1	2	-	35.0	19.7	4.7	982	554	1536
	3rd Year Soybean	Crusier	43	13.9	227	29	1	2	-	34.3	19.7	4.8	873	507	1380
	3rd Year Soybean	Gaucho	39	13.6	209	28	1	2	-	34.6	19.5	4.8	814	464	1277
	3rd Year Soybean	Untreated	41	13.5	217	29	1	2	-	34.4	19.7	4.8	837	483	1321
	4th Year Soybean	Crusier	38	13.5	201	28	1	2	-	34.2	19.7	4.8	769	454	1222
	4th Year Soybean	Gaucho	38	13.6	199	28	1	2	-	34.5	19.6	4.8	764	447	1210
	4th Year Soybean	Untreated	34	13.6	181	27	1	2	-	34.5	19.7	4.8	698	406	1104
	5th Year Soybean	Crusier	27	13.3	141	26	1	2	-	34.9	19.6	4.8	551	314	865
	5th Year Soybean	Gaucho	26	13.4	140	25	1	2	-	35.0	19.5	4.8	549	312	860
	5th Year Soybean	Untreated	27	13.7	142	25	1	2	-	34.8	19.7	4.8	553	319	873
	Continuous Soybean	Crusier	18	13.0	97	24	1	2	-	35.5	19.1	4.8	389	210	599
	Continuous Soybean	Gaucho	20	13.0	105	25	1	2	-	35.2	19.2	4.8	417	230	647
	Continuous Soybean	Untreated	20	13.2	105	23	1	2	-	35.3	19.3	4.8	419	229	649
	Rotated Soybean	Crusier	50	14.1	263	33	1	2	-	34.6	19.4	4.8	1022	578	1600
	Rotated Soybean	Gaucho	47	13.7	248	32	1	2	-	34.6	19.5	4.8	964	549	1513
	Rotated Soybean	Untreated	46	13.9	246	30	1	2	-	34.6	19.5	4.8	950	543	1493
Conv			27	13.6	142	26	1	2	5387	35.1	19.4	4.7	561	313	874
NoTill			51	13.5	273	32	1	2	2408	34.4	19.6	4.8	1057	606	1664
Conv		Crusier	26	13.6	140	25	1	2	-	35.1	19.4	4.8	552	308	861
Conv		Gaucho	27	13.6	144	26	1	2	-	35.1	19.4	4.8	568	317	885
Conv		Untreated	27	13.7	142	26	1	2	-	35.1	19.5	4.7	562	314	877
NoTill		Crusier	53	13.6	279	32	1	2	-	34.4	19.6	4.8	1079	619	1698
NoTill		Gaucho	51	13.5	273	31	1	2	-	34.4	19.6	4.8	1056	605	1661
NoTill		Untreated	50	13.5	268	31	1	2	-	34.4	19.7	4.8	1037	596	1632

(continued)

Table C-62. Corn/Soybean Rotation and Tillage Study - Soybean.

(continued) **Arlington, WI - 2005.**

Tillage	Rotation	Insecticide	Yield	Moisture	Grower return	Height	Lodging	Soybean Aphids	SCN	Seed Composition Protein	Oil	Fiber	Protein	Oil	Protein + Oil
			bu/A	%	$/A	inches	1 to 5	0 to 5	eggs/100cc	%	%	%	lbs/A	lbs/A	lbs/A
Conv	1st Year Soybean		45	13.8	236	30	1	2	4974	34.8	19.6	4.8	930	522	1452
Conv	2nd Year Soybean		32	13.9	172	28	1	2	4653	35.1	19.7	4.7	681	384	1065
Conv	3rd Year Soybean		24	13.6	126	25	1	2	3440	34.8	19.5	4.8	495	278	773
Conv	4th Year Soybean		19	13.5	101	23	1	2	6347	35.3	19.3	4.7	405	221	626
Conv	5th Year Soybean		17	13.4	91	22	1	2	6880	35.4	19.3	4.7	364	200	564
Conv	Continuous Soybean		17	13.3	88	23	1	2	3800	35.2	19.2	4.8	350	192	542
Conv	Rotated Soybean		34	13.9	179	29	1	2	7613	35.0	19.5	4.7	703	395	1098
NoTill	1st Year Soybean		70	13.5	372	35	1	2	3827	34.7	19.3	4.8	1458	813	2271
NoTill	2nd Year Soybean		58	13.7	310	34	1	2	2862	34.6	19.7	4.8	1213	689	1903
NoTill	3rd Year Soybean		58	13.7	309	32	1	2	144	34.1	19.7	4.8	1188	691	1879
NoTill	4th Year Soybean		54	13.6	286	32	1	2	2697	33.5	20.1	4.8	1082	650	1731
NoTill	5th Year Soybean		36	13.5	191	29	1	2	3740	34.4	19.9	4.8	738	430	1168
NoTill	Continuous Soybean		22	12.8	117	25	1	2	1980	35.4	19.2	4.8	467	254	722
NoTill	Rotated Soybean		61	13.8	326	34	1	2	1610	34.1	19.5	4.9	1255	718	1973
Conv	1st Year Soybean	Crusier	45	13.8	236	27	1	2	-	34.9	19.6	4.8	933	523	1455
Conv	1st Year Soybean	Gaucho	47	13.8	248	29	1	2	-	34.7	19.6	4.8	971	549	1519
Conv	1st Year Soybean	Untreated	42	14.0	225	33	1	2	-	34.9	19.6	4.7	886	496	1382
Conv	2nd Year Soybean	Crusier	29	13.9	154	27	1	2	-	35.0	19.6	4.8	607	342	950
Conv	2nd Year Soybean	Gaucho	33	13.8	175	29	1	2	-	35.3	19.7	4.7	695	390	1085
Conv	2nd Year Soybean	Untreated	35	14.0	188	30	1	2	-	35.1	19.7	4.7	740	419	1159
Conv	3rd Year Soybean	Crusier	24	13.9	128	25	1	2	-	34.8	19.6	4.8	503	284	786
Conv	3rd Year Soybean	Gaucho	23	13.5	124	25	1	2	-	34.9	19.4	4.8	485	273	757
Conv	3rd Year Soybean	Untreated	24	13.5	126	25	1	2	-	34.9	19.5	4.8	496	278	775
Conv	4th Year Soybean	Crusier	19	13.5	100	23	1	2	-	35.1	19.4	4.8	398	220	618
Conv	4th Year Soybean	Gaucho	18	13.5	98	24	1	2	-	35.5	19.0	4.8	393	212	605
Conv	4th Year Soybean	Untreated	20	13.5	106	23	1	2	-	35.3	19.4	4.7	423	233	656
Conv	5th Year Soybean	Crusier	16	13.1	88	22	1	2	-	35.4	19.2	4.8	348	191	539
Conv	5th Year Soybean	Gaucho	16	13.3	87	21	1	2	-	35.4	19.3	4.8	348	190	538
Conv	5th Year Soybean	Untreated	19	13.8	99	22	1	2	-	35.4	19.4	4.7	398	218	616
Conv	Continuous Soybean	Crusier	15	13.1	82	22	1	2	-	35.4	19.1	4.8	328	176	503
Conv	Continuous Soybean	Gaucho	19	13.3	101	25	1	2	-	35.0	19.4	4.8	396	222	618
Conv	Continuous Soybean	Untreated	15	13.4	82	22	1	2	-	35.3	19.3	4.7	325	178	503
Conv	Rotated Soybean	Crusier	36	14.1	192	31	1	2	-	34.9	19.5	4.8	750	423	1173
Conv	Rotated Soybean	Gaucho	33	13.8	174	29	1	2	-	35.2	19.5	4.7	689	385	1074
Conv	Rotated Soybean	Untreated	32	14.0	171	28	1	2	-	35.1	19.5	4.7	668	378	1046

(continued)

Table C-62. Corn/Soybean Rotation and Tillage Study - Soybean.

(continued) **Arlington, WI - 2005.**

Tillage	Rotation	Insecticide	Yield	Moisture	Grower return	Height	Lodging	Soybean Aphids	SCN	Seed Composition Protein	Oil	Fiber	Protein	Oil	Protein + Oil
			bu/A	%	$/A	inches	1 to 5	0 to 5	eggs/100cc	%	%	%	lbs/A	lbs/A	lbs/A
NoTill	1st Year Soybean	Crusier	71	13.7	376	35	1	2	-	34.7	19.3	4.8	1475	818	2293
NoTill	1st Year Soybean	Gaucho	71	13.4	376	34	1	2	-	34.6	19.3	4.8	1469	819	2288
NoTill	1st Year Soybean	Untreated	69	13.5	365	36	1	2	-	34.7	19.5	4.8	1429	802	2231
NoTill	2nd Year Soybean	Crusier	58	13.7	307	33	1	2	-	34.5	19.7	4.8	1197	683	1880
NoTill	2nd Year Soybean	Gaucho	59	13.7	313	34	1	2	-	34.5	19.7	4.8	1219	697	1915
NoTill	2nd Year Soybean	Untreated	58	13.6	310	34	1	2	-	34.9	19.7	4.7	1224	689	1913
NoTill	3rd Year Soybean	Crusier	61	13.9	325	33	1	2	-	33.9	19.9	4.8	1243	729	1973
NoTill	3rd Year Soybean	Gaucho	56	13.7	295	31	1	2	-	34.4	19.6	4.8	1143	655	1798
NoTill	3rd Year Soybean	Untreated	58	13.6	308	34	1	2	-	34.0	19.8	4.8	1179	688	1867
NoTill	4th Year Soybean	Crusier	57	13.6	303	32	1	2	-	33.4	20.1	4.9	1140	687	1827
NoTill	4th Year Soybean	Gaucho	57	13.7	300	33	1	2	-	33.5	20.1	4.8	1134	682	1816
NoTill	4th Year Soybean	Untreated	48	13.6	256	32	1	2	-	33.7	20.1	4.8	972	579	1551
NoTill	5th Year Soybean	Crusier	37	13.4	194	30	1	2	-	34.5	19.9	4.8	755	437	1192
NoTill	5th Year Soybean	Gaucho	36	13.5	193	30	1	2	-	34.6	19.8	4.8	750	433	1183
NoTill	5th Year Soybean	Untreated	35	13.6	185	28	1	2	-	34.2	20.0	4.8	709	420	1129
NoTill	Continuous Soybean	Crusier	21	12.8	113	26	1	2	-	35.5	19.2	4.8	451	244	695
NoTill	Continuous Soybean	Gaucho	21	12.7	110	25	1	2	-	35.3	19.1	4.8	438	237	676
NoTill	Continuous Soybean	Untreated	24	13.0	129	24	1	2	-	35.3	19.3	4.8	513	281	794
NoTill	Rotated Soybean	Crusier	63	14.0	335	36	1	2	-	34.3	19.4	4.9	1293	733	2026
NoTill	Rotated Soybean	Gaucho	61	13.6	322	34	1	2	-	34.1	19.6	4.9	1239	712	1952
NoTill	Rotated Soybean	Untreated	60	13.8	321	33	1	2	-	34.0	19.6	4.9	1231	709	1940
Mean			39	13.6	208	29	1	2	3897	34.7	19.5	4.8	809	460	1269
Probability(%)															
Tillage (T)			0.0	7.5	0.0	0.0	-	51.3	7.4	0.2	3.8	0.0	0.0	0.0	0.0
Rotation (R)			0.0	0.0	0.0	0.0	-	92.2	44.5	17.0	1.3	49.9	0.0	0.0	0.0
T x R			0.9	23.9	0.9	5.6	-	88.6	83.6	16.6	0.3	56.7	0.9	0.8	0.9
Insecticide (I)			57.5	9.3	57.5	89.8	-	0.0	-	83.8	4.8	1.8	61.6	68.6	64.1
T x I			29.1	43.6	29.1	6.0	-	45.3	-	94.9	81.0	62.6	28.9	32.0	29.9
R x I			39.4	2.8	39.4	0.0	-	41.9	-	57.9	49.1	36.1	42.0	43.3	42.6
T x R x I			52.3	90.1	52.3	5.3	-	76.7	-	70.7	35.7	25.8	60.7	46.5	55.4
LSD(0.10)															
Tillage (T)			4	0.1	22	1	-	NS	1548	0.3	0.1	0.0	80	48	128
Rotation (R)			7	0.2	35	2	-	NS	NS	NS	0.2	NS	128	79	206
T x R			9	NS	49	2	-	NS	NS	NS	0.3	NS	181	111	292
Insecticide (I)			NS	0.1	NS	NS	-	0	-	NS	0.1	0.0	NS	NS	NS
T x I			NS	NS	NS	1	-	NS	-	NS	NS	NS	NS	NS	NS
R x I			NS	0.2	NS	1	-	NS	-	NS	NS	NS	NS	NS	NS
T x R x I			NS	NS	NS	2	-	NS	-	NS	NS	NS	NS	NS	NS
CV(%)			11	2	11	6	-	16	87	1	1	1	11	12	11

FIELD EXPERIMENT HISTORY

Title: **Foliar Fungicide Timing**

Experiment: 10 Foliar Fungicide Timing **Trial ID:** 2674 **Year:** 2005

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

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

Supported By: BASF Corporation

Site Information

Field: ARS368N **Previous Crop:** Corn **Soil Type:** Plano Silt Loam

Soil Test: **Date:** 10/15/05 **pH** 6.3 **OM (%)** 3.2 **P (ppm)** 30 **K (ppm)** 162

Plot Management

Tillage Operations: Chisel Plow Field Cultivator Cultivated 6/23/05

Fertilizer:

Preplant Analysis:	46-0-0	**Rate lbs/A:** 325	**Date:**	4 /15/05
Starter Analysis:	N/A	**Rate lbs/A:** N/A	**Date:**	N/A
Post plant Analysis:	34-0-0	**Rate lbs/A:** 150	**Date:**	6 /27/05
Manure: N/A				

Herbicide: Outlook 20 oz/A
Hornet 4.0 oz/A
Accent 0.67 oz/A
Callisto 3.0 oz/A

Insecticide: Force 3G 4.4 lbs/A

Hybrid: Dekalb DKC53-34

Irrigation: None

Planting Date: 4/29/05 **Planting Depth:** 1.5" **Row Width** 30"

Target Plant Density: 30000 **plants per acre** **Planting Method:** Kinze 3000 Row Planter

Harvest Date: 10/26/05 **Harvest Method:** Massey Ferguson 8XP

Notes: Method of Application: CO2 Backpack sprayer, 10' boom, 15" spacing, TeeJet 8002VS nozzles, 30 lb pressure, 3.5 mph, 19.6 gal H2O/Acre.

Experimental Design

Design: RCB **Replications:** 4

Plot Size Seeded: 10' x 30' **Experiment Size:** 0.3 Acre

Harvest Plot Size: 5' x 30' **Harvest Plant Density:** 33033 **plants per acre**

Factors/Treatments:

Application:

1. Check
2. Headline @ 6.0 g a.i. /A; NIS @ 0.125 g/A @ V17 on 7/18/05
3. Headline @ 6.0 g a.i. /A; NIS @ 0.125 g/A @ VT on 7/21/05
4. Headline @ 6.0 g a.i. /A; NIS @ 0.125 g/A @ R1 on 7/25/05
5. Headline @ 9.0 g a.i. /A; NIS @ 0.125 g/A @ V17 on 7/18/05
6. Headline @ 9.0 g a.i. /A; NIS @ 0.125 g/A @ VT on 7/21/05
7. Headline @ 9.0 g a.i. /A; NIS @ 0.125 g/A @ R1 on 7/25/05

Observation Ratings:

Stay Green
1. Completely Brown
3. 25% Green
5. 50% Green
7. 75% Green
9. Completely Green

Disease (Based on leaf area affected).
1. Poor (diseased)
5. Moderate
9. Best (healthy)

Results: Table C-63.

