2018
Wisconsin Research Report of

STUDIES ON CULTURAL PRACTICES AND MANAGEMENT SYSTEMS FOR CORN

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2018 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 2018. 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 This information is **NOT FOR PUBLICATION** unless prior approval is received.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.

Cooperating Faculty: Shawn Conley – Agronomy, Natalia de-Leon – Agronomy, Randy Shaver – Dairy Science, Carrie Laboski – Soil Science

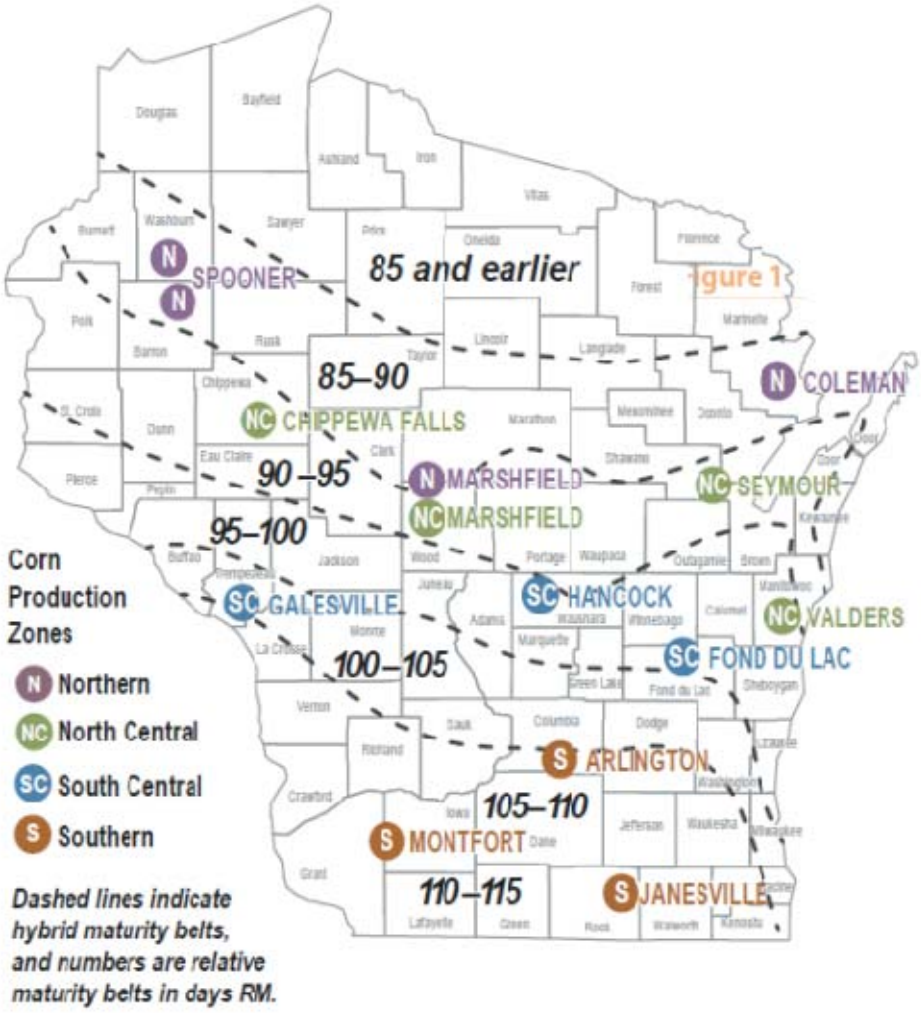
Cooperating UWEX County Agents and ARS Staff: Nick Baker, Jerry Clark, Mike Bertram, Arin Crooks, Paul Sytsma, and John Zander

Cooperating Farmers: Ken Congdon, Jason Biddick, Mike Maass, Ed Montsma, and Dale Wagner

Cooperating Academic Staff: John Gaska and Adam Roth

Project Crew: Aidan Gabriel, Phil Geiger, Callista Hoxie, Taishi Ikeda, JiWon Lim and Louie Pulvino

Wisconsin Corn
Agronomy Research Sites



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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
3 Bar Biologics
Dairyland Seeds
FS InVision
Jung Seed Genetics
Masters Choice
Monsanto
Munson Seeds
National Crop Insurance Services
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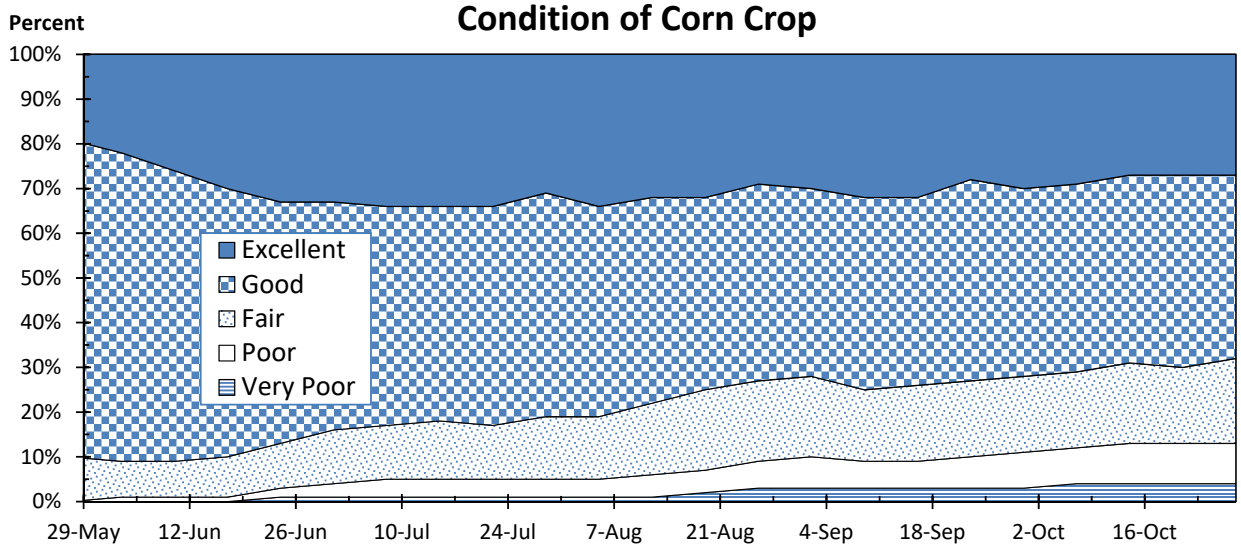
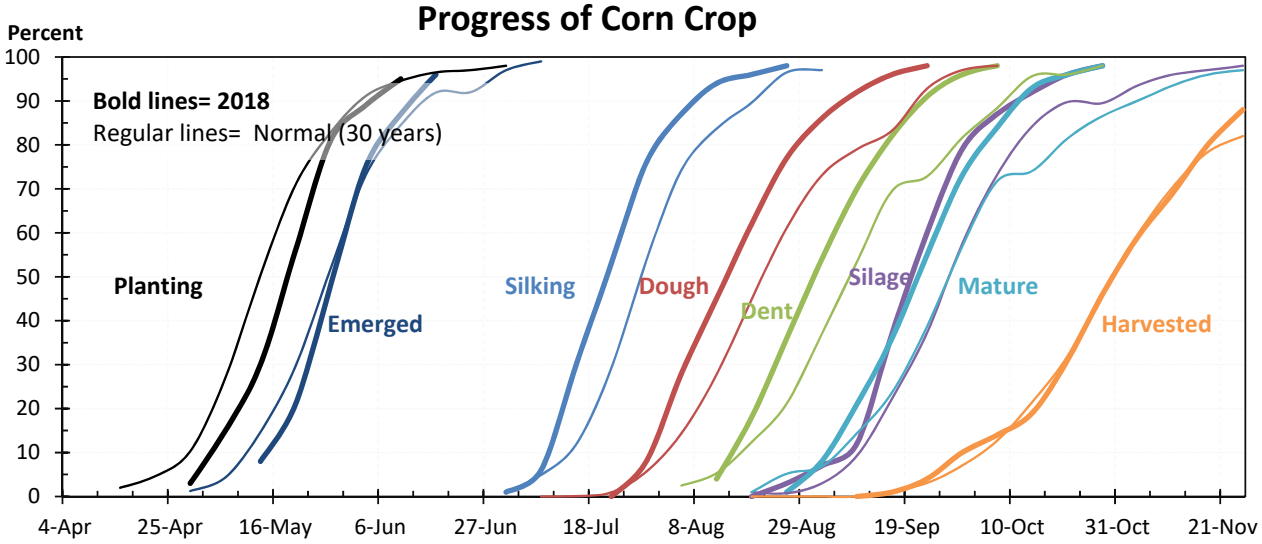
TABLE OF CONTENTS

2018 Corn Crop Summary for Wisconsin

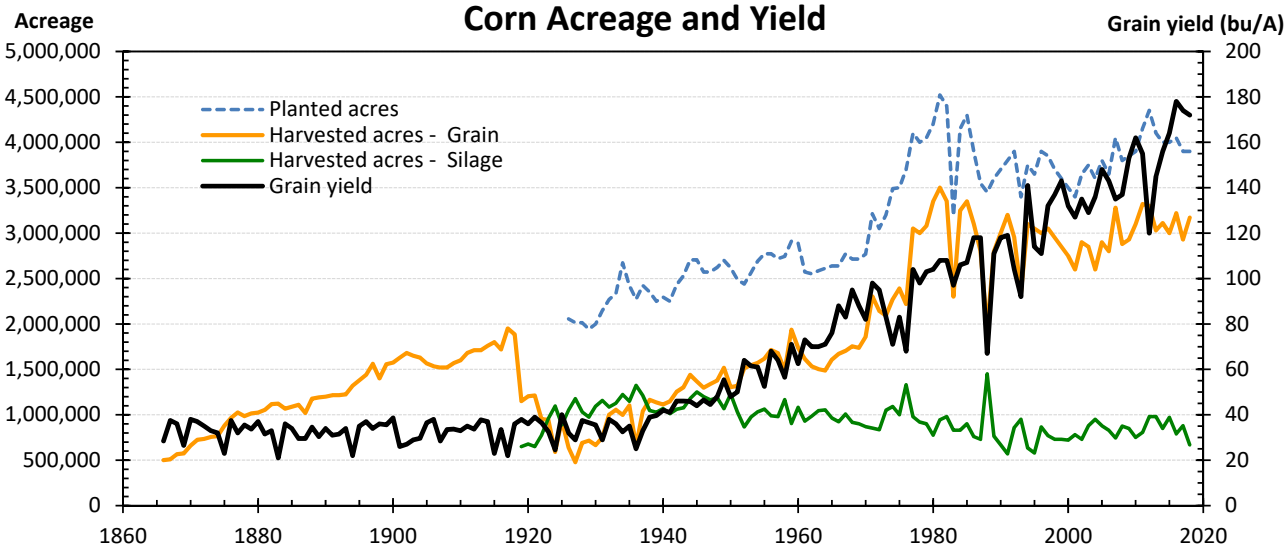
Condition of Corn Crop



Progress of Corn Crop



Corn Acreage and Yield



Crop Progress Review of 2018

Derived from USDA-NASS report on December 12, 2017
http://www.nass.usda.gov/Statistics_by_State/Wisconsin/Publications/Farm_Reporter/

The 2018 crop season was a challenging one for farmers in Wisconsin, with a variety of severe weather events impacting crop progress and condition. April opened with below-normal temperatures and frequent snow, including the record-breaking blizzard of April 12-15. This storm was the second largest snowstorm ever recorded at the National Weather Service station in Green Bay, more than doubling the previous records for largest April snowstorm and snowiest April. Deep snow and cold soils delayed the start of the 2018 planting sea-son significantly. Then, above-normal temperatures in May helped spring fieldwork catch up to the five-year average by the beginning of June. During May, frequent rains kept fields wet and planting progress slow in southern Wisconsin, but soils in the northern portions of the state became dry. Severe thunderstorms lashed the state in mid-June, missing some areas, bringing much-needed rain to others, and causing localized flood damage. Warm weather in late June and early July pushed overall crop progress ahead of the five-year average. But ongoing spotty rains left parts of northern Wisconsin unfavorably dry during the critical period for crop pollination. From mid-August through September, a series of severe storms dam-aged crops in multiple areas of the state with extreme heavy rain, flooding, flash flooding, hail, wind and tornadoes. Emergencies were declared in 18 counties across southern and central Wisconsin during this period. Some of the floodwaters took weeks to recede due to repeated weekly rain storms. Crops along affected waterways were damaged or lost, while road and bridge washouts disrupted rural transportation. This massive influx of moisture set the state up for a difficult harvest season. Continuing wet weather kept soil moistures high for the rest of the year. Summer-like days in the 80s and 90s persisted through September, helping crops to mature. Temperatures then nosedived, with widespread frost and light snow reported during the week ending October 14. Farmers struggled with frequent precipitation, deep mud and the emergence of damp-driven molds and diseases throughout October and November. Below-normal temperatures in mid-November then froze the ground, finally allowing access to unharvested fields but halting tillage. On November 25, fall tillage reached 68 percent complete, 1 day ahead of the previous year but 4 days behind average.

Temperatures in April of 2018 averaged 10.5 degrees below normal, while May averaged 6.7 degrees above normal. The remainder of the growing season months ranged from 0.8 to 2.6 degrees above nor-mal, before temperatures fell to 2.9 degrees below normal in October. The average temperature for June through September was 66.6 degrees, compared with 65.2 degrees in 2017 and a normal of 64.9 degrees.

The statewide precipitation total for April through September was 27.35 inches, compared to 25.93 inches the previous year and a nor-mal of 22.43 inches. The 2018 season showed a strong regional variation in precipitation; April through September precipitation aver-aged 0.96 inch above normal for the three northern districts, 6.00 inches above normal for the three central districts and 11.58 inches above normal for the three southern districts. It was also the snowiest April on record for the state, with a statewide average of 17.9 inches more snow than normal. April snow totals ranged from 9.4 inches for the Southeast District to 33.3 inches for the Northeast District.

Corn

Snow and cold soils delayed the beginning of corn planting in 2018. By April 29, 3 percent of corn was planted, 5 days behind the five-year average. Planting caught up to the average by late May with favorable weather, and progress remained ahead of average through the rest of the year. Corn condition averaged 79 percent good to excellent for the season, compared with 69 percent good to excellent in the previous

year. But, corn condition peaked at 91 percent good to excellent in early June before declining slowly throughout the summer and fall. Dry conditions during pollination meant some northern Wisconsin corn fields were underdeveloped, while very wet conditions drove an outbreak of tar spot disease in southern Wisconsin. Silage chopping and grain harvest both started about a week early as producers worked to get damaged corn out of fields. Corn harvest remained ahead of normal through the fall, but rain and snow delays meant fieldwork progressed in fits and starts. On November 25, 88 percent of corn for grain was harvested, 2 days ahead of the five-year average.

Soybean

Favorable weather in May allowed soybean planting to start in line with the 5-year average and wrap up about a week ahead. Warm temperatures and sufficient rain kept progress just ahead of average throughout the growing season. As with corn, soybean condition peaked in early June and then declined slowly through the summer and fall. Overall, soybeans averaged 78 percent in good to excellent condition for June through mid-October, compared to 74 percent the previous year. Soybean harvest started a week ahead of average, with 1 percent harvested by September 16. However, wet and stormy conditions immediately stalled progress, delaying soybean combining for weeks. One-quarter of the soybean crop was harvested during the week ending October 28, helping to edge progress toward average. Soybeans reached 94 percent harvested on November 25. A few reporters in northern Wisconsin noted soybeans would have to be left in fields due to early snow cover.

Oats

Oats planting lagged behind the 5-year average due to a lack of days suitable for fieldwork in April, with variations in planting dates similar to other crops. However, by mid-summer oat maturity was often ahead of average. Oat condition averaged 88 per-cent good to excellent from May through mid-August, compared with 77 percent the previous year. Oats reached 97 percent harvested on September 16.

Winter wheat

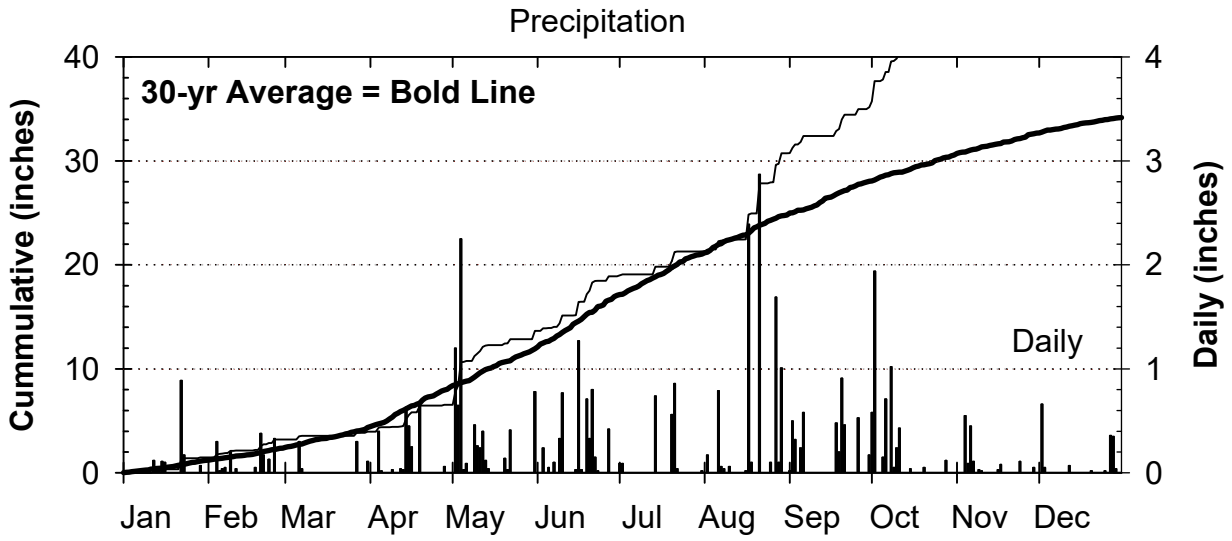
Winter wheat started this season with 46 percent of the crop in good to excellent condition, compared with 54 percent the previous year. Condition didn't change much as plants weathered April's snow storms but it improved rapidly with warmer weather in May. Wheat condition then remained above 80 percent good to excellent through the end of July. Winter wheat maturity trended slightly behind average for much of the season, but harvest activity ran about a week ahead thanks to favorable weather.

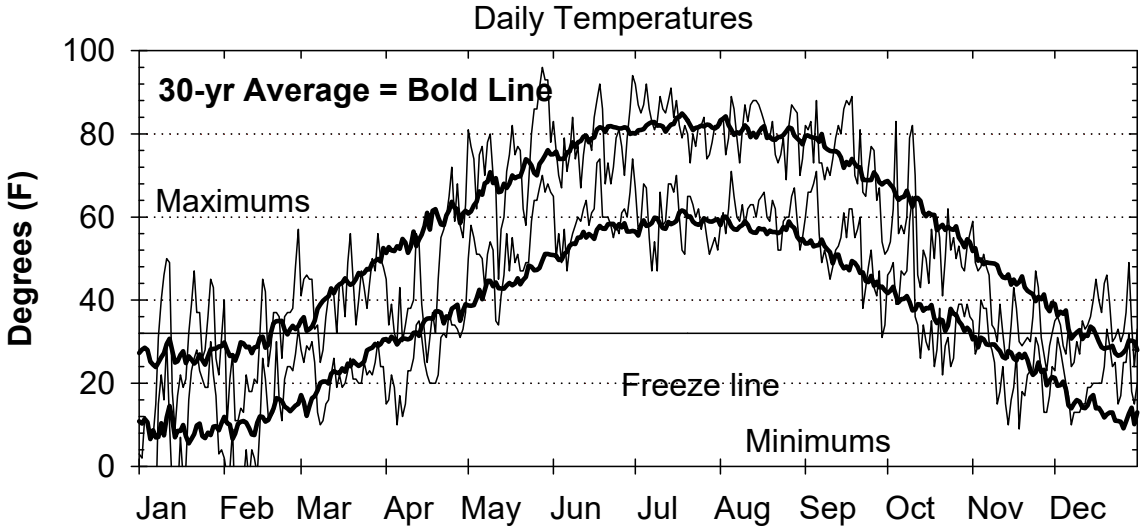
Winter wheat planting started off slightly ahead of average but progress was slowed by delays to the soybean harvest. Emergence also got off to a quick start but slowed due to cold, wet weather in November. Winter wheat condition averaged 78 percent good to excellent from mid-October through the end of November, compared with 84 percent good to excellent in 2017.

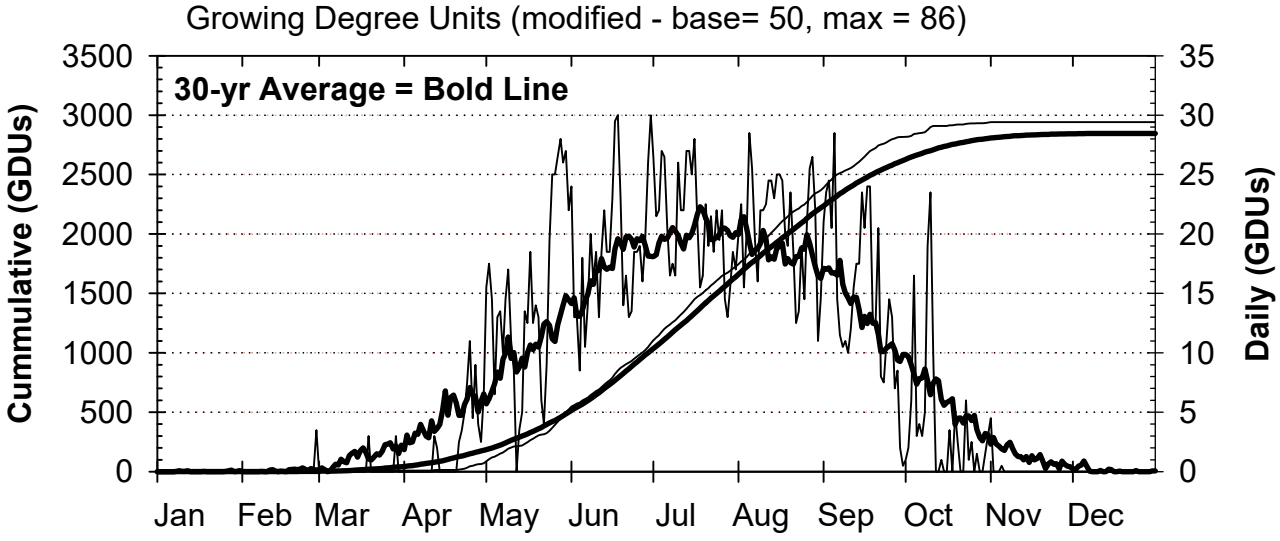
Alfalfa and Hay

Heavy snow cover during April helped keep alfalfa and other hay stands well insulated. As of May 20, winter freeze damage to alfalfa was rated 2 percent severe, 4 percent moderate and 12 percent light. There were reportedly no damages to the remaining 82 percent of alfalfa, up from 59 percent undamaged the previous year. The first, second and third cuttings of hay progressed in line with the 5-year average. Dry conditions in northern Wisconsin helped producers there bale lots of dry hay, while wet fields in southern Wisconsin made haying more difficult. Very wet conditions then dragged progress down during the fall. Some producers reported taking a fourth crop of hay while waiting to access their soybean fields, while others said hay stands were too muddy for a fourth crop. Some reporters commented that late haying and cold fall temperatures may affect hay fields' ability to overwinter. All hay condition was 80 percent good to excellent on average for May through mid-September, compared with 77 percent good to excellent in 2017.

2018 Weather Summary for Arlington, WI







Source: Midwest Region Climatological Center.

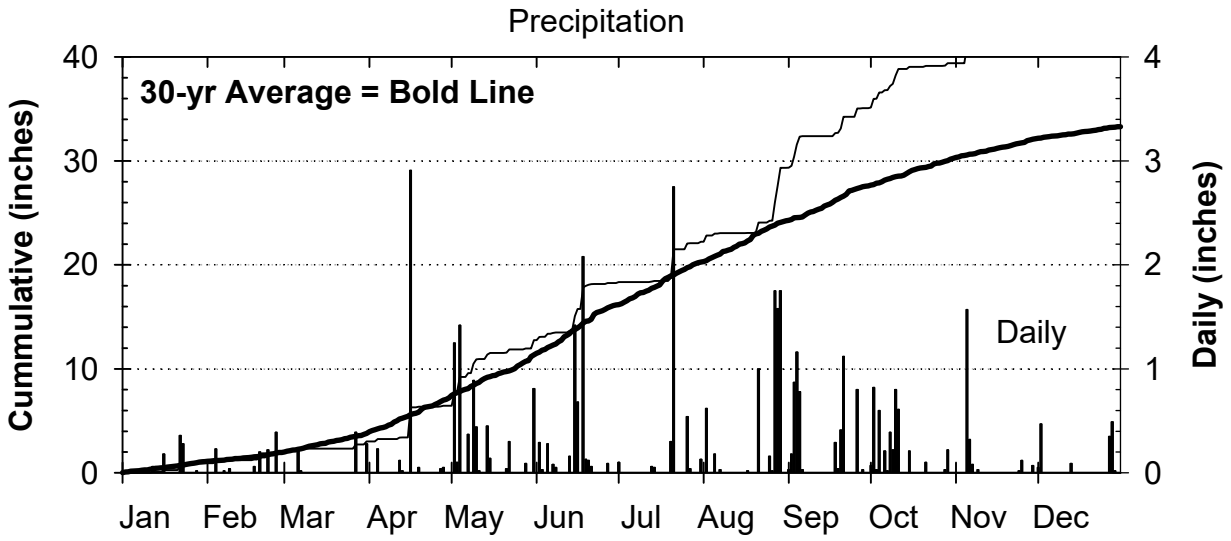
Table A-1. Monthly and total precipitation (inches) data for the Arlington Research Station.