Table C-63. BASF Headline Trial - ARS368N
Arlington, WI - 2005

Treatment	Application	Application Timing	Grain yield	Grain moisture	Test weight	Lodging	Grower return	Disease rating	Stay Green rating
			bu/A	%	lb/bu	%	$/A	1-10	1-10
1	Check		181	17.4	59	12	290	2.8	3.5
2	Headline@ 6.0; NIS@0.125	V17	192	17.3	60	16	308	2.0	3.5
3	Headline@ 6.0; NIS@0.125	VT	186	17.5	60	10	298	2.3	4.5
4	Headline@ 6.0; NIS@0.125	R1	181	16.9	60	21	291	2.8	3.3
5	Headline@ 9.0; NIS@0.125	V17	195	17.4	60	12	312	2.3	4.0
6	Headline@ 9.0; NIS@0.125	VT	202	17.5	61	12	324	2.3	4.5
7	Headline@ 9.0; NIS@0.125	R1	195	17.2	60	16	314	3.0	4.8
Mean			190	17.3	60	14	305	2.5	4.0
Probability (%)									
Treatment			20.2	44.9	22.5	42.9	18.6	9.8	5.4
LSD (0.10)									
Treatment			NS	NS	NS	NS	NS	0.6	0.9
CV (%)			7	2	1	53	6	20	18

FIELD EXPERIMENT HISTORY

Title: **Foliar Fungicide Timing**

Experiment: 10 Foliar Fungicide Timing **Trial ID:** 2675 **Year:** 2005

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

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

Supported By: BASF Corporation

Site Information

Field: ARS372 **Previous Crop:** Soybean **Soil Type:** Plano Silt Loam

Soil Test: **Date:** 10/15/05 **pH** 5.7 **OM (%)** 3.7 **P (ppm)** 35 **K (ppm)** 202

Plot Management

Tillage Operations: Chisel Plow Field Cultivator Soil Finisher Cultivated 6/23/05

Fertilizer:

Preplant Analysis:	46-0-0	**Rate lbs/A:** 325	**Date:**	4 /15/05
Starter Analysis:	N/A	**Rate lbs/A:** N/A	**Date:**	N/A
Post plant Analysis:	N/A	**Rate lbs/A:** N/A	**Date:**	N/A
Manure: N/A				

Herbicide: Outlook 20 oz/A
Hornet 4.0 oz/A

Insecticide: None

Hybrid: NK Brand N50-P5

Irrigation: None

Planting Date: 4/28/05 **Planting Depth:** 1.5" **Row Width** 30"

Target Plant Density: 30000 **plants per acre** **Planting Method:** Kinze 3000 Row Planter

Harvest Date: 10/26/05 **Harvest Method:** Massey Ferguson 8XP

Notes: Method of Application: CO2 Backpack sprayer, 10' boom, 15" spacing, TeeJet 8002VS nozzles, 30 lb pressure, 3.5 mph, 19.6 gal H2O/Acre.

Experimental Design

Design: RCB **Replications:** 4

Plot Size Seeded: 10' x 30' **Experiment Size:** 0.3 Acre

Harvest Plot Size: 5' x 30' **Harvest Plant Density:** 31487 **plants per acre**

Factors/Treatments:

Application:

1. Check
2. Headline @ 6.0 g a.i. /A; NIS @ 0.125 g/A @ V17 on 7/18/05
3. Headline @ 6.0 g a.i. /A; NIS @ 0.125 g/A @ VT on 7/21/05
4. Headline @ 6.0 g a.i. /A; NIS @ 0.125 g/A @ R1 on 7/25/05
5. Headline @ 9.0 g a.i. /A; NIS @ 0.125 g/A @ V17 on 7/18/05
6. Headline @ 9.0 g a.i. /A; NIS @ 0.125 g/A @ VT on 7/21/05
7. Headline @ 9.0 g a.i. /A; NIS @ 0.125 g/A @ R1 on 7/25/05

Observation Ratings:

Stay Green
1. Completely Brown
3. 25% Green
5. 50% Green
7. 75% Green
9. Completely Green

Disease (Based on leaf area affected).
1. Poor (diseased)
5. Moderate
9. Best (healthy)

Results: Table C-64.

Table C-64. BASF Headline Trial - ARS372
Arlington, WI - 2005

Treatment	Application	Application Timing	Grain yield	Grain moisture	Test weight	Lodging	Grower return	Disease rating	Stay Green rating
			bu/A	%	lb/bu	%	$/A	1-10	1-10
1	Check		199	18.8	57	2	314	1.8	6.3
2	Headline@ 6.0; NIS@0.125	V17	204	18.6	57	0	321	1.0	6.8
3	Headline@ 6.0; NIS@0.125	VT	211	18.2	58	0	335	1.5	6.3
4	Headline@ 6.0; NIS@0.125	R1	204	18.5	58	0	322	1.0	6.5
5	Headline@ 9.0; NIS@0.125	V17	207	18.5	58	0	327	1.5	6.3
6	Headline@ 9.0; NIS@0.125	VT	203	18.6	57	1	321	1.3	7.0
7	Headline@ 9.0; NIS@0.125	R1	206	18.4	58	0	326	1.8	6.5
Mean			205	18.5	58	1	324	1.4	6.5
Probability (%)									
Treatment			64.5	24.7	3.5	29.6	59.0	11.3	59.8
LSD (0.10)									
Treatment			NS	NS	1	NS	NS	NS	NS
CV (%)			4	1	1	204	5	31	10

FIELD EXPERIMENT HISTORY

Title: **Corn Rootworm Hybrid Comparison Trial**

Experiment: 10 Corn Rootworm Hybrid Comparison **Trial ID:** 2682 **Year:** 2005

Personnel: J.G. Lauer, E. Cullen, P.J. Flannery, and K.D. Kohn

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

Supported By: HATCH

Site Information

Field: ARS505 **Previous Crop:** Corn **Soil Type:** Plano Silt Loam

Soil Test: **Date:** 10/15/04 **pH** 6.2 **OM (%)** 3.9 **P (ppm)** 70 **K (ppm)** 159

Plot Management

Tillage Operations: Chisel Plow Disk Cultivated 6/9/05

		Analysis:	Rate lbs/A:	Date:
Fertilizer:	**Preplant :**	82-0-0	195 lbs/A	N/A
	Starter :	9-24-24	150 lbs/A	4 /28/05
	Post plant :	N/A	N/A	N/A
	Manure:	N/A	N/A	N/A

Herbicide: Roundup Weather Max 21 oz/A **Insecticide:** See Factors

Irrigation: None **Hybrid:** See Factors

Planting Date: 4/28/05 **Planting Depth:** 1.5" **Row Width:** 30"

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

Harvest Date: 10/21/05 **Harvest Method:** Massey Ferguson 8XP

Notes: The ISU 0 to 3 node-injury root rating scale was used. A rating of 0.50 or below is considered acceptable economic root protection. 5 roots per replicate were evaluated.

Trial was incorrectly sprayed with Round-up Weather Max resulting in death of non-RR hybrids. Filler corn was replanted to provide competition.

Experimental Design

Design: Split-Plot **Replications:** 3

Plot Size Seeded: 10' x 25' **Experiment Size:** 0.32 Acre

Harvest Plot Size: 5' x 22' **Harvest Plant Density:** 29066

Factors/Treatments:

Hybrids:	Soil Applied Insecticide:
Dekalb DKC51-41(RR2YGRW)	Untreated
Dekalb DKC51-45(RR2)	Force 3G @ 4.4 lbs/A
Dekalb DKC60-13(RR2YGRW)	

Results: Table C-65.

Table C-65. Corn Rootworm Hybrid Comparison Trial (Heavy Rootworm Pressure) Arlington, WI - 2005

Insecticide	Brand	Hybrid	Yield	Moisture	Test weight	Root lodging	Stalk lodging	Grower Return	Root rating
			bu/A	%	lbs/bu	%	%	$/A	0 to 3
	Dekalb	DKC51-41(RR2YGRW)	261	18.7	60	4	2	409	0.01
	Dekalb	DKC51-45(RR2)	252	18.8	60	4	0	394	0.23
	Dekalb	DKC60-13(RR2YGRW)	273	22.8	55	3	0	406	0.01
UTC			261	19.8	59	3	0	403	0.11
Force 3G			262	20.3	58	4	1	402	0.06
UTC	Dekalb	DKC51-41(RR2YGRW)	262	18.5	61	2	0	411	0.01
UTC	Dekalb	DKC51-45(RR2)	255	18.7	60	4	1	400	0.31
UTC	Dekalb	DKC60-13(RR2YGRW)	267	22.4	56	4	0	399	0.02
Force 3G	Dekalb	DKC51-41(RR2YGRW)	260	18.9	60	5	3	406	0.01
Force 3G	Dekalb	DKC51-45(RR2)	248	18.8	59	4	0	388	0.15
Force 3G	Dekalb	DKC60-13(RR2YGRW)	279	23.3	55	1	0	412	0.00
Mean			262	20.1	58	3	1	403	0.08
Probability(%)									
Insecticide (I)			68.3	17.3	28.0	70.7	42.3	58.8	48.8
Hybrid (H)			0.2	0.0	0.0	79.1	49.0	13.6	13.3
I x H			9.3	61.9	46.0	24.4	44.7	23.7	75.8
LSD(0.10)									
Insecticide (I)			NS	NS	NS	NS	NS	NS	NS
Hybrid (H)			7	0.7	1	NS	NS	NS	NS
I x H			10	NS	NS	NS	NS	NS	NS
CV(%)			3	3	1	88	286	3	226

FIELD EXPERIMENT HISTORY

Title: **Corn Rootworm Hybrid Comparison Trial**

Experiment: 10 Corn Rootworm Hybrid Comparison **Trial ID:** 2683 **Year:** 2005

Personnel: J.G. Lauer, E. Cullen, P.J. Flannery, and K.D. Kohn

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

Supported By: HATCH

Site Information

Field: ARS428 **Previous Crop:** Soybean **Soil Type:** Plano Silt Loam

Soil Test: **Date:** 10/15/04 **pH** 6.5 **OM (%)** 3.1 **P (ppm)** 38 **K (ppm)** 96

Plot Management

Tillage Operations: Chisel Plow Field Cultivator Soil Finisher Cultivated 6/9/05

		Analysis:	Rate lbs/A:	Date:
Fertilizer:	**Preplant :**	46-0-0	325 lbs/A	4 /14/04
	Starter :	9-24-24	150 lbs/A	4 /28/05
	Post plant :	N/A	N/A	N/A
	Manure:	N/A	N/A	N/A

Herbicide: Outlook 20 oz/A
Hornet 3.0 oz/A
Accent 0.67 oz/A
Callisto 3.0 oz/A

Insecticide: See Factors
Hybrid: See Factors

Irrigation: None

Planting Date: 4/28/05 **Planting Depth:** 1.5" **Row Width:** 30"

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

Harvest Date: 10/21/05 **Harvest Method:** Massey Ferguson 8XP

Notes: The ISU 0 to 3 node-injury root rating scale was used. A rating of 0.50 or below is considered acceptable economic root protection. 5 roots per replicate were evaluated.

Experimental Design

Design: Split-Plot **Replications:** 3

Plot Size Seeded: 10' x 25' **Experiment Size:** 0.32 Acre

Harvest Plot Size: 5' x 22' **Harvest Plant Density:** 30808

Factors/Treatments:

Hybrids:

Dekalb DKC51-41(RR2YGRW)
Dekalb DKC51-45(RR2)
Dekalb DKC58-78(YGCB)
Dekalb DKC60-13(RR2YGRW)
Dekalb DKC60-15

Soil Applied Insecticide:

Untreated
Force 3G @ 4.4 lbs/A

Results: Table C-66.

Table C-66. Corn Rootworm Hybrid Comparison Trial (Light Rootworm Pressure) Arlington, WI - 2005

Insecticide	Brand	Hybrid	Yield	Moisture	Test weight	Root lodging	Stalk lodging	Grower Return	Root rating
			bu/A	%	lbs/bu	%	%	$/A	0 to 3
	Dekalb	DKC51-41(RR2YGRW)	236	17.2	60	8	4	377	0.00
	Dekalb	DKC51-45(RR2)	232	17.1	60	9	2	370	0.03
	Dekalb	DKC58-78(YGCB)	234	17.9	59	4	1	370	0.04
	Dekalb	DKC60-13(RR2YGRW)	250	19.9	59	5	6	385	0.01
	Dekalb	DKC60-15	253	20.1	58	6	2	390	0.04
UTC			235	18.4	58	8	3	370	0.04
Force 3G			246	18.5	60	5	2	386	0.01
UTC	Dekalb	DKC51-41(RR2YGRW)	232	17.2	60	11	2	370	0.01
UTC	Dekalb	DKC51-45(RR2)	224	17.2	60	11	3	357	0.03
UTC	Dekalb	DKC58-78(YGCB)	234	17.6	58	6	1	371	0.06
UTC	Dekalb	DKC60-13(RR2YGRW)	235	19.7	58	3	9	363	0.02
UTC	Dekalb	DKC60-15	253	20.1	57	9	2	390	0.07
Force 3G	Dekalb	DKC51-41(RR2YGRW)	240	17.2	61	5	5	383	0.00
Force 3G	Dekalb	DKC51-45(RR2)	240	17.1	61	7	1	383	0.03
Force 3G	Dekalb	DKC58-78(YGCB)	234	18.1	59	2	0	369	0.03
Force 3G	Dekalb	DKC60-13(RR2YGRW)	265	20.0	59	6	3	408	0.00
Force 3G	Dekalb	DKC60-15	254	20.2	59	3	2	389	0.00
Mean			241	18.4	59	6	3	378	0.02
Probability(%)									
Insecticide (I)			2.5	17.9	2.5	22.9	45.1	2.4	6.3
Hybrid (H)			0.2	0.0	0.0	25.0	10.1	10.5	7.4
I x H			5.6	18.4	5.5	36.2	16.5	6.3	16.0
LSD(0.10)									
Insecticide (I)			5	NS	1	NS	NS	8	0.02
Hybrid (H)			9	0.2	0	NS	NS	NS	0.03
I x H			13	NS	0	NS	NS	21	NS
CV(%)			4	1	1	68	109	4	108

FIELD EXPERIMENT HISTORY

Title: **Corn Rootworm Hybrid Comparison Trial**

Experiment: 10 Corn Rootworm Hybrid Comparison **Trial ID:** 2684 **Year:** 2005

Personnel: J. G. Lauer, E. Cullen, P. J. Flannery and K. D. Kohn

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

Supported By: HATCH

Site Information

Field: R-5A **Previous Crop:** Corn **Soil Type:** Plano Silt Loam

Soil Test: **Date:** 10/1 /03 **pH** 6.7 **OM (%)** 3.3 **P (ppm)** 62 **K (ppm)** 188

Plot Management

Tillage Operations: Fall Chisel Plow Field Cultivator Cultivated 6/13/05

		Analysis:	Rate lbs/A:	Date:
Fertilizer:	**Preplant :**	28-0-0	570 lbs/A	N/A
	Starter :	9-24-24	150 lbs/A	4 /25/05
	Post plant :	N/A	N/A	N/A
	Manure:	N/A	N/A	N/A

Herbicide: Dual II Magnum 1.8 pt/A
Hornet 4.0 oz/A
Banvel 1 pt/A

Insecticide: See Factors

Hybrid: See Factors

Irrigation: None

Planting Date: 4/25/05 **Planting Depth:** 1.5" **Row Width:** 30"

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

Harvest Date: 10/03/05 **Harvest Method:** Massey Ferguson 8XP

Notes: The ISU 0 to 3 node-injury root rating scale was used. A rating of 0.50 or below is considered acceptable economic root protection. 5 roots per replicate were evaluated.

Experimental Design

Design: Split-Plot **Replications:** 3

Plot Size Seeded: 10' x 25' **Experiment Size:** 0.32 Acre

Harvest Plot Size: 5' x 22' **Harvest Plant Density:** 29898

Factors/Treatments:

Hybrids:

Dekalb DKC51-41(RR2YGRW)
Dekalb DKC51-45(RR2)
Dekalb DKC58-78(YGCB)
Dekalb DKC60-13(RR2YGRW)
Dekalb DKC60-15

Soil Applied Insecticide:

Untreated
Force 3G @ 4.4 lbs/A

Results: Table C-67.

Table C-67. Corn Rootworm Hybrid Comparison Trial (Normal Rootworm Pressure) Janesville, WI - 2005

Insecticide	Brand	Hybrid	Yield	Moisture	Test weight	Root lodging	Stalk lodging	Grower Return	Root rating
			bu/A	%	lbs/bu	%	%	$/A	0 to 3
	Dekalb	DKC51-41(RR2YGRW)	193	17.2	60	0	3	308	0.01
	Dekalb	DKC51-45(RR2)	181	16.2	59	1	2	292	0.59
	Dekalb	DKC58-78(YGCB)	180	20.7	56	4	0	275	0.75
	Dekalb	DKC60-13(RR2YGRW)	213	21.9	57	0	1	320	0.02
	Dekalb	DKC60-15	177	21.9	57	8	1	266	0.65
UTC			179	19.9	58	5	2	275	0.39
Force 3G			199	19.2	58	0	2	309	0.41
UTC	Dekalb	DKC51-41(RR2YGRW)	184	17.9	60	0	2	291	0.01
UTC	Dekalb	DKC51-45(RR2)	166	15.7	59	3	1	269	0.43
UTC	Dekalb	DKC58-78(YGCB)	168	21.2	56	7	0	255	0.60
UTC	Dekalb	DKC60-13(RR2YGRW)	209	21.7	57	0	2	315	0.04
UTC	Dekalb	DKC60-15	166	22.8	56	16	2	247	0.88
Force 3G	Dekalb	DKC51-41(RR2YGRW)	202	16.4	60	0	4	325	0.01
Force 3G	Dekalb	DKC51-45(RR2)	196	16.6	60	0	2	315	0.75
Force 3G	Dekalb	DKC58-78(YGCB)	192	20.2	57	0	1	296	0.90
Force 3G	Dekalb	DKC60-13(RR2YGRW)	216	22.0	56	0	0	325	0.00
Force 3G	Dekalb	DKC60-15	188	21.0	57	0	1	286	0.42
Mean			189	19.6	58	3	2	292	0.40
Probability(%)									
Insecticide (I)			15.3	10.7	28.6	19.6	84.0	12.5	85.9
Hybrid (H)			0.3	0.0	0.0	3.1	6.6	0.8	0.0
I x H			72.2	3.9	39.4	3.1	23.0	72.5	17.6
LSD(0.10)									
Insecticide (I)			NS	NS	NS	NS	NS	NS	NS
Hybrid (H)			15	0.8	1	4	1	24	0.29
I x H			NS	1	NS	6	NS	NS	NS
CV(%)			8	4	2	167	85	8	71

FIELD EXPERIMENT HISTORY

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

Experiment: 11 Misc **Trial ID:** 2710 **Year:** 2005

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: ARS357 **Previous Crop:** Grass **Soil Type:** Plano Silt Loam

Soil Test: **Date:** 11/1 /05 **pH** 6 **OM (%)** 3.4 **P (ppm)** 28 **K (ppm)** 78

Plot Management

Tillage Operations: Chisel Plow Field Cultivator Soil Finisher Cultivated 6/24/05

		Analysis:	Rate lbs/A:	Date:
Fertilizer:	**Preplant :**	46-0-0	325 lbs/A	4 /14/05
	Starter :	9-24-24	150 lbs/A	5 /9 /05
	Post plant :	N/A	N/A	N/A
	Manure:	N/A	N/A	N/A

Herbicide: Outlook 20 oz/A
Hornet 4 oz/A
Stinger (spot) 0.5 pt/A
Accent 0.67 oz/A
Callisto 3 oz/A

Insecticide: None

Hybrid: See Factors

Irrigation: None

Planting Date: 5/9/05 **Planting Depth:** 1.5" **Row Width:** 30"

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

Harvest Date: 10/24/05 **Harvest Method:** Massey Ferguson 8XP

Experimental Design

Design: RCB **Replications:** 3

Plot Size Seeded: 10' x 25' **Experiment Size:** 0.21 Acre

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

Factors/Treatments:

Plant Density: (plants/A)

30000
38000

Hybrids:

Dekalb DKC5334
Pioneer 34M94
Pioneer 34M95

Results: Table C-68.

Table C-68. Cultivation, Plant Density, and Hybrid Influence on Corn Grain. Arlington, WI - 2005.

				Grain										
Target						Test	Grower	Lodged				Ears	Harvest	
Density	Hybrid	Trait	Cultivation	Yield	Moisture	Weight	Return	Total	Stalk	Root	Barren	Dropped	plants	ears
plants/A			Y or N	bu/A	%	lbs/bu	$/A	%	%	%	%	%	plants/A	ears/A
			N	194	19.3	58	302	10	9	1	2	0	33154	32626
			Y	202	19.6	58	313	11	10	1	2	0	33440	32912
	Dekalb DKC5334	BtRR		199	18.5	60	313	3	3	0	1	0	33099	32901
	Pioneer 34M94			191	19.9	58	295	17	16	1	3	0	33825	32703
	Pioneer 34M95	Bt		203	19.9	58	314	11	8	3	1	0	32967	32703
	Dekalb DKC5334	BtRR	N	195	18.5	59	306	5	5	0	1	0	33066	32736
	Dekalb DKC5334	BtRR	Y	204	18.6	60	320	2	2	0	0	0	33132	33066
	Pioneer 34M94		N	190	19.8	58	293	16	16	0	3	0	33792	32736
	Pioneer 34M94		Y	193	20.1	57	297	18	17	1	3	0	33858	32670
	Pioneer 34M95	Bt	N	198	19.6	58	306	8	6	2	1	0	32604	32406
	Pioneer 34M95	Bt	Y	209	20.1	57	321	13	10	3	1	0	33330	33000
30000				205	19.8	58	317	6	5	1	1	0	29392	29062
38000				191	19.1	59	297	15	13	1	2	0	37202	36476
30000			N	202	19.6	58	313	5	5	0	1	0	29260	29128
30000			Y	208	19.9	58	322	7	6	1	2	0	29524	28996
38000			N	186	19.0	59	290	14	13	1	3	0	37048	36124
38000			Y	196	19.3	58	304	15	14	1	1	0	37356	36828
30000	Dekalb DKC5334	BtRR		204	18.7	59	320	2	2	0	1	0	29106	29106
30000	Pioneer 34M94			202	20.4	57	309	11	10	1	2	0	29766	29172
30000	Pioneer 34M95	Bt		210	20.2	58	322	5	4	1	2	0	29304	28908
38000	Dekalb DKC5334	BtRR		194	18.4	60	305	5	5	0	1	0	37092	36696
38000	Pioneer 34M94			181	19.5	58	281	23	22	1	4	0	37884	36234
38000	Pioneer 34M95	Bt		197	19.5	58	305	16	12	4	1	0	36630	36498

(continued)

Table C-68. Cultivation, Plant Density, and Hybrid Influence on Corn Grain.

(continued) **Arlington, WI - 2005.**

				Grain										
Target						Test	Grower	Lodged				Ears	Harvest	
Density	Hybrid	Trait	Cultivation	Yield	Moisture	Weight	Return	Total	Stalk	Root	Barren	Dropped	plants	ears
plants/A			Y or N	bu/A	%	lbs/bu	$/A	%	%	%	%	%	plants/A	ears/A
30000	Dekalb DKC5334	BtRR	N	199	18.7	59	311	1	1	0	0	0	29304	29436
30000	Dekalb DKC5334	BtRR	Y	210	18.6	60	329	2	2	0	1	0	28908	28776
30000	Pioneer 34M94		N	204	20.1	58	313	10	10	0	1	0	29832	29436
30000	Pioneer 34M94		Y	200	20.7	57	305	12	11	1	3	0	29700	28908
30000	Pioneer 34M95	Bt	N	205	20.1	58	315	3	3	0	1	0	28644	28512
30000	Pioneer 34M95	Bt	Y	215	20.3	57	330	7	4	3	2	0	29964	29304
38000	Dekalb DKC5334	BtRR	N	190	18.3	60	300	8	8	0	3	0	36828	36036
38000	Dekalb DKC5334	BtRR	Y	198	18.5	60	311	2	2	0	0	0	37356	37356
38000	Pioneer 34M94		N	176	19.5	59	273	22	22	0	5	0	37752	36036
38000	Pioneer 34M94		Y	186	19.4	58	288	23	23	1	4	0	38016	36432
38000	Pioneer 34M95	Bt	N	191	19.1	58	298	12	9	4	1	0	36564	36300
38000	Pioneer 34M95	Bt	Y	203	19.9	57	312	20	16	4	0	0	36696	36696
Mean				198	19.4	58	307	10	9	1	2	0	33297	32769
Probability(%)														
Hybrid (H)				12.4	0.8	0.0	8.3	0.0	0.0	0.2	0.6	-	3.1	77.5
Plant Density (D)				0.5	11.0	0.4	1.3	0.0	0.1	14.6	27.1	-	0.0	0.0
H x D				62.6	72.4	40.2	73.8	18.9	30.3	8.9	7.0	-	43.7	63.9
Cultivation (C)				10.5	47.0	21.4	15.0	47.6	72.7	20.3	93.0	-	29.1	28.4
C x H				75.6	88.3	3.8	77.9	28.3	45.3	63.5	46.7	-	51.1	58.9
C x D				71.4	96.5	35.1	74.1	76.8	98.4	22.9	7.3	-	93.4	12.5
C x D x H				75.7	78.6	70.4	69.6	53.8	44.0	52.2	86.7	-	25.8	19.8
LSD (0.10)														
Hybrid (H)				NS	0.8	0	16	4	5	1	1	-	556	NS
Plant Density (D)				8	NS	0	13	3	4	NS	NS	-	454	447
H x D				NS	NS	NS	NS	NS	NS	2	2	-	NS	NS
Cultivation (C)				NS	NS	NS	NS	NS	NS	NS	NS	-	NS	NS
C x H				NS	NS	1	NS	NS	NS	NS	NS	-	NS	NS
C x D				NS	NS	NS	NS	NS	NS	NS	1	-	NS	NS
C x D x H				NS	NS	NS	NS	NS	NS	NS	NS	-	NS	NS
CV(%)				7	6	1	7	58	71	148	98	-	2	2

FIELD EXPERIMENT HISTORY

Title: **Progress of Whole Plant Drydown on Corn Silage.**

Experiment: 15 Silage Dry-Down **Trial ID:** 2736 **Year:** 2005

Personnel: J. G. Lauer, K.D. Kohn, P.J. Flannery

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

Supported By: HATCH

Site Information

Field: ARS368S **Previous Crop:** Soybean **Soil Type:** Plano Silt Loam

Soil Test: **Date:** 10/1 /05 **pH** 6.4 **OM (%)** 3.1 **P (ppm)** 22 **K (ppm)** 131

Plot Management

Tillage Operations: Fall Chisel Plow Field Cultivator

Fertilizer:

Preplant Analysis:	46-0-0	**Rate lbs/A:** 325	**Date:**	4 /14/05
Starter Analysis:	N/A	**Rate lbs/A:** N/A	**Date:**	N/A
Post plant Analysis:	N/A	**Rate lbs/A:** N/A	**Date:**	N/A
Manure: N/A				

Herbicide: Outlook 20.0 oz/A
Hornet 4.0 oz/A

Insecticide: N/A

Hybrid: Dekalb DKC53-34

Irrigation: None

Planting Date: 4/29/05 **Planting Depth:** 1.5" **Row Width** 30"

Target Plant Density: 32000 **plants per acre** **Planting Method:** Kinze Inter-Row Planter

Harvest Date: See Factors **Harvest Method:** Hand Harvest

Experimental Design

Design: Random **Replications:** 3

Plot Size Seeded: 1.5 Acres **Experiment Size:** 0.5 Acres

Harvest Plot Size: 2.5' x 2' **Harvest Plant Density:** 30000 **plants per acre**

Factors/Treatments:

Harvest Dates:

Aug. 26, Aug. 29, Sept. 1, Sept. 6, Sept. 9, Sept. 13, Sept. 16, and Sept. 19,

Results: Table C-69.

Table C-69. Silage Dry-Down
Arlington, WI - 2005.

Sample Date	Day of year	Type	Moisture	Kernel milk
			%	%
		Grain	40.0	40.8
		Stover	63.3	-
		Whole Plant	51.7	40.2
August 26	238		63.1	77.5
August 29	241		62.6	74.2
September 01	244		59.9	63.3
September 06	249		51.2	50.0
September 09	252		50.3	38.3
September 13	256		42.1	18.3
September 16	259		41.5	2.5
September 19	262		42.6	0.0
August 26	238	Grain	51.8	78.3
August 26	238	Stover	72.7	-
August 26	238	Whole Plant	64.9	76.7
August 29	241	Grain	52.4	75.0
August 29	241	Stover	74.5	-
August 29	241	Whole Plant	60.9	73.3
September 01	244	Grain	47.1	65.0
September 01	244	Stover	72.5	-
September 01	244	Whole Plant	60.1	61.7
September 06	249	Grain	41.1	50.0
September 06	249	Stover	62.6	-
September 06	249	Whole Plant	50.0	50.0
September 09	252	Grain	37.1	38.3
September 09	252	Stover	62.5	-
September 09	252	Whole Plant	51.3	38.3
September 13	256	Grain	29.5	16.7
September 13	256	Stover	54.8	-
September 13	256	Whole Plant	41.9	20.0
September 16	259	Grain	31.5	3.3
September 16	259	Stover	51.8	-
September 16	259	Whole Plant	41.3	1.7
September 19	262	Grain	29.6	0.0
September 19	262	Stover	54.8	-
September 19	262	Whole Plant	43.3	0.0
Mean			51.7	40.5
Probability(%)				
Sample Date (S)			0.0	0.0
Type (T)			0.0	48.7
S x T			4.3	73.3
LSD (0.10)				
Sample Date (S)			1.5	2.5
Type (T)			0.9	NS
S x T			2.5	NS
CV(%)			4	8

FIELD EXPERIMENT HISTORY

Title: **16 Influence of Clipping Timing on Corn Grain Yield**

Experiment: 16 Influence of Clipping on Corn Grain **Trial ID** 2737 **Year:** 2005

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

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

Supported By: HATCH

Site Information

Field: ARS372 **Previous Crop:** Soybean **Soil Type:** Plano Silt Loam

Soil Test: **Date:** 10/15/05 **pH:** 5.7 **OM (%)** 3.7 **P (ppm)** 35 **K (ppm)** 202

Plot Management

Tillage Operations: Fall Chisel Plow Field Cultivator Soil Finisher Cultivated

		Analysis:	Rate lbs/A:	Date:
Fertilizer:	**Preplant :**	46-0-0	325	N/A
	Starter :	N/A	N/A	N/A
	Post plant :	N/A	N/A	N/A
	Manure:	N/A	N/A	N/A

Herbicide: Outlook 20 oz/A
Hornet 4.0 oz/A

Insecticide: None

Hybrid: NK Brand N50-P5

Irrigation: None

Planting Date: 4/29/05 **Planting Depth:** 1.5" **Row Width:** 30"

Target Plant Density: 34000 **plants per acre** **Planting Method:** Kinze Inter-Row Planter

Harvest Date: 10/25/05 **Harvest Method:** Massey Ferguson 8XP

Experimental Design

Design: RCB Factorial **Replications:** 3

Plot Size Seeded 10' x 25' **Experiment Size:** 0.3 Acre

Harvest Plot Size: 22' x 5' **Harvest Plant Density:** 32868 **plants per acre**

Factors/Treatments:

Growth Stage at Time of Clipping:

V2 - 2 plant pattern	V6 - 2 plant pattern
V2 - 4 plant pattern	V6 - 4 plant pattern
V2 - 8 plant pattern	V6 - 8 plant pattern
V2 - All plants	V6 - All plants
V4 - 2 plant pattern	Control

Date of Clipping:

V2 - May 31
V4 - June 10
V6 - June 20

Results: Table C-70.

Table C-70. Influence of Clipping on Corn Grain Yield
Arlington, WI - 2005

Treatment	Grain yield	Grain moisture	Test weight	Lodging	Harvest pop	Grower return
	bu/A	%	lbs/bu	%	plants/A	$/A
V2 - 2 plant	228	19.3	58	2	32340	354
V2 - 4 plant	226	18.7	58	0	33660	354
V2 - 8 plant	218	18.6	58	1	32736	341
V2 - Clip entire plot	213	18.8	58	0	33264	333
V4 - 2 plant	205	19.2	57	1	33000	319
V4 - 4 plant	222	18.9	57	2	33396	346
V4 - 8 plant	207	19.3	57	4	32736	322
V4 - Clip entire plot	206	20.4	56	0	32868	315
V6 - 2 plant	204	18.8	58	0	32340	319
V6 - 4 plant	203	18.8	58	1	32604	318
V6 - 8 plant	204	18.6	58	2	32340	320
V6 - Clip entire plot	195	19.2	58	0	33000	303
Control A - UTC	222	18.8	57	0	32340	348
Control B - UTC	227	18.6	57	0	33528	356
Mean	213	19.0	57	1	32868	332
Probability(%)						
Treatment	0.3	0.0	14.7	80.8	89.2	0.2
LSD(0.10)						
Treatment	14	0.5	NS	NS	NS	22
CV(%)	5	2	1	245	3	5

FIELD EXPERIMENT HISTORY

Title: **16 Corn Grain yield response to cohort emergence**

Experiment: 16 Cohorts **Trial ID:** 2738 **Year:** 2005

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

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

Supported By: HATCH

Site Information

Field: ARS372 **Previous Crop:** Soybean **Soil Type:** Plano Silt Loam

Soil Test: **Date:** 11/01/05 **pH** 5.7 **OM (%)** 3.7 **P (ppm)** 35 **K (ppm)** 202

Plot Management

Tillage Operations: Fall Chisel Plow, Field Cultivator, Soil Finisher, Cultivated

		Analysis:	Rate lbs/A:	Date:
Fertilizer:	**Preplant :**	46-0-0	325	4 /14/05
	Starter :	N/A	N/A	N/A
	Post plant :	N/A	N/A	N/A
	Manure:	N/A	N/A	N/A

Herbicide: Outlook 20 oz/A
Hornet 4.0 oz/A

Insecticide: None

Hybrid: NK Brand N50-P5

Irrigation: None

Planting Date: 4/29/05 **Planting Depth:** 1.5" **Row Width:** 30"

Target Plant Density: 32000 **plants per acre** **Planting Method:** Kinze Inter-Row Planter

Harvest Date: 10/25/05 **Harvest Method:** Hand Harvest

Notes: Grain moisture of 6.31% was derived using ten samples collected from entire bulk sample.

Experimental Design

Design: RCB Factorial **Replications:** 3

Plot Size Seeded: 25' x 10' **Experiment Size:** 0.57 Acre

Harvest Plot Size: Single Plants

Factors/Treatments:

Treatments:

A = Plant clipped completely at V3 on 6/6
B = Emerged leaves clipped at V3 on 6/6
C = Control - No clipping

Results: Table C-71.