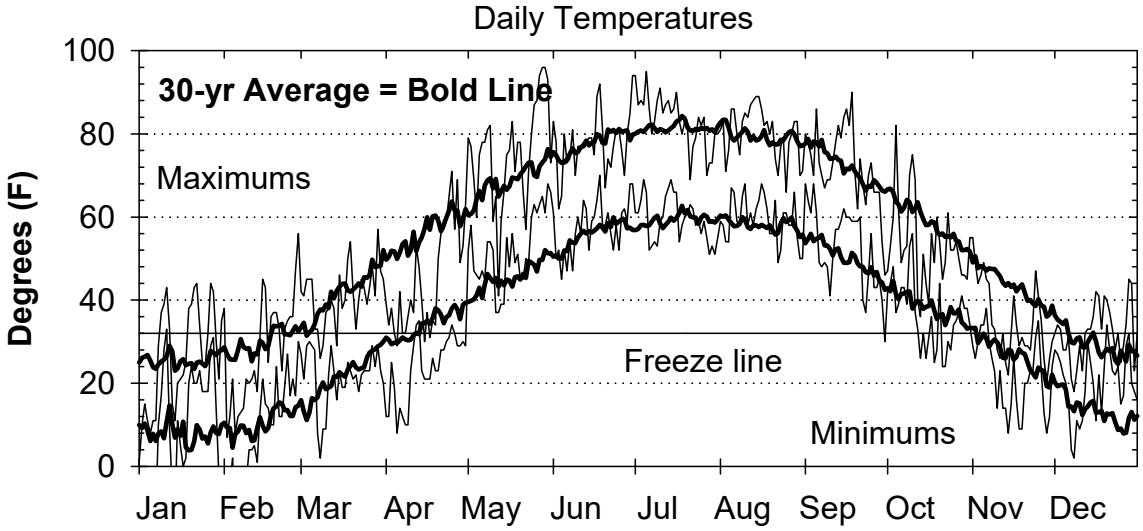
Year	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Annual
1989	0.7	0.9	1.5	1.4	1.8	2.0	3.8	4.3	3.8	2.4	1.3	0.5	24.3
1990	1.8	0.9	3.7	2.5	4.3	6.3	1.6	5.4	1.2	2.3	1.7	2.4	34.2
1991	1.0	0.4	3.0	4.5	1.9	2.6	3.8	1.8	4.7	6.8	3.6	1.4	35.4
1992	0.5	1.6	1.7	4.0	1.2	1.2	5.8	1.9	7.5	1.3	5.2	2.8	34.6
1993	1.6	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
2006	1.6	0.6	2.1	5.1	4.3	4.5	4.1	6.1	5.4	3.2	1.7	0.9	39.6
2007	0.5	1.5	3.2	3.3	1.2	3.3	2.9	11.3	2.8	2.3	0.5	3.3	36.3
2008	2.9	2.6	2.8	9.3	3.3	13.8	5.1	1.9	1.6	3.4	1.3	1.8	49.8
2009	0.4	1.7	4.8	4.3	3.6	4.3	2.3	3.2	2.4	4.6	1.3	2.8	35.5
2010	1.7	1.1	1.0	3.7	4.2	7.6	9.3	4.7	4.5	1.7	1.4	1.7	42.5
2011	0.6	0.7	3.4	3.5	1.6	4.1	2.5	1.5	3.9	1.6	3.3	2.4	28.9
2012	0.8	1.0	2.5	3.1	2.9	0.3	4.3	2.9	1.0	4.0	1.1	2.5	26.3
2013	2.3	1.9	2.4	5.4	6.0	7.5	3.0	1.8	3.0	1.5	2.6	1.1	38.5
2014	0.7	1.0	1.0	6.4	2.8	9.3	1.9	3.7	1.8	2.7	1.7	1.1	34.3
2015	0.4	1.0	0.4	6.4	4.4	3.1	3.2	4.3	5.7	2.0	4.9	3.4	39.1
2016	0.8	0.4	4.3	1.5	3.4	4.4	6.5	5.5	6.2	3.4	1.6	1.3	39.2
2017	2.5	1.6	2.8	5.3	3.3	6.1	3.7	1.7	0.8	3.7	0.7	0.6	32.7
2018	1.5	1.7	0.8	2.6	7.1	5.3	2.4	9.4	4.4	5.3	1.5	1.6	43.6
30-year Average	1.2	1.2	2.0	3.8	4.0	5.1	4.0	4.0	3.3	2.6	2.1	1.5	34.8

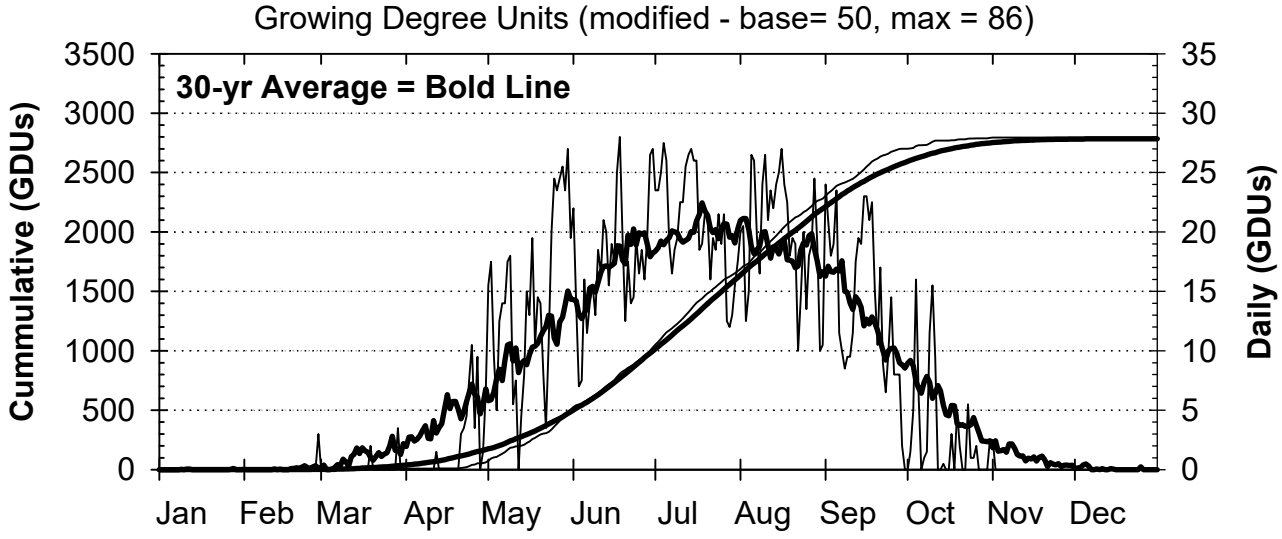
Table A-2. Average monthly and annual temperature (oF) data for the Arlington Research Station.

Year	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Annual
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
2006	29	21	34	50	57	66	73	69	58	44	38	29	48
2007	21	13	37	43	60	68	70	70	62	53	33	17	46
2008	15	14	27	45	53	66	70	67	61	47	34	14	43
2009	8	21	31	43	56	64	63	64	60	42	38	18	42
2010	14	19	36	49	57	66	71	70	58	50	36	15	45
2011	13	18	28	41	54	65	73	68	57	49	36	27	44
2012	21	27	46	44	59	68	76	67	58	45	34	25	47
2013	16	17	22	39	56	64	68	67	60	46	31	13	42
2014	6	8	22	41	55	67	65	69	60	48	28	27	41
2015	18	9	33	47	59	66	69	68	66	51	41	34	47
2016	18	25	38	45	58	69	71	71	64	52	43	21	48
2017	22	30	32	49	55	68	70	65	64	52	34	21	47
2018	17	19	32	35	64	69	71	71	64	47	30	27	46
30-year Average	18	21	33	45	57	67	70	69	61	49	35	23	46

2018 Weather Summary for Hancock, WI







Source: Midwest Region Climatological Center.

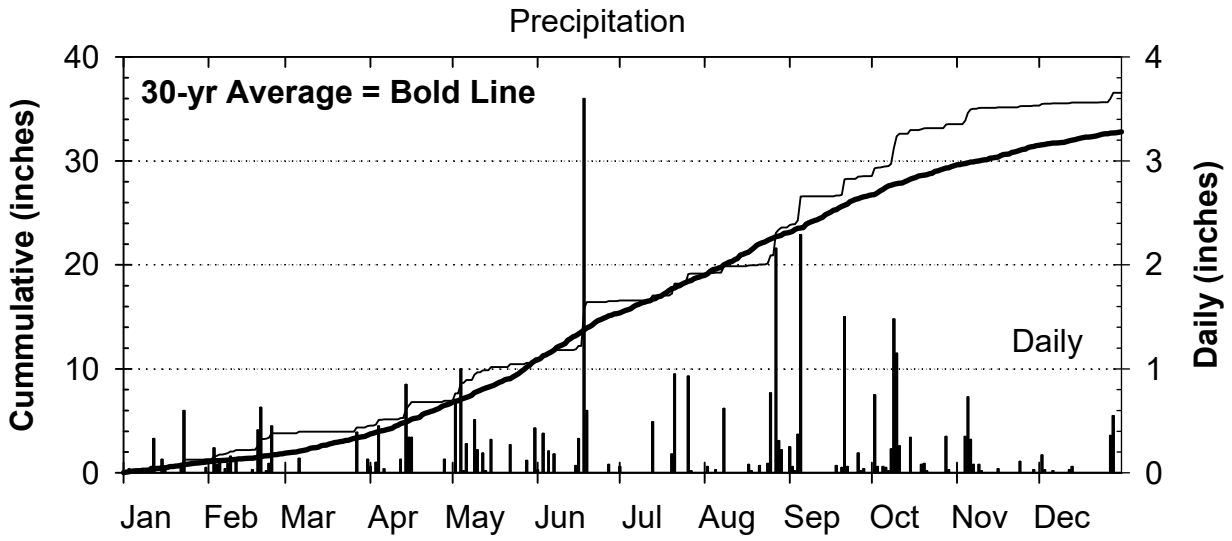
Table A-3. Monthly and total precipitation (inches) data for the Hancock Research Station.

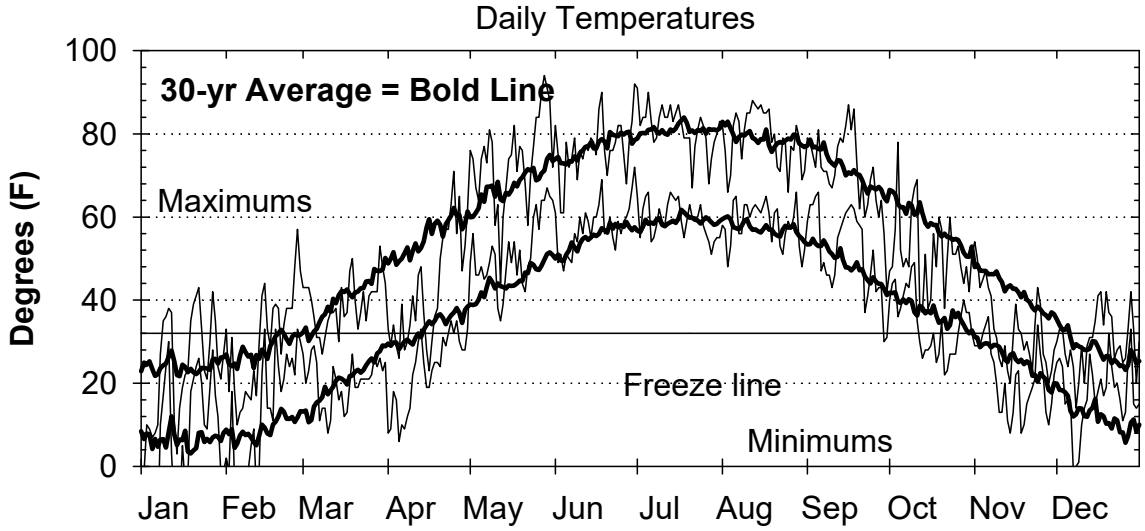
Year	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Annual
1989	0.3	0.4	1.8	0.5	7.3	2.1	3.0	1.7	1.5	4.3	1.4	0.3	24.6
1990	1.0	0.6	2.9	2.0	4.8	8.1	3.9	6.4	2.9	2.7	1.0	2.1	38.6
1991	0.7	0.4	2.8	4.6	6.5	1.3	3.9	1.8	3.3	3.6	4.4	1.5	34.6
1992	0.7	0.6	2.4	2.8	2.5	1.7	4.2	3.2	7.9	1.4	4.4	2.2	34.0
1993	1.1	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	8.0	3.2	3.4	1.5	0.4	0.6	29.9
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	5.8	3.5	4.0	1.6	3.2	0.6	31.0
2006	1.1	0.7	0.8	5.0	5.8	1.5	2.7	2.9	3.8	2.0	1.7	1.6	29.7
2007	1.1	0.9	2.4	2.4	3.8	1.8	2.7	8.9	2.9	4.6	0.1	0.9	32.3
2008	1.6	1.9	0.5	5.5	2.9	6.5	4.5	2.4	2.1	1.8	1.6	2.4	33.7
2009	0.5	1.1	1.9	3.7	4.6	2.7	2.2	3.4	0.6	5.0	1.3	2.4	29.4
2010	0.8	0.4	0.6	2.6	3.6	7.2	10.6	5.4	4.4	1.3	1.4	0.9	39.3
2011	0.6	1.0	2.2	4.8	3.3	3.7	3.0	2.1	6.3	1.9	2.2	1.1	32.3
2012	0.6	0.3	2.8	3.4	6.0	1.9	0.6	2.9	1.1	5.5	1.4	1.9	28.4
2013	1.2	1.1	1.7	3.9	5.0	5.3	1.6	1.9	2.1	2.4	3.1	0.8	30.0
2014	1.1	0.9	1.1	8.9	2.2	6.8	1.7	6.5	4.3	2.9	1.6	1.0	39.0
2015	0.3	0.2	0.4	3.7	5.6	4.3	1.8	3.1	4.8	3.2	2.2	1.6	31.2
2016	1.0	0.5	5.9	1.5	2.5	3.6	3.9	5.5	11.3	2.2	2.1	1.4	41.3
2017	1.8	1.1	1.7	3.5	3.8	8.0	4.1	4.3	2.5	4.4	0.6	0.6	36.4
2018	0.9	1.2	0.9	3.4	6.3	5.5	4.0	7.1	5.7	4.3	2.2	1.5	43.1
30-year Average	1.1	0.9	1.8	3.4	4.3	4.9	4.0	4.1	3.4	2.7	1.9	1.1	33.8

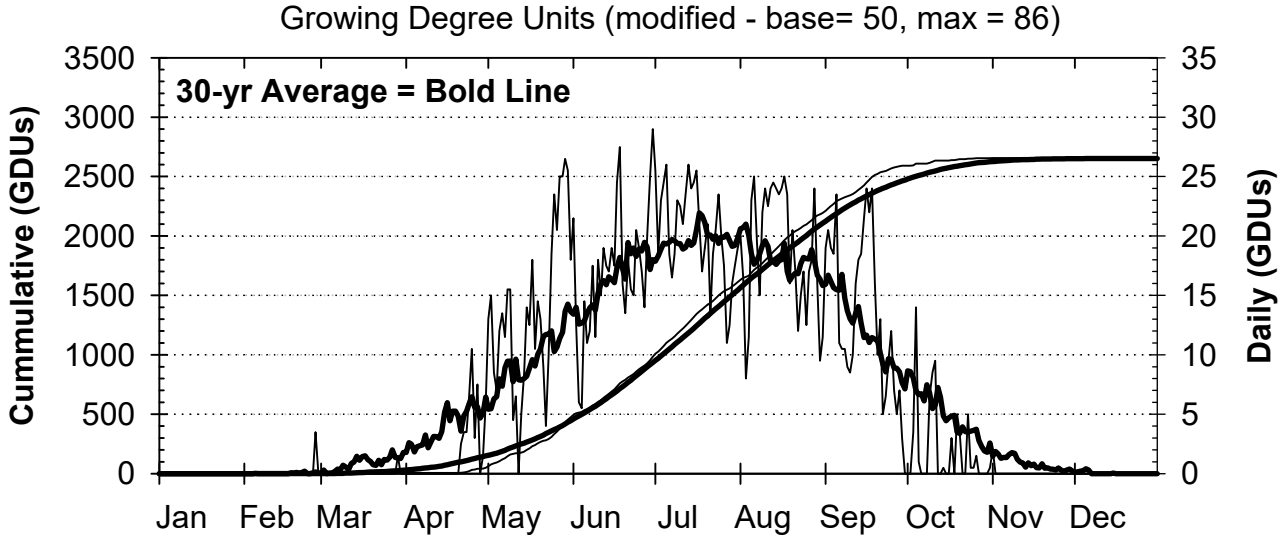
Table A-4. Average monthly and annual temperature (oF) data for the Hancock Research Station.

Year	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Annual
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	64	61	49	31	26	44
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
2006	30	20	33	51	58	67	74	70	58	45	39	29	48
2007	23	13	36	44	61	69	71	70	62	54	34	18	47
2008	17	15	26	45	54	66	70	68	62	48	35	14	43
2009	7	22	31	43	57	65	64	66	62	43	41	20	44
2010	15	20	37	51	59	67	72	72	58	50	36	16	46
2011	12	18	27	42	55	65	74	70	58	51	38	27	45
2012	22	28	48	46	62	69	77	69	59	46	36	25	49
2013	19	17	24	38	58	64	71	69	62	47	32	14	43
2014	9	7	22	41	56	69	66	69	60	46	26	25	41
2015	18	9	33	46	59	65	69	68	66	50	41	33	46
2016	16	27	38	44	56	66	71	70	64	52	42	21	47
2017	20	28	30	48	54	67	69	66	63	49	33	19	46
2018	17	18	31	34	64	68	71	70	62	45	28	26	45
30-year Average	17	20	32	45	57	67	70	69	61	49	35	22	45

2018 Weather Summary for Marshfield, WI







Source: Midwest Region Climatological Center.

Table A-5. 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
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	36.4
1991	0.4	0.7	2.5	4.4	6.5	2.2	5.7	2.1	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	1.4	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	28.0
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	34.8
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	22.4
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
2006	0.9	0.4	1.6	1.6	4.1	2.2	2.1	4.2	2.5	2.5	1.3	2.1	25.5
2007	0.9	1.0	1.7	1.9	4.7	2.7	3.3	9.7	3.8	4.8	0.1	1.0	35.7
2008	1.3	1.1	0.6	5.8	3.3	3.4	3.2	1.3	1.9	1.6	2.0	2.2	27.8
2009	0.4	0.7	1.3	3.3	3.9	3.7	2.5	7.3	0.4	6.2	0.5	1.8	31.8
2010	0.9	0.3	0.7	1.0	3.6	6.8	11.1	4.4	9.0	2.4	2.9	2.0	45.0
2011	0.7	0.6	1.9	3.0	3.2	4.1	8.2	2.7	3.6	2.3	0.9	1.3	32.5
2012	1.2	1.1	1.3	2.3	3.8	3.6	1.3	4.1	1.7	5.8	1.2	1.7	29.1
2013	1.3	1.4	1.8	4.3	6.6	4.7	2.4	1.1	3.3	7.2	1.9	1.3	37.3
2014	1.4	1.5	0.8	5.2	4.8	5.2	3.0	6.9	3.1	3.5	2.2	1.6	39.1
2015	0.5	0.2	0.4	3.6	5.0	5.2	2.9	3.1	6.6	2.3	2.7	5.0	37.3
2016	0.7	0.7	4.8	1.8	2.9	6.6	4.3	3.9	6.0	2.2	1.9	2.1	37.6
2017	2.3	1.4	2.2	6.0	5.7	6.9	4.1	2.9	1.2	4.2	0.8	0.8	38.5
2018	1.3	2.5	0.7	2.5	4.1	5.5	2.6	4.5	4.9	5.0	1.8	1.3	36.6
30-year Average	1.0	0.9	1.8	3.0	4.2	4.6	3.6	4.1	3.7	3.0	1.9	1.3	33.1

Table A-6. Average monthly and annual temperature (oF) data for the Marshfield Research Station.

Year	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Annual
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	66	59	48	32	21	44
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
2006	26	17	31	49	56	66	73	68	56	42	36	25	46
2007	19	11	34	43	59	67	69	68	61	53	32	14	45
2008	13	11	23	42	53	64	69	67	60	47	34	12	41
2009	6	20	30	44	57	65	65	66	62	42	40	19	43
2010	16	22	38	51	58	66	72	71	57	51	35	18	46
2011	12	18	27	41	55	65	74	70	57	50	36	24	44
2012	19	25	45	45	59	67	75	68	58	45	34	24	47
2013	16	16	24	37	56	64	70	68	61	47	30	12	42
2014	5	5	18	40	56	68	67	67	59	46	25	24	40
2015	14	7	31	46	57	65	69	66	65	48	39	31	45
2016	14	21	36	42	56	66	70	69	62	50	42	19	46
2017	18	26	28	47	53	66	70	65	62	49	30	16	44
2018	14	22	30	33	63	67	70	69	61	43	27	24	44
30-year Average	15	19	30	44	56	66	70	68	60	48	33	20	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. Observations and Data Collected

Corn Measurements

AGI (Adjusted Gross Income)	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 = $3.40 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 Harvest Master unit on combine or wet weight method and adjusted to standard corn moisture 15.5% 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 leaf (flag) 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%

Table B-1. Observations and Data Collected

Kernel Mass	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	plant counts on whole plot (22' x 2 rows)
Ear Density	Units	Ears per acre
	Determination	Just prior to harvest
	Observations	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
Starch (Grain)	Units	%
	Determination	Near Infra-Red Transmittance Spectroscopy using a global calibration equation from Foss
	Observations	Plot subsample
Protein (Grain)	Units	%
	Determination	Near Infra-Red Transmittance Spectroscopy using a global calibration equation from Foss
	Observations	Plot subsample
Oil (Grain)	Units	%
	Determination	Near Infra-Red Transmittance Spectroscopy using a global calibration equation from Foss
	Observations	Plot subsample
Ethanol (Grain)	Units	%
	Determination	Near Infra-Red Transmittance Spectroscopy using a global calibration equation from Pioneer
	Observations	Plot subsample
Diseases ratings	Units	Rating score = 1-9 1,2,3= Worst; 4,5,6= Mid; 7,8,9= Best
	Determination	Based on amount of disease on plant part of interest
	Observations	Plot measured in the field
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	Formula	% Greenness x Leaf Rating (Leaf Rating scale 1-5, Based on % of

Table B-1. Observations and Data Collected		
Rating (SMR)		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%
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
Soybean Measurements		
AGI (Adjusted Gross Income)	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 = $8.48 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		
AGI (Adjusted Gross Income)	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 = $4.75 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 ° 18 '- 89° 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 ° 7 ' - 89 ° 32 '	Plainfield loamy sand (Predominant soil)	Mixed, mesic	Typic Udipsamment
	Sparta loamy sand	Sandy, mixed, mesic	Entic Hapludoll
Lancaster ARS 42 ° 50 ' - 90 ° 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 ° 39 ' - 90 ° 8 '	Withee silt loam (Predominant soil)	Fine-loamy, mixed	Aquic Glossoboralf
	Marshfield silt loam	Fine-loamy, mixed, frigid	Typic Ochraqualf
Spooner ARS 45 ° 49 ' - 91 ° 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: **Plant Density and Hybrid Influence on Corn Grain and Silage Performance**

Experiment: 02PD **Trial ID:** 6260 **Year:** 2018

Personnel: Joe Lauer, Kent Kohn, Thierno Diallo

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

Supported By: HATCH

Site Information

Field: ARS408 **Previous Crop:** Alfalfa **Soil Type:** Plano Silt Loam

Soil Test: **Date:** 5 /1 /18 **pH** 6.2 **OM (%)** 3.5 **P (ppm)** 37 **K (ppm)** 106

Plot Management

Tillage Operations: Disk Chisel Field Cultivator

		Analysis:	Rate lbs/A	Date:
Fertilizer:	**Preplant :**	46-0-0	250	N/A
	Starter :	9-11-30-6S-1Zn	200 lbs/A	5 /1 /18
	Post plant :	N/A	N/A	N/A
	Manure:			

Herbicide: Resicore 80.0 oz/A
Simazine 4L 16.0oz/A

Insecticide: Force 3G 4.4 lbs/A

Irrigation: None **Hybrid:** See Factors

Planting Date: 5/1/18 **Planting Depth:** 1.5" **Row Width:** 30"

Target Plant Density: See Factors **Planting Method:** Almaco Precision Planter

Harvest Date: S: 9/7/18
G: 10/9/18

Harvest Method: S: New Holland 707
G: Massey 8XP

Experimental Design

Design: RCB **Replications:** 4

Plot Size Seeded: 20' x 25' **Experiment Size:** 1.0 A

Harvest Plot Size: S: 2.5' x 23'
G: 5' x 23'

Harvest Plant Density: 33972

Factors/Treatments:

Target Plant Density:	Hybrid:
1) 20000	1) Jung 53SS517RIB
2) 26000	2) Dekalb DKC58-06RIB
3) 32000	
4) 38000	
5) 44000	
6) 50000	

Results: Tables 1802-01 & 1802-02.