Table C-71. Corn Grain response to cohort emergence. Arlington, WI - 2005

Treatment	Five Neighboring plants south	Plant	Five Neighboring plants north	Yield Components @ 0% Moisture: Kernels per ear	Yield per ear	100 Kernel weight
				no./ear	grams	grams
1	All leaves clipped	A	All leaves clipped	365	96	26.8
2	All leaves clipped	B	All leaves clipped	576	142	24.8
3	All leaves clipped	C	All leaves clipped	693	183	26.5
4	All leaves clipped	A	Emerged leaves clipped	188	57	30.5
5	All leaves clipped	B	Emerged leaves clipped	585	147	25.2
6	All leaves clipped	C	Emerged leaves clipped	658	160	24.3
7	All leaves clipped	A	Control	291	78	27.9
8	All leaves clipped	B	Control	625	145	23.3
9	All leaves clipped	C	Control	677	166	24.6
10	Emerged leaves clipped	A	Emerged leaves clipped	202	56	28.2
11	Emerged leaves clipped	B	Emerged leaves clipped	555	133	23.9
12	Emerged leaves clipped	C	Emerged leaves clipped	493	132	26.7
13	Emerged leaves clipped	A	Control	177	47	29.1
14	Emerged leaves clipped	B	Control	546	128	23.5
15	Emerged leaves clipped	C	Control	598	139	23.2
16	Control	A	Control	131	37	28.5
17	Control	B	Control	468	111	23.8
18	Control	C	Control	431	115	26.7
Mean				459	115	26.0
Probability(%)						
Treatment				0.0	0.0	0.5
LSD(0.10)						
Treatment				143	23	2.2
CV(%)				23	20	9

A = All leaves clipped

B = Emerged leaves clipped

C = Control

FIELD EXPERIMENT HISTORY

Title: **17 Tillage and Fumigation in Corn and Soybean Production Systems**

Experiment: 17 Tillage **Trial ID** 2711 **Year** 2005

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: ARS396 **Previous Crop:** Corn/Soybean **Soil Type:** Plano Silt Loam

Soil Test: **Date** 5 /6 /04 **pH** 6.8 **OM (%)** 3.0 **P (ppm)** 22 **K (ppm)** 139

Plot Managemen

Tillage Operations: See Factors

		Analysis:	Rate lbs/A:	Date:
Fertilizer:	**Preplant :**	28-0-0	70 gal/A	5 /2 /05
	Starter :	N/A	N/A	N/A
	Post plant :	34-0-0	59 lbs N/A	6 /17/05
	Manure:	N/A	N/A	N/A

Herbicide: 2-4D Ester 0.67 pt/A
Dual 2 pt/A
Roundup WeatherMax 21 oz/A

Insecticide: Force 3G @ 4.4 lb/A

Irrigation: None

Hybrid/Variety: Trelay 7693 RR2

Planting Date C: 4/29/05
S: 5/3/05

Row Width: 30"

Planting Method: Kinze Inter-Row Planter

Planting Depth: C: 1.5"
S: 1.0"

Harvest Date: C: 10/13/05
S: 10/3/05

Harvest Method: C: Kincaid Plot Combine
S: Almaco Plot Combine

Experimental Design

Design: RCB Split Plot

Replications: 4

Plot Size Seeded 20' x 100'

Experiment Size 4.5 Acres

Harvest Plot Size: 5' x 96'

Factors/Treatments:

Rotation

Continuous Corn
Corn / Soybean
Soybean / Corn

Tillage for All Rotation

CP = Fall chisel plow and 2 spring field cultivator
T1 = NT- Planter unit equipped with 1 13-wave coulter with trash whippers
T2 = NT- Planter unit equipped with 1 13-wave coulter with trash whippers
T3 = Fall chisel plow, fumigation - Sectagon 42 @ 45 gals/A, and 2 spring field cultivator
T4 = Spring chisel plow and 2 spring field cultivator
NT = Planter unit equipped with 1 13-wave coulter with trash whippers

Results: Tables C-72, C-73, and C-74.

Table C-72. Tillage in Corn and Soybean Production Systems - Corn. Arlington, WI - 2005.

Rotation	Tillage treatment	Residue cover	Yield	Moisture	Test Weight	Grower return	Lodged			Barren	Ears Dropped	Harvest	
							Total	Stalk	Root			plants	ears
		%	bu/A	%	lbs/bu	$/A	%	%	%	%	%	plants/A	ears/A
	CP	28	172	19.8	55	265	1	1	0	5	0	34000	32125
	NT	77	157	24.3	52	230	3	3	0	7	0	34250	31875
	T1	-	159	23.7	52	234	3	2	0	2	0	34625	33875
	T2	-	169	23.7	52	249	2	2	0	6	0	34125	32000
	T3	20	180	21.3	53	272	15	15	0	4	0	34250	33000
	T4	31	176	20.0	54	272	4	4	0	4	0	34250	33000
CC		48	155	24.6	52	225	6	6	0	4	0	33750	32333
CS		29	183	19.7	54	282	3	3	0	5	0	34750	32958
CC	CP	38	164	21.0	53	249	2	2	0	6	0	33500	31500
CC	NT	88	131	27.8	51	181	2	2	0	6	0	33250	31250
CC	T1	-	144	27.7	50	199	4	3	1	1	0	34000	33500
CC	T2	-	152	27.1	50	211	3	3	0	5	0	34250	32500
CC	T3	26	182	22.5	52	270	24	24	0	1	0	34500	34000
CC	T4	40	157	21.4	53	237	3	3	0	5	0	33000	31250
CS	CP	17	180	18.7	56	281	0	0	0	5	0	34500	32750
CS	NT	65	183	20.8	54	278	4	4	0	8	0	35250	32500
CS	T1	-	174	19.7	53	269	2	2	0	3	0	35250	34250
CS	T2	-	187	20.3	54	286	1	1	0	7	0	34000	31500
CS	T3	13	179	20.1	54	274	5	5	0	6	0	34000	32000
CS	T4	21	195	18.6	55	306	5	5	0	2	0	35500	34750
Mean		39	169	22.1	53	253	5	5	0	5	0	34250	32646
Probability(%)													
Rotation (R)		0.1	9.1	0.8	1.7	2.8	22.9	23.2	39.1	43.4	-	37.8	55.5
Tillage (T)		0.0	2.0	0.0	0.0	0.1	0.5	0.5	43.5	15.6	-	99.6	43.3
R x T		25.3	1.5	0.0	27.1	0.2	4.0	3.8	43.5	48.0	-	71.0	21.0
LSD (0.10)													
Rotation (R)		2	13	0.9	1	17	NS	NS	NS	NS	-	NS	NS
Tillage (T)		2	6	0.6	0	9	3	3	NS	NS	-	NS	NS
R x T		NS	9	0.9	1	13	4	4	NS	NS	-	NS	NS
CV(%)		14	9	7	2	9	148	150	693	84	-	6	7

Table C-73. Tillage in Corn and Soybean Production Systems - Soybean. Arlington, WI - 2005.

Rotation	Tillage treatment	Residue cover	Yield	Moisture	Grower return	Seed Composition			Protein	Oil	Protein + Oil
						Oil	Protein	Fiber			
		%	bu/A	%	$/A	%	%	%	lbs/A	lbs/A	lbs/A
SC	CP	41	52	12.4	278	20.1	33.7	4.8	1056	630	1687
SC	NT	91	54	12.5	285	19.8	33.9	4.8	1085	637	1722
SC	T1	-	54	12.5	286	19.7	33.9	4.8	1092	638	1730
SC	T2	-	52	12.6	278	20.1	33.4	4.8	1052	632	1684
SC	T3	29	57	12.7	300	19.9	33.9	4.8	1148	675	1823
SC	T4	50	56	12.5	298	19.8	33.9	4.8	1141	666	1807
Mean		52	54	12.5	288	19.9	33.8	4.8	1096	647	1742
Probability(%)											
Tillage		0.0	60.7	37.0	60.7	38.0	92.6	83.0	45.2	78.4	57.3
LSD (0.10)											
Tillage		4	NS	NS	NS	NS	NS	NS	NS	NS	NS
CV(%)		11	8	2	8	2	2	1	7	9	8

Table C-74. Crop Rotation, Tillage, and Fumigation Influence on Corn Growth and Development. Arlington, WI - 2005.

			Leaf Development			
Rotation	Treatment	Observation Day of Year	Leaf Collars	Hail Adjusters Method	Total Leaves	Plant Height
			no./plant	no./plant	no./plant	inches
		151	1.8	3.2	3.7	4.5
		165	5.3	7.2	8.7	16.7
		180	8.3	11.0	12.6	40.3
		194	13.0	12.9	15.9	68.2
		208	17.8	17.6	17.8	79.1
	CP		9.4	10.4	11.8	41.0
	NT		8.8	10.0	11.4	40.4
	T3		9.3	10.5	11.8	42.2
	T4		9.5	10.6	12.0	43.3
	CP	151	1.9	3.1	3.6	4.4
	CP	165	5.4	7.4	8.8	17.7
	CP	180	8.6	11.0	12.8	40.8
	CP	194	13.4	13.0	16.1	65.3
	CP	208	17.8	17.6	17.8	77.1
	NT	151	1.4	2.8	3.1	4.1
	NT	165	4.8	6.5	8.1	15.5
	NT	180	7.8	10.6	12.1	37.4
	NT	194	12.0	12.4	15.4	66.8
	NT	208	18.0	17.8	18.0	78.4
	T3	151	2.0	3.4	3.9	4.9
	T3	165	5.4	7.3	8.6	15.4
	T3	180	8.4	11.0	12.6	39.0
	T3	194	12.9	13.1	15.9	69.3
	T3	208	17.8	17.7	17.8	82.2
	T4	151	2.0	3.3	3.9	4.5
	T4	165	5.7	7.8	9.2	18.1
	T4	180	8.5	11.3	13.1	43.8
	T4	194	13.5	13.2	16.2	71.4
	T4	208	17.8	17.6	17.8	78.8
CC			9.0	10.1	11.5	39.9
CS			9.6	10.7	12.0	43.6

(continued)

Table C-74. Crop Rotation, Tillage, and Fumigation Influence on Corn Growth and Development.
(continued) **Arlington, WI - 2005.**

			Leaf Development			
Rotation	Treatment	Observation Day of Year	Leaf Collars	Hail Adjusters Method	Total Leaves	Plant Height
			no./plant	no./plant	no./plant	inches
CC		151	1.7	3.0	3.6	4.4
CC		165	5.1	6.9	8.4	16.2
CC		180	8.0	10.7	12.2	37.9
CC		194	12.2	12.3	15.5	65.2
CC		208	17.8	17.6	17.8	75.7
CS		151	1.9	3.3	3.8	4.6
CS		165	5.6	7.5	9.0	17.2
CS		180	8.7	11.3	13.1	42.6
CS		194	13.7	13.5	16.3	71.2
CS		208	17.9	17.7	17.9	82.5
CC	CP		9.1	10.2	11.6	39.8
CC	NT		8.4	9.6	10.9	37.9
CC	T3		9.3	10.5	11.8	41.9
CC	T4		9.1	10.2	11.7	39.9
CS	CP		9.8	10.7	12.1	42.3
CS	NT		9.2	10.4	11.8	43.0
CS	T3		9.4	10.6	11.8	42.5
CS	T4		9.9	11.0	12.4	46.7
CC	CP	151	1.8	3.0	3.4	4.4
CC	CP	165	5.0	7.1	8.5	17.8
CC	CP	180	8.1	10.6	12.3	39.4
CC	CP	194	12.9	12.8	15.9	64.3
CC	CP	208	17.8	17.5	17.8	73.3
CC	NT	151	1.0	2.5	3.0	3.7
CC	NT	165	4.5	5.9	7.4	13.5
CC	NT	180	7.3	10.1	11.4	33.6
CC	NT	194	11.0	11.6	14.9	63.3
CC	NT	208	18.0	17.8	18.0	75.5
CC	T3	151	2.0	3.4	4.0	5.0
CC	T3	165	5.4	7.4	8.8	16.5
CC	T3	180	8.6	11.0	12.6	39.1
CC	T3	194	12.6	12.9	15.8	68.1
CC	T3	208	17.8	17.6	17.8	80.5
CC	T4	151	2.0	3.3	3.9	4.5
CC	T4	165	5.4	7.4	8.9	16.8
CC	T4	180	8.1	10.9	12.5	39.5
CC	T4	194	12.4	12.1	15.6	65.1
CC	T4	208	17.6	17.5	17.6	73.5

(continued)

Table C-74. Crop Rotation, Tillage, and Fumigation Influence on Corn Growth and Development.
(continued) **Arlington, WI - 2005.**

			Leaf Development			
Rotation	Treatment	Observation Day of Year	Leaf Collars	Hail Adjusters Method	Total Leaves	Plant Height
			no./plant	no./plant	no./plant	inches
CS	CP	151	2.0	3.3	3.9	4.3
CS	CP	165	5.9	7.8	9.1	17.6
CS	CP	180	9.1	11.4	13.3	42.3
CS	CP	194	14.0	13.3	16.4	66.4
CS	CP	208	17.8	17.6	17.8	80.9
CS	NT	151	1.8	3.0	3.3	4.6
CS	NT	165	5.0	7.1	8.9	17.5
CS	NT	180	8.4	11.1	12.9	41.3
CS	NT	194	13.0	13.1	16.0	70.3
CS	NT	208	18.0	17.8	18.0	81.3
CS	T3	151	2.0	3.5	3.9	4.8
CS	T3	165	5.4	7.1	8.4	14.3
CS	T3	180	8.3	11.0	12.5	38.9
CS	T3	194	13.3	13.4	16.1	70.5
CS	T3	208	17.9	17.8	17.9	83.9
CS	T4	151	2.0	3.4	4.0	4.5
CS	T4	165	6.0	8.1	9.5	19.3
CS	T4	180	8.9	11.8	13.8	48.0
CS	T4	194	14.6	14.3	16.8	77.6
CS	T4	208	17.9	17.6	17.9	84.0
Mean			9.3	10.4	11.7	41.7
Probability(%)						
Rotation (R)			0.0	0.0	0.0	0.0
Treatment (T)			0.0	0.0	0.0	10.4
R x T			1.3	2.8	1.0	6.6
DOY (D)			0.0	0.0	0.0	0.0
R x D			0.2	0.2	0.3	2.2
T x D			1.9	29.2	19.5	54.9
R x T x D			44.9	59.3	64.2	97.9
LSD (0.10)						
Rotation (R)			0.2	0.1	0.1	1.2
Treatment (T)			0.2	0.2	0.2	NS
R x T			0.3	0.3	0.3	2.9
DOY (D)			0.2	0.3	0.2	1.5
R x D			0.3	0.3	0.2	2.6
T x D			0.5	NS	NS	NS
R x T x D			NS	NS	NS	NS
CV(%)			6	6	5	13

FIELD EXPERIMENT HISTORY

Title: **Corn Cropping Systems**

Experiment: 19 Corn Cropping Systems **Trial ID:** 2633 **Year:** 2005

Personnel: J. G. Lauer, K.D. Kohn, P.J. Flannery

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

Supported By: HATCH

Site Information

Field: ARS428 **Previous Crop:** Soybean **Soil Type:** Plano Silt Loam

Soil Test: **Date:** 10/15/05 **pH** 6.6 **OM (%)** 3.4 **P (ppm)** 49 **K (ppm)** 91

Plot Management

Tillage Operations: Chisel Plow Field Cultivator Soil Finisher Cultivated 6/15/05

		Analysis:	Rate lbs/A:	Date:
Fertilizer:	**Preplant :**	46-0-0	325 lbs/A	4 /14/05
	Starter :	9-24-24	150 lbs/A	4 /28/05
	Post plant :	34-0-0	175 lbs/A	6 /15/05
	Manure:	N/A	N/A	N/A

Herbicide: Outlook 20 oz/A
Hornet 4.0 oz/A

Insecticide: See Factors

Hybrid: See Factors

Irrigation: None

Planting Date: 4/28/05 **Planting Depth:** 1.5" **Row Width:** 30"

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

Harvest Date: 10/21/05 **Harvest Method:** Massey Ferguson 8XP

Experimental Design

Design: RCB **Replications:** 2

Plot Size Seeded: 10' x 25' **Experiment Size:** 1.9 Acre

Harvest Plot Size: 5' x 22' **Harvest Plant Density:** 37151

Factors/Treatments:

Hybrids:
Pioneer 34M94
Pioneer 34M95

Plant Density:
30000
45000

Nitrogen Rate:
160
220

Seed Strobilurins:
Untreated Check
Dynasty (azoxystrobin)

Seed Insecticide:
Untreated Check
Poncho 1250 (clothianidin)

Leaf Fungicide:
Untreated Check
Headline (pyraclostrobin) at V12
Headline at V18
Headline at V12 and V18

Results: Table C-75.

Table C-75. Corn Cropping Systems.

Arlington, WI - 2005.