Table: 1802-01. Plant Density and Hybrid Influence on Corn Grain. Arlington, WI - 2018.

Hybrid	Target density	Density Harvest	Density Ears	Yield	Moisture	Test weight	Lodged Total	Lodged Stalk	Lodged Root	AGR $3.40
	plants/A	plants/A	ears/A	bu/A	%	lbs/bu	%	%	%	$/A
DKC58-06RIB		35132	37152	261	27.9	56	10.4	1.3	9.1	762
Jung 53SS517RIB		32812	33743	240	26.5	55	12.0	0.6	11.4	709
	20000	19649	22869	229	28.3	55	2.5	0.2	2.3	668
	26000	27935	30113	241	27.5	55	9.1	0.6	8.6	707
	32000	30681	32244	249	27.3	56	7.9	1.6	6.3	730
	38000	37926	38778	260	26.8	57	16.4	1.7	14.7	766
	44000	41429	41855	262	27.0	55	12.5	0.8	11.7	769
	50000	46211	46827	261	26.6	55	19.0	1.0	18.0	770
DKC58-06RIB	20000	20170	24526	239	28.8	55	0.5	0.5	0.0	693
DKC58-06RIB	26000	28977	32291	260	27.6	56	6.9	0.0	6.9	760
DKC58-06RIB	32000	31723	33712	250	28.5	56	9.8	3.2	6.6	728
DKC58-06RIB	38000	38636	40056	268	27.3	57	20.3	3.2	17.1	786
DKC58-06RIB	44000	43371	43939	282	28.2	56	12.3	0.4	11.8	823
DKC58-06RIB	50000	47916	48389	265	27.2	55	12.9	0.8	12.1	779
Jung 53SS517RIB	20000	19129	21212	220	27.7	55	4.5	0.0	4.5	642
Jung 53SS517RIB	26000	26894	27935	223	27.5	55	11.4	1.1	10.3	654
Jung 53SS517RIB	32000	29640	30776	247	26.0	55	6.0	0.0	6.0	732
Jung 53SS517RIB	38000	37215	37499	253	26.3	56	12.5	0.2	12.2	746
Jung 53SS517RIB	44000	39488	39772	241	25.7	55	12.7	1.2	11.5	715
Jung 53SS517RIB	50000	44507	45265	257	26.0	55	25.0	1.2	23.8	762
Mean		33972	35448	250	27.2	56	11.2	1.0	10.2	735
Probability(%)										
Hybrid (H)		0.2	0.0	0.1	0.0	11.5	64.0	29.4	46.1	0.3
Plant Density (D)		0.0	0.0	0.8	9.7	25.7	8.3	79.1	6.8	0.4
Plant Density x Hybrid		81.7	97.9	28.8	30.8	76.6	60.6	30.1	72.5	27.5
LSD (0.10)										
Hybrid (H)		1158	1269	9	0.6	NS	NS	NS	NS	28
Plant Density (D)		2006	2198	16	1.0	NS	9.8	NS	9.0	48
Plant Density x Hybrid		NS	NS	NS	NS	NS	NS	NS	NS	NS

Table: 1802-02. Cutting Height, Plant Density and Hybrid Influence on Silage Preformance.

Arlington WI - 2018.

Hybrid	Target density	Density		Dry Matter		Kernel	KMR	SMR	VMR	Crude	*In Vitro*					Milk per	
		Harvest	Ears	Yield	Moist	milk	0-5	0-5	0-10	protein	ADF	NDF	Digest	NDFD	Starch	Ton	Acre
	plants/A	plants/A	ears/A	T/A	%	%				%	%	%	%	%	%	lbs/T	lbs/A
DKC58-06RIB		35196	37026	10.9	61.0	18.7	0.9	1.3	2.2	6.6	17.0	33	85	54.9	34.4	3085	33540
Jung 53SS517RIB		32892	33617	10.2	62.2	17.7	0.9	1.1	2.0	6.6	18.3	35	84	55.2	31.3	2970	30377
	20000	19224	21969	10.0	63.3	16.2	0.8	1.3	2.1	7.2	17.5	35	85	56.9	30.4	2961	29758
	26000	27936	29829	11.1	61.7	16.2	0.8	1.5	2.3	6.6	17.3	34	85	55.9	32.9	3050	34061
	32000	31156	32575	11.6	62.1	17.5	0.9	1.2	2.0	6.6	17.3	34	85	55.1	33.6	3090	35790
	38000	38163	38920	12.8	59.5	16.9	0.8	0.8	1.7	6.4	16.8	33	85	55.8	34.5	3053	39205
	44000	41194	41666	8.7	61.5	23.1	1.2	1.3	2.5	6.3	17.9	35	84	54.1	33.9	3083	26753
	50000	46593	46969	8.9	61.5	19.4	1.0	1.0	2.0	6.4	18.8	36	83	52.5	31.8	2929	26185
DKC58-06RIB	20000	19887	23485	9.9	64.1	16.2	0.8	1.6	2.4	7.3	17.4	34	85	56.4	30.4	2964	29469
DKC58-06RIB	26000	28220	31439	11.8	60.5	21.2	1.1	1.6	2.7	6.7	16.1	33	86	56.9	35.1	3143	36906
DKC58-06RIB	32000	32576	34659	12.0	61.0	18.7	0.9	1.4	2.3	6.7	16.5	33	86	55.7	35.2	3150	37942
DKC58-06RIB	38000	38257	39583	12.5	60.2	15.0	0.8	0.8	1.6	6.5	16.8	33	85	54.4	34.6	3067	38438
DKC58-06RIB	44000	42993	43371	9.6	61.2	20.0	1.0	1.4	2.4	6.3	17.4	34	84	53.9	34.9	3111	29858
DKC58-06RIB	50000	49243	49621	9.4	59.1	21.2	1.1	0.8	1.9	6.2	17.6	34	84	51.8	35.9	3077	28629
Jung 53SS517RIB	20000	18561	20454	10.1	62.5	16.2	0.8	1.0	1.8	7.1	17.6	35	85	57.5	30.3	2958	30047
Jung 53SS517RIB	26000	27651	28219	10.5	62.9	11.2	0.6	1.3	1.9	6.5	18.5	36	84	55.0	30.8	2958	31216
Jung 53SS517RIB	32000	29735	30492	11.1	63.1	16.2	0.8	1.0	1.8	6.6	18.2	35	84	54.4	32.0	3031	33637
Jung 53SS517RIB	38000	38068	38257	13.1	58.9	18.7	0.9	0.9	1.8	6.3	16.9	33	86	57.1	34.4	3038	39972
Jung 53SS517RIB	44000	39394	39962	7.8	61.9	26.2	1.3	1.2	2.5	6.2	18.4	36	84	54.3	33.0	3054	23648
Jung 53SS517RIB	50000	43942	44318	8.4	63.8	17.5	0.9	1.2	2.1	6.6	19.9	38	82	53.2	27.7	2781	23741
Mean		34044	35321	10.5	61.6	18.2	0.9	1.2	2.1	6.6	17.6	34	84	55.0	32.9	3028	31959
Probability(%)																	
Hybrid (H)		0.0	0.0	0.5	12.5	40.8	40.8	34.7	43.0	0.0	39.1	46.4	9.4	0.3	11.3	6.0	0.2
Plant Density (D)		8.1	7.0	35.5	20.0	65.8	65.8	39.9	38.8	42.7	9.1	6.9	25.2	69.2	4.3	4.6	20.3
Hybrid x Density (H x D)		19.3	62.9	88.7	12.8	31.9	31.9	67.0	62.5	12.3	68.3	56.5	51.7	23.9	11.5	18.3	78.1
LSD (0.10)																	
Hybrid (H)		1875	1892	1.9	NS	NS	NS	NS	NS	0.2	NS	NS	1	1.8	NS	103	5736
Plant Density (D)		2098	2908	NS	NS	NS	NS	NS	NS	NS	1	2	NS	NS	2.1	83	NS
Hybrid x Density (H x D)		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

FIELD EXPERIMENT HISTORY

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

Experiment: 02PD **Trial ID:** 6325 **Year:** 2018

Personnel: Joe Lauer, Kent Kohn, Thierno Diallo

Location: Marshfield, WI **County:** Columbia

Supported By: HATCH

Site Information

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

Soil Test: **Date:** 5 /8 /18 **pH** 6.0 **OM (%)** 2.8 **P (ppm)** 30 **K (ppm)** 91

Plot Management

Tillage Operations: Vertical-Till

		Analysis:	Rate lbs/A	Date:
Fertilizer:	**Preplant :**	N/A	N/A	N/A
	Starter :	9-11-30-6S-1Zn	200 lbs/A	5 /8 /18
	Post plant :	28-0-0	40 gal/A	N/A
	Manure:	N/A		N/A

Herbicide: Me-too-lachlor 1.7pt/A
Hornet 3.0 oz/A
Accent Q 1.0 oz/A

Insecticide: Force 3G 4.4 lbs/A

Irrigation: None **Hybrid:** See Factors

Planting Date: 5/8/18 **Planting Depth:** 1.5" **Row Width:** 30"

Target Plant Density: See Factors **Planting Method:** Almaco Precision Planter

Harvest Date: S: 9/12/18
G: 10/18/18

Harvest Method: S: New Holland 707
G: Massey 8XP

Experimental Design

Design: RCB **Replications:** 4

Plot Size Seeded: 20' x 25' **Experiment Size:** 1.0 A

Harvest Plot Size: S: 2.5' x 23'
G: 5' x 23'

Harvest Plant Density: 33794

Factors/Treatments:

Target Plant Density:	Hybrid:	Cutting height
1) 20000	1) Jung 46SS427RIB	1) High-cut: 24-inches
2) 26000	2) NuTech 5L-503	2) Low-cut: 6-inches
3) 32000		
4) 38000		
5) 44000		
6) 50000		

Results: Tables 1802-03 & 1802-04.

Table: 1802-03. Plant Density and Hybrid Influence on Corn Grain. Marshfield, WI - 2018.

Hybrid	Target density	Density Harvest	Yield	Moisture	Test weight	Lodged Total	Lodged Stalk	Lodged Root	AGR $3.40
	plants/A	plants/A	bu/A	%	lbs/bu	%	%	%	$/A
Jung 46SS427RIB		33702	210	27.3	52	0.7	0.3	0.4	617
NuTech 5L-503		33886	210	30.7	53	0.4	0.1	0.3	602
	20000	21062	190	28.0	52	0.2	0.0	0.3	557
	26000	26116	213	29.9	55	0.8	0.3	0.5	612
	32000	31037	213	28.2	52	0.8	0.6	0.2	623
	38000	37642	216	29.1	54	0.3	0.2	0.1	627
	44000	42001	225	29.5	53	0.0	0.0	0.0	650
	50000	44909	203	29.4	50	1.4	0.4	1.1	587
Jung 46SS427RIB	20000	21338	190	25.7	52	0.2	0.0	0.3	565
Jung 46SS427RIB	26000	26665	221	28.8	53	1.5	0.5	1.0	639
Jung 46SS427RIB	32000	30776	215	26.3	51	0.7	0.6	0.2	636
Jung 46SS427RIB	38000	36695	216	26.9	53	0.6	0.3	0.3	635
Jung 46SS427RIB	44000	40577	211	28.4	54	0.0	0.0	0.0	613
Jung 46SS427RIB	50000	46164	209	27.9	49	1.3	0.6	0.8	611
NuTech 5L-503	20000	20786	191	30.3	53	0.2	0.0	0.3	548
NuTech 5L-503	26000	25568	205	31.1	57	0.0	0.0	0.0	585
NuTech 5L-503	32000	31297	212	30.1	53	0.8	0.6	0.3	610
NuTech 5L-503	38000	38588	217	31.2	55	0.0	0.0	0.0	620
NuTech 5L-503	44000	43424	239	30.6	53	0.1	0.0	0.1	686
NuTech 5L-503	50000	43655	197	30.9	50	1.6	0.2	1.4	563
		33794	210	29.0	53	0.6	0.2	0.4	609
Probability(%)									
Hybrid (H)		82.9	98.3	0.0	30.7	44.7	18.6	76.1	42.4
Plant Density (D)		0.0	10.8	38.9	13.8	31.2	28.7	42.5	10.9
Plant Density x Hybrid		48.1	35.0	73.8	89.8	79.4	84.7	81.2	29.3
LSD (0.10)									
Hybrid (H)		NS	NS	1.0	NS	NS	NS	NS	NS
Plant Density (D)		2444	NS	NS	NS	NS	NS	NS	NS
Plant Density x Hybrid		NS	NS	NS	NS	NS	NS	NS	NS

Table: 1802-04. Cutting Height, Plant Density and Hybrid Influence on Silage Preformance.

Marshfield, WI - 2018. (page 1 of 2)

			Whole Plant														
	Target	Cutting	Density	Dry Matter		Kernel	KMR	SMR	VMR	Crude			*In Vitro*			Milk per	
Hybrid	density	height	Harvest	Yield	Moist	milk	0-5	0-5	0-10	protein	ADF	NDF	Digest	NDFD	Starch	Ton	Acre
	plants/A	inches	plants/A	T/A	%	%				%	%	%	%	%	%	lbs/T	lbs/A
Jung 46SS427RIB			33626	8.3	62.6	68.3	3.4	2.1	5.5	6.6	17.8	35.4	86.5	62.0	32	3224	26880
NuTech 5L-503			34055	8.2	64.7	68.2	3.4	2.8	6.2	6.8	17.4	34.5	87.6	64.2	32	3280	26741
	20000		21215	8.0	62.8	67.5	3.4	3.1	6.5	7.3	16.7	33.9	88.0	64.9	33	3326	26499
	26000		26160	8.5	62.0	64.6	3.2	2.7	5.9	7.0	16.6	33.6	87.8	64.0	34	3317	28143
	32000		30918	8.0	64.3	68.9	3.4	2.6	6.0	6.6	17.8	35.1	87.1	63.2	32	3275	26047
	38000		37594	8.3	64.0	70.8	3.5	2.3	5.9	6.5	18.0	35.5	86.5	62.0	32	3217	26757
	44000		42506	8.6	64.6	68.0	3.4	2.1	5.5	6.5	18.6	36.2	86.1	61.7	31	3180	27453
	50000		44649	8.1	64.1	69.4	3.5	1.9	5.4	6.4	17.9	35.3	86.8	62.8	31	3198	25964
		6	33818	8.8	64.5	68.2	3.4	2.4	5.9	6.5	18.6	36.0	85.9	60.9	31	3204	28215
		24	33862	7.7	62.8	68.2	3.4	2.4	5.9	6.9	16.7	33.9	88.2	65.3	33	3300	25406
Jung 46SS427RIB	20000		21313	8.4	61.9	66.2	3.3	2.8	6.1	7.3	16.8	34.4	87.5	63.9	32	3288	27752
Jung 46SS427RIB	26000		26752	8.4	62.1	70.0	3.5	2.2	5.7	6.8	18.0	35.6	86.5	62.3	32	3224	27057
Jung 46SS427RIB	32000		30303	7.9	63.3	70.0	3.5	2.4	5.9	6.6	17.7	35.1	86.8	62.5	32	3259	25906
Jung 46SS427RIB	38000		36837	8.4	62.3	68.8	3.4	2.2	5.6	6.4	18.0	35.5	86.2	61.4	32	3217	27130
Jung 46SS427RIB	44000		40624	8.5	63.2	63.6	3.2	1.7	4.8	6.5	18.4	36.1	85.6	60.2	31	3179	27113
Jung 46SS427RIB	50000		45927	8.3	62.8	71.1	3.6	1.6	5.1	6.1	18.0	35.8	86.2	61.8	32	3177	26323
NuTech 5L-503	20000		21117	7.5	63.8	68.7	3.4	3.4	6.8	7.2	16.6	33.5	88.6	65.9	33	3364	25245
NuTech 5L-503	26000		25568	8.6	61.8	59.2	3.0	3.2	6.2	7.3	15.2	31.6	89.1	65.6	35	3410	29229
NuTech 5L-503	32000		31534	8.0	65.2	67.9	3.4	2.8	6.2	6.7	18.0	35.0	87.3	64.0	32	3290	26189
NuTech 5L-503	38000		38352	8.2	65.8	72.9	3.6	2.4	6.1	6.5	18.0	35.4	86.7	62.5	31	3217	26384
NuTech 5L-503	44000		44387	8.8	66.1	72.5	3.6	2.5	6.1	6.5	18.9	36.3	86.6	63.2	30	3181	27792
NuTech 5L-503	50000		43371	8.0	65.3	67.8	3.4	2.3	5.7	6.7	17.9	34.9	87.3	63.8	31	3219	25605
Jung 46SS427RIB		6	33473	8.9	63.7	68.3	3.4	2.1	5.5	6.4	18.9	36.7	85.2	59.8	31	3178	28261
Jung 46SS427RIB		24	33779	7.8	61.5	68.3	3.4	2.1	5.5	6.8	16.7	34.1	87.7	64.2	33	3270	25499
NuTech 5L-503		6	34164	8.7	65.2	68.2	3.4	2.8	6.2	6.6	18.2	35.3	86.5	62.0	32	3229	28169
NuTech 5L-503		24	33946	7.6	64.1	68.2	3.4	2.8	6.2	7.1	16.6	33.6	88.7	66.4	32	3331	25312
	20000	6	21521	8.4	63.8	67.5	3.4	3.1	6.5	7.0	17.8	35.5	86.6	62.3	31	3240	27316
	20000	24	20909	7.5	61.8	67.5	3.4	3.1	6.5	7.5	15.6	32.4	89.5	67.6	34	3412	25682
	26000	6	26246	9.2	62.2	64.6	3.2	2.7	5.9	6.7	17.3	34.3	87.1	62.6	33	3287	30394
	26000	24	26073	7.7	61.7	64.6	3.2	2.7	5.9	7.3	15.9	32.9	88.6	65.3	34	3347	25892
	32000	6	30681	8.6	64.8	68.9	3.4	2.6	6.0	6.5	18.5	35.9	86.1	61.4	32	3248	27865
	32000	24	31155	7.3	63.7	68.9	3.4	2.6	6.0	6.8	17.1	34.3	88.0	65.0	32	3301	24230
	38000	6	37499	8.8	65.2	70.8	3.5	2.3	5.9	6.3	19.0	36.5	85.3	59.8	31	3185	27890
	38000	24	37689	7.9	62.9	70.8	3.5	2.3	5.9	6.7	17.0	34.5	87.6	64.1	32	3250	25625
	44000	6	42833	9.3	65.3	68.0	3.4	2.1	5.5	6.4	19.0	36.5	85.4	60.0	31	3177	29524
	44000	24	42179	8.0	63.9	68.0	3.4	2.1	5.5	6.7	18.2	35.9	86.8	63.4	30	3184	25382
	50000	6	44128	8.5	65.4	69.4	3.5	1.9	5.4	6.1	19.7	37.4	84.7	59.1	29	3085	26304
	50000	24	45170	7.7	62.7	69.4	3.5	1.9	5.4	6.7	16.2	33.3	88.8	66.5	33	3311	25624

continued

Table: 1802-04. Cutting Height, Plant Density and Hybrid Influence on Silage Preformance.

(continued) **Marshfield, WI - 2018. (page 2 of 2)**

Hybrid	Target density	Cutting height	Whole Plant Density Harvest	Dry Matter Yield	Moist	Kernel milk	KMR 0-5	SMR 0-5	VMR 0-10	Crude protein	*In Vitro* ADF	NDF	Digest	NDFD	Starch	Milk per Ton	Milk per Acre
	plants/A	inches	plants/A	T/A	%	%				%	%	%	%	%	%	lbs/T	lbs/A
Jung 46SS427RIB	20000	6	21262	8.8	63.7	66.2	3.3	2.8	6.1	7.0	18.8	37	85	60.4	29.3	3134	27714
Jung 46SS427RIB	20000	24	21363	8.1	60.1	66.2	3.3	2.8	6.1	7.7	14.8	32	90	67.5	35.5	3441	27790
Jung 46SS427RIB	26000	6	26925	9.1	63.0	70.0	3.5	2.2	5.7	6.5	19.4	37	85	59.9	30.6	3172	28775
Jung 46SS427RIB	26000	24	26578	7.7	61.2	70.0	3.5	2.2	5.7	7.0	16.7	34	88	64.7	32.6	3276	25340
Jung 46SS427RIB	32000	6	29356	8.5	63.8	70.0	3.5	2.4	5.9	6.5	17.9	35	86	61.4	32.2	3260	27823
Jung 46SS427RIB	32000	24	31250	7.4	62.8	70.0	3.5	2.4	5.9	6.6	17.4	35	87	63.6	32.1	3258	23988
Jung 46SS427RIB	38000	6	37121	8.8	63.8	68.8	3.4	2.2	5.6	6.3	19.3	37	85	59.0	30.8	3171	27874
Jung 46SS427RIB	38000	24	36553	8.1	60.7	68.8	3.4	2.2	5.6	6.6	16.6	34	88	63.7	33.5	3263	26387
Jung 46SS427RIB	44000	6	40719	9.2	63.4	63.6	3.2	1.7	4.8	6.5	17.8	35	86	59.4	33.3	3275	30011
Jung 46SS427RIB	44000	24	40530	7.8	62.9	63.6	3.2	1.7	4.8	6.5	18.9	37	85	60.9	29.4	3083	24214
Jung 46SS427RIB	50000	6	45454	9.0	64.3	71.1	3.6	1.6	5.1	5.7	20.1	38	84	58.5	29.1	3057	27371
Jung 46SS427RIB	50000	24	46401	7.7	61.3	71.1	3.6	1.6	5.1	6.4	15.8	33	88	65.1	34.1	3297	25274
NuTech 5L-503	20000	6	21780	8.0	64.0	68.7	3.4	3.4	6.8	7.0	16.8	34	88	64.2	33.0	3345	26918
NuTech 5L-503	20000	24	20454	7.0	63.5	68.7	3.4	3.4	6.8	7.4	16.3	33	89	67.7	32.9	3382	23573
NuTech 5L-503	26000	6	25568	9.4	61.4	59.2	3.0	3.2	6.2	6.8	15.3	32	89	65.4	35.9	3403	32014
NuTech 5L-503	26000	24	25568	7.7	62.2	59.2	3.0	3.2	6.2	7.7	15.1	32	89	65.9	34.9	3417	26444
NuTech 5L-503	32000	6	32007	8.6	65.8	67.9	3.4	2.8	6.2	6.6	19.1	36	86	61.5	30.9	3236	27906
NuTech 5L-503	32000	24	31060	7.3	64.7	67.9	3.4	2.8	6.2	6.9	16.9	34	89	66.5	32.4	3344	24472
NuTech 5L-503	38000	6	37878	8.7	66.6	72.9	3.6	2.4	6.1	6.2	18.6	36	86	60.6	31.3	3198	27906
NuTech 5L-503	38000	24	38825	7.7	65.0	72.9	3.6	2.4	6.1	6.8	17.4	35	88	64.5	30.9	3236	24863
NuTech 5L-503	44000	6	44947	9.4	67.2	72.5	3.6	2.5	6.1	6.3	20.3	38	85	60.5	28.4	3078	29036
NuTech 5L-503	44000	24	43827	8.1	65.0	72.5	3.6	2.5	6.1	6.8	17.5	35	88	65.9	31.5	3285	26549
NuTech 5L-503	50000	6	42802	8.1	66.5	67.8	3.4	2.3	5.7	6.5	19.2	36	85	59.7	29.8	3114	25236
NuTech 5L-503	50000	24	43939	7.8	64.1	67.8	3.4	2.3	5.7	6.9	16.6	33	89	67.8	32.2	3324	25974
Mean			33840	8.3	63.6	68.2	3.4	2.4	5.9	6.7	17.6	35	87	63.1	31.9	3252	26810
Probability(%)																	
Hybrid (H)			76.7	55.9	0.9	96.2	96.2	5.6	6.5	12.5	38.5	17.9	4.1	1.7	86.1	17.1	89.4
Plant Density (D)			0.0	57.3	0.4	38.4	38.4	3.7	8.5	0.0	2.5	10.6	1.2	0.2	28.0	5.3	81.9
Hybrid x Density (H x D)			79.2	75.8	13.3	4.9	4.9	91.7	87.4	27.5	26.4	43.9	59.4	71.3	41.4	67.6	80.9
Cutting Height (C)			86.3	0.0	0.0	-	-	-	-	0.0	0.0	0.0	0.0	0.0	1.6	0.1	0.0
H x C			30.7	87.2	8.1	-	-	-	-	24.7	37.3	35.9	54.2	95.1	33.2	83.0	90.4
D x C			36.3	27.0	24.7	-	-	-	-	17.7	37.9	28.1	13.5	12.1	27.5	16.0	7.5
D x H x C			20.4	43.3	11.9	-	-	-	-	14.9	2.0	1.6	1.9	6.5	1.6	1.2	8.8
LSD (0.10)																	
Hybrid (H)			NS	NS	0.8	NS	NS	0.5	0.5	NS	NS	NS	1	1.1	NS	NS	NS
Plant Density (D)			3884	NS	1.0	NS	NS	0.6	0.7	0.3	1.1	NS	1	1.3	NS	94	NS
Hybrid x Density (H x D)			NS	NS	NS	6.6	0.3	NS	NS	0.4	NS	NS	NS	NS	NS	NS	NS
Cutting Height (C)			NS	0.2	0.5	NS	NS	NS	NS	0.1	0.6	1	0	0.8	0.9	44	664
H x C			NS	NS	0.7	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
D x C			NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	2914
D x H x C			NS	NS	NS	NS	NS	NS	NS	NS	2.0	3	2	2.6	3.5	166	4180

FIELD EXPERIMENT HISTORY

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

Experiment: 03DOP **Trial ID:** 6261 **Year:** 2018

Personnel: Joe Lauer, Kent Kohn, Thierno Diallo

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

Supported By: HATCH

Site Information

Field: ARS392 **Previous Crop:** Soybean **Soil Type:** Plano Silt Loam

Soil Test: **Date:** 11/1 /18 **pH** 6.6 **OM (%)** 2.8 **P (ppm)** 23 **K (ppm)** 89

Plot Management

Tillage Operations: Disk Chisel Field Cultivator

		Analysis:	Rate lbs/A:	Date:
Fertilizer:	**Preplant :**	46-0-0	325 lbs/A	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: Dual II 1.5 pt/A
Hornet 4.0 oz/A

Insecticide: None

Hybrid: Factor

Irrigation: None

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

Target Plant Density: 34000 **plants per acre** **Planting Method:** JD1700 w RTK

Harvest Date: S: See Factors
G:10/23/18

Harvest Method: S: New Holland 707
G: Massey Ferguson 8XP

Notes:

Experimental Design

Design: RCB split-plot (2 x 3

Replications: 3

Plot Size Seeded: 10' x 30'

Experiment Size: 1.3A

Harvest Plot Size: S: 30' x 2.5'
G: 30' x 5'

Harvest Plant Density: 32554 **plants per acre**

Factors/Treatments:

Planting Date:
1) April 24
2) May 07
3) May 16
4) June 01
5) June 14

Hybrid:
1) Pioneer P9998AMXT
2) DeKalb DKC58-06RIB

Harvest Date:
1) September 04
2) September 24

Results: Tables 1803-01, 1803-02 & 1803-03.

Table: 1803-01. Planting Date Influence on Corn Grain Performance.

Arlington, WI - 2018.

Planting date	Hybrid	Grain Harvest population	Yield	Moisture	Test weight	Lodged Total	Lodged Stalk	Lodged Root	AGI $3.40	Silking date	Early dent	Kernel Milk 75%	Kernel Milk 50%	Kernel Milk 25%	Black layer
		plants/A	bu/A	%	lbs/bu	%	%	%	$/A	doy	doy	doy	doy	doy	doy
	DKC58-06RIB	32931	227	28.7	54	36	35	1	664	205	243	251	259	267	277
	P9998AMXT	32176	211	24.1	54	27	22	5	639	204	241	247	256	265	274
April 24		33348	259	20.2	57	13	12	1	797	192	230	235	240	251	260
May 07		33154	256	22.0	56	11	10	1	777	196	235	242	251	258	268
May 16		32331	238	24.6	54	36	34	1	710	198	240	246	257	263	275
June 01		32912	201	29.1	52	38	35	3	581	214	247	254	262	273	282
June 14		31024	142	36.1	51	61	52	9	391	224	258	269	278	286	291
April 24	DKC58-06RIB	33783	258	21.7	57	16	16	0	786	192	230	235	240	251	260
May 07	DKC58-06RIB	34074	271	24.0	55	12	12	0	812	197	236	245	253	260	274
May 16	DKC58-06RIB	32138	240	28.2	53	45	45	1	700	198	240	246	256	263	275
June 01	DKC58-06RIB	33396	209	31.0	53	55	55	0	598	214	249	256	265	276	283
June 14	DKC58-06RIB	31266	157	38.4	52	52	50	3	424	224	260	273	280	287	291
April 24	P9998AMXT	32912	260	18.6	58	10	8	2	809	192	230	235	240	251	260
May 07	P9998AMXT	32234	241	20.0	56	10	8	2	742	195	234	239	248	255	262
May 16	P9998AMXT	32525	235	20.9	56	26	24	2	721	197	239	245	257	263	274
June 01	P9998AMXT	32428	192	27.1	52	21	15	5	565	213	245	252	259	270	282
June 14	P9998AMXT	30782	128	33.8	50	70	55	15	358	224	256	265	275	284	291
Mean		32554	219	26.4	54	32	29	3	651	205	242	249	257	266	275
Probability(%)															
Hybrid(H)		52.4	11.6	3.3	36.7	41.1	21.0	15.0	30.3	13.3	32.0	17.5	12.6	23.3	14.3
PlantDate(P)		30.6	0.0	0.0	0.0	1.0	1.1	11.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
HxP		90.8	35.5	13.2	6.2	40.6	38.6	40.4	33.9	50.3	94.3	62.5	24.2	61.1	1.9
LSD (0.10)															
Hybrid(H)		NS	NS	2.5	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
PlantDate(P)		NS	16	1.4	2	24	21	NS	50	1	5	5	3	4	3
HxP		NS	NS	NS	2	NS	NS	NS	NS	NS	NS	NS	NS	NS	5

Table: 1803-02. Planting Date and Harvest Timing Influence on Corn Silage Performance.

Arlington, WI - 2018.

					Whole Plant														
	Planting	Harvest	Density		Dry Matter		Plant	Kernel	KMR	SMR	VMR	Crude			*In Vitro*			Milk per	
Hybrid	date	date	plant	ears	yield	Moisture	height	milk	0-5	0-5	0-10	protein	ADF	NDF	Digest	NDFD	Starch	Ton	Acre
			plants/A	ears/A	tons/A	%	inches	%				%	%	%	%	%	%	lbs/T	lbs/A
DKC58-06RIB			36823	37113	9.9	63.5	105	55	2.8	2.4	5.2	6.8	19.3	37.1	85.1	59.8	30.1	3062	30773
P9998AMXT			35332	35564	9.0	61.7	104	48	2.4	2.1	4.5	7.0	18.7	36.2	86.5	62.7	31.5	3189	29127
	April 24		35671	35913	10.9	52.7	99	20	1.0	0.9	1.9	6.4	15.7	31.8	87.3	60.0	38.1	3310	35960
	May 07		35913	36445	10.8	57.7	101	33	1.6	1.6	3.2	6.6	16.5	33.0	87.1	60.8	36.2	3284	35354
	May 16		36300	36736	10.1	61.5	104	43	2.1	1.6	3.8	6.6	17.9	35.2	86.3	61.2	33.4	3200	32292
	June 01		36542	36639	9.2	68.0	107	74	3.7	3.3	7.0	7.2	21.1	39.6	84.9	61.9	26.6	3059	28219
	June 14		35961	35961	6.4	73.2	113	89	4.5	3.8	8.3	7.5	23.8	43.4	83.5	62.1	19.7	2773	17924
		Sept 04	36436	36726	9.0	70.9	105	74	3.7	2.9	6.6	7.3	21.3	40.0	84.9	62.5	25.5	3047	28145
		Sept 24	35719	35952	9.9	54.3	104	30	1.5	1.6	3.0	6.4	16.7	33.3	86.7	60.0	36.1	3204	31755
DKC58-06RIB	April 24		35913	36010	11.6	53.9	99	22	1.1	1.2	2.2	6.3	15.4	31.6	87.1	59.1	37.9	3265	37770
DKC58-06RIB	May 07		37462	38042	11.1	59.0	101	37	1.8	1.8	3.6	6.4	16.7	33.5	86.4	59.2	35.5	3210	35639
DKC58-06RIB	May 16		37752	38526	10.4	62.8	106	48	2.4	1.8	4.2	6.3	18.2	35.7	85.4	59.2	32.8	3141	32743
DKC58-06RIB	June 01		36784	36784	9.4	68.8	108	79	3.9	3.3	7.3	7.2	21.9	40.8	83.9	60.4	25.1	2980	28358
DKC58-06RIB	June 14		36203	36203	7.0	73.1	113	91	4.5	3.9	8.5	7.5	24.1	43.8	82.8	60.9	19.1	2715	19354
P9998AMXT	April 24		35429	35816	10.2	51.4	99	18	0.9	0.7	1.6	6.5	16.0	32.1	87.5	60.9	38.3	3356	34149
P9998AMXT	May 07		34364	34848	10.5	56.4	100	28	1.4	1.5	2.9	6.8	16.4	32.6	87.8	62.5	36.9	3359	35068
P9998AMXT	May 16		34848	34945	9.8	60.1	102	38	1.9	1.4	3.3	6.8	17.5	34.7	87.3	63.3	34.0	3260	31842
P9998AMXT	June 01		36300	36494	8.9	67.1	106	70	3.5	3.2	6.7	7.2	20.2	38.5	85.9	63.4	28.1	3138	28080
P9998AMXT	June 14		35719	35719	5.8	73.3	112	88	4.4	3.7	8.1	7.6	23.5	43.1	84.1	63.4	20.2	2831	16494
DKC58-06RIB		Sept 04	37404	37791	9.4	71.0	106	77	3.8	3.1	6.9	7.2	21.8	40.8	84.0	61.0	24.4	2958	28523
DKC58-06RIB		Sept 24	36242	36436	10.4	56.0	105	34	1.7	1.7	3.4	6.3	16.7	33.4	86.2	58.5	35.7	3166	33023
P9998AMXT		Sept 04	35468	35661	8.6	70.8	104	71	3.5	2.8	6.3	7.4	20.7	39.2	85.8	63.9	26.6	3135	27767
P9998AMXT		Sept 24	35196	35468	9.4	52.5	104	26	1.3	1.4	2.7	6.6	16.7	33.2	87.2	61.4	36.4	3243	30487
	April 24	Sept 04	37074	37462	10.8	63.4	99	40	2.0	1.7	3.7	6.6	16.6	33.4	87.7	63.1	34.8	3390	36444
	April 24	Sept 24	34267	34364	11.0	41.9	99	0	0.0	0.2	0.2	6.3	14.7	30.3	86.9	56.8	41.4	3231	35476
	May 07	Sept 04	35235	35816	10.5	67.2	102	60	3.0	2.6	5.6	6.9	18.1	35.4	86.9	63.1	32.3	3342	35105
	May 07	Sept 24	36590	37074	11.0	48.2	100	5	0.3	0.7	0.9	6.3	15.0	30.7	87.2	58.5	40.1	3227	35603
	May 16	Sept 04	36494	36978	9.7	70.3	104	71	3.5	2.6	6.2	7.0	19.9	38.1	85.6	62.5	28.5	3178	30867
	May 16	Sept 24	36106	36494	10.5	52.6	104	15	0.8	0.6	1.4	6.2	15.8	32.3	87.1	60.0	38.3	3222	33718
	June 01	Sept 04	36881	36881	8.3	74.8	107	99	4.9	3.8	8.7	7.8	23.8	43.5	83.5	62.3	21.6	2952	24650
	June 01	Sept 24	36203	36397	10.0	61.1	107	50	2.5	2.8	5.3	6.6	18.3	35.8	86.2	61.5	31.6	3166	31787
	June 14	Sept 04	36494	36494	5.8	78.9	113	100	5.0	4.1	9.0	8.2	28.1	49.6	80.7	61.2	10.3	2371	13658
	June 14	Sept 24	35429	35429	7.0	67.5	112	79	4.0	3.6	7.5	6.8	19.5	37.2	86.2	63.1	29.0	3175	22190

continued

Table: 1803-02. Planting Date and Harvest Timing Influence on Corn Silage Performance.

continued. **Arlington, WI - 2018.**

					Whole Plant														
	Planting	Harvest	Density		Dry Matter		Plant	Kernel	KMR	SMR	VMR	Crude			*In Vitro*			Milk per	
Hybrid	date	date	plant	ears	yield	Moisture	height	milk	0-5	0-5	0-10	protein	ADF	NDF	Digest	NDFD	Starch	Ton	Acre
			plants/A	ears/A	tons/A	%	inches	%				%	%	%	%	%	%	lbs/T	lbs/A
DKC58-06RIB	April 24	Sept 04	36978	37171	11.5	63.3	100	43	2.2	2.0	4.2	6.6	15.9	32.5	87.8	62.6	35.4	3374	38639
DKC58-06RIB	April 24	Sept 24	34848	34848	11.7	44.5	99	0	0.0	0.3	0.3	6.1	14.8	30.7	86.4	55.6	40.4	3155	36901
DKC58-06RIB	May 07	Sept 04	36590	37365	10.6	67.8	103	65	3.3	2.6	5.8	6.7	18.8	36.4	86.0	61.5	30.7	3225	34168
DKC58-06RIB	May 07	Sept 24	38333	38720	11.6	50.1	100	8	0.4	0.9	1.4	6.1	14.6	30.6	86.8	56.9	40.3	3196	37110
DKC58-06RIB	May 16	Sept 04	38720	39688	10.1	70.8	106	77	3.8	2.7	6.5	6.7	20.4	38.6	84.6	60.4	28.2	3114	31576
DKC58-06RIB	May 16	Sept 24	36784	37365	10.7	54.9	105	20	1.0	0.9	1.9	5.9	16.1	32.7	86.2	58.0	37.5	3168	33909
DKC58-06RIB	June 01	Sept 04	37558	37558	8.5	75.0	108	99	4.9	3.6	8.5	8.0	25.6	46.1	81.6	60.1	18.4	2794	23943
DKC58-06RIB	June 01	Sept 24	36010	36010	10.4	62.6	108	58	2.9	3.1	6.0	6.4	18.2	35.4	86.1	60.7	31.7	3166	32773
DKC58-06RIB	June 14	Sept 04	37171	37171	6.2	78.3	113	100	5.0	4.5	9.5	8.2	28.6	50.3	80.0	60.2	9.2	2286	14287
DKC58-06RIB	June 14	Sept 24	35235	35235	7.8	67.9	112	82	4.1	3.3	7.4	6.8	19.6	37.4	85.6	61.5	29.0	3144	24421
P9998AMXT	April 24	Sept 04	37171	37752	10.0	63.5	99	37	1.8	1.3	3.2	6.6	17.3	34.3	87.6	63.7	34.2	3406	34248
P9998AMXT	April 24	Sept 24	33686	33880	10.3	39.3	99	0	0.0	0.0	0.0	6.5	14.6	29.9	87.5	58.1	42.5	3306	34050
P9998AMXT	May 07	Sept 04	33880	34267	10.4	66.6	100	55	2.8	2.6	5.3	7.0	17.4	34.3	87.9	64.8	33.9	3459	36041
P9998AMXT	May 07	Sept 24	34848	35429	10.5	46.2	100	2	0.1	0.4	0.5	6.6	15.4	30.9	87.7	60.1	40.0	3258	34095
P9998AMXT	May 16	Sept 04	34267	34267	9.3	69.9	103	65	3.3	2.6	5.8	7.2	19.5	37.6	86.6	64.5	28.9	3243	30157
P9998AMXT	May 16	Sept 24	35429	35622	10.2	50.3	102	10	0.5	0.3	0.8	6.4	15.6	31.8	87.9	62.1	39.1	3277	33527
P9998AMXT	June 01	Sept 04	36203	36203	8.1	74.6	105	99	4.9	3.9	8.8	7.7	21.9	40.9	85.5	64.5	24.7	3110	25358
P9998AMXT	June 01	Sept 24	36397	36784	9.7	59.6	106	42	2.1	2.5	4.6	6.7	18.4	36.2	86.3	62.2	31.5	3166	30802
P9998AMXT	June 14	Sept 04	35816	35816	5.3	79.5	112	99	5.0	3.6	8.6	8.3	27.6	49.0	81.5	62.2	11.4	2456	13029
P9998AMXT	June 14	Sept 24	35622	35622	6.3	67.2	112	77	3.8	3.8	7.6	6.8	19.4	37.1	86.8	64.6	29.1	3206	19959
Mean			36077	36339	9.5	62.6	105	52	2.6	2.2	4.8	6.9	19.0	36.6	85.8	61.2	30.8	3125	29950
Probability(%)																			
Hybrid (H)			13.1	11.9	12.4	13.5	32.5	19.9	19.9	13.8	8.6	7.5	25.4	22.2	5.9	3.2	13.2	5.9	31.3
PlantDate(P)			89.8	85.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13.7	0.0	0.0	0.0
HxP			40.7	21.3	70.1	72.0	93.1	78.6	78.6	93.7	93.4	12.4	36.7	54.6	65.0	75.4	71.0	96.6	69.1
HarvDate(D)			24.6	20.4	0.0	0.0	52.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
HxD			46.6	33.6	44.3	1.3	43.1	64.8	64.8	81.7	64.1	14.0	4.5	6.3	22.5	94.4	7.8	2.3	16.6
PxD			32.6	26.8	12.8	0.0	94.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
HxPxD			74.1	66.4	81.2	91.3	98.9	44.2	44.2	0.3	4.2	36.4	4.9	1.4	15.5	68.0	1.3	3.3	39.1
LSD(0.10)																			
Hybrid (H)			NS	NS	NS	NS	NS	NS	NS	NS	0.6	0.2	NS	NS	1.0	1.6	NS	94	NS
PlantDate(P)			NS	NS	0.7	2.1	3	7	0.3	0.4	0.6	0.2	1.0	1.4	1.0	NS	1.6	89	2455
HxP			NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
HarvDate(D)			NS	NS	0.3	1.0	NS	4	0.2	0.1	0.2	0.1	0.5	0.6	0.5	0.9	0.7	35	1067
HxD			NS	NS	NS	1.6	NS	NS	NS	NS	NS	NS	0.7	1.0	NS	NS	1.2	60	NS
PxD			NS	NS	NS	2.6	NS	9	0.4	0.4	0.7	0.3	1.2	1.6	1.3	2.0	1.9	101	2892
HxPxD			NS	NS	NS	NS	NS	NS	NS	0.6	0.9	NS	1.7	2.3	NS	NS	2.7	145	NS

Table: 1803-03. Planting Date and Hybrid Influence on Corn Leaf Development. Arlington, WI - 2018.

Hybrid	Date of planting	Observation date	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
		149	2.8	3.5	4.5	5.7
		163	4.2	5.0	6.8	14.6
		176	5.9	8.3	9.5	27.5
		190	10.8	11.4	13.6	59.7
		204	15.2	14.2	16.5	85.4
		219	17.4	15.7	17.8	100.3
	April 24		12.0	12.4	13.8	62.3
	May 07		10.8	11.1	12.7	56.1
	May 16		9.7	9.8	11.9	51.6
	June 01		9.4	9.4	11.5	51.0
	June 14		7.5	7.9	10.1	41.2
	April 24	149	4.1	5.3	6.4	8.0
	April 24	163	6.4	7.9	9.5	25.1
	April 24	176	9.4	12.8	14.3	51.7
	April 24	190	16.1	15.2	16.7	93.2
	April 24	204	18.2	17.0	18.2	97.8
	April 24	219	17.6	16.3	17.6	98.2
	May 07	149	2.7	3.3	4.1	4.8
	May 07	163	5.3	6.5	7.9	16.1
	May 07	176	7.8	10.5	12.1	36.9
	May 07	190	12.8	13.8	15.4	77.7
	May 07	204	17.9	15.9	17.9	100.3
	May 07	219	18.7	16.8	18.7	101.1
	May 16	149	1.6	2.0	3.0	4.2
	May 16	163	3.2	3.8	5.5	10.3
	May 16	176	5.9	8.4	9.8	25.1
	May 16	190	10.5	11.3	14.8	59.1
	May 16	204	16.3	15.0	17.1	93.1
	May 16	219	18.0	15.3	18.0	102.0
	June 01	149	2.0	2.0	3.3	4.3
	June 01	163	2.1	1.8	4.3	6.9
	June 01	176	5.3	7.4	8.5	20.2
	June 01	190	9.3	10.4	12.9	50.9
	June 01	204	14.5	14.3	16.4	85.5
	June 01	219	18.3	15.8	18.3	107.1
	June 14	149	-	-	-	-
	June 14	163	-	-	-	-
	June 14	176	1.1	2.2	3.0	3.8
	June 14	190	5.3	6.3	8.0	17.7
	June 14	204	9.1	8.9	12.9	50.2
	June 14	219	14.6	14.3	16.3	93.0

Continued

Table: 1803-03. Planting Date and Hybrid Influence on Corn Leaf Development.
(continued) **Arlington, WI - 2018.**

Hybrid	Date of planting	Observation date	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
Dekalb DKC58-06RIB			10.4	10.6	12.6	53.6
P9998AMXT			9.7	10.0	11.7	53.0
Dekalb DKC58-06RIB		149	2.9	3.6	4.6	5.7
Dekalb DKC58-06RIB		163	4.5	5.3	7.1	14.6
Dekalb DKC58-06RIB		176	6.1	8.4	9.8	28.0
Dekalb DKC58-06RIB		190	10.9	11.6	13.7	59.6
Dekalb DKC58-06RIB		204	15.9	14.5	17.3	85.8
Dekalb DKC58-06RIB		219	18.1	16.1	18.5	101.2
P9998AMXT		149	2.7	3.4	4.5	5.7
P9998AMXT		163	4.0	4.7	6.5	14.6
P9998AMXT		176	5.7	8.1	9.2	27.1
P9998AMXT		190	10.7	11.2	13.4	59.8
P9998AMXT		204	14.5	14.0	15.7	84.9
P9998AMXT		219	16.8	15.2	17.0	99.4
Dekalb DKC58-06RIB	April 24		12.7	12.6	14.6	65.3
Dekalb DKC58-06RIB	May 07		11.3	11.3	13.2	55.8
Dekalb DKC58-06RIB	May 16		10.1	10.2	12.2	52.2
Dekalb DKC58-06RIB	June 01		9.4	9.6	11.7	49.9
Dekalb DKC58-06RIB	June 14		7.6	8.2	10.3	39.9
P9998AMXT	April 24		11.2	12.2	12.9	59.3
P9998AMXT	May 07		10.4	10.9	12.2	56.4
P9998AMXT	May 16		9.3	9.3	11.5	51.0
P9998AMXT	June 01		9.3	9.3	11.4	52.1
P9998AMXT	June 14		7.5	7.6	9.8	42.4
Dekalb DKC58-06RIB	April 24	149	4.2	5.3	6.7	7.8
Dekalb DKC58-06RIB	April 24	163	7.0	8.2	10.2	26.2
Dekalb DKC58-06RIB	April 24	176	10.0	13.3	15.2	55.0
Dekalb DKC58-06RIB	April 24	190	17.2	15.7	17.8	97.0
Dekalb DKC58-06RIB	April 24	204	19.5	17.3	19.5	103.0
Dekalb DKC58-06RIB	April 24	219	18.3	15.8	18.3	103.2
Dekalb DKC58-06RIB	May 07	149	2.8	3.2	4.0	4.7
Dekalb DKC58-06RIB	May 07	163	5.5	7.2	8.2	15.3
Dekalb DKC58-06RIB	May 07	176	8.0	10.3	12.2	36.7
Dekalb DKC58-06RIB	May 07	190	11.8	13.2	15.2	75.5
Dekalb DKC58-06RIB	May 07	204	19.5	16.5	19.5	100.5
Dekalb DKC58-06RIB	May 07	219	20.0	17.5	20.0	102.3

Continued

Table: 1803-03. Planting Date and Hybrid Influence on Corn Leaf Development.
(continued) **Arlington, WI - 2018.**

Hybrid	Date of planting	Observation date	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
Dekalb DKC58-06RIB	May 16	149	1.8	2.3	3.0	4.6
Dekalb DKC58-06RIB	May 16	163	3.3	4.2	5.7	10.5
Dekalb DKC58-06RIB	May 16	176	6.0	8.7	10.2	25.3
Dekalb DKC58-06RIB	May 16	190	10.7	12.0	14.3	58.7
Dekalb DKC58-06RIB	May 16	204	16.8	15.3	17.8	94.2
Dekalb DKC58-06RIB	May 16	219	19.0	16.2	19.0	104.0
Dekalb DKC58-06RIB	June 01	149	2.0	2.0	3.0	4.5
Dekalb DKC58-06RIB	June 01	163	2.2	1.8	4.3	6.3
Dekalb DKC58-06RIB	June 01	176	5.3	7.8	8.7	18.8
Dekalb DKC58-06RIB	June 01	190	9.2	10.3	13.0	50.2
Dekalb DKC58-06RIB	June 01	204	14.5	14.2	16.7	84.0
Dekalb DKC58-06RIB	June 01	219	18.5	16.3	18.5	105.2
Dekalb DKC58-06RIB	June 14	149	-	-	-	-
Dekalb DKC58-06RIB	June 14	163	-	-	-	-
Dekalb DKC58-06RIB	June 14	176	1.0	2.0	3.0	4.2
Dekalb DKC58-06RIB	June 14	190	5.7	6.8	8.3	16.8
Dekalb DKC58-06RIB	June 14	204	9.2	9.0	13.2	47.5
Dekalb DKC58-06RIB	June 14	219	14.5	14.8	16.7	91.2
P9998AMXT	April 24	149	4.0	5.2	6.2	8.3
P9998AMXT	April 24	163	5.8	7.7	8.8	24.0
P9998AMXT	April 24	176	8.8	12.2	13.3	48.3
P9998AMXT	April 24	190	15.0	14.7	15.5	89.3
P9998AMXT	April 24	204	16.8	16.7	16.8	92.5
P9998AMXT	April 24	219	16.8	16.7	16.8	93.2
P9998AMXT	May 07	149	2.5	3.3	4.2	4.9
P9998AMXT	May 07	163	5.0	5.8	7.7	16.8
P9998AMXT	May 07	176	7.5	10.7	12.0	37.2
P9998AMXT	May 07	190	13.8	14.3	15.7	79.8
P9998AMXT	May 07	204	16.3	15.3	16.3	100.0
P9998AMXT	May 07	219	17.3	16.2	17.3	99.8
P9998AMXT	May 16	149	1.5	1.8	3.0	3.8
P9998AMXT	May 16	163	3.0	3.5	5.3	10.0
P9998AMXT	May 16	176	5.8	8.2	9.5	24.8
P9998AMXT	May 16	190	10.3	10.7	15.2	59.5
P9998AMXT	May 16	204	15.7	14.7	16.3	92.0
P9998AMXT	May 16	219	17.0	14.5	17.0	100.0
P9998AMXT	June 01	149	2.0	2.0	3.5	4.0
P9998AMXT	June 01	163	2.0	1.7	4.3	7.5
P9998AMXT	June 01	176	5.2	7.0	8.3	21.5
P9998AMXT	June 01	190	9.3	10.5	12.8	51.7
P9998AMXT	June 01	204	14.5	14.3	16.2	87.0
P9998AMXT	June 01	219	18.0	15.2	18.0	109.0

Continued

Table: 1803-03. Planting Date and Hybrid Influence on Corn Leaf Development.
(continued) **Arlington, WI - 2018.**

Hybrid	Date of planting	Observation date	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
P9998AMXT	June 14	149	-	-	-	-
P9998AMXT	June 14	163	-	-	-	-
P9998AMXT	June 14	176	1.2	2.3	3.0	3.5
P9998AMXT	June 14	190	5.0	5.7	7.7	18.5
P9998AMXT	June 14	204	9.0	8.8	12.7	52.8
P9998AMXT	June 14	219	14.7	13.7	16.0	94.8
Mean			10.1	10.3	12.1	53.3
Probability(%)						
Hybrid(H)			1.3	10.5	1.5	25.6
Date of Planting (D)			0.0	0.0	0.0	0.0
HxD			36.8	96.5	27.4	34.1
Sample DOY (S)			0.0	0.0	0.0	0.0
H x S			47.4	97.9	29.5	99.5
DxS			0.0	0.0	0.0	0.0
HxDxS			94.6	99.14	99.4	100.0
LSD(0.10)						
Hybrid(H)			0.1	NS	0.1	NS
Date of Planting (D)			0.7	0.7	0.7	4.1
HxD			NS	NS	NS	NS
Sample DOY (S)			0.8	0.8	0.8	4.5
H x S			NS	NS	NS	NS
DxS			1.7	1.7	1.7	10.2
HxDxS			NS	NS	NS	NS

FIELD EXPERIMENT HISTORY

Title: **Plant Density and Row Spacing Effects on Yield and Quality of Corn Silage**

Experiment: 06PDxRS **Trial ID:** 6262 **Year:** 2018

Personnel: Joe Lauer, Kent Kohn, Thierno Diallo

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

Supported By: HATCH

Site Information

Field: ARS411 **Previous Crop:** Alfalfa **Soil Type:** Plano Silt Loam

Soil Test: **Date:** 5 /1 /18 **pH** 6.2 **OM (%)** 3.5 **P (ppm)** 37 **K (ppm)** 106

Plot Management

Tillage Operations: Disk Chisel Field Cultivator

		Analysis:	Rate lbs/A:	Date:
Fertilizer:	**Preplant :**	46-0-0	250 lbs/A	N/A
	Starter :	N/A	N/A	N/A
	Post plant :	N/A	N/A	N/A
	Manure:	Dairy	13235 gal/A	N/A

Herbicide: Resicore 80.0 oz/A
Simazine 4L16.0 oz/A
None

Insecticide: None

Hybrid: Jung 46SS427RIB

Planting Date: 5/25/18 **Planting Depth:** 1.5" **Row Width:** See Factors

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

Harvest Date: S: 9/24/18
G:10/12/18

Harvest Method: S:USDA Kemper
G:MF 8XP

Experimental Design

Design: RCB **Replications:** 3

Plot Size Seeded: 10' x 75' **Experiment Size:** 1.0 Acre

Harvest Plot Size: S:3.75' x 23'
G:5' x 47'

Harvest Plant Density: 33210

Factors/Treatments:

Row Spacing:

1) 15 inch
2) 30 inch

Plant Density: (plants/A)

1) 26000
2) 32000
3) 38000
4) 44000

Results: Table 1806-01.