Brand	Hybrid	Target density	Nitrogen rate	Seed strobilurins	Seed insecticide	Fungicide Timing	Yield	Moisture	Test Weight	Grower Return	Lodged Stalk	Lodged Root	Harvest plants	Plants emerged	Seeds planted
		plants/A					bu/A	%	lbs/bu	$/A	%	%	plants/A	plants/A	seeds/A
						UTC	212	20.1	56	327	4	34	37120	48176	51084
						HeadlineV12	215	19.8	56	331	6	28	36888	47879	51084
						HeadlineV18	213	19.5	56	330	7	28	37416	48442	51084
						HeadlineV12V18	215	19.6	56	333	6	30	37168	47928	51084
					UTC		216	19.9	56	333	6	29	36951	47931	51084
					Poncho1250		212	19.6	56	327	6	32	37359	48281	51084
					UTC	UTC	216	20.0	56	332	4	32	37275	48250	51084
					UTC	HeadlineV12	216	20.1	56	332	5	28	36892	47594	51084
					UTC	HeadlineV18	215	19.5	56	334	7	26	37224	48411	51084
					UTC	HeadlineV12V18	217	19.9	56	335	6	29	36377	47471	51084
					Poncho1250	UTC	209	20.1	56	321	4	37	36960	48102	51084
					Poncho1250	HeadlineV12	213	19.5	56	330	7	29	36885	48164	51084
					Poncho1250	HeadlineV18	211	19.5	57	327	7	30	37607	48473	51084
					Poncho1250	HeadlineV12V18	213	19.4	56	331	7	31	37988	48386	51084
				UTC			214	19.7	56	331	6	29	37092	48043	51084
				Dynasty			214	19.8	56	329	5	32	37211	48170	51084
				UTC		UTC	212	20.0	56	326	5	33	36969	48151	51084
				UTC		HeadlineV12	214	19.7	56	331	6	24	36732	47310	51084
				UTC		HeadlineV18	217	19.7	56	335	7	27	37454	48411	51084
				UTC		HeadlineV12V18	214	19.4	56	332	7	31	37197	48300	51084
				Dynasty		UTC	213	20.2	56	327	4	35	37277	48201	51084
				Dynasty		HeadlineV12	215	19.9	56	332	5	32	37039	48448	51084
				Dynasty		HeadlineV18	210	19.3	57	326	6	30	37377	48473	51084
				Dynasty		HeadlineV12V18	216	19.9	56	333	6	29	37139	47557	51084
				UTC	UTC		215	19.8	56	332	5	27	36828	47699	51084
				UTC	Poncho1250		213	19.6	56	330	7	30	37356	48386	51084
				Dynasty	UTC		217	19.9	56	334	6	30	37071	48164	51084
				Dynasty	Poncho1250		210	19.7	56	325	5	33	37363	48176	51084
				UTC	UTC	UTC	217	19.9	56	335	5	28	37373	48188	51084
				UTC	UTC	HeadlineV12	215	19.9	56	331	4	24	36274	46901	51084
				UTC	UTC	HeadlineV18	216	19.7	56	334	7	27	37330	47966	51084
				UTC	UTC	HeadlineV12V18	212	19.6	56	328	5	31	36262	47743	51084
				UTC	Poncho1250	UTC	206	20.1	56	317	5	39	36538	48114	51084
				UTC	Poncho1250	HeadlineV12	213	19.4	57	330	9	25	37224	47718	51084
				UTC	Poncho1250	HeadlineV18	217	19.6	57	336	7	27	37571	48857	51084
				UTC	Poncho1250	HeadlineV12V18	216	19.2	56	336	8	31	38069	48857	51084
				Dynasty	UTC	UTC	214	20.2	56	329	4	36	37171	48312	51084
				Dynasty	UTC	HeadlineV12	216	20.2	56	332	6	32	37472	48287	51084
				Dynasty	UTC	HeadlineV18	215	19.2	56	334	7	26	37125	48857	51084
				Dynasty	UTC	HeadlineV12V18	222	20.1	56	341	7	28	36485	47198	51084
				Dynasty	Poncho1250	UTC	212	20.1	55	326	4	34	37382	48089	51084
				Dynasty	Poncho1250	HeadlineV12	214	19.7	56	331	4	33	36545	48609	51084
				Dynasty	Poncho1250	HeadlineV18	205	19.4	57	318	6	34	37646	48089	51084
				Dynasty	Poncho1250	HeadlineV12V18	210	19.7	56	325	6	31	37894	47916	51084
			160				213	19.6	56	330	6	30	37109	47854	51084
			220				214	19.9	56	331	5	30	37192	48358	51084
			160			UTC	209	19.7	56	323	4	35	37013	47829	51084
			160			HeadlineV12	214	19.8	56	330	6	31	37118	47730	51084
			160			HeadlineV18	214	19.4	57	332	7	25	37039	48164	51084
			160			HeadlineV12V18	216	19.6	56	334	7	31	37283	47693	51084
			220			UTC	216	20.4	56	330	4	33	37224	48522	51084
			220			HeadlineV12	215	19.8	56	332	5	26	36650	48027	51084
			220			HeadlineV18	213	19.5	56	329	6	32	37769	48720	51084
			220			HeadlineV12V18	215	19.7	56	332	6	29	37066	48164	51084
			160		UTC		215	19.8	56	331	6	29	36854	47848	51084
			160		Poncho1250		212	19.5	56	328	6	31	37377	47860	51084
			220		UTC		217	19.9	56	335	5	28	37045	48015	51084
			220		Poncho1250		212	19.8	56	327	6	32	37343	48702	51084
			160		UTC	UTC	214	19.7	56	331	4	31	37571	48584	51084
			160		UTC	HeadlineV12	215	20.0	56	331	5	36	37274	47545	51084
			160		UTC	HeadlineV18	214	19.5	56	332	8	23	36696	47817	51084
			160		UTC	HeadlineV12V18	216	20.0	56	333	7	28	35640	47446	51084
			160		Poncho1250	UTC	204	19.8	56	315	5	40	36375	47075	51084
			160		Poncho1250	HeadlineV12	213	19.6	56	330	7	25	36941	47916	51084
			160		Poncho1250	HeadlineV18	214	19.3	57	332	7	27	37382	48510	51084
			160		Poncho1250	HeadlineV12V18	215	19.2	56	335	8	34	38808	47941	51084
			220		UTC	UTC	217	20.4	56	333	5	32	36960	47916	51084
			220		UTC	HeadlineV12	216	20.1	56	333	4	20	36485	47644	51084
			220		UTC	HeadlineV18	217	19.4	56	336	6	30	37719	49005	51084
			220		UTC	HeadlineV12V18	218	19.7	56	337	5	31	36977	47495	51084

continued

Table C-75. Corn Cropping Systems.

(continued) **Arlington, WI - 2005.**

Brand	Hybrid	Target density	Nitrogen rate	Seed strobilurins	Seed insecticide	Fungicide Timing	Yield	Moisture	Test Weight	Grower Return	Lodged Stalk	Lodged Root	Harvest plants	Plants emerged	Seeds planted
		plants/A					bu/A	%	lbs/bu	$/A	%	%	plants/A	plants/A	seeds/A
			220		Poncho1250	UTC	214	20.4	55	327	4	34	37472	49129	51084
			220		Poncho1250	HeadlineV12	214	19.5	56	331	6	32	36828	48411	51084
			220		Poncho1250	HeadlineV18	208	19.7	57	322	7	34	37818	48436	51084
			220		Poncho1250	HeadlineV12V18	211	19.6	56	327	7	27	37167	48832	51084
			160	UTC			215	19.6	56	333	7	28	36855	47786	51084
			160	Dynasty			211	19.7	56	327	5	33	37358	47922	51084
			220	UTC			213	19.8	56	329	5	30	37313	48300	51084
			220	Dynasty			216	19.9	56	332	5	30	37066	48417	51084
			160	UTC		UTC	211	19.8	56	325	4	31	36538	48040	51084
			160	UTC		HeadlineV12	213	19.6	56	330	7	26	36590	46827	51084
			160	UTC		HeadlineV18	217	19.3	57	337	8	23	36907	47966	51084
			160	UTC		HeadlineV12V18	219	19.6	56	339	9	31	37468	48312	51084
			160	Dynasty		UTC	208	19.7	57	321	4	39	37488	47619	51084
			160	Dynasty		HeadlineV12	215	20.0	56	331	5	36	37646	48634	51084
			160	Dynasty		HeadlineV18	211	19.5	56	327	7	26	37171	48362	51084
			160	Dynasty		HeadlineV12V18	212	19.6	56	328	6	31	37111	47075	51084
			220	UTC		UTC	213	20.1	56	327	5	36	37373	48263	51084
			220	UTC		HeadlineV12	214	19.7	56	331	5	23	36885	47792	51084
			220	UTC		HeadlineV18	216	20.0	56	333	7	30	37967	48857	51084
			220	UTC		HeadlineV12V18	209	19.2	56	325	5	31	36977	48287	51084
			220	Dynasty		UTC	219	20.7	55	333	4	30	37066	48782	51084
			220	Dynasty		HeadlineV12	216	19.9	56	332	6	29	36432	48263	51084
			220	Dynasty		HeadlineV18	209	19.1	57	325	6	33	37571	48584	51084
			220	Dynasty		HeadlineV12V18	220	20.1	56	338	7	28	37167	48040	51084
			160	UTC	UTC		216	19.8	56	333	6	26	36814	47483	51084
			160	UTC	Poncho1250		214	19.3	56	333	8	30	36896	48089	51084
			160	Dynasty	UTC		214	19.8	56	330	6	33	36892	48213	51084
			160	Dynasty	Poncho1250		209	19.6	56	323	5	33	37875	47631	51084
			220	UTC	UTC		214	19.7	56	331	4	29	36841	47916	51084
			220	UTC	Poncho1250		212	19.8	56	327	7	31	37786	48683	51084
			220	Dynasty	UTC		220	20.1	56	338	6	28	37250	48114	51084
			220	Dynasty	Poncho1250		212	19.8	56	326	5	33	36869	48720	51084
		30000					218	20.2	56	335	5	18	30180	39387	41184
		45000					209	19.2	56	325	6	43	44420	56826	60984
		30000				UTC	219	20.7	56	333	3	24	29943	39501	41184
		30000				HeadlineV12	221	20.2	56	340	6	15	30300	39551	41184
		30000				HeadlineV18	215	19.9	56	331	5	17	30428	39513	41184
		30000				HeadlineV12V18	219	20.2	56	336	6	16	30041	38981	41184
		45000				UTC	206	19.4	56	320	5	44	44537	56851	60984
		45000				HeadlineV12	208	19.4	56	323	5	43	44182	56207	60984
		45000				HeadlineV18	211	19.0	57	330	8	40	44403	57371	60984
		45000				HeadlineV12V18	212	19.1	56	329	7	44	44550	56876	60984
		30000			UTC		218	20.3	56	335	5	18	30207	39606	41184
		30000			Poncho1250		218	20.2	56	335	6	18	30151	39167	41184
		45000			UTC		213	19.4	56	331	7	41	44393	56257	60984
		45000			Poncho1250		205	19.1	56	319	6	45	44446	57395	60984
		30000			UTC	UTC	220	20.7	56	336	3	24	29898	39848	41184
		30000			UTC	HeadlineV12	218	20.4	56	335	4	16	30294	39575	41184
		30000			UTC	HeadlineV18	216	20.0	56	333	6	15	30591	39674	41184
		30000			UTC	HeadlineV12V18	219	20.3	56	336	5	18	30047	39328	41184
		30000			Poncho1250	UTC	217	20.7	56	331	4	25	29990	39155	41184
		30000			Poncho1250	HeadlineV12	224	20.0	56	345	8	15	30307	39526	41184
		30000			Poncho1250	HeadlineV18	214	19.9	57	329	5	18	30254	39353	41184
		30000			Poncho1250	HeadlineV12V18	219	20.1	56	336	7	14	30035	38635	41184
		45000			UTC	UTC	211	19.3	57	328	5	40	45144	56653	60984
		45000			UTC	HeadlineV12	213	19.8	56	329	6	41	43930	55613	60984
		45000			UTC	HeadlineV18	214	19.0	56	335	9	38	44299	57148	60984
		45000			UTC	HeadlineV12V18	215	19.5	56	333	7	44	44169	55613	60984
		45000			Poncho1250	UTC	201	19.5	56	312	5	48	43930	57049	60984
		45000			Poncho1250	HeadlineV12	203	19.1	56	316	4	45	44474	56801	60984
		45000			Poncho1250	HeadlineV18	208	19.1	57	325	8	42	44501	57593	60984
		45000			Poncho1250	HeadlineV12V18	208	18.8	56	326	7	45	44880	58138	60984
		30000		UTC			219	20.2	56	336	6	16	29994	39117	41184
		30000		Dynasty			218	20.3	56	334	4	20	30373	39656	41184
		45000		UTC			209	19.1	56	326	6	43	44680	56968	60984
		45000		Dynasty			209	19.4	56	325	7	43	44164	56684	60984

continued

Table C-75. Corn Cropping Systems.

(continued) **Arlington, WI - 2005.**

Brand	Hybrid	Target density	Nitrogen rate	Seed strobilurins	Seed insecticide	Fungicide Timing	Yield	Moisture	Test Weight	Grower Return	Lodged Stalk	Lodged Root	Harvest plants	Plants emerged	Seeds planted
		plants/A					bu/A	%	lbs/bu	$/A	%	%	plants/A	plants/A	seeds/A
		30000		UTC		UTC	217	20.8	56	331	4	22	29849	39328	41184
		30000		UTC		HeadlineV12	222	20.1	56	342	7	9	29885	38412	41184
		30000		UTC		HeadlineV18	219	20.1	56	337	6	18	30393	39872	41184
		30000		UTC		HeadlineV12V18	218	19.9	56	335	8	16	29832	38858	41184
		30000		Dynasty		UTC	220	20.7	56	336	2	27	30043	39674	41184
		30000		Dynasty		HeadlineV12	220	20.3	55	337	6	22	30690	40689	41184
		30000		Dynasty		HeadlineV18	210	19.7	56	325	5	15	30466	39155	41184
		30000		Dynasty		HeadlineV12V18	220	20.4	56	337	4	17	30266	39105	41184
		45000		UTC		UTC	206	19.2	57	321	5	46	44563	56975	60984
		45000		UTC		HeadlineV12	205	19.3	56	319	6	41	44069	56207	60984
		45000		UTC		HeadlineV18	214	19.2	56	333	9	37	44986	56950	60984
		45000		UTC		HeadlineV12V18	211	18.9	56	329	5	47	45087	57742	60984
		45000		Dynasty		UTC	206	19.7	56	318	5	43	44510	56727	60984
		45000		Dynasty		HeadlineV12	210	19.5	56	326	5	44	44295	56207	60984
		45000		Dynasty		HeadlineV18	209	18.9	57	327	8	43	43857	57791	60984
		45000		Dynasty		HeadlineV12V18	212	19.4	56	330	9	41	44013	56009	60984
		30000		UTC	UTC		218	20.2	56	334	5	15	29799	39241	41184
		30000		UTC	Poncho1250		220	20.2	56	338	8	17	30202	38994	41184
		30000		Dynasty	UTC		219	20.4	56	335	4	21	30616	39971	41184
		30000		Dynasty	Poncho1250		216	20.2	56	332	4	20	30096	39340	41184
		45000		UTC	UTC		212	19.3	56	330	5	41	44861	56158	60984
		45000		UTC	Poncho1250		206	18.9	57	322	7	44	44510	57779	60984
		45000		Dynasty	UTC		215	19.5	56	333	8	40	43956	56356	60984
		45000		Dynasty	Poncho1250		204	19.3	56	317	5	46	44379	57012	60984
		30000	160				218	20.1	56	334	6	18	30439	38888	41184
		30000	220				219	20.3	56	336	5	18	29930	39885	41184
		45000	160				209	19.1	56	325	7	43	44130	56820	60984
		45000	220				210	19.4	56	326	6	42	44695	56832	60984
		30000	160			UTC	212	20.3	56	325	4	24	30254	39155	41184
		30000	160			HeadlineV12	221	20.0	56	341	6	18	30542	38858	41184
		30000	160			HeadlineV18	216	20.1	56	332	5	16	30624	38783	41184
		30000	160			HeadlineV12V18	221	20.2	56	339	9	14	30322	38759	41184
		30000	220			UTC	225	21.2	56	341	3	24	29651	39848	41184
		30000	220			HeadlineV12	221	20.4	56	338	6	12	30043	40244	41184
		30000	220			HeadlineV18	214	19.7	57	331	6	18	30245	40244	41184
		30000	220			HeadlineV12V18	216	20.1	56	333	4	18	29779	39204	41184
		45000	160			UTC	206	19.2	57	321	5	46	43771	56504	60984
		45000	160			HeadlineV12	207	19.6	56	320	6	45	44635	56603	60984
		45000	160			HeadlineV18	212	18.7	57	332	10	34	43454	57544	60984
		45000	160			HeadlineV12V18	210	19.0	56	328	6	49	44778	56628	60984
		45000	220			UTC	206	19.6	56	319	6	42	45302	57197	60984
		45000	220			HeadlineV12	209	19.3	57	325	4	41	43730	55811	60984
		45000	220			HeadlineV18	211	19.4	56	328	7	46	45293	57197	60984
		45000	220			HeadlineV12V18	213	19.2	56	331	8	40	44352	57123	60984
		30000	160		UTC		217	20.3	56	333	5	20	30418	39068	41184
		30000	160		Poncho1250		218	20.0	56	336	7	16	30464	38709	41184
		30000	220		UTC		220	20.3	56	337	4	16	29997	40145	41184
		30000	220		Poncho1250		218	20.3	56	334	5	21	29858	39625	41184
		45000	160		UTC		213	19.3	56	330	7	40	44211	56628	60984
		45000	160		Poncho1250		205	18.9	56	320	6	47	44052	57012	60984
		45000	220		UTC		214	19.5	56	332	6	42	44563	55886	60984
		45000	220		Poncho1250		205	19.3	56	319	6	43	44827	57779	60984
		30000	160	UTC			220	20.2	56	337	7	15	30300	38523	41184
		30000	160	Dynasty			215	20.1	56	331	4	21	30588	39254	41184
		30000	220	UTC			218	20.2	56	335	5	17	29687	39711	41184
		30000	220	Dynasty			220	20.5	56	336	4	19	30173	40058	41184
		45000	160	UTC			210	18.9	56	328	7	42	44381	57049	60984
		45000	160	Dynasty			207	19.3	57	322	6	45	43903	56591	60984
		45000	220	UTC			208	19.3	56	323	6	43	44940	56888	60984
		45000	220	Dynasty			212	19.4	56	328	7	41	44434	56777	60984
Pioneer	34M94						209	19.7	56	323	8	27	36885	47879	51084
Pioneer	34M95						218	19.8	57	337	4	34	37415	48334	51084
Pioneer	34M94					UTC	207	20.0	56	319	6	30	37326	48052	51084
Pioneer	34M94					HeadlineV12	211	20.0	56	324	8	26	36021	47235	51084
Pioneer	34M94					HeadlineV18	211	19.5	56	327	8	25	36878	49017	51084
Pioneer	34M94					HeadlineV12V18	208	19.5	56	323	10	25	37224	47211	51084
Pioneer	34M95					UTC	218	20.1	56	334	3	38	36907	48300	51084
Pioneer	34M95					HeadlineV12	218	19.7	57	338	4	30	37620	48522	51084
Pioneer	34M95					HeadlineV18	215	19.5	57	334	6	32	37990	47867	51084
Pioneer	34M95					HeadlineV12V18	222	19.8	56	343	3	35	37111	48646	51084

continued

Table C-75. Corn Cropping Systems.

(continued) **Arlington, WI - 2005.**

Brand	Hybrid	Target density	Nitrogen rate	Seed strobilurins	Seed insecticide	Fungicide Timing	Yield	Moisture	Test Weight	Grower Return	Lodged Stalk	Lodged Root	Harvest plants	Plants emerged	Seeds planted
		plants/A					bu/A	%	lbs/bu	$/A	%	%	plants/A	plants/A	seeds/A
Pioneer	34M94				UTC		212	20.0	56	327	8	26	36866	47600	51084
Pioneer	34M94				Poncho1250		206	19.5	56	320	8	28	36904	48157	51084
Pioneer	34M95				UTC		220	19.7	56	339	3	32	37039	48263	51084
Pioneer	34M95				Poncho1250		217	19.8	57	335	4	35	37792	48405	51084
Pioneer	34M94				UTC	UTC	212	20.1	56	326	6	27	37521	48312	51084
Pioneer	34M94				UTC	HeadlineV12	211	20.3	56	323	6	28	36538	46728	51084
Pioneer	34M94				UTC	HeadlineV18	215	19.7	56	332	9	24	37175	48906	51084
Pioneer	34M94				UTC	HeadlineV12V18	211	19.8	56	326	9	24	36168	46456	51084
Pioneer	34M94				Poncho1250	UTC	202	19.9	55	312	6	34	37118	47792	51084
Pioneer	34M94				Poncho1250	HeadlineV12	211	19.6	55	326	10	25	35376	47743	51084
Pioneer	34M94				Poncho1250	HeadlineV18	207	19.3	56	322	7	26	36581	49129	51084
Pioneer	34M94				Poncho1250	HeadlineV12V18	206	19.2	56	320	10	26	38355	47966	51084
Pioneer	34M95				UTC	UTC	219	20.0	57	337	2	37	37013	48188	51084
Pioneer	34M95				UTC	HeadlineV12	221	19.8	56	341	4	29	37224	48461	51084
Pioneer	34M95				UTC	HeadlineV18	216	19.2	57	336	6	28	37277	47916	51084
Pioneer	34M95				UTC	HeadlineV12V18	223	19.9	56	343	2	35	36602	48485	51084
Pioneer	34M95				Poncho1250	UTC	216	20.3	56	331	3	39	36802	48411	51084
Pioneer	34M95				Poncho1250	HeadlineV12	216	19.5	57	335	4	31	38016	48584	51084
Pioneer	34M95				Poncho1250	HeadlineV18	215	19.7	57	332	7	35	38702	47817	51084
Pioneer	34M95				Poncho1250	HeadlineV12V18	221	19.6	57	342	4	36	37620	48807	51084
Pioneer	34M94			UTC			211	19.6	56	326	9	23	36593	47910	51084
Pioneer	34M94			Dynasty			208	19.9	56	320	7	31	37171	47848	51084
Pioneer	34M95			UTC			217	19.7	57	336	4	35	37575	48176	51084
Pioneer	34M95			Dynasty			219	19.8	56	339	4	32	37251	48491	51084
Pioneer	34M94			UTC		UTC	206	19.7	56	318	8	26	37013	47768	51084
Pioneer	34M94			UTC		HeadlineV12	212	19.6	56	329	9	17	35823	46802	51084
Pioneer	34M94			UTC		HeadlineV18	215	19.8	56	332	8	24	36977	48931	51084
Pioneer	34M94			UTC		HeadlineV12V18	210	19.2	56	326	10	22	36432	48139	51084
Pioneer	34M94			Dynasty		UTC	208	20.3	56	320	4	34	37620	48337	51084
Pioneer	34M94			Dynasty		HeadlineV12	209	20.3	55	320	7	35	36206	47669	51084
Pioneer	34M94			Dynasty		HeadlineV18	207	19.2	56	322	7	26	36779	49104	51084
Pioneer	34M94			Dynasty		HeadlineV12V18	207	19.7	56	320	9	28	38073	46283	51084
Pioneer	34M95			UTC		UTC	217	20.2	57	334	1	40	36927	48535	51084
Pioneer	34M95			UTC		HeadlineV12	215	19.7	57	333	4	30	37472	47817	51084
Pioneer	34M95			UTC		HeadlineV18	218	19.5	57	338	6	30	37963	47891	51084
Pioneer	34M95			UTC		HeadlineV12V18	219	19.5	56	339	3	41	38016	48461	51084
Pioneer	34M95			Dynasty		UTC	218	20.1	56	335	4	36	36885	48065	51084
Pioneer	34M95			Dynasty		HeadlineV12	222	19.6	56	343	4	30	37769	49228	51084
Pioneer	34M95			Dynasty		HeadlineV18	213	19.4	57	330	6	34	38016	47842	51084
Pioneer	34M95			Dynasty		HeadlineV12V18	225	20.0	57	347	3	30	36206	48832	51084
Pioneer	34M94			UTC	UTC		213	19.9	56	329	8	21	36353	47582	51084
Pioneer	34M94			UTC	Poncho1250		208	19.3	56	324	10	24	36842	48238	51084
Pioneer	34M94			Dynasty	UTC		211	20.0	56	325	8	30	37348	47619	51084
Pioneer	34M94			Dynasty	Poncho1250		204	19.7	56	316	5	32	36969	48077	51084
Pioneer	34M95			UTC	UTC		217	19.6	57	335	3	34	37303	47817	51084
Pioneer	34M95			UTC	Poncho1250		218	19.8	57	336	4	37	37837	48535	51084
Pioneer	34M95			Dynasty	UTC		222	19.8	56	343	4	31	36775	48708	51084
Pioneer	34M95			Dynasty	Poncho1250		216	19.7	57	334	4	34	37743	48275	51084
Pioneer	34M94		160				210	19.7	56	325	8	27	36620	47613	51084
Pioneer	34M94		220				209	19.8	56	322	8	27	37145	48145	51084
Pioneer	34M95		160				216	19.6	57	335	4	34	37606	48095	51084
Pioneer	34M95		220				220	19.9	57	339	3	33	37237	48572	51084
Pioneer	34M94		160			UTC	208	19.7	56	321	6	30	37013	47594	51084
Pioneer	34M94		160			HeadlineV12	211	20.0	56	325	8	27	35810	47000	51084
Pioneer	34M94		160			HeadlineV18	213	19.5	56	331	7	24	36383	48461	51084
Pioneer	34M94		160			HeadlineV12V18	208	19.5	56	322	11	26	37281	47396	51084
Pioneer	34M94		220			UTC	207	20.3	56	317	6	31	37620	48510	51084
Pioneer	34M94		220			HeadlineV12	210	19.9	56	324	7	26	36249	47471	51084
Pioneer	34M94		220			HeadlineV18	209	19.5	56	324	8	26	37373	49574	51084
Pioneer	34M94		220			HeadlineV12V18	209	19.5	56	324	9	24	37171	47025	51084
Pioneer	34M95		160			UTC	210	19.8	57	325	2	41	37013	48065	51084
Pioneer	34M95		160			HeadlineV12	217	19.6	56	336	4	34	38264	48461	51084
Pioneer	34M95		160			HeadlineV18	214	19.3	57	333	8	26	37790	47867	51084
Pioneer	34M95		160			HeadlineV12V18	224	19.7	56	345	4	36	37285	47990	51084
Pioneer	34M95		220			UTC	225	20.5	56	343	3	36	36802	48535	51084
Pioneer	34M95		220			HeadlineV12	220	19.7	57	340	4	26	36977	48584	51084
Pioneer	34M95		220			HeadlineV18	216	19.6	57	334	5	37	38165	47867	51084
Pioneer	34M95		220			HeadlineV12V18	220	19.8	57	340	3	34	36960	49302	51084

continued

Table C-75. Corn Cropping Systems.

(continued) **Arlington, WI - 2005.**

Brand	Hybrid	Target density	Nitrogen rate	Seed strobilurins	Seed insecticide	Fungicide Timing	Yield	Moisture	Test Weight	Grower Return	Lodged Stalk	Lodged Root	Harvest plants	Plants emerged	Seeds planted
		plants/A					bu/A	%	lbs/bu	$/A	%	%	plants/A	plants/A	seeds/A
Pioneer	34M94		160		UTC		212	19.9	56	327	8	26	36790	47421	51084
Pioneer	34M94		160		Poncho1250		208	19.4	56	322	8	28	36432	47805	51084
Pioneer	34M94		220		UTC		212	20.0	56	327	7	26	36943	47780	51084
Pioneer	34M94		220		Poncho1250		205	19.5	56	318	8	28	37361	48510	51084
Pioneer	34M95		160		UTC		217	19.7	56	336	4	34	36924	48275	51084
Pioneer	34M95		160		Poncho1250		215	19.5	57	334	5	35	38289	47916	51084
Pioneer	34M95		220		UTC		222	19.8	57	343	3	31	37147	48250	51084
Pioneer	34M95		220		Poncho1250		219	20.1	57	336	4	36	37326	48894	51084
Pioneer	34M94		160	UTC			213	19.5	56	330	10	20	36295	47508	51084
Pioneer	34M94		160	Dynasty			207	19.9	56	319	6	33	36934	47718	51084
Pioneer	34M94		220	UTC			209	19.7	56	322	8	25	36881	48312	51084
Pioneer	34M94		220	Dynasty			209	19.8	56	322	7	29	37409	47978	51084
Pioneer	34M95		160	UTC			217	19.7	57	335	4	35	37415	48065	51084
Pioneer	34M95		160	Dynasty			216	19.5	57	334	5	33	37798	48126	51084
Pioneer	34M95		220	UTC			218	19.8	57	336	3	35	37719	48287	51084
Pioneer	34M95		220	Dynasty			223	20.1	56	343	4	31	36722	48857	51084
Pioneer	34M94	30000					216	20.4	55	330	8	15	30018	39223	41184
Pioneer	34M94	45000					203	19.0	56	317	8	38	44106	56535	60984
Pioneer	34M95	30000					221	20.0	57	340	3	21	30343	39551	41184
Pioneer	34M95	45000					215	19.5	57	334	5	47	44728	57117	60984
Pioneer	34M94	30000				UTC	216	20.7	55	329	6	23	29997	39452	41184
Pioneer	34M94	30000				HeadlineV12	218	20.6	55	333	8	13	29990	38882	41184
Pioneer	34M94	30000				HeadlineV18	214	20.1	56	329	7	13	30344	39922	41184
Pioneer	34M94	30000				HeadlineV12V18	215	20.4	56	329	9	12	29700	38635	41184
Pioneer	34M94	45000				UTC	198	19.3	56	308	6	37	45144	56653	60984
Pioneer	34M94	45000				HeadlineV12	204	19.3	56	316	7	44	43560	55589	60984
Pioneer	34M94	45000				HeadlineV18	208	18.9	56	325	8	37	43412	58113	60984
Pioneer	34M94	45000				HeadlineV12V18	202	18.5	56	317	10	37	44246	55787	60984
Pioneer	34M95	30000				UTC	221	20.7	56	337	1	25	29885	39551	41184
Pioneer	34M95	30000				HeadlineV12	225	19.8	57	347	4	18	30591	40219	41184
Pioneer	34M95	30000				HeadlineV18	216	19.8	57	333	4	20	30518	39105	41184
Pioneer	34M95	30000				HeadlineV12V18	223	19.9	57	343	3	20	30360	39328	41184
Pioneer	34M95	45000				UTC	214	19.6	56	331	4	51	43930	57049	60984
Pioneer	34M95	45000				HeadlineV12	212	19.5	57	329	4	42	44649	56826	60984
Pioneer	34M95	45000				HeadlineV18	215	19.2	57	334	8	43	45461	56628	60984
Pioneer	34M95	45000				HeadlineV12V18	221	19.7	56	342	3	53	44900	57965	60984
Pioneer	34M94	30000			UTC		215	20.7	55	328	7	15	30195	39984	41184
Pioneer	34M94	30000			Poncho1250		216	20.2	55	332	8	16	29823	38462	41184
Pioneer	34M94	45000			UTC		209	19.2	56	325	8	37	43982	55217	60984
Pioneer	34M94	45000			Poncho1250		197	18.8	56	308	8	40	44239	57853	60984
Pioneer	34M95	30000			UTC		222	19.9	57	341	2	21	30220	39229	41184
Pioneer	34M95	30000			Poncho1250		221	20.2	57	339	4	21	30478	39872	41184
Pioneer	34M95	45000			UTC		218	19.5	56	337	5	45	44833	57296	60984
Pioneer	34M95	45000			Poncho1250		213	19.4	57	331	5	49	44633	56937	60984
Pioneer	34M94	30000		UTC			216	20.4	56	331	10	14	29764	39043	41184
Pioneer	34M94	30000		Dynasty			215	20.5	55	329	5	17	30281	39402	41184
Pioneer	34M94	45000		UTC			206	18.8	56	322	8	32	44154	56777	60984
Pioneer	34M94	45000		Dynasty			200	19.2	56	312	8	44	44062	56294	60984
Pioneer	34M95	30000		UTC			222	20.1	57	342	3	19	30224	39192	41184
Pioneer	34M95	30000		Dynasty			220	20.0	57	339	3	23	30466	39909	41184
Pioneer	34M95	45000		UTC			212	19.4	57	330	4	52	45170	57160	60984
Pioneer	34M95	45000		Dynasty			219	19.5	56	338	5	42	44270	57074	60984
Pioneer	34M94	30000	160				214	20.4	56	329	8	15	30122	38486	41184
Pioneer	34M94	30000	220				217	20.5	55	331	7	16	29911	39959	41184
Pioneer	34M94	45000	160				206	19.0	56	321	7	39	43815	56739	60984
Pioneer	34M94	45000	220				201	19.0	56	313	8	38	44378	56331	60984
Pioneer	34M95	30000	160				221	19.9	56	340	3	21	30779	39291	41184
Pioneer	34M95	30000	220				221	20.1	57	340	3	20	29948	39810	41184
Pioneer	34M95	45000	160				212	19.3	57	330	6	47	44434	56900	60984
Pioneer	34M95	45000	220				219	19.7	56	339	4	47	45012	57333	60984
Mean							214	19.7	56	330	6	30	37151	48106	51084