Table: 1806-01. Plant Density and Row Spacing Effects on Corn Silage Yield and Quality Arlington, WI - 2018.

		Grain							
Target	Row	Harvest			Test	Lodged			AGI
Density	spacing	Density	Yield	Moisture	weight	Total	Stalk	Root	$3.40
plants/A	inches	plants/A	bu/A	%	lbs/bu	%	%	%	$/A
	15	36404	229	23.5	53.9	6	3	3	690
	30	36715	224	24.2	53.2	6	6	1	673
26000		31114	223	24.3	53.4	2	1	1	666
32000		35470	230	23.7	53.6	2	1	2	691
38000		37752	231	23.4	53.6	9	5	4	695
44000		41901	225	24.0	53.6	12	12	0	674
26000	15	33189	226	23.9	53.6	3	1	1	678
32000	15	35678	230	23.5	53.8	4	1	3	693
38000	15	36922	227	22.9	54.2	16	9	8	686
44000	15	39826	235	23.8	54.0	3	2	1	705
26000	30	29040	219	24.8	53.2	1	0	1	655
32000	30	35263	230	23.9	53.3	1	0	1	689
38000	30	38582	234	23.8	53.0	2	2	0	704
44000	30	43975	215	24.2	53.2	21	21	0	643
Mean		36559	227	23.8	53.6	6	5	2	682
Probability(%)									
Row Spacing (S)		76.4	10.1	6.4	0.7	98.9	20.1	8.4	6.0
Density (D)		0.0	16.1	21.9	89.1	5.1	0.2	37.3	10.1
S x D		6.7	2.3	91.0	58.0	0.8	0.1	20.6	3.1
LSD (0.10)									
Row Spacing (S)		NS	NS	0.6	0	NS	NS	2	15
Density (D)		2531	NS	NS	NS	7	4	NS	NS
S x D		3580	10	NS	NS	10	6	NS	30

Continued

Table: 1806-01. Plant Density and Row Spacing Effects on Corn Silage Yield and Quality

(continued) **Arlington, WI - 2018.**

		Whole Plant															
Target	Row	Dry Matter		Harvest	Ear	Kernel	KMR	SMR	VMR	Crude			*In Vitro*			Milk per	
Density	spacing	yield	Moisture	Density	Density	milk	0-5	0-5	0-10	protein	ADF	NDF	Digest	NDFD	Starch	Ton	Acre
plants/A	inches	tons/A	%	plants/A	Ear/A	%				%	%	%	%	%	%	lbs/T	lbs/A
	15	10.2	47.2	29924	31560	2.7	0.1	0.1	0.2	6.6	19.1	35.8	84.1	55.8	37.1	3108	31624
	30	10.0	46.9	29798	31052	2.5	0.1	0.1	0.3	6.4	18.8	35.5	84.4	56.0	37.6	3120	31221
26000		9.4	50.0	24852	25568	1.2	0.1	0.1	0.2	6.6	18.9	35.7	84.1	55.6	36.8	3104	29207
32000		10.1	47.7	28956	29897	2.5	0.1	0.1	0.2	6.6	19.1	35.7	84.2	56.0	37.4	3111	31582
38000		10.5	45.5	31860	32638	3.3	0.2	0.1	0.3	6.6	17.9	34.4	85.1	56.7	38.9	3166	33292
44000		10.3	45.0	33775	37120	3.3	0.2	0.1	0.3	6.3	19.9	36.7	83.5	55.2	36.3	3073	31608
26000	15	9.5	50.7	26094	26767	0.7	0.0	0.1	0.1	7.0	17.6	33.9	84.9	55.6	38.9	3166	29962
32000	15	10.5	46.5	30134	32323	0.0	0.0	0.1	0.1	6.5	19.3	36.2	83.9	55.7	36.6	3080	32413
38000	15	10.3	44.7	30639	32323	3.3	0.2	0.1	0.3	6.6	18.2	34.9	84.8	56.5	38.2	3155	32475
44000	15	10.4	46.7	32828	34828	6.7	0.3	0.1	0.4	6.3	21.1	38.0	82.9	55.3	34.7	3030	31646
26000	30	9.3	49.3	23611	24368	1.7	0.1	0.2	0.3	6.2	20.2	37.5	83.3	55.7	34.7	3043	28452
32000	30	9.8	48.8	27777	27471	5.0	0.3	0.1	0.4	6.6	18.8	35.3	84.6	56.3	38.2	3141	30751
38000	30	10.7	46.2	33080	32954	3.3	0.2	0.1	0.3	6.6	17.6	34.0	85.4	57.0	39.6	3178	34109
44000	30	10.1	43.3	34722	39412	0.0	0.0	0.1	0.1	6.2	18.7	35.3	84.2	55.1	37.9	3117	31571
Mean		10.1	47.0	29861	31306	2.6	0.1	0.1	0.2	6.5	18.9	35.6	84.2	55.9	37.3	3114	31422
Probability(%)																	
Row Spacing (S)		30.5	64.7	88.8	59.2	94.6	94.6	9.5	85.1	27.2	77.4	76.2	61.3	59.7	64.9	71.9	59.5
Density (D)		0.2	0.0	0.0	0.1	91.1	91.1	51.4	97.1	18.6	30.4	38.3	16.4	18.3	39.1	29.4	1.3
S x D		14.5	0.4	12.6	5.5	42.7	42.7	39.5	38.5	7.5	13.3	10.7	17.0	91.9	13.0	16.1	39.3
LSD (0.10)																	
Row Spacing (S)		NS	NS	NS	NS	NS	NS	0.0	NS	NS	NS	NS	NS	NS	NS	NS	NS
Density (D)		0.4	1.2	2200	2447	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
S x D		NS	1.7	NS	3453	NS	NS	NS	NS	0.4	NS	NS	NS	NS	NS	NS	NS

FIELD EXPERIMENT HISTORY

Title: **Corn response to seed fungicides - Valent**

Experiment: 08Seed **Trial ID:** 6330 **Year:** 2018

Personnel: J.G.Lauer, T.H.Diallo, K.D.Kohn, Avi Alcala

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

Supported By: Valent USA

Site Information

Field: ARS392 **Previous Crop:** Soybean **Soil Type** Silt Loam

Soil Test:Date: 11/08/2018 **pH:** 6.2 **OM (%)** 2.9 **P (ppm)** 14 **K (ppm)** 94

Plot Management

Tillage Operations: Field cultivator 2x

Fertilizer:	Product Analysis	Product Rate	Date
Preplant	46-0-0	325 lbs	04/24/2018
Starter	N/A	N/A	N/A
Post plant	N/A	N/A	N/A
Manure:	N/A	N/A	N/A

Herbicide: Simazine 4L 16 oz/A 05/08/2018
Resicore 80 oz/A 05/08/2018

Insecticide: See factors

Irrigation: None

Hybrid: Munson 6358

Planting Date: 04/26/2018 **Planting Depth:** 1.5" **Row Width:** 30"

Target Plant Density: 34000 **plants per acre** **Planting Method:** Almaco precision planter

Harvest Date: 09/26/2018 **Harvest Method:** MF 8XP

Notes:

Experimental Design

Design: RCB **Replications:** 6

Plot Size Seeded: 10' x 25' **Experiment Size:** 0.6 A

Harvest Plot Size: 5' x 23' **Harvest Plant Density:** 33300 **plants per acre**

Factors/Treatments:

Seed Treatment:

1 - NIPSIT inside Insect
2 - NIPSIT INSIDE INSECT MAXIM QUATTRO INTEGO SOLO
3 - NIPSIT INSIDE INSECT MAXIM QUATTRO INTEGO SOLO S-2399
4 - NIPSIT INSIDE INSECT MAXIM QUATTRO INTEGO SOLO AVEO EZ (MINIMUM 61 BCFU/ML)
5 - NIPSIT INSIDE INSECT SEBRING 2.65 ST INTEGO SOLOS-2200 RANCONA
6 - NIPSIT INSIDE INSECT SEBRING 2.65 ST INTEGO SOLO RANCONAS-2399
7 - NIPSIT INSIDE INSECT SEBRING 2.65 ST INTEGO SOLOTRILEX RANCONAAVEO EZ (MINIMUM 61 BCFU/ML)
8 - PONCHO VOTIVO MAXIM QUATTRO INTEGO SOLO
9 - NIPSIT INSIDE INSECT SEBRING 2.65 ST INTEGO SOLOTRILEX RANCONA
10 - NIPSIT INSIDE INSECT SEBRING 2.65 ST INTEGO SOLO RANCONATRILEXAVEO EZ (MINIMUM 61 BCFU/ML) VBC-40026

Results: Table: 1808 - 01

Table:1808- 01 .Corn response to seed fungicides - Valent

Arlington, WI - 2018.

Seed Treatment	Yield	Moisture	Test weight	Lodged			Harvest density	AGI $3.44/bu
				Total	Root	Stalk		
	bu/A	%	lbs/bu	%	%	%	plants/A	$/A
1 - NIPSIT inside Insect	238	28.7	53.2	9.6	9.6	0.0	33667	701
2 - NIPSIT INSIDE INSECT MAXIM QUATTRO INTEGO SOLO	258	28.0	52.5	3.6	3.1	0.5	32667	764
3 - NIPSIT INSIDE INSECT MAXIM QUATTRO INTEGO SOLO S-2399	254	27.5	53.3	14.0	12.4	1.5	33500	754
4 - NIPSIT INSIDE INSECT MAXIM QUATTRO INTEGO SOLO AVEO EZ (MINIMUM 61 BCFU/ML)	235	28.9	52.1	10.4	9.3	1.1	33000	691
5 - NIPSIT INSIDE INSECT SEBRING 2.65 ST INTEGO SOLOS-2200 RANCONA	241	28.6	59.1	7.4	7.4	0.0	33667	712
6 - NIPSIT INSIDE INSECT SEBRING 2.65 ST INTEGO SOLO RANCONAS-2399	247	28.6	52.2	11.0	9.5	1.5	33000	729
7 - NIPSIT INSIDE INSECT SEBRING 2.65 ST INTEGO SOLOTRILEX RANCONAAVEO EZ (MINIMUM 61 BCFU/ML)	248	28.7	53.0	1.6	1.6	0.0	32833	731
8 - PONCHO VOTIVO MAXIM QUATTRO INTEGO SOLO	239	28.8	52.3	8.2	8.2	0.0	33667	705
9 - NIPSIT INSIDE INSECT SEBRING 2.65 ST INTEGO SOLOTRILEX RANCONA	240	28.3	52.6	18.9	17.9	1.0	33333	709
10 - NIPSIT INSIDE INSECT SEBRING 2.65 ST INTEGO SOLO RANCONATRILEXAVEO EZ (MINIMUM 61 BCFU/ML) VBC-40026	239	28.8	53.2	9.4	8.9	0.5	33667	702
Mean	244	28.5	53.4	9.4	8.8	0.6	33300	720
Probability(%)								
Treatment (T)	5.9	58.1	45.5	12.8	24.2	51.5	96.6	4.4
LSD(0.10)								
Treatment (T)	13	NS	NS	NS	NS	NS	NS	39

***AGI - Adjusted Gross Income.**

FIELD EXPERIMENT HISTORY

Title: **Alfalfa - Corn Response to Rotation**

Experiment: 09AC **Trial ID:** 6263 **Year:** 2018

Personnel: Joe Lauer, Thierno Diallo,Kent Kohn

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

Supported By: HATCH

Site Information

Field: ARS333 **Previous Crop:** See Factors **Soil Type:** Plano Silt Loam

Soil Test Date: 11/12/18 **pH** 6.4 **OM (%)** 3.3 **P (ppm)** 11 **K (ppm)** 93

Plot Management

Tillage Operations: NT

Fertilizer:		**Analysis:**	**Rate lbs/A:**	**Date:**
	Preplant :	N/A	N/A	N/A
	Starter :	N/A	N/A	N/A
	Post plant :	28-0-0	CC: 678 CA: 571	6/8/18 6/8/18
	Manure:	N/A	N/A	N/A

Herbicide: C: 2.4D @16 oz/A 4/30/18
Mad Dog 5.4 @ 22 oz/A 4/30/18
Laudis @ 3 oz/A 6/6/18
Tomahawk 5 @ 28 oz/A
A: Tomahawk 5 @ 32 oz/A
Warrior II w/Zeon Tech @ 1.25 oz/A 7/13/18

Insecticide: N/A

Hybrid: C: DKC57-97GENNRIB
A: Dekalb DKA40-51RR

Irrigation: None

Planting Date: C:5/1/18
A: 5/1/18

Planting Depth: C:1.5"
A: 0.25"

Row Width: 30"

Target Plant Density: 35000 plants/A

Planting Method: JD1700 w RTK
A: JD750 No-Till Drill

Harvest Date: C: 10/23/18
S: 9/17/18
A: 6/1; 7/2; 8/3; 9/19

Harvest Method: C: MF 8XP
S: Hagee harvester
Al: Almaco Harvester

Notes:

Experimental Design

Design: RCB split-split-block

Replications: 3

Plot Size Seeded: 75' x 60

Experiment Size: 3.47 A

Harvest Plot Size: G:5' x 71'
S: 2.5' x 71'
A:4.33' x 71'

Factors/Treatments:

Rotation - 2018 Treatments:

1) AAACC-3A
2) AAACC-1C
3) AAACC-2C
4) AAACC-1A
5) AAACC-2A
6) AACC-2C
7) AACC-1A
8) AACC- 2A
9) AACC- 1C
10) AACC- 2C(Silage)
11) AACC- 1A
12) AACC- 2A
13) AACC- 1C(Silage)
14) CC- Grain & Silage (S/S,S/G,G/S,G/G)

Results: Tables 1809-01,1809-02 & 1809-03

Table:1809-01. Alfalfa-Corn Rotation Study - Corn.
Arlington, WI - 2018.

Rotation	Yield	Moisture	Test weight	Lodged			Harvest density	*AGI $3.44/bu
				Total	Stalk	Root		
	bu/A	%	lbs/bu	%	%	%	plants/A	$/A
AAACC-1C	213	22.4	52.5	7.2	4.9	2.3	32000	654
AAACC-2C	212	22.5	53.2	4.1	3.1	1.0	32000	653
AACC-1C	212	21.1	52.9	5.1	5.1	0.0	33667	656
AACC-2C	203	23.4	52.6	0.0	0.0	0.0	33000	620
CC-CC	192	25.1	51.8	0.0	0.0	0.0	29000	578
Mean	206	22.9	52.6	3.3	2.6	0.7	31933	632
Probability(%)								
Rotation (R)	42.1	6.4	69.6	5.4	13.6	55.1	25.4	34.1
LSD(0.10)								
Rotation (R)	NS	2	NS	4.4	NS	NS	NS	NS

*AGI - Adjusted Gross Income.

Table:1809-02. Alfalfa-Corn Rotation Study -Alfalfa.
Arlington, WI - 2018.

Rotation	Harvest Date 1-Jun	2-Jul	3-Aug	19-Sep	Total
	T Dm/A	T Dm/A	T Dm/A	T Dm/A	T Dm/A
AAACC-1A	0.0	0.3	1.1	0.6	2.0
AAACC-2A	2.3	1.2	1.2	0.7	5.3
AAACC-3A	1.6	0.8	0.9	0.4	3.7
AACC(S)-1A	0.0	0.3	1.2	0.7	2.2
AACC(S)-2A	2.2	1.2	1.1	0.8	5.3
AACC-1A	0.0	0.6	1.0	0.6	2.1
AACC-2A	2.3	1.3	1.1	0.7	5.5
Mean	1.2	0.8	1.1	0.6	3.7
Probability (%)					
Rotation (R)	0.0	0.0	35.9	1.5	0.0
LSD 10%					
Rotation (R)	0.4	0.2	NS	0.1	0.8

Table:1809-03. Alfalfa-Corn Rotation Study - Silage.
Arlington, WI 2018

	Whole Plant											
	Dry Matter		Kernel	Crude			*In Vitro*			Milk per		Harvest
Rotation	Yield	Moisture	milk	protein	ADF	NDF	Digest	NDFD	Starch	Ton	Acre	density
	T/A	%	%	%	%	%	%	%	%	lb	lb	plants/A
AACC-1Cs	8.3	51.7	28.3	6.5	14.8	31.4	88.2	62.5	39.1	3308	27499	30144
AACC-2Cs	9.5	47.5	16.7	6.7	16.9	34.6	84.9	56.6	36.2	3103	29642	28876
Mean	8.9	49.6	22.5	6.6	15.9	33.0	86.6	59.6	37.7	3206	28570	29510
Probability(%)												
Rotation (R)	28.4	31.5	51.3	15.1	35.7	32.3	16.1	5.6	49.2	27.7	63.4	16.7
LSD(0.10)												
Rotation (R)	NS	NS	NS	NS	NS	NS	NS	4.2	NS	NS	NS	NS

FIELD EXPERIMENT HISTORY

Title: **Alfalfa - Corn Response to Rotation**

Experiment: 09AC **Trial ID:** 6335 **Year:** 2018

Personnel: Joe Lauer, Thierno Diallo,Kent Kohn, Jason Cavadini

Location: Marshfield, WI **County:** Columbia

Supported By: HATCH

Site Information

Field: 402 **Previous Crop:** See Factors **Soil Type:** Withee Silt Loam

Soil Test Date: 5 /01/15 **pH** 7.1 **OM (%)** 3.7 **P (ppm)** 27 **K (ppm)** 77

Plot Management

Tillage Operations:

		Analysis:	Rate lbs/A:	Date:
Fertilizer:	**Preplant :**	N/A	N/A	N/A
	Starter :	C: 20-10-30-4S C: 7-9-13-2S	200 lb/A 5 gal/A	6/1/18 6/1/18
	Post plant :	C:28-0-0 A: 0-0-60 Gypsum	40 gal/A 200 lb/A 100 lb/A	6/21/18 8/6/18 8/6/18
	Manure:	N/A	N/A	N/A

Herbicide: C: Roundup PM 32.0 oz/A
Verdict 16 oz/A
A: Raptor 5 oz/A

Insecticide: N/A

Hybrid: C: Prairie Estates 3327
A: Dairyland 3420 Wet

Irrigation: None

Planting Date: C: 5/17/18
A: 5/17/18

Planting Depth: C:1.5"
A: 0.25"

Row Width: C: 30"
A: 7.5"

Target Plant Density: C: 35000 plants/A
A: 17 lb/A

Planting Method: C: JD750 Planter
A: Great plains No-Till Drill

Harvest Date: C: 11/14/18
S: 9/21/18

Harvest Method: C: MF 8XP
S:Hand harvest
AI: MARS forage Harvester

Notes: A: 6/4; 7/6; 8/8/, 9/4/18

Experimental Design

Design: RCB split-split-block

Replications: 3

Plot Size Seeded: 60' x 60

Experiment Size: 5.40 A

Harvest Plot Size: G:5' x 60'
S: 2.5' x 10'
A: 3.5' x 60'

Factors/Treatments:

Rotation - 2018 Treatments:

1) AAACC-1A
2) AAACC-2A
3) AAACC-3A
4) AAACC-1C
5) AAACC-2C
6) AACC-2A
7) AACC-1C
8) AACC- 2C
9) AACC- 1A
10) AACC- 2A
11) AACC- 1C (Silage)
12) AACC- 2C (Silage)
13) AACC- 1A
14) CC- Grain & Silage (S/S,S/G,G/S,G/G)

Results: Tables 1809-04,1809-05 & 1809-06

Table:1809-04. Alfalfa-Corn Rotation Study - Corn.
Marshfield, 2018

Rotation	Yield	Moisture	Test weight	Lodged		Harvest density	*AGI $3.44/bu
				Total	Stalk		
	bu/A	%	lbs/bu	%	%	plants/A	$/A
AAACC-1C	181	19.5	51.7	- ł	--	--	566
AAACC-2C	142	20.2	52.5	--	--	--	443
AACC-1C	184	19.0	54.3	--	--	--	578
AACC-2C	116	18.7	52.0	--	--	--	366
CC-CC	112	18.0	54.7	--	--	--	355
Mean	147	19.1	53.0				462
Probability(%)							
Rotation (R)	0.0	28.5	6.3	--	--	--	0.1
LSD(0.10)							
Rotation (R)	21	NS	1.9	--	--	--	68

- ł No population data provided

*AGI - Adjusted Gross Income.

Table: 1809-0 Alfalfa and Corn Rotation- Established Alfalfa
Marshfield, WI - 2018.

Rotation	Yield 4-Jun	Yield 6-Jul	Yield 8-Aug	Yield 14-Sep	Yield Season
	tn dm/A	tn dm/A	tn dm/A	tn dm/A	tn dm/A
AAACC	- ł	1.4	0.9	0.7	3.0
AAACC	-	1.0	0.6	0.6	2.2
AACC	-	1.4	1.0	1.0	3.4
AACsCs	-	1.7	1.1	0.8	3.6
Mean	-	1.4	0.9	1.0	3.1
Probability (%)					
Treatment	-	36.9	26.5	0.3	25.8
LSD 10%					
Treatment	-	0.8	0.4	0.3	1.3

ł dropped because of lack of moisture data.

FIELD EXPERIMENT HISTORY

Title: **Corn - Soybean Response to Tillage and Rotation**

Experiment: 09CS **Trial ID:** 6265 **Year:** 2018

Personnel: Joe Lauer, Thierno Diallo, Kent Kohn,

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

Supported By: HATCH

Site Information

Field: 334 **Previous Crop:** See factors **Soil Type:**

Soil Test Date: 11/12/18 **pH** 6.5 **OM (%)** 3.1 **P (ppm)** 15 **K (ppm)** 108

Plot Management

Tillage Operations: Fiel cultivator x 2

Fertilizer:	**Analysis:**	**Rate lbs/A:**	**Date:**
Preplant :	N/A	N/A	N/A
Starter :	N/A	N/A	N/A
Post plant :	28-0-0	CC: 678 CS: 571	6 /8 /18
Manure:	N/A	N/A	N/A

Herbicide: Tomahawk 5 22 oz/A 4/27/18
Medal II EC 24 oz/A 4/27/18
Tomahawk5 22 oz/A 6/7/18

Insecticide: See Seed Treatments

Hybrid: C: DKC57-97 RIB
S: NK S21-M7 Brand

Irrigation: No

Planting Date: C: 4/30/18
S: 4/30/18

Row Width: 30"

Planting Depth: 1.5"

Target Plant Density: Corn: 32500 Plants/A
Soybean: 150000 Plants/A

Planting Method: JD 1700 with RTK

Harvest Date: C: 10/22/18
S: 10/16/18

Harvest Method: MF 8XP plot combine

Notes:

Experimental Design

Design: RCB split-split-plot

Replications: 4

Plot Size Seeded: MP: 30' x 70'

Experiment Size: 2.7 A

Harvest Plot Size: 5' x 31'

Factors/Treatments:

Tillage:

1) NT
2) CT

Rotation: 2018 Treatments

1) CCCCCSSSSS-5C
2) CCCCCSSSSS-4C
3) CCCCCSSSSS-3C
4) CCCCCSSSSS-2C
5) CCCCCSSSSS-1C
6) CCCCCSSSSS-5S
7) CCCCCSSSSS-4S
8) CCCCCSSSSS-3S
9) CCCCCSSSSS-2S
10) CCCCCSSSSS-1S
11) CC-1C
12) CS-1S
13) CS-1C
14) SS-1S

Fungicide:

1) UTC
2) Prothioconazole (Proline @ 5.7 oz/A)
3) Picoxystrobin (Approach @ 6 oz/A)

Results: Table 1809-07 & 1809-08

Table 1809-07. Corn/Soybean Rotation and Tillage Study - Corn.
Arlington, WI - 2018.

Tillage	Rotation	Fungicide	Yield	Moisture	Test weight	Lodged			Harvest density	AGI $3.40/bu
						Total	Stalk	Root		
			bu/A	%	lbs/bu	%	%	%	plants/A	$/A
Conv			241	22.4	55.5	3.1	3.1	0.0	32786	731
Notill			226	23.4	54.7	3.5	3.4	0.0	30786	680
	1C		251	22.0	56.2	3.4	3.4	0.0	30667	763
	2C		231	23.2	54.9	3.9	3.9	0.0	31125	698
	3C		224	23.0	54.9	3.4	3.4	0.0	33042	676
	4C		225	23.3	54.4	2.9	2.9	0.0	31250	678
	5C		223	23.6	54.8	3.4	3.2	0.1	31292	670
	C		260	22.5	55.2	2.7	2.7	0.0	32625	787
	CC		221	22.9	55.4	3.2	3.2	0.0	32500	667
		Picoxystrobin	234	23.1	55.0	3.0	2.9	0.1	31518	707
		Prothioconazole	237	23.1	55.1	2.1	2.1	0.0	32268	715
		UTC	230	22.6	55.2	4.8	4.8	0.0	31571	695
Conv	1C		260	22.2	56.7	3.6	3.6	0.0	31833	789
Conv	2C		234	22.5	55.4	3.3	3.3	0.0	32750	709
Conv	3C		232	22.2	55.7	1.7	1.7	0.0	33083	703
Conv	4C		231	22.5	55.0	2.2	2.2	0.0	32750	699
Conv	5C		234	23.4	55.1	4.1	4.1	0.0	31833	705
Conv	C		265	22.3	55.3	2.6	2.6	0.0	34000	804
Conv	CC		233	22.0	55.7	3.8	3.8	0.0	33250	707
Notill	1C		243	21.9	55.7	3.3	3.3	0.0	29500	738
Notill	2C		228	24.0	54.4	4.4	4.4	0.0	29500	686
Notill	3C		216	23.7	54.1	5.2	5.2	0.0	33000	649
Notill	4C		219	24.1	53.8	3.6	3.6	0.0	29750	657
Notill	5C		211	23.7	54.5	2.7	2.4	0.3	30750	635
Notill	C		254	22.8	55.0	2.8	2.8	0.0	31250	770
Notill	CC		209	23.9	55.2	2.5	2.5	0.0	31750	628
Conv		Picoxystrobin	242	22.6	55.2	3.3	3.3	0.0	32536	732
Conv		Prothioconazole	242	22.5	55.4	1.5	1.5	0.0	33071	734
Conv		UTC	239	22.3	56.0	4.4	4.4	0.0	32750	727
Notill		Picoxystrobin	226	23.6	54.9	2.6	2.5	0.1	30500	681
Notill		Prothioconazole	231	23.7	54.8	2.6	2.6	0.0	31464	696
Notill		UTC	220	23.0	54.4	5.2	5.2	0.0	30393	664
	1C	Picoxystrobin	251	21.6	56.6	2.2	2.2	0.0	29500	764
	1C	Prothioconazole	265	22.3	56.3	1.6	1.6	0.0	33000	803
	1C	UTC	238	22.1	55.6	6.5	6.5	0.0	29500	723
	2C	Picoxystrobin	233	23.7	54.7	4.6	4.6	0.0	30375	702
	2C	Prothioconazole	233	23.3	54.9	1.1	1.1	0.0	30625	701
	2C	UTC	228	22.6	55.1	5.8	5.8	0.0	32375	690
	3C	Picoxystrobin	223	23.1	54.4	4.1	4.1	0.0	32500	674
	3C	Prothioconazole	226	23.2	55.4	2.5	2.5	0.0	32875	681
	3C	UTC	222	22.6	54.8	3.7	3.7	0.0	33750	673

continue

Table 1809-07. Corn/Soybean Rotation and Tillage Study - Corn.
(continued) **Arlington, WI - 2018.**

Tillage	Rotation	Fungicide	Yield	Moisture	Test weight	Lodged			Harvest density	AGI $3.40/bu
						Total	Stalk	Root		
			bu/A	%	lbs/bu	%	%	%	plants/A	$/A
	4C	Picoxystrobin	224	23.4	54.0	3.8	3.8	0.0	31250	675
	4C	Prothioconazole	231	23.5	54.9	0.4	0.4	0.0	32125	695
	4C	UTC	220	23.1	54.3	4.5	4.5	0.0	30375	665
	5C	Picoxystrobin	223	23.7	55.4	1.5	1.1	0.4	31125	671
	5C	Prothioconazole	222	23.4	54.7	4.1	4.1	0.0	31875	669
	5C	UTC	223	23.6	54.2	4.5	4.5	0.0	30875	670
	C	Picoxystrobin	265	22.4	55.1	2.0	2.0	0.0	32125	803
	C	Prothioconazole	258	22.9	54.2	1.8	1.8	0.0	32875	778
	C	UTC	257	22.2	56.2	4.4	4.4	0.0	32875	780
	CC	Picoxystrobin	219	23.9	54.9	2.6	2.6	0.0	33750	658
	CC	Prothioconazole	225	23.0	55.2	3.0	3.0	0.0	32500	678
	CC	UTC	219	22.0	56.1	3.9	3.9	0.0	31250	665
Conv	1C	Picoxystrobin	258	21.7	57.5	4.4	4.4	0.0	30500	787
Conv	1C	Prothioconazole	263	22.1	56.8	1.6	1.6	0.0	35000	798
Conv	1C	UTC	258	22.7	55.7	4.9	4.9	0.0	30000	782
Conv	2C	Picoxystrobin	237	22.9	54.6	4.6	4.6	0.0	32000	716
Conv	2C	Prothioconazole	237	22.4	55.5	0.0	0.0	0.0	32750	718
Conv	2C	UTC	229	22.2	56.1	5.3	5.3	0.0	33500	694
Conv	3C	Picoxystrobin	233	22.3	55.1	1.5	1.5	0.0	31750	708
Conv	3C	Prothioconazole	232	21.9	56.3	2.3	2.3	0.0	32500	704
Conv	3C	UTC	230	22.5	55.8	1.5	1.5	0.0	35000	698
Conv	4C	Picoxystrobin	226	22.3	53.8	4.4	4.4	0.0	32250	687
Conv	4C	Prothioconazole	236	22.9	55.5	0.0	0.0	0.0	33000	712
Conv	4C	UTC	231	22.5	55.6	2.1	2.1	0.0	33000	699
Conv	5C	Picoxystrobin	234	23.6	56.0	2.2	2.2	0.0	32750	703
Conv	5C	Prothioconazole	235	23.3	54.8	3.0	3.0	0.0	31750	708
Conv	5C	UTC	234	23.4	54.4	7.0	7.0	0.0	31000	704
Conv	C	Picoxystrobin	270	22.1	54.7	2.2	2.2	0.0	33250	819
Conv	C	Prothioconazole	261	23.0	53.9	1.4	1.4	0.0	34000	790
Conv	C	UTC	264	21.7	57.4	4.3	4.3	0.0	34750	803
Conv	CC	Picoxystrobin	234	23.2	54.8	3.6	3.6	0.0	35250	707
Conv	CC	Prothioconazole	233	22.1	55.2	2.3	2.3	0.0	32500	708
Conv	CC	UTC	230	20.8	57.0	5.4	5.4	0.0	32000	706
Notill	1C	Picoxystrobin	243	21.6	55.7	0.0	0.0	0.0	28500	742
Notill	1C	Prothioconazole	267	22.5	55.9	1.6	1.6	0.0	31000	808
Notill	1C	UTC	218	21.6	55.5	8.1	8.1	0.0	29000	664
Notill	2C	Picoxystrobin	230	24.6	54.8	4.6	4.6	0.0	28750	687
Notill	2C	Prothioconazole	228	24.3	54.2	2.3	2.3	0.0	28500	684
Notill	2C	UTC	227	23.1	54.1	6.3	6.3	0.0	31250	686
Notill	3C	Picoxystrobin	213	23.8	53.8	6.8	6.8	0.0	33250	641
Notill	3C	Prothioconazole	220	24.6	54.6	2.8	2.8	0.0	33250	658
Notill	3C	UTC	214	22.8	53.9	5.9	5.9	0.0	32500	648
Notill	4C	Picoxystrobin	222	24.5	54.3	3.1	3.1	0.0	30250	663
Notill	4C	Prothioconazole	226	24.1	54.3	0.8	0.8	0.0	31250	677
Notill	4C	UTC	210	23.7	52.9	6.9	6.9	0.0	27750	631

continue

Table 1809-07. Corn/Soybean Rotation and Tillage Study - Corn.
(continued) **Arlington, WI - 2018.**

Tillage	Rotation	Fungicide	Yield	Moisture	Test weight	Lodged			Harvest density	AGI $3.40/bu
						Total	Stalk	Root		
			bu/A	%	lbs/bu	%	%	%	plants/A	$/A
Notill	5C	Picoxystrobin	213	23.8	54.8	0.8	0.0	0.8	29500	640
Notill	5C	Prothioconazole	209	23.6	54.6	5.2	5.2	0.0	32000	630
Notill	5C	UTC	212	23.9	54.0	2.0	2.0	0.0	30750	636
Notill	C	Picoxystrobin	260	22.7	55.5	1.7	1.7	0.0	31000	787
Notill	C	Prothioconazole	254	22.9	54.6	2.1	2.1	0.0	31750	767
Notill	C	UTC	250	22.7	55.0	4.6	4.6	0.0	31000	756
Notill	CC	Picoxystrobin	204	24.6	55.1	1.5	1.5	0.0	32250	609
Notill	CC	Prothioconazole	216	23.9	55.3	3.6	3.6	0.0	32500	649
Notill	CC	UTC	207	23.2	55.1	2.4	2.4	0.0	30500	625
Mean			233	22.9	55.1	3.3	3.3	0.0	31786	706
Probability(%)										
Tillage (T)			3.8	2.9	6.7	68.2	69.9	39.1	18.9	2.8
Rotation (R)			0.0	4.0	10.1	99.1	99.2	44.0	32.7	0.0
Fungicide (F)			2.7	8.4	88.5	0.4	0.3	37.2	29.3	6.8
T x R			83.2	21.5	93.8	68.6	66.3	44.0	81.9	84.4
T x F			26.4	65.8	14.0	50.6	45.9	37.2	77.8	34.6
R x F			46.7	58.5	47.3	63.2	57.9	45.6	27.9	47.4
T x R x F			58.8	89.0	78.2	61.7	62.5	45.6	71.8	71.1
LSD(0.10)										
Tillage (T)			10	0.6	0.7	NS	NS	NS	NS	30
Rotation (R)			11	0.8	NS	NS	NS	NS	NS	35
Fungicide (F)			4	0.4	NS	1.3	1.3	NS	NS	14
T x R			NS	NS	NS	NS	NS	NS	NS	NS
T x F			NS	NS	NS	NS	NS	NS	NS	NS
R x F			NS	NS	NS	NS	NS	NS	NS	NS
T x R x F			NS	NS	NS	NS	NS	NS	NS	NS

Table 1809-08. Corn/Soybean Rotation and Tillage Study - Soybean. Arlington, WI - 2018.

Tillage	Rotation	Fungicide	Yield	Moisture	AGI $8.70/bu
			bu/A	%	$/A
Conv			62.4	11.8	515
Notill			63.7	11.6	526
	1S		71.0	11.7	586
	2S		66.0	11.3	544
	3S		62.5	11.9	515
	4S		59.3	10.9	489
	5S		62.3	12.0	514
	S		63.3	11.9	522
	SS		57.0	11.9	470
		Picoxystrobin	63.5	11.6	524
		Prothioconazole	64.1	11.6	528
		UTC	61.6	11.8	508
Conv	1S		69.2	11.8	570
Conv	2S		64.7	11.4	534
Conv	3S		62.2	12.0	512
Conv	4S		59.5	10.9	491
Conv	5S		60.2	12.1	497
Conv	S		63.2	11.9	522
Conv	SS		57.7	12.3	476
Notill	1S		72.9	11.6	602
Notill	2S		67.3	11.3	555
Notill	3S		62.9	11.8	518
Notill	4S		59.1	10.9	488
Notill	5S		64.3	11.9	531
Notill	S		63.3	11.9	522
Notill	SS		56.3	11.6	464
Conv		Picoxystrobin	62.9	11.8	519
Conv		Prothioconazole	63.6	11.7	525
Conv		UTC	60.6	11.8	500
Notill		Picoxystrobin	64.1	11.5	529
Notill		Prothioconazole	64.5	11.5	532
Notill		UTC	62.6	11.7	516
	1S	Picoxystrobin	71.3	12.0	588
	1S	Prothioconazole	70.8	11.4	584
	1S	UTC	71.1	11.8	586
	2S	Picoxystrobin	65.1	11.5	537
	2S	Prothioconazole	68.0	11.1	561
	2S	UTC	64.8	11.4	535
	3S	Picoxystrobin	62.2	11.8	513
	3S	Prothioconazole	63.7	12.0	525
	3S	UTC	61.6	11.9	508

continue

Table 1809-08. Corn/Soybean Rotation and Tillage Study - Soybean.
(continued) **Arlington, WI - 2018.**

Tillage	Rotation	Fungicide	Yield	Moisture	AGI $8.70/bu
			bu/A	%	$/A
	4S	Picoxystrobin	62.5	10.6	516
	4S	Prothioconazole	59.8	10.8	493
	4S	UTC	55.6	11.4	459
	5S	Picoxystrobin	61.5	12.2	508
	5S	Prothioconazole	63.4	12.0	523
	5S	UTC	61.9	11.8	511
	S	Picoxystrobin	63.6	12.1	525
	S	Prothioconazole	64.2	12.0	530
	S	UTC	61.9	11.6	511
	SS	Picoxystrobin	58.4	11.3	482
	SS	Prothioconazole	58.5	12.0	483
	SS	UTC	54.1	12.4	446
Conv	1S	Picoxystrobin	69.1	12.3	570
Conv	1S	Prothioconazole	69.3	11.3	572
Conv	1S	UTC	69.0	12.0	569
Conv	2S	Picoxystrobin	63.4	11.7	523
Conv	2S	Prothioconazole	67.2	11.3	554
Conv	2S	UTC	63.4	11.3	523
Conv	3S	Picoxystrobin	62.3	11.8	514
Conv	3S	Prothioconazole	63.1	11.9	520
Conv	3S	UTC	61.0	12.2	503
Conv	4S	Picoxystrobin	62.6	10.7	516
Conv	4S	Prothioconazole	59.1	10.9	488
Conv	4S	UTC	56.8	11.3	469
Conv	5S	Picoxystrobin	59.2	12.3	488
Conv	5S	Prothioconazole	62.0	12.6	511
Conv	5S	UTC	59.5	11.6	491
Conv	S	Picoxystrobin	64.7	12.1	534
Conv	S	Prothioconazole	64.6	11.9	533
Conv	S	UTC	60.4	11.6	499
Conv	SS	Picoxystrobin	59.2	11.9	488
Conv	SS	Prothioconazole	60.1	12.2	496
Conv	SS	UTC	53.9	12.7	445
Notill	1S	Picoxystrobin	73.4	11.7	605
Notill	1S	Prothioconazole	72.3	11.5	596
Notill	1S	UTC	73.2	11.7	604
Notill	2S	Picoxystrobin	66.7	11.4	551
Notill	2S	Prothioconazole	68.9	11.0	568
Notill	2S	UTC	66.2	11.5	546
Notill	3S	Picoxystrobin	62.1	11.8	512
Notill	3S	Prothioconazole	64.3	12.1	530
Notill	3S	UTC	62.2	11.6	513
Notill	4S	Picoxystrobin	62.5	10.4	516
Notill	4S	Prothioconazole	60.5	10.7	499
Notill	4S	UTC	54.4	11.5	449

continue

Table 1809-08. Corn/Soybean Rotation and Tillage Study - Soybean.
(continued) **Arlington, WI - 2018.**

Tillage	Rotation	Fungicide	Yield	Moisture	AGI $8.70/bu
			bu/A	%	$/A
Notill	5S	Picoxystrobin	68.1	12.3	577
Notill	5S	Prothioconazole	73.0	12.3	618
Notill	5S	UTC	66.3	12.3	562
Notill	S	Picoxystrobin	72.9	12.1	618
Notill	S	Prothioconazole	68.6	12.0	581
Notill	S	UTC	72.2	12.0	612
Notill	SS	Picoxystrobin	65.0	12.2	551
Notill	SS	Prothioconazole	67.8	12.2	574
Notill	SS	UTC	64.1	12.1	543
Mean			67.0	12.1	568
Probability(%)					
Tillage (T)			18.5	8.7	18.5
Rotation (R)			39.7	2.2	39.6
Fungicide (F)			0.3	28.2	0.3
T x R			2.7	76.1	2.7
T x F			18.2	92.0	18.2
R x F			16.0	89.8	16.0
T x R x F			0.1	25.7	0.1
LSD(0.10)					
Tillage (T)			NS	0.2	NS
Rotation (R)			NS	0.2	NS
Fungicide (F)			1.3	NS	11
T x R			4.4	NS	37
T x F			NS	NS	NS
R x F			NS	NS	NS
T x R x F			5.7	NS	49

FIELD EXPERIMENT HISTORY

Title: **Corn - Soybean - Wheat Response to Rotation: Cover Crops**

Experiment: 09CSW **Trial ID:** 6266 **Year:** 2018

Personnel: Joe Lauer, Thierno Diallo, Kent Kohn

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

Supported By: HATCH

Site Information

Field: 335 **Previous Crop:** See factors **Soil Type:** Plano Silt

Soil Test: Date: 11/12/18 **pH** 7 **OM (%)** 2.9 **P (ppm)** 20 **K (ppm)** 134

Plot Management

Tillage Operations:

		Analysis:	Rate lbs/A:	Date:
Fertilizer:	**Preplant :**	7-18-25	650	4 /30/18
	Starter :	N/A	N/A	N/A
	Post plant :	28-0-0	C: 714 S: 0 lb/A W: 80 lb/A	6 /12/18
	Manure:	N/A	N/A	N/A

Herbicide: C,S:Medal II 24 fl oz/a 4/30/18,
Maddog 22 oz/a 4/30/18
2,4-D low vol 4. 16.0 oz/a 4/30/18
Roundup Pmax 32.0 oz/a 5/18/18
Roundup Pmax 22.0 oz/a 6/14/18
w: Powerflex 2 oz/A 5/15/18
MPC Amine 8 oz/A 5/15/18

Hybrid: C: DKC57-97RIB
S: NK S14-A6
W: FS 624

Planting Date: C: 5/1/18
S: 5/8/18
W:10/15/17

Planting Depth: C: 1.5"
S,W: 1"

Planting Method: C,S: JD1700 with RTK
W: JD750 No-Till Drill

Harvest Method: C:MF 8XP combine
CS: NH 707
S,W: Almaco Plot combine

Target Plant Density: 35000

Row Width: C,S: 30"
W: 0.5"

Harvest Date: C: 10/12/18, CS: 9/17/18
S: 9/28/18, W: 7/17/18

Fungicide: N/A

Notes:

Experimental Design

Design: RCB split-split-block **Replications:** 3

Plot Size Seeded: MP: 60' x 60'; SP: 10' x 30'

Harvest Plot Size: 5' x 26 **Experiment Size:** 3.47 A

Factors/Treatments:

Rotation:	Cover Crop	Nitrogen Rate lb/A
1) CC	In Corn and Soybean plots use:	1) 0
2) SS	1) UTC	2) 30
3) WW	2) Oat pre-harvest	
4) CS-S	3) Oat post-harvest	
5) CS-C	4) Rye pre-harvest	
6) GS1: CSW-C	5) Rye post-harvest	
7) GS1: CSW-S	6) Oat/Rye in Strip/Wheel track post-harvest	
8) GS1: CSW-W		
9) GS2: CWS-W		
10) GS2: CWS-S		
11) GS2: CWS-W	In wheat plots use Berseem and Red Clover for Trtmts. 2-5, and for Trtmt. 6 use radish.	
12) Flex: CWS-C		
13) Flex: CWS-W		
14) Flex: CWS-S		

Results: Tables 1809-09 to 1809-12

Table: 1809 - 09 . Corn, Soybean and Wheat Rotation - Corn
Arlington, WI - 2018.

Rotation	Cover crop	Fertilizer	Yield	Moisture	Test weight	Lodged			Harvest	AGI
						Total	Stalk	Root	plants	$3.40/bu
			bu/A	%	lbs/bu	%	%	%	plants/A	$/A
CC-C			232	28.2	53.4	1.0	0.5	0.5	31944	677
CS-C			250	26.4	54.4	1.1	1.0	0.1	32694	738
CSW-C			225	29.8	53.3	0.9	0.6	0.4	31750	648
CWS-C(e)			240	28.4	54.0	0.8	0.5	0.3	32583	699
	Oat post-harvest		239	28.2	53.9	0.6	0.4	0.3	32500	697
	Oat pre-harvest		235	28.0	54.0	0.7	0.3	0.4	33458	686
	Oat/Rye in Strip/Wheel track		239	28.1	53.7	1.0	0.7	0.3	32333	698
	Rye post-harvest		236	27.8	53.4	1.0	0.8	0.1	31958	692
	Rye pre-harvest		234	28.2	53.5	1.3	1.2	0.1	31167	683
	UTC		236	28.9	54.2	1.1	0.5	0.6	32042	688
		0	236	28.2	53.7	1.2	0.8	0.4	32778	689
		30	237	28.2	53.8	0.7	0.5	0.2	31708	692
CC-C	Oat post-harvest		244	28.3	53.5	1.0	0.5	0.5	32500	712
CC-C	Oat pre-harvest		223	28.0	54.0	0.6	0.0	0.6	32667	652
CC-C	Oat/Rye in Strip/Wheel track		239	27.5	53.3	0.6	0.6	0.0	32167	701
CC-C	Rye post-harvest		226	27.9	52.5	1.5	1.1	0.5	30667	662
CC-C	Rye pre-harvest		228	28.5	53.6	0.5	0.5	0.0	29833	663
CC-C	UTC		232	29.0	53.6	1.6	0.5	1.2	33833	674
CS-C	Oat post-harvest		249	27.1	53.7	0.6	0.6	0.0	32167	733
CS-C	Oat pre-harvest		246	26.0	55.2	0.5	0.5	0.0	34833	729
CS-C	Oat/Rye in Strip/Wheel track		255	26.8	54.4	0.9	0.5	0.5	33333	752
CS-C	Rye post-harvest		249	26.9	54.2	1.7	1.7	0.0	32333	733
CS-C	Rye pre-harvest		243	26.7	54.0	2.3	2.3	0.0	31667	716
CS-C	UTC		257	25.2	55.1	0.5	0.5	0.0	31833	764
CSW-C	Oat post-harvest		224	29.4	54.2	0.5	0.0	0.5	32000	649
CSW-C	Oat pre-harvest		228	29.8	52.9	0.5	0.0	0.5	32500	657
CSW-C	Oat/Rye in Strip/Wheel track		227	29.4	53.0	2.4	1.8	0.6	31167	657
CSW-C	Rye post-harvest		221	29.4	53.1	0.6	0.6	0.0	31667	640
CSW-C	Rye pre-harvest		227	30.1	53.1	1.5	1.0	0.5	32667	654
CSW-C	UTC		220	30.6	53.5	0.0	0.0	0.0	30500	631
CWS-C(e)	Oat post-harvest		238	28.2	54.3	0.5	0.5	0.0	33333	694
CWS-C(e)	Oat pre-harvest		242	28.2	53.9	1.2	0.6	0.5	33833	706

continue

Table: 1809 - 09 . Corn, Soybean and Wheat Rotation - Corn
(continued) Arlington, WI - 2018.