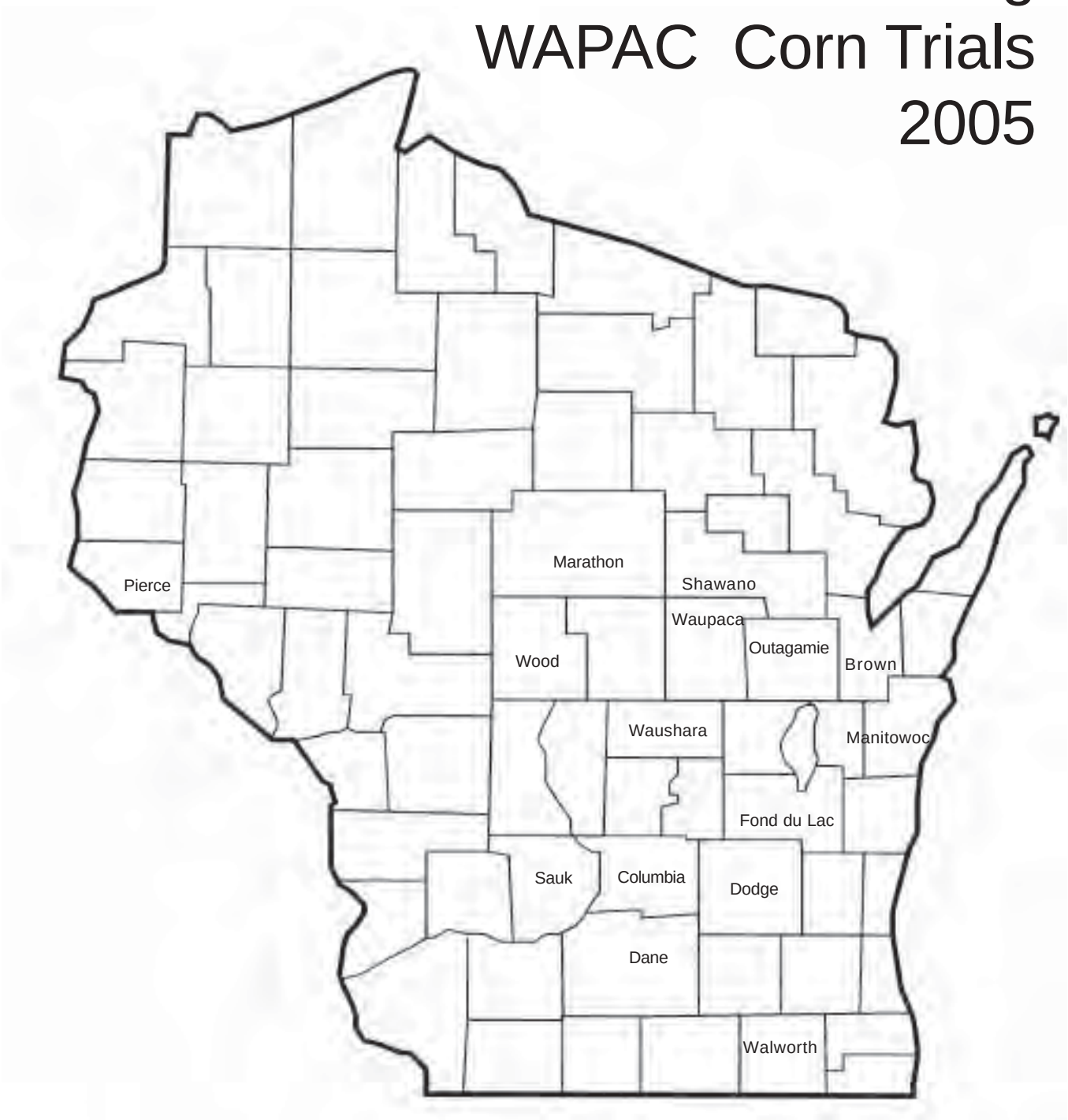
continued

Table C-75. Corn Cropping Systems.

(continued) **Arlington, WI - 2005.**

	Yield	Moisture	Test Weight	Grower Return	Lodged Stalk	Lodged Root	Harvest plants	Plants emerged	Seeds planted
	bu/A	%	lbs/bu	$/A	%	%	plants/A	plants/A	seeds/A
Probability(%)									
Hybrid (H)	0.0	82.2	0.0	0.0	0.0	0.1	3.5	20.2	-
Plant Density (D)	0.0	0.0	3.7	0.1	12.6	0.0	0.0	0.0	-
H x D	8.2	0.7	2.1	22.3	44.8	30.3	54.9	72.1	-
Nitrogen Rate (N)	53.0	19.4	48.7	75.1	38.2	62.3	95.8	15.7	-
H x N	19.9	54.9	76.0	22.6	75.5	89.0	54.4	93.8	-
D x N	90.2	91.2	44.2	90.0	66.5	69.9	3.1	16.7	-
H x D x N	9.2	57.5	6.5	10.0	11.9	71.9	52.6	20.8	-
Seed Strobilurins (S)	80.0	36.5	53.4	60.9	23.3	20.9	89.3	72.1	-
H x S	20.4	48.7	35.4	13.9	6.4	4.2	29.3	59.6	-
D x S	67.9	62.8	96.6	74.6	11.3	30.9	8.7	24.8	-
H x D x S	10.5	90.5	36.0	8.9	21.6	1.5	59.4	97.9	-
N x S	11.0	77.7	23.4	11.1	26.5	46.8	85.4	97.9	-
H x N x S	95.1	19.8	38.8	81.3	22.6	51.3	30.1	46.0	-
D x N x S	96.6	23.3	27.4	70.3	72.8	72.2	82.7	60.8	-
Seed Insecticide (I)	3.8	16.6	72.0	5.9	47.4	30.8	99.6	32.6	-
H x I	44.2	8.8	24.3	67.6	61.4	61.0	78.4	55.9	-
D x I	4.3	66.9	72.8	4.0	29.5	60.8	90.8	2.7	-
H x D x I	23.1	53.0	36.5	15.0	99.3	70.2	27.0	0.0	-
N x I	59.9	42.9	41.1	47.2	84.9	53.2	81.7	34.3	-
H x N x I	87.5	43.4	44.2	99.7	34.7	29.8	83.1	64.5	-
D x N x I	76.8	88.2	95.8	73.8	65.0	17.3	46.2	24.1	-
S x I	25.3	98.1	39.4	23.4	4.4	92.9	90.3	34.3	-
H x S x I	50.0	39.1	86.6	60.9	29.8	63.2	26.2	50.3	-
D x S x I	89.8	54.2	7.8	98.9	85.8	95.5	9.8	68.2	-
N x S x I	72.7	36.0	53.4	89.4	97.1	64.8	11.5	47.0	-
Leaf Fungicide (F)	75.5	6.4	19.0	49.8	7.0	18.1	90.4	66.1	-
H x F	43.2	60.8	55.9	48.0	14.6	57.5	6.0	4.0	-
D x F	26.8	65.4	91.4	24.7	27.0	54.7	62.2	57.6	-
H x D x F	79.8	40.3	87.6	79.1	45.4	44.0	17.6	74.4	-
N x F	49.3	48.1	15.7	64.0	82.3	34.0	17.1	98.3	-
H x N x F	36.6	99.2	27.0	33.9	55.3	84.5	55.2	53.9	-
D x N x F	35.0	30.6	12.3	35.0	4.5	33.3	17.1	56.2	-
S x F	35.1	27.7	21.2	54.9	100.0	63.5	36.6	31.7	-
H x S x F	71.1	47.8	90.4	61.3	32.8	52.7	95.0	41.2	-
D x S x F	77.2	90.1	9.0	66.6	18.9	56.0	77.1	21.1	-
N x S x F	26.2	16.0	0.8	44.9	47.7	82.8	45.9	56.7	-
I x F	90.8	47.6	12.4	74.9	59.5	78.2	65.6	70.8	-
H x I x F	74.6	94.1	36.9	76.4	50.0	73.7	25.1	78.2	-
D x I x F	71.2	81.2	54.2	74.1	61.9	93.2	48.9	60.8	-
N x I x F	60.0	82.2	75.0	45.2	68.4	12.8	64.3	26.5	-
S x I x F	13.5	94.0	62.8	8.3	29.3	19.6	88.9	88.0	-
LSD(0.10)									
Hybrid (H)	3	NS	0.2	4.9	1.2	3.7	400	NS	-
Plant Density (D)	3	0.3	0.2	4.9	NS	3.7	400	587	-
H x D	5	0.4	0.3	NS	NS	NS	NS	NS	-
Nitrogen Rate (N)	NS	NS	NS	NS	NS	NS	NS	NS	-
H x N	NS	NS	NS	NS	NS	NS	NS	NS	-
D x N	NS	NS	NS	NS	NS	NS	566	NS	-
H x D x N	7	NS	0.5	NS	NS	NS	NS	NS	-
Seed Strobilurins (S)	NS	NS	NS	NS	NS	NS	NS	NS	-
H x S	NS	NS	NS	NS	1.7	5.2	NS	NS	-
D x S	NS	NS	NS	NS	NS	NS	566	NS	-
H x D x S	NS	NS	NS	9.8	NS	7.3	NS	NS	-
N x S	NS	NS	NS	NS	NS	NS	NS	NS	-
H x N x S	NS	NS	NS	NS	NS	NS	NS	NS	-
D x N x S	NS	NS	NS	NS	NS	NS	NS	NS	-
Seed Insecticide (I)	3	NS	NS	4.9	NS	NS	NS	NS	-
H x I	NS	0.4	NS	NS	NS	NS	NS	NS	-
D x I	5	NS	NS	6.9	NS	NS	NS	829	-
H x D x I	NS	NS	NS	NS	NS	NS	NS	1173	-
N x I	NS	NS	NS	NS	NS	NS	NS	NS	-
H x N x I	NS	NS	NS	NS	NS	NS	NS	NS	-
D x N x I	NS	NS	NS	NS	NS	NS	NS	NS	-
S x I	NS	NS	NS	NS	1.7	NS	NS	NS	-
H x S x I	NS	NS	NS	NS	NS	NS	NS	NS	-
D x S x I	NS	NS	0.5	NS	NS	NS	800	NS	-
N x S x I	NS	NS	NS	NS	NS	NS	NS	NS	-
Leaf Fungicide (F)	NS	0.3	NS	NS	1.7	NS	566	NS	-
H x F	NS	NS	NS	NS	NS	NS	NS	1173	-
D x F	NS	NS	NS	NS	NS	NS	NS	NS	-
H x D x F	NS	NS	NS	NS	NS	NS	NS	NS	-
N x F	NS	NS	NS	NS	NS	NS	NS	NS	-
H x N x F	NS	NS	NS	NS	NS	NS	NS	NS	-
D x N x F	NS	NS	NS	NS	3.3	NS	NS	NS	-
S x F	NS	NS	NS	NS	NS	NS	NS	NS	-
H x S x F	NS	NS	NS	NS	NS	NS	NS	NS	-
D x S x F	NS	NS	0.7	NS	NS	NS	NS	NS	-
N x S x F	NS	NS	0.7	NS	NS	NS	NS	NS	-
I x F	NS	NS	NS	NS	NS	NS	NS	NS	-
H x I x F	NS	NS	NS	NS	NS	NS	NS	NS	-
D x I x F	NS	NS	NS	NS	NS	NS	NS	NS	-
N x I x F	NS	NS	NS	NS	NS	NS	NS	NS	-
S x I x F	NS	NS	NS	13.8	NS	NS	NS	NS	-
CV(%)	8	7	2	7	97	59	5	6	-

Wisconsin On-Farm Testing
WAPAC Corn Trials
2005



University of Wisconsin - Extension
Wisconsin Association of Professional Ag Consultants
Independent, Replicated, On-Farm Research

Introduction

Before the time of universities, industry research programs or crop consultants, farmers implemented changes in their production practices through a myriad of methods with some success. The process of incremental change and gradual improvements has evolved into an impressive system of research, development and production never imagined just decades ago. This production system, while impressive and productive can attribute much of its success on the recurring question asked by the farmer: "What am I going to do differently next season?"

The answer to the question hopefully results in an improvement of efficiency and profitability that is real and a result of the changes implemented. Our production system is dependent on selecting the inputs and operations that achieve a desired outcome. The process of testing a hypothesis and using the information gained in a cooperative, systematic manner has been highly successful in providing viable options for producing food, feed and fiber on the farm. However, that success has created what can be a bewildering mix of options that leave the farmer and farm advisor struggling with the answer to the question above. As a result, the Wisconsin Association of Professional Agricultural Consultants (WAPAC) and UW-Extension have worked together with farm clients across the state to develop a network for the purpose of conducting applied research trials.

This network consists of crop consultants, local and statewide extension faculty and most importantly farmers cooperating in a coordinated effort across Wisconsin. The objective of this program is to evaluate new technologies and management practices. Trials are conducted across a wide range of environments and management schemes in replicated plots using production scale equipment. This publication summarizes the results of on-farm hybrid trials conducted during 2005.

Identifying the source of variability in yield is a primary objective in any hybrid trial. The use of statistical methods including replication and means comparisons improves the reliability and confidence of results and outcome from the implemented practice. On-farm testing with field scale equipment has traditionally been used for demonstration in non-replicated trials. An overriding strength of on-farm evaluations is the credibility of the results in the eyes of the end user, the farmer by showing how the practice responds within his production system. Often the power of these trials can be enhanced with simple modifications such as replication within locations and across multiple sites with coordinated effort. That coordination is what the membership of WAPAC and UW Extension provide in the execution of the trials. The advent of effective tools for collecting data related to crop production such as weigh wagons, on farm scales and yield monitors have removed many of the traditional barriers of on-farm trials. The increased incidence of having a trained specialist such as a crop consultant on the farm enables the coordination of multi-site evaluations that address production concerns in a real time manner. The evolution of all components of the production process will likely increase the need for more on-farm data collection and analysis as agriculture moves into the future. Collaborative efforts such as this will be necessary to utilize the wealth of information residing in the data collected at the farm.

Methodology of the On-Farm Trials

A recognized strength of field scale on-farm trials is the low coefficient of variability achieved within this type of trial as compared to smaller traditional field research trials. The coefficient of variability (CV) can be looked as a measure of quality of the trial itself. By reducing or addressing the variability of sites or practices within a trial, one can better evaluate the treatment effects of the trait or practice being tested. The use of randomization, replication and thoughtful plot layout help improve the quality of information gleaned from the trial. The WAPAC Hybrid Trials use a minimum of 2 replications for each site and treatments (hybrids) are randomly placed within each replication.

Plots are planted across sources of variability such as soil types or slopes to provide somewhat uniform representation of these sources within each replication. The plots are planted and harvested with field scale equipment. Individual plot sizes for hybrid trials are typically 6 to 12 rows wide and run distances of 500 to over 1000 feet in length. Data and observations are collected throughout the growing season and utilized in the analysis when appropriate. Information identifying plot locations, production inputs, site characteristics along with other supporting information is systematically collected and recorded in a database format to facilitate user queries and data archival.

Using the Results

Coupling the information from this publication with the UWEX Hybrid Corn Performance Trials as well as other hybrid performance trials will give the user the ability to evaluate how a particular hybrid performs in multiple environments. Predicting the performance of a hybrid in the future is done through analysis of past performance. A primary factor in the prediction is the number of locations or replications of a hybrid. This trial typically provides 6 to 12 or more replications of a hybrid at 3 to 6 locations across the state.

The results are reported in Yield per acre and Grower return.

Grower return = (Yield*Price) - [Yield * (Handling+ Hauling+ Storage+ Drying+ Trucking)]

where **Price** = $1.87 = **Weighted Price per Bushel** = 50% November 15 Average Cash price + 25% March CBOT Futures price ($0.15 basis) + 25% July CBOT Futures price ($0.10 basis). November 15 Average Cash price derived from Wisconsin Ag Statistics; CBOT Futures prices derived from closing price on first business day in December.

Handling costs = $0.02 per bushel
Hauling costs = $0.04 per bushel
Storage costs = $0.02 per bushel for 30 days
Drying costs = $0.02 per bushel per point of moisture
Trucking costs = $0.11 per bushel for 100 miles

The data tables contain the number labeled “LSD” which stands for least significant difference. LSD’s at the 10% level of probability are shown. Where the difference between two selected treatments within a column is equal to or greater than the LSD value at the bottom of the column, you can be sure that in nine out of ten chances that there is a real difference between the two treatment averages. If the difference is less than the LSD value, the difference may still be real, but the experiment has produced no evidence of real differences.

Statistics are a tool to help prevent us from deceiving others and ourselves. Growing conditions in any particular year can have large effects on certain practices. Two years of replicated data are a minimum for supporting most practices. On-farm testing is not a quick cure for anything, but it should greatly accelerate innovation and adoption of new practices by providing reliable, quantitative answers that apply directly to a producer’s situation. Treatments frequently differ in performance and these differences may vary with management practices, weather patterns, soil conditions, and other environmental and management practices. Replicated trials that take into account field variability are more reliable than non-replicated trials and improve the confidence of implementing of new practices for profitable crop production.

Bill Stangel and Joe Lauer, WAPAC Board of Directors (written December 2003)

WAPAC Trial Information: 90 day

Location Cooperator Consultant	tri_id Soil series Soil texture	Previous crop	Planting Date Row width Population	Harvest Date Population	Fall and Spring Tillage Cultivation (times)	Soil test pH P K --- ppm ---	Fertilizer (lb/a) N P K manure (T/A)	Weed control Insecticide Fungicide
Marathon, WI James and Alan Draeger, Draeger Dairy Farm Inc. Paul Sturgis, Croptech Agronomics LLC	2688 Loyal	Alfalfa	5/21/05 30	10/13/05		6.7 33 125	31 31 117 7000 gla/A (4-3-16)	Keystone LA @ 1.6 qts/A + Python @ 0.8 oz/A on 5/25/05
Plot experienced quite a bit of anthracnose stalk rot which may have resulted in the higher lodging scores.								
Pittsville, WI Pete and Harvey Petersen Paul Sturgis, Croptech Agronomics LLC	2689 Kert	Corn	5/11/05 30	11/4/05	Fall chisel Spring disk and Field cultivator		118 3 13	Dual II Magnum @ 1.6 pt/A + Marksman @ 3.5 pt/A on 5/20/05
Prescott, WI Mark Huppert Kerr Agronomics Inc.	2690	Corn	5/20/05 38	10/17/05	Spring chisel and finsiher	3.1 93 224	147 33 116	Atrazine @ 0.5 lb/A + Hornet @ 3 oz/A + Harness @ 2 pt/A on 5/30/05
Pulaski, WI Lee Herman Jeff Polenske, Polenske Agronomic Consulting Inc.	2687 Ioska / Symco / Onaway mix	Fallow	5/7/05 30	10/28/05	No Till	7.8 17 85	105 20 45 6 S	Lumax @ 2.5 qt/A on 5/9/05
Fallow corn syndrome. Corn purple until late June. Very dry in July/August.								
Seymour, WI Dave Wickman Stern Crop Consulting LLC	2686 Onanway	Corn	5/4/05 36	11/1/05	Fall Chisel Field cultivate (2x)	7.8 44 146	138 23 30	Basis Gold @ 10 oa/A + Hornet @ 2 oz/A + Crop oil @ 1 gal/100 gal water + AMS 2 lb/A on 5/25/05
Extremely dry July/August. Drought stressed.								

WAPAC Corn Hybrid Trial Results (90 day RM)

Entry	Plant stand	Lodging	Test Weight	Grain Moisture	Grain Yield	Grower Return	Seymour 2686	Pulaski 2687	Marathon 2688	Pittsville 2689	Prescott 2690
	no./A	%	lb/bu	%	bu/A	$/A	bu/A	bu/A	bu/A	bu/A	bu/A
Dekalb DKC37-14(RR2)	28625	1	56	19.4	122	192	94	102	126	167	124
Renk RK282	28969	1	54	19.6	129	202	113	89	120	177	146
Agrigold A6112Bt	27875	1	55	19.7	124	194	124	109	111	141	136
Pioneer 38T41	27844	1	56	19.8	139 *	217	140	119	119	147	171
Dairyland Stealth 7191BtRR	28188	1	55	20.0	143 *	222	137	135	128	161	155
LG Seeds LG2407Bt	29156	1	55	20.2	147 *	229	134	139	125	162	176
NK Brand N29-A2	29344	3	55	20.2	137 *	214	109	109	118	190	161
Renk RK438YGCB	28688	1	55	20.2	150 *	233	145	124	127	160	191
Kaltenberg K3919BtRR	28188	1	55	20.3	141 *	218	145	130	119	171	140
Golden Harvest H6476BtRR	28281	1	55	20.4	139 *	216	114	135	125	167	155
Croplan Genetics 294Bt	28906	1	55	20.9	141 *	218	123	108	131	158	186
Garst 8922YG1	28125	5	54	21.8	144 *	219	141	130	128	140	181
Mean	28516	1	55	20.2	138	214	127	119	123	162	160
LSD(0.10)	NS	NS	NS	1.0	15	NS	17	16	7	7	---

Grower return = (Yield * Price) - [Yield * (Handling + Hauling + Storage + Drying + Trucking)]

where Price = $1.87 = Weighted Price per Bushel = 50% November 15 Average Cash price + 25% March CBOT Futures price ($0.15 basis) + 25% July CBOT Futures price ($0.10 basis). November 15 Average Cash price derived from Wisconsin Ag Statistics; CBOT Futures prices derived from closing price on first business day in December.

Handling = $0.02 per bushel
Hauling = $0.04 per bushel
Storage = $0.02 per bushel for 30 days
Drying = $0.02 per bushel per point of moisture above 15.5%
Trucking = $0.11 per bushel for 100 miles

WAPAC Trial Information: 95 day

Location Cooperator Consultant	tri_id Soil series Soil texture	Previous crop	Planting Date Row width Population	Harvest Date Population	Fall and SpringTillage Cultivation (times)	Soil test pH P K --- ppm ---	Fertilizer (lb/a) N P K manure (T/A)	Weed control	Insecticide Fungicide
Bonduel, WI Hillside Farms Stern Crop Consulting LLC	2691 Onaway	Corn		10/1	Fall chisel Spring Field cultivator (2x)	7.5 32 141	130 15 5	Dual II @ + Clarity @ on 5/15/05	
Clintonville, WI Doug Behnke Mike Kiddy *Very dry in July and August*	2697 Hortonville fine sandy loam	Alfalfa	5/4/05 30	10/25/05	No Till Cultivate	7.1 34 102	159 21 35 1.6 Zn	Lumax @ 1.75 qt/A + 2,4-D ester @ 1 pt/A + AMS @ 3 lb/A on 5/15/05	Kernel Guard @ 3/4 pk/bu on 5/4/05
DePere, WI Robertson Brothers Jeff Polenske, Polenske Agronomic Consulting Inc. *Nice plot*	2692 Hortonville	Alfalfa	4/27/05 30		Fall chisel Spring Field cultivator (2x)	7.1 41 115	0 0 0	Lumax @ 2.25 qt/A on 5/10/05	
Iola, WI Paul Reierson Paul Knutzen	2696 Neeham	Soybean	5/7/05 36	10/7/05	Fall Chisel Spring Disc	6.2 92 80	152 18 45 8.25 S - 0.63 Zn	Dual @ 1 pt/A + Banvel @ 1 pt/A + Prowl @ 1 pt/A on 5/12/05	
Oneida, WI Pat Cornelius, Oneida Nations Farms Bill Schaumberg *Second rep soil was lighter than first.*	2694 Onaway silt loam	Corn	5/4/05 30	10/13/05	Spring Field cultivator (2x)	7 28 100	138 21 67	Lumax @ 2.5 qt/A on 5/15/05	
St. Nazianz, WI Mark Litz Steve Hoffman *Warm and very dry.*	2695 Manawa	Soybean	5/4/05 30	10/7/05	Fall disk chisel Spring Field cultivator (2x) Cultivate 6/15	7.6 23 157	140 85 261 9400 gal/A Dairy	Dual II Magnum @ 1 pt/A on 5/2/05 Distinct @ 4 oz/A + Permit @ 0.2 oz/A on 6/18/05	Kernel Guard seed treatment

WAPAC Corn Hybrid Trial Results (95 day RM)

Entry	Plant stand	Lodging	Test Weight	Grain Moisture	Grain Yield	Grower Return	Bonduel 2691	DePere 2692	Oneida 2694	St. Nazianz 2695	Iola 2696	Clintonville 2697
	no./A	%	lb/bu	%	bu/A	$/A	bu/A	bu/A	bu/A	bu/A	bu/A	bu/A
AgriGold A6205Bt	27596	2	55	24.0	176 *	261	146	205	202	179	117	207
Croplan Genetics 364Bt	28796	0	55	24.0	176 *	261	149	201	205	184	114	207
Renk RK488YGCB	28542	1	55	24.4	170 *	250	120	199	216	179	103	203
Golden Harvest H7007Bt	28104	1	54	24.5	169 *	250	138	207	197	183	81	210
Dairyland Stealth 5194	27396	1	55	24.9	169 *	247	138	198	193	173	109	202
Kaltenberg K4688Bt	27979	0	54	25.0	176 *	257	148	204	196	175	127	204
Garst 8880YG1	28333	1	54	25.0	170 *	249	142	201	211	180	90	197
LG Seeds LG2463Bt	28583	2	55	25.1	174 *	254	136	199	206	179	122	202
NK Brand N32-L9	28729	1	54	25.1	155	228	119	194	190	167	87	176
Pioneer 38B85	27000	1	54	25.4	161	234	132	199	192	171	86	188
Mean	28106	1	54	24.7	170	249	137	201	201	177	104	200
LSD(0.10)	NS	NS	NS	0.8	8	12	---	NS	NS	NS	23	6

Grower return = (Yield * Price) - [Yield * (Handling + Hauling + Storage + Drying + Trucking)]

where Price = $1.87 = Weighted Price per Bushel = 50% November 15 Average Cash price + 25% March CBOT Futures price ($0.15 basis) + 25% July CBOT Futures price ($0.10 basis). November 15 Average Cash price derived from Wisconsin Ag Statistics; CBOT Futures prices derived from closing price on first business day in December.

Handling = $0.02 per bushel
Hauling = $0.04 per bushel
Storage = $0.02 per bushel for 30 days
Drying = $0.02 per bushel per point of moisture above 15.5%
Trucking = $0.11 per bushel for 100 miles

WAPAC Trial Information: 100 day

Location Cooperator Consultant	tri_id Soil series Soil texture	Previous crop	Planting Date Row width Population	Harvest Date Population	Fall and SpringTillage Cultivation (times)	Soil test pH --- ppm --- P K	Fertilizer (lb/a) N P K manure (T/A)	Weed control	Insecticide Fungicide
Cambridge, WI	2701	Corn	5/18/05	11/11/05	No Till	6.7 24 82	168 70 124	Dual II Magnum @ 1.33 pt/A + Hornet WDG @ 4 oz/A + Princep 90 @ 1.0 lb/A on 5/20/05	Force 3G @ 4.8 lb/1000 ft on 5/18/05
Jeff Nostad	McHenry		38						
A.D. Cole, ITAC of WI Inc.	silt loam						1.8 Zn		
Of seed dropped, 84% survived. Hot-dry with timely rains. All varieites and plots had 100% corn bloth leaf mi up to 8th node. Non-Bt hybrids had 100% of plants with ECB tunneling (2.3 tunnels/plant).									
Collins, WI	2700	Fallow	5/7/05	10/12/05	Fall chisel plow	7.1 17 89	154 36 72	Dual II Magnum @ 0.7 pt/A on 5/6/05	
Larry Krepline	Kewaunee loam		30		Spring Field cultivator (2x)			Steadfast @ 0.75 oz/A + Hornet WDG @ 2 oz/A + Aatrex 4L @ 1 pt/A + Dicamba @ 2 oz/A on 6/6/05	
Carl Buchner, Buchner Consulting									
Deerfield, WI	2699	Soybean	5/04/05	10/19/05		6.1 31 110	103 20 40	Lasso @ 2 qt/A on 5/6/05 Distinct @ 3 oz/A 6/10/05	
Russ and Kate Dahl	Dodge		30		Spring Field cultivator				
Tom Novak, Total Crop Management LLC	sil								
Poy Sippi, WI	2702	Fallow	5/17/05	11/21/05	No Till	6.4 47 135	135 10 50	Touchdown @ 24 oz/A + Lumax @ 2 qt/A + Atrazine @ 0.25 lb/A on 5/16/05	
Larry Paltzer	Fisk loamy sand		30						
Larry Paltzer	loamy sand								
Ripon, WI	2698	Soybean	5/3/05	10/28/05		7 86 208	118 39 60	Dual II Magnum @ 1 pt/A impregnated on pre-plant urea	
Bob and Buck Grasee	Plano silt loam		30		Spring disk			Steadfast @ 0.67 oz/A + Atrazine @ 0.75 lb/A + Sterling @ 2 oz/A	
Mike Rankin, UWEX Crops and Soils Agent					Cultivate (1x)				
Wind storm resulted in increased lodging.									

WAPAC Corn Hybrid Trial Results (100 day RM)

Entry	Plant stand	Lodging	Test Weight	Grain Moisture	Grain Yield	Grower Return	Ripon 2698	Deerfield 2699	Collins 2700	Cambridge 2701	Poy Sippi 2702
	no./A	%	lb/bu	%	bu/A	$/A	bu/A	bu/A	bu/A	bu/A	bu/A
Dekalb DKC50-20(RR2YGCB)	29904	7	58	18.7	200 *	314	176	187	198	204	236
Kaltenberg K5151Bt	28158	3	58	19.4	177	275	163	176	172	170	203
Kaltenberg K4935LLBt	28940	4	56	19.5	179	278	157	173	184	170	210
Renk RK632YGCB	29035	13	57	19.7	188	293	172	182	181	189	219
Dairyland Stealth 5201	29929	9	57	19.8	187	291	165	184	173	178	235
Golden Harvest H-7566Bt	27927	6	56	20.5	177	273	157	171	163	186	209
Pioneer 36W66	28815	3	56	20.8	187	286	170	191	187	165	219
Croplan Genetics 441Bt	28540	7	57	21.1	191	292	166	186	179	188	237
Mean	28906	6	57	19.9	186	288	166	181	180	181	221
LSD(0.10)	NS	NS	1	0.9	8	13	12	5	7	12	13

Grower return = (Yield * Price) - [Yield * (Handling + Hauling + Storage + Drying + Trucking)]

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Hauling = $0.04 per bushel
Storage = $0.02 per bushel for 30 days
Drying = $0.02 per bushel per point of moisture above 15.5%
Trucking = $0.11 per bushel for 100 miles

WAPAC Trial Information: 105 day

Location Cooperator Consultant	tri_id Soil series Soil texture	Previous crop	Planting Date Row width Population	Harvest Date Population	Fall and SpringTillage Cultivation (times)	Soil test pH	Soil test P (ppm)	Soil test K (ppm)	Fertilizer (lb/a) N	Fertilizer (lb/a) P	Fertilizer (lb/a) K	Weed control	Insecticide Fungicide
Elkhorn, WI Lauderdale Farms Inc. Tom Novak, Total Crop Management LLC	2703 Warsaw sil	Corn	5/5/05 30	10/14/05	Fall chisel plow Spring soil finisher (2x)	6.9	48	127	98	20 manure (T/A)	40	Harness @ 2 pt/Aon 5/7/05 Distinct @ 3 oz/A on 6/9/05	Force 3G @ 4.4 lb/100 ft
Lodi, WI Lochner Dairy LLC A.D. Cole, ITAC of WI Inc.	2706 Mt Carroll silt loam	Alfalfa	5/6/05 30	10/19/05	No Till	6.7	44	134	167	12 0.9 Zn	152	Roundup Max @ 2 qt/A + 2,4-D @ 1 pt/A on Fall 2004 Dual II Magnum @ 1.33 pt/A + Hornet WDG @ 3 oz/A on 5/10/05	
All varieites and plots had 100% corn bloth leaf minor up to 8 th node.													
Prairie du Sac, WI Rick Walgenbach, USDA-ARS A.D. Cole, ITAC of WI Inc.	2707 Richwood silt loam	Soybean	4/28/05 30	10/25/05	Spring Disc (2x)	6.5	25	134	155 Dairy 13,000 gal/A (110 N)	118	315	Camix @ 2.4 qt/A + Princep @ 32 oz/A on 5/8/05	
Disc plow sole at 4-6 inches. Very hard at planting leading to poor emergence on some hybrids.													
Whitewater, WI Tom Hoffmann Tom Novak, Total Crop Management LLC	2704 Mahalasville sil	Soybean	5/4/05 30	10/27/05	No Till	7	37	110	123	66	40	Clear Out 41 Plus @ 1 qt/A + Harness @ 2 pt/A + 2,4-D ester @ 0.5 pt/A on 5/9/05 Distinct @ 3 oz/A on 6/11/05	
Whitewater, WI Mark and Deb Hoffmann Tom Novak, Total Crop Management LLC	2705 Plano sil	Corn	5/17/05 30	11/11/05	Fall Chisel plow Spring Soil finisher (2x)	6.7	81	131	116 Poultry manure @ 5 T/A	85	80	Keystone LA @ 1 qt/A in 15-inch band on 5/17/05 Distinct @ 3 oz/A on 6/15/05	

WAPAC Corn Hybrid Trial Results (105 day RM)

Entry	Plant stand	Lodging	Test Weight	Grain Moisture	Grain Yield		Grower Return	Elkhorn 2703	Whitewater 2704	Whitewater 2705	Lodi 2706	Prairie du Sac 2707
	no./A	%	lb/bu	%	bu/A		$/A	bu/A	bu/A	bu/A	bu/A	bu/A
Dekalb DKC52-47(RR2YGCB)	29463	1	57	15.6	193	*	315	142	177	188	229	231
Renk RK772YGCB	28727	1	56	16.2	184	*	299	132	176	181	232	199
Golden Harvest H7990Bt	26972	1	58	16.5	158		257	118	122	145	210	197
AgriGold A6398	27569	1	56	17.3	166		266	115	164	161	208	182
Pioneer 35Y67	28611	1	58	17.5	178		285	131	169	164	227	201
Kaltenberg K5215Bt	26523	1	58	17.5	183	*	293	126	179	167	229	214
Dairyland Stealth 1705	23233	2	55	17.7	143		228	106	128	111	202	167
AgriGold A6333Bt	27495	1	57	18.1	182	*	289	127	176	168	239	199
Mean	27324	1	57	17.0	173		279	125	161	161	222	199
LSD(0.10)	NS	NS	1	0.5	11		17	14	16	13	9	13

Grower return = (Yield * Price) - [Yield * (Handling + Hauling + Storage + Drying + Trucking)]

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