Rotation	Cover crop	Fertilizer	Yield	Moisture	Test weight	Lodged			Harvest plants	AGI $3.40/bu
						Total	Stalk	Root		
			bu/A	%	lbs/bu	%	%	%	plants/A	$/A
CWS-C(e)	Oat/Rye in Strip/Wheel track		235	28.7	54.0	0.0	0.0	0.0	32667	683
CWS-C(e)	Rye post-harvest		249	27.0	53.8	0.0	0.0	0.0	33167	733
CWS-C(e)	Rye pre-harvest		238	27.3	53.3	1.0	1.0	0.0	30500	698
CWS-C(e)	UTC		237	30.8	54.5	2.1	1.1	1.1	32000	684
CC-C		0	232	28.2	53.2	1.0	0.5	0.5	32556	676
CC-C		30	233	28.2	53.6	0.9	0.5	0.4	31333	678
CS-C		0	251	26.5	54.5	1.4	1.3	0.2	33167	739
CS-C		30	249	26.4	54.3	0.7	0.7	0.0	32222	737
CSW-C		0	222	29.6	53.1	1.5	1.0	0.5	32500	641
CSW-C		30	227	30.0	53.5	0.4	0.2	0.2	31000	655
CWS-C(e)		0	240	28.4	54.0	0.9	0.5	0.4	32889	700
CWS-C(e)		30	239	28.3	53.9	0.7	0.5	0.2	32278	699
	Oat post-harvest	0	240	28.3	53.9	0.8	0.3	0.5	33000	698
	Oat post-harvest	30	239	28.2	53.9	0.5	0.5	0.0	32000	696
	Oat pre-harvest	0	234	28.0	54.0	0.8	0.0	0.8	33333	685
	Oat pre-harvest	30	235	28.0	53.9	0.6	0.6	0.0	33583	687
	Oat/Rye in Strip/Wheel track	0	237	27.9	53.6	1.4	0.9	0.5	32667	692
	Oat/Rye in Strip/Wheel track	30	241	28.3	53.8	0.5	0.5	0.0	32000	704
	Rye post-harvest	0	238	27.6	53.4	1.0	0.8	0.2	33417	697
	Rye post-harvest	30	235	28.0	53.4	0.9	0.9	0.0	30500	687
	Rye pre-harvest	0	231	27.9	53.2	2.4	2.4	0.0	32667	676
	Rye pre-harvest	30	237	28.4	53.8	0.3	0.0	0.3	29667	690
	UTC	0	237	29.3	54.2	0.8	0.5	0.3	31583	687
	UTC	30	236	28.5	54.1	1.3	0.5	0.8	32500	690
CC-C	Oat post-harvest	0	241	28.6	52.8	1.0	0.0	1.0	33000	700
CC-C	Oat post-harvest	30	248	28.0	54.2	1.0	1.0	0.0	32000	725
CC-C	Oat pre-harvest	0	224	27.7	54.2	1.1	0.0	1.1	29333	655
CC-C	Oat pre-harvest	30	223	28.3	53.7	0.0	0.0	0.0	36000	649
CC-C	Oat/Rye in Strip/Wheel track	0	241	28.1	52.9	0.0	0.0	0.0	33667	702
CC-C	Oat/Rye in Strip/Wheel track	30	238	26.8	53.7	1.1	1.1	0.0	30667	699
CC-C	Rye post-harvest	0	226	28.2	53.1	2.0	1.0	1.0	32333	658
CC-C	Rye post-harvest	30	227	27.7	52.0	1.1	1.1	0.0	29000	665
CC-C	Rye pre-harvest	0	228	27.7	53.0	1.0	1.0	0.0	31333	669
CC-C	Rye pre-harvest	30	227	29.3	54.2	0.0	0.0	0.0	28333	657
CC-C	UTC	0	232	28.8	53.5	0.9	0.9	0.0	35667	673
CC-C	UTC	30	233	29.1	53.6	2.3	0.0	2.3	32000	675

continue

Table: 1809 - 09 . Corn, Soybean and Wheat Rotation - Corn
(continued) Arlington, WI - 2018.

Rotation	Cover crop	Fertilizer	Yield	Moisture	Test weight	Lodged			Harvest plants	AGI $3.40/bu
						Total	Stalk	Root		
			bu/A	%	lbs/bu	%	%	%	plants/A	$/A
CS-C	Oat post-harvest	0	251	27.1	54.8	1.1	1.1	0.0	32000	737
CS-C	Oat post-harvest	30	248	27.0	52.5	0.0	0.0	0.0	32333	728
CS-C	Oat pre-harvest	0	247	26.2	55.1	0.0	0.0	0.0	35000	731
CS-C	Oat pre-harvest	30	245	25.7	55.2	1.0	1.0	0.0	34667	726
CS-C	Oat/Rye in Strip/Wheel track	0	255	26.6	54.6	1.8	0.9	0.9	33000	753
CS-C	Oat/Rye in Strip/Wheel track	30	255	27.0	54.2	0.0	0.0	0.0	33667	751
CS-C	Rye post-harvest	0	248	26.3	54.1	1.0	1.0	0.0	35333	733
CS-C	Rye post-harvest	30	250	27.5	54.2	2.4	2.4	0.0	29333	732
CS-C	Rye pre-harvest	0	238	27.2	53.5	4.7	4.7	0.0	33000	700
CS-C	Rye pre-harvest	30	248	26.2	54.6	0.0	0.0	0.0	30333	733
CS-C	UTC	0	263	25.7	54.9	0.0	0.0	0.0	30667	780
CS-C	UTC	30	251	24.8	55.3	1.0	1.0	0.0	33000	748
CSW-C	Oat post-harvest	0	225	29.6	54.0	1.0	0.0	1.0	33667	650
CSW-C	Oat post-harvest	30	224	29.2	54.3	0.0	0.0	0.0	30333	647
CSW-C	Oat pre-harvest	0	225	29.2	52.6	0.9	0.0	0.9	34333	653
CSW-C	Oat pre-harvest	30	230	30.3	53.1	0.0	0.0	0.0	30667	661
CSW-C	Oat/Rye in Strip/Wheel track	0	224	28.6	52.9	3.8	2.6	1.3	31667	652
CSW-C	Oat/Rye in Strip/Wheel track	30	230	30.1	53.2	1.0	1.0	0.0	30667	662
CSW-C	Rye post-harvest	0	220	29.3	52.4	1.2	1.2	0.0	32667	636
CSW-C	Rye post-harvest	30	223	29.4	53.8	0.0	0.0	0.0	30667	644
CSW-C	Rye pre-harvest	0	226	29.8	52.8	2.0	2.0	0.0	33333	652
CSW-C	Rye pre-harvest	30	228	30.4	53.4	1.1	0.0	1.1	32000	656
CSW-C	UTC	0	210	30.8	53.9	0.0	0.0	0.0	29333	603
CSW-C	UTC	30	229	30.4	53.2	0.0	0.0	0.0	31667	659
CWS-C(e)	Oat post-harvest	0	241	27.9	53.8	0.0	0.0	0.0	33333	705
CWS-C(e)	Oat post-harvest	30	235	28.5	54.7	0.9	0.9	0.0	33333	683
CWS-C(e)	Oat pre-harvest	0	240	28.8	54.3	1.1	0.0	1.1	34667	699
CWS-C(e)	Oat pre-harvest	30	243	27.7	53.6	1.3	1.3	0.0	33000	712
CWS-C(e)	Oat/Rye in Strip/Wheel track	0	227	28.2	53.9	0.0	0.0	0.0	32333	662
CWS-C(e)	Oat/Rye in Strip/Wheel track	30	242	29.1	54.2	0.0	0.0	0.0	33000	703
CWS-C(e)	Rye post-harvest	0	257	26.7	54.0	0.0	0.0	0.0	33333	758
CWS-C(e)	Rye post-harvest	30	241	27.4	53.7	0.0	0.0	0.0	33000	707
CWS-C(e)	Rye pre-harvest	0	232	26.9	53.5	2.1	2.1	0.0	33000	682
CWS-C(e)	Rye pre-harvest	30	244	27.7	53.1	0.0	0.0	0.0	28000	714
CWS-C(e)	UTC	0	242	32.0	54.7	2.2	1.1	1.1	30667	692
CWS-C(e)	UTC	30	232	29.7	54.3	2.0	1.0	1.0	33333	676
Mean			237	28.2	53.8	0.9	0.7	0.3	32243	691

continue

Table: 1809 - 09 . Corn, Soybean and Wheat Rotation - Corn

(continued) Arlington, WI - 2018.

Rotation	Cover crop	Fertilizer	Yield	Moisture	Test weight	Lodged			Harvest	AGI
						Total	Stalk	Root	plants	$3.40/bu
			bu/A	%	lbs/bu	%	%	%	plants/A	$/A
Mean			237	28.2	53.8	0.9	0.7	0.3	32243	691
Probability(%)										
Rotation (R)			26.8	22.7	7.8	97.0	66.8	62.9	58.6	25.8
Cover crop ('C)			66.6	52.2	39.1	82.3	36.7	54.4	31.0	77.4
Fertilizer (F)			58.0	88.0	64.5	10.5	22.9	15.8	5.8	65.0
R x C			18.8	38.0	83.0	40.0	65.0	47.2	86.4	21.7
R x F			70.9	93.4	76.4	65.1	63.3	94.6	95.0	85.8
C x F			86.7	87.1	93.4	25.9	2.4	8.0	23.5	93.8
R x C x F			78.5	98.2	77.7	78.5	76.4	36.3	33.6	90.2
LSD(0.10)										
Rotation (R)			NS	NS	0.7	NS	NS	NS	NS	NS
Cover crop ('C)			NS	NS	NS	NS	NS	NS	NS	NS
Fertilizer (F)			NS	NS	NS	NS	NS	NS	927	NS
R x C			NS	NS	NS	NS	NS	NS	NS	NS
R x F			NS	NS	NS	NS	NS	NS	NS	NS
C x F			NS	NS	NS	NS	1.1	0.6	NS	NS
R x C x F			NS	NS	NS	NS	NS	NS	NS	NS

AGI*: Adjusted Gross Income.

Table: 1809-10. Corn, Soybean and Wheat Rotation - Corn Silage
Arlington, WI - 2018.

			Whole Plant										
		Dry Matter		Kernel	Crude			*In Vitro*			Milk per		Plant
Cover crop	Fertilizer	Yield	Moisture	milk	protein	ADF	NDF	Digest	NDFD	Starch	Ton	Acre	population
		tons/A	%	%	%	%	%	%	%	%	lbs/T	lbs/T	plants/A
Oat post-harvest		10.9	47.6	3.5	6.2	16.5	33.4	85.2	55.8	37.4	3058	33429	28202
Oat pre-harvest		10.7	49.5	13.5	6.2	16.2	32.8	85.9	57.4	36.8	3025	32348	27700
Oat/Rye in Strip/Wheel tr		10.8	46.4	2.3	6.1	16.2	32.9	85.6	56.3	37.7	3068	33028	27253
Rye post-harvest		11.5	50.0	19.8	6.4	17.0	34.2	85.1	56.5	34.6	2956	34046	26862
Rye pre-harvest		10.5	47.6	4.2	6.2	15.7	32.6	85.7	55.9	38.2	3081	32312	27253
UTC		10.7	50.0	9.2	6.0	18.2	35.5	83.7	54.2	34.3	2889	31052	27923
	0	10.7	48.6	8.8	6.1	16.9	33.9	84.9	55.6	36.1	2991	31860	27402
	30	11.0	48.4	8.7	6.2	16.3	33.2	85.5	56.5	36.8	3034	33545	27662
Oat post-harvest	0	10.7	48.3	2.0	6.2	17.4	34.5	84.4	54.9	35.7	2971	31865	29598
Oat post-harvest	30	11.1	46.9	5.0	6.3	15.6	32.2	86.0	56.7	39.0	3145	34994	26806
Oat pre-harvest	0	10.4	49.9	18.3	6.1	16.7	33.5	85.6	57.0	36.0	2984	31072	27030
Oat pre-harvest	30	11.0	49.0	8.7	6.3	15.7	32.2	86.3	57.8	37.7	3067	33624	28370
Oat/Rye in Strip/Wheel tr	0	10.5	46.4	2.3	6.0	16.7	33.4	85.2	55.6	37.3	3041	32015	26694
Oat/Rye in Strip/Wheel tr	30	11.0	46.3	2.3	6.2	15.7	32.4	86.0	57.0	38.2	3096	34041	27811
Rye post-harvest	0	11.1	50.5	15.3	6.2	17.7	35.2	84.1	54.9	33.9	2910	32324	26583
Rye post-harvest	30	11.9	49.4	24.3	6.5	16.3	33.2	86.0	58.0	35.3	3001	35769	27141
Rye pre-harvest	0	10.3	46.8	3.3	6.2	15.5	32.2	85.9	56.4	38.7	3105	32123	26918
Rye pre-harvest	30	10.6	48.3	5.0	6.2	15.9	32.9	85.4	55.5	37.6	3056	32501	27588
UTC	0	10.8	49.7	11.7	6.1	17.5	34.8	84.2	54.6	35.2	2936	31760	27588
UTC	30	10.7	50.3	6.7	5.9	18.9	36.2	83.2	53.7	33.3	2841	30343	28258
Mean		10.9	48.5	8.8	6.2	16.6	33.6	85.2	56.0	36.5	3013	32702	27532
Probability(%)													
Cover crop ('C)		16.5	7.3	7.5	19.4	36.3	39.3	26.9	18.1	24.3	23.0	55.0	80.5
Fertilizer (F)		8.6	76.5	96.4	15.3	42.4	41.2	28.6	19.9	53.6	39.8	8.7	66.9
C x F		86.6	89.9	75.4	64.2	74.8	78.3	59.7	49.4	79.0	66.9	66.3	40.3
LSD(0.10)													
Cover crop ('C)		NS	2.4	10.9	NS	NS	NS	NS	NS	NS	NS	NS	NS
Fertilizer (F)		0.4	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
C x F		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

Table: 1809 - 11 . Corn, Soybean and Wheat Rotation -Soybean
Arlington, WI - 2018.

Rotation	Cover crop	Fertilizer	Yield	Moisture	AGI $8.48/bu
			bu/A	%	$/A
CSW-S (e)			80.9	13.1	666.8
CWS(L)-S			78.2	13.2	644.4
CWS-S			76.4	13.2	630.0
SC-S			73.6	13.3	606.9
SS-S			65.7	13.2	541.2
	Oat-1Sep		75.0	13.3	618.1
	Oat-Post		75.6	13.2	623.2
	Oat/Rye		75.8	13.1	624.8
	Rye-1Sep		74.6	13.3	614.7
	Rye-Post		72.5	13.2	597.7
	UTC		76.3	13.2	628.9
		0	75.0	13.2	618.5
		30	74.9	13.2	617.3
CSW-S (e)	Oat-1Sep		81.3	13.4	669.9
CSW-S (e)	Oat-Post		80.6	13.1	664.7
CSW-S (e)	Oat/Rye		82.7	13.1	682.2
CSW-S (e)	Rye-1Sep		85.0	12.8	700.6
CSW-S (e)	Rye-Post		73.1	13.2	602.5
CSW-S (e)	UTC		82.6	13.2	681.0
CWS(L)-S	Oat-1Sep		78.1	13.0	644.2
CWS(L)-S	Oat-Post		81.8	13.4	673.9
CWS(L)-S	Oat/Rye		75.5	13.1	622.3
CWS(L)-S	Rye-1Sep		74.9	13.3	617.2
CWS(L)-S	Rye-Post		78.6	13.2	648.1
CWS(L)-S	UTC		80.2	13.1	660.8
CWS-S	Oat-1Sep		76.2	13.4	628.3
CWS-S	Oat-Post		78.1	13.0	644.1
CWS-S	Oat/Rye		78.0	13.0	643.5
CWS-S	Rye-1Sep		74.4	13.3	613.3
CWS-S	Rye-Post		73.9	13.3	609.2
CWS-S	UTC		77.8	13.2	641.7
SC-S	Oat-1Sep		75.1	13.3	619.2
SC-S	Oat-Post		71.1	13.3	586.3
SC-S	Oat/Rye		74.5	13.1	614.3

continue

Table: 1809 - 11 . Corn, Soybean and Wheat Rotation -Soybean
(continued) Arlington, WI - 2018.

Rotation	Cover crop	Fertilizer	Yield	Moisture	AGI $8.48/bu
			bu/A	%	$/A
SC-S	Rye-1Sep		74.2	13.5	611.5
SC-S	Rye-Post		72.0	13.1	593.7
SC-S	UTC		74.8	13.4	616.4
SS-S	Oat-1Sep		64.1	13.3	528.7
SS-S	Oat-Post		66.3	13.2	546.7
SS-S	Oat/Rye		68.1	13.3	561.6
SS-S	Rye-1Sep		64.4	13.3	530.9
SS-S	Rye-Post		64.9	13.1	534.8
SS-S	UTC		66.0	13.1	544.4
CSW-S (e)		0	81.0	13.1	667.3
CSW-S (e)		30	80.8	13.2	666.3
CWS(L)-S		0	78.7	13.2	648.7
CWS(L)-S		30	77.7	13.2	640.2
CWS-S		0	77.2	13.2	636.6
CWS-S		30	75.6	13.2	623.4
SC-S		0	72.8	13.3	600.2
SC-S		30	74.5	13.3	613.6
SS-S		0	65.5	13.2	539.6
SS-S		30	65.8	13.2	542.8
	Oat-1Sep	0	73.4	13.3	604.8
	Oat-1Sep	30	76.6	13.3	631.4
	Oat-Post	0	74.6	13.2	615.2
	Oat-Post	30	76.6	13.2	631.2
	Oat/Rye	0	77.0	13.2	634.6
	Oat/Rye	30	74.6	13.1	615.0
	Rye-1Sep	0	75.2	13.2	620.2
	Rye-1Sep	30	73.9	13.3	609.2
	Rye-Post	0	72.1	13.2	594.3
	Rye-Post	30	72.9	13.2	601.0
	UTC	0	77.9	13.2	641.9
	UTC	30	74.7	13.2	615.8
CSW-S (e)	Oat-1Sep	0	80.4	13.4	662.2
CSW-S (e)	Oat-1Sep	30	82.2	13.5	677.6
CSW-S (e)	Oat-Post	0	83.5	13.1	688.3
CSW-S (e)	Oat-Post	30	77.8	13.1	641.2

continue

Table: 1809 - 11 . Corn, Soybean and Wheat Rotation -Soybean
(continued) Arlington, WI - 2018.

Rotation	Cover crop	Fertilizer	Yield	Moisture	AGI $8.48/bu
			bu/A	%	$/A
CSW-S (e)	Oat/Rye	0	81.0	13.2	667.6
CSW-S (e)	Oat/Rye	30	84.5	13.1	696.9
CSW-S (e)	Rye-1Sep	0	83.8	12.8	690.9
CSW-S (e)	Rye-1Sep	30	86.1	12.9	710.2
CSW-S (e)	Rye-Post	0	74.8	13.1	616.8
CSW-S (e)	Rye-Post	30	71.3	13.2	588.1
CSW-S (e)	UTC	0	82.3	13.1	678.1
CSW-S (e)	UTC	30	83.0	13.3	683.8
CWS(L)-S	Oat-1Sep	0	76.1	13.0	627.2
CWS(L)-S	Oat-1Sep	30	80.2	13.1	661.3
CWS(L)-S	Oat-Post	0	78.9	13.4	650.1
CWS(L)-S	Oat-Post	30	84.7	13.3	697.8
CWS(L)-S	Oat/Rye	0	75.0	13.2	618.5
CWS(L)-S	Oat/Rye	30	75.9	13.0	626.1
CWS(L)-S	Rye-1Sep	0	78.2	13.3	644.7
CWS(L)-S	Rye-1Sep	30	71.5	13.3	589.6
CWS(L)-S	Rye-Post	0	80.0	13.3	659.6
CWS(L)-S	Rye-Post	30	77.2	13.2	636.6
CWS(L)-S	UTC	0	84.0	13.2	692.1
CWS(L)-S	UTC	30	76.4	13.1	629.6
CWS-S	Oat-1Sep	0	74.6	13.5	614.5
CWS-S	Oat-1Sep	30	77.9	13.3	642.0
CWS-S	Oat-Post	0	75.7	13.1	624.5
CWS-S	Oat-Post	30	80.5	13.0	663.7
CWS-S	Oat/Rye	0	82.0	13.1	676.4
CWS-S	Oat/Rye	30	74.0	13.0	610.6
CWS-S	Rye-1Sep	0	76.5	13.3	630.3
CWS-S	Rye-1Sep	30	72.3	13.4	596.3
CWS-S	Rye-Post	0	73.4	13.4	604.9
CWS-S	Rye-Post	30	74.4	13.2	613.6
CWS-S	UTC	0	81.2	13.2	669.2
CWS-S	UTC	30	74.5	13.2	614.2
SC-S	Oat-1Sep	0	74.2	13.3	612.0
SC-S	Oat-1Sep	30	76.0	13.3	626.5
SC-S	Oat-Post	0	70.1	13.2	577.9
SC-S	Oat-Post	30	72.1	13.3	594.7

continue

Table: 1809 - 11 . Corn, Soybean and Wheat Rotation -Soybean
(continued) Arlington, WI - 2018.

Rotation	Cover crop	Fertilizer	Yield	Moisture	AGI $8.48/bu
			bu/A	%	$/A
SC-S	Oat/Rye	0	74.7	13.1	615.7
SC-S	Oat/Rye	30	74.3	13.2	612.9
SC-S	Rye-1Sep	0	74.7	13.4	615.3
SC-S	Rye-1Sep	30	73.8	13.6	607.8
SC-S	Rye-Post	0	69.8	13.1	575.7
SC-S	Rye-Post	30	74.2	13.1	611.6
SC-S	UTC	0	73.3	13.4	604.5
SC-S	UTC	30	76.2	13.4	628.3
SS-S	Oat-1Sep	0	61.6	13.4	507.8
SS-S	Oat-1Sep	30	66.7	13.3	549.5
SS-S	Oat-Post	0	64.9	13.2	535.1
SS-S	Oat-Post	30	67.7	13.2	558.4
SS-S	Oat/Rye	0	72.2	13.3	595.0
SS-S	Oat/Rye	30	64.1	13.3	528.2
SS-S	Rye-1Sep	0	63.0	13.2	519.6
SS-S	Rye-1Sep	30	65.8	13.3	542.1
SS-S	Rye-Post	0	62.4	13.1	514.8
SS-S	Rye-Post	30	67.3	13.1	554.9
SS-S	UTC	0	68.6	13.2	565.5
SS-S	UTC	30	63.5	13.1	523.4
Mean	Mean		75.0	13.2	617.9
Probability(%)					
Rotation (R)			0.8	95.1	0.8
Cover crop ('C)			10.9	37.2	11.0
Fertilizer (F)			85.1	93.6	85.3
R x C			27.4	3.1	27.4
R x F			74.2	79.1	74.6
C x F			15.6	84.6	15.6
R x C x F			50.3	100.0	50.3
LSD(0.10)					
Rotation (R)			5.6	NS	46.3
Cover crop ('C)			NS	NS	NS
Fertilizer (F)			NS	NS	NS
R x C			NS	0.4	NS
R x F			NS	NS	NS
C x F			NS	NS	NS
R x C x F			NS	NS	NS

AGI*: Adjusted Gross Income.

Table: 1809 - 12 . Corn, Soybean and Wheat Rotation -Wheat.
Arlington, WI - 2018.

Rotation	Yield	Moisture	Test weight	AGI $3.04/bu
	bu/A	%	lbs/bu	$/A
CSW-W	70	13.1	53.2	315
CWS-W	60	14.0	51.4	271
CWSL-W(s)	68	13.1	51.1	308
WW-W	--	--	--	--
Mean	49	10.0	38.9	224
Probability(%)				
Rotation (R)	0.0	0.0	0.0	0.0
LSD(0.10)				
Rotation (R)	13	0.7	1.2	58

AGI*: Adjusted Gross Income.

-- No wheat to harvest from the continuous wheat plots.

FIELD EXPERIMENT HISTORY

Title: **Corn - Soybean - Wheat Response to Rotation**

Experiment: 09CSW **Trial ID:** 6334 **Year:** 2018

Personnel: Joe Lauer, Thierno Diallo, Kent Kohn, Jason Cavadini

Location: Marshfield, WI **County:** Marathon

Supported By: HATCH

Site Information

Field: 405 **Previous Crop:** See factors **Soil Type:** Withee Sil

Soil Test: Date: 4 /24/15 **pH** 7.4 **OM (%)** 3.1 **P (ppm)** 41 **K (ppm)** 124

Plot Management

Tillage Operations:

Fertilizer:	Analysis:	Rate lbs/A:	Date:
Preplant :	N/A	N/A	N/A
Starter :	C: 20-10-20-4S C: 7-9-13-2S	200 lbs 4 gal/A	5/18/18 5/18/18
Post plant :	S: 20-10-20-4S WW: 46-0-0 C: 28-0-0	150 lb/A 50 lb/A 40 gal	5/21/18 6/21/18 6/21/18
Manure:	N/A	N/A	N/A

Herbicide: C pre: Verdict 16 oz,
C pre: Roundup Pmax 32 oz
S post: Roundup Pmax 32 oz
post Me-too-Lachlor 1.3 pt
W: pre Roundup Pmax 32 oz

Hybrid: C: Masters Choice 4210
S: Renk RS147NR2
W: Pioneer 25R34

Planting Date: C: 5/17/18
S: 5/21/18
W: 5/18/18

Planting Depth: C: 1.5"
S,W: 1"

Planting Method: C: JD 1750 planter
S,W: Great Plains 1206 Ntdrill

Harvest Method: CS: Hand Harvest
C,S,W: Almaco plot combine

Target Plant Density: 35000

Row Width: C: 30"
S: 15"
W: 7.5"

Harvest Date: C: 11/1/18, CS: 9/21/18
S: 10/18/18, W: 9/10/18

Fungicide: N/A

Notes:

Experimental Design

Design: RCB split-split-block

Replications: 3

Plot Size Seeded: 60' x 60'

Harvest Plot Size: C: 60' x 5'; S,W: 60' x 5'; CS: 10' x 2.5'

Experiment Size: 3.09 A

Factors/Treatments:

Rotation: 2017 Treatments

1) CC
2) SS
3) WW
4) CS- C
5) SC- S
6) GS1: CSW- C
7) GS1: CSW- S (early)
8) GS1: CSW- W
9) GS2: CWS- C (early)
10) GS2: CWS- S
11) GS2: CWS- W
12) Flex: CWS- C (silage)
13) Flex: CWS- S
14) Flex: CWS- W (straw)

Results: Tables 1809-13 to 1809-16

Table: 1809 - 13 . Corn, Soybean and Wheat Rotation - Corn
Marshfield, WI - 2018.

Rotation	Yield	Moisture	Test weight	Lodged Stalk	Harvest plants	AGI $3.44/bu
	bu/A	%	lbs/bu	%	plants/A	$/A
Continuous	141	21.8	52.0	0.0	31170	429
Alternating	202	21.2	54.3	0.0	32912	619
Grain System I	177	21.7	51.7	0.0	33493	538
Mean	173	21.6	52.7	0.0	32525	529
Probability(%)						
Rotation (R)	1.5	28.8	0.7	--	28.7	1.4
LSD(0.10)						
Rotation (R)	25	NS	0.9	--	NS	74

AGI*: Adjusted Gross Income.

Table:1809 - 14. Corn, Soybean, and Wheat Rotation- Corn Silage
Marshfield, WI - 2018.

Rotation	Yield	Moisture	Kernel milk	Harvest Population	CP	ADF	NDF	NDFD	TDN	NFC	Starch	Milk per Ton	Milk per Acre
	tn dm/A	%	%	ppa	%	%	%	%	%	%	%	lb	lb
Continuous	5.85	60.7	50	31,170	4.7	28.4	47.5	73.9	76.5	50.0	27.2	4,034	23,559
Alternating	8.45	58.3	50	32,912	4.7	26.1	42.4	73.8	73.6	55.8	33.8	3,824	32,176
Grain System I	7.40	61.4	50	33,493	4.4	30.1	49.8	72.4	75.3	47.5	24.7	3,937	28,846
Mean	7.2	60.1	$50	32,525	4.6	28.2	46.6	73.4	75.2	51.1	28.6	3,931	28,194
Probability (%)													
Treatment	3.3	13.5	--	28.7	67.5	17.6	27.3	42.9	50.7	26.9	31.3	52.2	16.1
LSD 10%													
Treatment	1.3	NS	--	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

Table: 1809 - 15 . Corn, Soybean and Wheat Rotation -Soybean
Marshfield, WI - 2018.

Rotation	Yield	Moisture	Test Weight	Height	Lodging	AGI $8.48/bu
	bu/A	%	lb/bu	in.	1 to 5	$/A
Continuous	38	20.6	52.0	25	1.0	312
Alternating	46	22.1	52.1	26	1.7	373
Grain System I	54	20.3	54.5	29	2.9	439
Mean	46	21.0	52.8	27	1.9	375
Probability (%)						
Treatment	7.6	53.8	35.5	55.5	10.9	8.0
LSD 10%						
Treatment	10.3	NS	NS	NS	NS	85.1

AGI*: Adjusted Gross Income.

Table: 1809 - 16 . Corn, Soybean and Wheat Rotation -Wheat.
Marshfield, WI - 2018.

Rotation	Yield	Moisture	Test Weight	Height	Lodging	AGI $4.75/bu
	bu/A	%	lb/bu	in.	1 to 5	$/A
Continuous	1	15.9	56.4	6	4.0	26
Grain System I	20	13.3	55.7	92	5.0	28
Mean	11	14.6	56.1	49	4.5	27
Probability (%)						
Treatment	4.6	5.8	28.9	4.6	3.5	21.7
LSD 10%						
Treatment	12	2	NS	56	1	NS

AGI*: Adjusted Gross Income.

FIELD EXPERIMENT HISTORY

Title: **Crop Rotation Response to Nrate**

Experiment: 09ACOSW **Trial ID:** 6264 **Year:** 2018

Personnel: Carrie Laboski, Joe Lauer, Thierno Diallo

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

Supported By: HATCH

Site Information

Field: 300 B **Previous Crop:** See factors **Soil Type:** Fayette silt loam

Soil Test: Date: N/A **pH** 6.8 **OM (%)** 2.3 **P (ppm)** 18 **K (ppm)** 124

Plot Management

Tillage Operations: C: Fall chisel

Fertilizer:

	Analysis:	Product Rate lbs/A:	Date:
Preplant :	S:0-20-34	315	5/22/2017
Starter :	C: 9-23-30	195	5/15/2017
Post plant :	C: 34-0-0	See rates	6/9/2017
	W: 34-0-0	30	4/20/2017
	W,O: 34-0-0	315	5/22/2017
	A: 0-8-37-3S-0.3B	400	7/31/2017
Manure:	N/A	N/A	N/A

Herbicide: C: Powermax 29 oz/a 5/3/17
A,W: Cornbelt Salvan 1.6 pt/a,
PwrMax 29.0 oz/A 4/19/17
2,4-D 1 pts/a, 10/5/17
PwrMax 32 oz/a 10/5/17

Planting Depth: C:1.5"

Row Width: C:30" S:15"
O/A/W: 7.5"

Hybrid: C: Pioneer P0157 AMX
S: Nutech 7172R2
W:Pioneer 25R25
A: Croplan Rebound 6.0
O:Ogle

Planting Date: C: 5/15/17 W: 10/25/16
S: 6/1/17 A: 5/15-4/18/17
O: 4/18/17

Planting Method: White6100 No till planter

Target Plant Density: Corn: 32500 Plants/A
Soybean: 150000 Plants/A

Harvest Method: C: MF 8XP Combine.

Harvest Date: C:10/27/17S: 10/10/17
O: 7/25/17 W: 7/25/17
A: 5/30; 7/3; 7/28; 8/31

Fungicide: N/A

Notes: Lime (50-59) @ 2.4T/A on 4/21/17

Experimental Design

Design: RCB split-split-plot

Plot Size Seeded: MP: 30' x 70'

Harvest Plot Size: 5' x 25'

Replications: 2

Experiment Size: 2.7 A

Factors/Treatments:

Rotation

1) CC
2) CSCOA-2C
3) CSCOA-1O
4) CSCOA-1A
5) CSCOA-1C
6) CSCOA-1S
7) CCCAA-3C
8) CCCAA-1A
9) CCCAA-1C
10) CCCAA-2A
11) CCCAA-2C
12) CCOAA-1O
13) CCOAA-1A
14) CCOAA-2A
15) CCOAA-1C
16) CCOAA-2C
17) CSW-1W
18) CSW-1S
19) CS-1S
20) CSW-1C
21) CS-1C

Corn N-rate (lbs/A)

1) 0
2) 50
3) 100
4) 200

Results: Tables 1809-17 to 1809-21

Table:1809-17. Corn, Soybean, Wheat, Oats and Alfalfa Rotation - Corn
Lancaster, WI - 2018.

Rotation	Nitrogen rate	Yield	Moisture	Test weight	AGI $3.44/bu
	N lb/A	bu/A	%	lbs/bu	$/A
CC-C		153	19.8	58.0	479
CCCMM-C1		229	19.6	58.1	717
CCCMM-C2		198	19.7	59.1	620
CCCMM-C3		168	19.3	57.6	528
CCOMM-C1		191	19.0	56.4	599
CCOMM-C2		187	19.2	56.9	587
CSb-C		194	19.4	58.3	608
CSbCOM-C1		222	19.7	59.0	695
CSbCOM-C2		199	19.1	57.6	624
CSbW-C		178	19.9	58.8	554
	0	136	19.2	57.5	427
	50	190	19.3	58.4	596
	100	209	19.5	57.9	653
	200	233	19.8	58.1	728
CC-C	0	76	19.9	58.0	238
CC-C	50	142	19.3	58.3	444
CC-C	100	163	20.1	58.0	509
CC-C	200	233	20.1	57.7	726
CCCMM-C1	0	219	19.3	58.7	687
CCCMM-C1	50	235	19.7	58.5	735
CCCMM-C1	100	241	19.7	57.7	752
CCCMM-C1	200	223	19.7	57.5	696
CCCMM-C2	0	110	19.0	57.3	345
CCCMM-C2	50	196	19.5	59.4	614
CCCMM-C2	100	237	19.9	59.6	740
CCCMM-C2	200	250	20.4	60.2	780
CCCMM-C3	0	80	19.1	56.1	250
CCCMM-C3	50	167	18.6	57.8	525
CCCMM-C3	100	200	19.5	58.6	625
CCCMM-C3	200	228	20.0	57.8	712
CCOMM-C1	0	168	18.9	56.3	529
CCOMM-C1	50	210	19.0	56.7	660
CCOMM-C1	100	165	18.8	55.8	519
CCOMM-C1	200	219	19.2	57.0	686

continue

Table:1809-17. Corn, Soybean, Wheat, Oats and Alfalfa Rotation - Corn
(continued) **Lancaster, WI - 2018.**

Rotation	Nitrogen rate	Yield	Moisture	Test weight	AGI $3.44/bu
	N lb/A	bu/A	%	lbs/bu	$/A
CCOMM-C2	0	128	18.5	55.3	404
CCOMM-C2	50	185	19.3	57.6	580
CCOMM-C2	100	208	19.0	56.7	651
CCOMM-C2	200	229	20.1	58.0	713
CS-C	0	122	19.3	57.8	383
CS-C	50	202	19.1	59.0	633
CS-C	100	213	19.4	57.9	666
CS-C	200	240	19.9	58.6	749
CSCOM-C1	0	200	19.4	59.8	626
CSCOM-C1	50	226	20.0	59.9	706
CSCOM-C1	100	240	19.8	58.6	749
CSCOM-C1	200	223	19.6	57.8	698
CSCOM-C2	0	157	18.9	58.0	494
CSCOM-C2	50	184	19.0	57.7	578
CSCOM-C2	100	220	19.0	57.1	690
CSCOM-C2	200	234	19.5	57.8	732
CSW-C	0	100	19.9	57.9	311
CSW-C	50	156	19.6	59.1	489
CSW-C	100	203	20.0	58.9	632
CSW-C	200	252	20.0	59.3	785
Mean		192	19.5	58.0	601
Probability(%)					
Rotation (R)		0.1	51.4	28.7	0.1
Nitrogen (N)		0.0	0.0	3.6	0.0
R x N		0.0	22.0	22.4	0.0
LSD (0.10)					
Rotation (R)		17	NS	NS	54
Nitrogen (N)		10	0.2	0.5	32
R x N		32	NS	NS	100

*AGI: Adjusted Gross Income

Table:1809-18. Corn, Soybean, Wheat, Oats and Alfalfa (Meadow) Rotation - Soybean Lancaster, WI - 2018.

Rotation	Nitrogen rate	Yield	Moisture	AGI $8.48/bu
	N lb/A	bu/A	%	$/A
CS-S		50	11.6	412
CSCOM-S		61	11.4	501
CSW-S		55	11.4	455
	0	55	11.5	455
	50	55	11.5	451
	100	56	11.5	466
	200	55	11.4	451
CS-S	0	47	11.5	388
CS-S	50	49	11.7	404
CS-S	100	54	11.7	448
CS-S	200	49	11.5	408
CSCOM-S	0	62	11.4	512
CSCOM-S	50	59	11.5	487
CSCOM-S	100	61	11.4	502
CSCOM-S	200	61	11.5	503
CSW-S	0	57	11.6	467
CSW-S	50	56	11.4	463
CSW-S	100	54	11.3	448
CSW-S	200	53	11.3	441
Mean		55	11.5	456
Probability(%)				
Rotation (R)		34	77.9	34
Nitrogen (N)		79	70.1	79
R x N		56	64.8	56
LSD (0.10)				
Rotation (R)		NS	NS	NS
Nitrogen (N)		NS	NS	NS
R x N		NS	NS	NS

*AGI: Adjusted Gross Income

Table:1809-19. Corn, Soybean, Wheat, Oats and Alfalfa (Meadow) Rotation - Wheat. Lancaster, WI - 2017.

Rotation	Nitrogen rate	Yield	Moisture	AGI $3.78/bu
	N lb/A	bu/A	%	$/A
CSW-W	0	51	11.8	179
CSW-W	50	49	11.8	174
CSW-W	100	65	11.8	229
CSW-W	200	57	11.8	203
Mean		55	11.8	196
Probability(%)				
Nitrogen (N)		4.3	--	4.3
LSD (0.10)				
Nitrogen (N)		7	--	26

*AGI: Adjusted Gross Income

Table:1809-20. Corn, Soybean, Wheat, Oats and Alfalfa (Meadow) Rotation - Oats. Lancaster, WI - 2018.

Rotation	Nitrogen rate	Yield	Moisture	AGI $2.00/bu
	N lb/A	bu/A	%	$/A
CCOAA-O		44	5.8	77
CSCOA-O		39	5.8	68
			5.8	
	0	38	5.8	67
	50	40	5.8	70
	100	40	5.8	72
	200	46	5.8	82
CCOAA-O	0	39	5.8	69
CCOAA-O	50	44	5.8	77
CCOAA-O	100	42	5.8	75
CCOAA-O	200	50	5.8	88
CSCOA-O	0	37	5.8	66
CSCOA-O	50	36	5.8	63
CSCOA-O	100	38	5.8	68
CSCOA-O	200	43	5.8	76
Mean		41	5.8	73
Probability(%)				
Rotation (R)		34	--	34
Nitrogen (N)		30	--	30
R x N		88	--	88
LSD (0.10)				
Rotation (R)		NS	--	NS
Nitrogen (N)		NS	--	NS
R x N		NS	--	NS

*AGI: Adjusted Gross Income

Table:1809-21. Corn, Soybean, Wheat, Oats and Alfalfa (Meadow) Rotation - Alfalfa. Lancaster, WI - 2018.

Rotation	Nitrogen rate	Harvest Date				Total
		31-May	2-Jul	3-Aug	10-Sep	
	N lb/A	T dm/A	T dm/A	T dm/A	T dm/A	T dm/A
CCCMM-M1		1.2	1.3	--	--	2.5
CCCMM-M2		1.9	1.8	1.2	1.1	5.9
CCOMM-M1		1.8	1.6	1.1	1.2	5.8
CCOMM-M2		1.7	1.6	1.1	1.0	5.4
CSCOM-M		2.0	1.9	1.1	1.1	6.0
	0	1.7	1.6	1.1	1.1	5.1
	50	1.7	1.6	1.1	1.1	5.0
	100	1.7	1.6	1.1	1.1	5.1
	200	1.8	1.6	1.2	1.2	5.2
CCCMM-M1	0	1.3	1.4	--	--	2.6
CCCMM-M1	50	1.1	1.3	--	--	2.4
CCCMM-M1	100	1.2	1.3	--	--	2.4
CCCMM-M1	200	1.3	1.2	--	--	2.5
CCCMM-M2	0	1.8	1.8	1.3	1.1	6.0
CCCMM-M2	50	2.0	1.7	1.2	1.1	6.0
CCCMM-M2	100	1.9	1.8	1.2	1.0	5.8
CCCMM-M2	200	1.8	1.8	1.3	1.1	6.0
CCOMM-M1	0	1.7	1.6	1.1	1.1	5.5
CCOMM-M1	50	1.7	1.6	1.1	1.2	5.6
CCOMM-M1	100	2.0	1.6	1.2	1.3	6.1
CCOMM-M1	200	1.9	1.5	1.1	1.3	5.9
CCOMM-M2	0	1.9	1.6	1.1	0.9	5.5
CCOMM-M2	50	1.7	1.6	1.1	0.9	5.3
CCOMM-M2	100	1.7	1.7	1.2	1.0	5.6
CCOMM-M2	200	1.7	1.6	1.1	1.1	5.4
CSCOM-M	0	2.0	1.8	1.0	1.2	6.0
CSCOM-M	50	1.9	1.9	1.1	1.1	5.9
CSCOM-M	100	1.8	1.9	1.0	1.0	5.7
CSCOM-M	200	2.1	1.9	1.1	1.2	6.4
Mean		1.7	1.6	1.1	1.1	5.1
Probability(%)						
Rotation (R)		1.5	0.4	14.0	24.4	0.0
Nitrogen (N)		59.9	89.5	84.0	28.8	16.7
R x N		54.8	90.2	66.2	42.1	12.1
LSD (0.10)						
Rotation (R)		0.3	0.1	NS	NS	0.3
Nitrogen (N)		NS	NS	NS	NS	NS
R x N		NS	NS	NS	NS	NS

FIELD EXPERIMENT HISTORY

Title: **Corn response to 3Bar Biologics microbes applied in-furrow**

Experiment: 11Biologicals **Trial ID:** 6267 **Year:** 2018

Personnel: Joe Lauer, Thierno Diallo, Kent Kohn,

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

Supported By: HATCH

Site Information

Field: ARS 373 **Previous Crop:** Soybean **Soil Type:** Plano Silt Loam

Soil Test:Date: 11/12/2018 **pH:** 6.6 **OM (%)** 2.6 **P (ppm)** 15 **K (ppm)** 109

Plot Management

Tillage Operations: Spring Field Cultivator 5/16/18

Fertilizer:

Preplant Analysis:	46-0-0	**ProductRate lbs/A**	325	**Date:**	05/16/2018
Starter Analysis:	N/A	**Product Rate lbs/A:**	N/A	**Date:**	N/A
Post plant Analysis:	N/A	**Product Rate lbs/A:**	N/A	**Date:**	N/A
Manure:	N/A				

Herbicide: 2.4D Low Vol 4 @ 16 oz/A 5/8/18
Tomahawk 5 @ 32 oz/A 5/8/18

Insecticide: N/A

Hybrid: Jung 49SS437RIB

Irrigation: None

Planting Date: 5/25/ 2018 **Planting Depth:** 1.5" **Row Width** 30"

Target Plant Density: 35000 **plants per acre** **Planting Method:** JD1700 w RTK

Harvest Date: 10/24/18 **Harvest Method:** MF 8XP

Experimental Design

Design: RCB **Replications:** 6

Plot Size Seeded: 10' x 50' **Experiment Size:** 0.7 A

Harvest Plot Size: 5' x 50' **Harvest Plant Density:** 35375 **plants per acre**

Factors/Treatments:

Treatment

1) Bio-Yield (label rate)
2) Bio-Yield (label rate + starter fertilizer)
3) Bio-Yield (2X label rate + starter fertilizer)
4) check (+ starter fertilizer)

Results: Table 1811-01.

Table:1811-01. Corn Response to 3Bar Biologics microbes applied in Furrow- Corn. Arlington, WI - 2018.

Treatment	Yield	Moisture	Test weight	Lodged			Harvest density	*AGI $3.44/bu
				Total	Stalk	Root		
	bu/A	%	lbs/bu	%	%	%	plants/A	$/A
1-Bio-Yield (label rate)	217	23.2	51.0	1.4	1.4	0.0	35667	663
2-Bio-Yield (label rate + starter fertilizer)	218	22.8	51.0	2.9	2.5	0.5	34500	667
3-Bio-Yield (2 X label rate + starter fertilizer)	219	23.2	50.7	1.0	1.0	0.0	37167	671
4-Check (+ starter fertilizer)	220	23.5	51.2	1.5	1.5	0.0	34167	671
Mean	219	23.2	50.9	1.7	1.6	0.1	35375	668
Probability(%)								
Treatment (T)	78.3	55.0	71.4	24.4	52.6	42.0	25.9	87.6
LSD(0.10)								
Treatment (T)	NS	NS	NS	NS	NS	NS	NS	NS

***AGI - Adjusted Gross Income.**

FIELD EXPERIMENT HISTORY

Title: **In-Furrow Biostimulant mixes on corn**

Experiment: 11Biologicals **Trial ID:** 6327 **Year:** 2018

Personnel: Joe Lauer, Thierno Diallo, Kent Kohn,

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

Supported By: Rosen

Site Information

Field: ARS 373 **Previous Crop:** Soybean **Soil Type:** Plano Silt Loam

Soil Test:Date: 11/12/18 **pH:** 6.6 **OM (%)** 2.6 **P (ppm)** 15 **K (ppm)** 109

Plot Management

Tillage Operations: Spring Field Cultivator 5/16/18

Fertilizer:	**Preplant Analysis:**	46-0-0	**ProductRate lbs/A**	325	**Date:**	05/16/2018
	Starter Analysis:	N/A	**Product Rate lbs/A:**	N/A	**Date:**	N/A
	Post plant Analysis:	N/A	**Product Rate lbs/A:**	N/A	**Date:**	N/A
	Manure:	N/A				

Herbicide: 2.4D Low Vol 4 @ 16 oz/A 5/8/18
Tomahawk 5 @ 32 oz/A 5/8/18

Insecticide: N/A

Hybrid: Jung 49SS437RIB

Irrigation: none

Planting Date: 5/25/ 2018 **Planting Depth:** 1.5" **Row Width** 30"

Target Plant Density: 35000 **plants per acre** **Planting Method:** JD1700 w RTK

Harvest Date: 10/24/18 **Harvest Method:** MF 8XP

Notes: Starter Fertilizer 7-21-7 was used instead of 9-24-3

Experimental Design

Design: RCB **Replications:** 4

Plot Size Seeded: 10' x 50' **Experiment Size:** 1.0 A

Harvest Plot Size: 5' x 50' **Harvest Plant Density:** 34350 **plants per acre**

Factors/Treatments:

Treatment

1) 9-24-3 @ 3 gal/A @ NA
2) 9-24-3 @ 3 gal/A IF + DEV DRT @ 8 oz/A IF
3) 9-24-3 @ 3 gal/A IF + DEV SMP @ 1% v/v IF
4) 9-24-3 @ 3 gal/A IF + DEV MPO @ 0.6 dry oz/A IF
5) 9-24-3 @ 3 gal/A IF + DEV MLN @ 1 qt/A IF
6) 9-24-3 @ 3 gal/A IF + DEV MLN @ 2 qt/A IF
7) 9-24-3 @ 3 gal/A IF + DEV SMP @ 1% v/v IF + DEV MLN @ 1 qt/A IF + DEV AUF @ 12 oz/A IF
8) 9-24-3 @ 3 gal/A IF + DEV DRT @ 8 oz/A IF + DEV LRP @ 94 grams/A IF
9) 9-24-3 @ 3 gal/A IF + DEV DRT @ 8 oz/A IF + DEV MPO @ 0.6 dry oz/A IF
10) 9-24-3 @ 3 gal/A IF+ DEV LRP @ 94 grams/A IF + DEV MPO @ 0.6 dry oz/A IF

Results: Table 1811-02

Table:1811- 02 . In Furrow Biostimulant mixes in corn.
Arlington, WI - 2018.

Treatment	Yield	Moisture	Test weight	Lodged			Harvest density	AGI $3.44/bu
				Total	Root	Stalk		
	bu/A	%	lbs/bu	%	%	%	plants/A	$/A
1) 9-24-3 @ 3 gal/A UTC	179	24.1	50.0	3.6	2.1	1.5	34000	543
2) 9-24-3 @ 3 gal/A + DEV DRT @ 8 oz/A	178	24.8	49.8	0.7	0.7	0.0	34500	538
3) 9-24-3 @ 3 gal/A + DEV SMP @ 1% v/v	171	24.6	50.5	2.3	0.8	1.5	35250	518
4) 9-24-3 @ 3 gal/A + DEV MPO @ 0.6 dry oz/A	180	24.5	49.8	2.0	0.0	2.0	34667	546
5) 9-24-3 @ 3 gal/A + DEV MLN @ 1 qt/A	181	24.4	50.0	0.7	0.7	0.0	34750	550
6) 9-24-3 @ 3 gal/A + DEV MLN @ 2 qt/A	188	23.6	50.4	0.0	0.0	0.0	33000	573
7) 9-24-3 @ 3 gal/A + DEV SMP @ 1% v/v + DEV MLN @ 1 qt/A + DEV AUF @ 12 oz/A	189	24.4	50.1	0.0	0.0	0.0	34000	572
8) 9-24-3 @ 3 gal/A + DEV DRT @ 8 oz/A + DEV LRP @ 94 grams/A	179	24.2	50.5	0.7	0.7	0.0	34250	544
9) 9-24-3 @ 3 gal/A + DEV DRT @ 8 oz/A + DEV MPO @ 0.6 dry oz/A	181	24.3	50.9	3.7	2.2	1.4	35500	550
10) 9-24-3 @ 3 gal/A + DEV LRP @ 94 grams/A + DEV MPO @ 0.6 dry oz/A	188	23.7	50.3	3.5	0.7	2.9	33750	571
Mean	181	24.3	50.2	1.7	0.8	0.9	34366.7	551
Probability(%)								
Treatment (T)	91.4	43.3	80.3	49.7	51.3	71.1	86.4	90.4
LSD(0.10)								
Treatment (T)	NS	NS	NS	NS	NS	NS	NS	NS

***AGI - Adjusted Gross Income.**

FIELD EXPERIMENT HISTORY

Title: **V4 Biostimulent mixes on corn**

Experiment: 11Biologicals **Trial ID:** 6328 **Year:** 2018

Personnel: Joe Lauer, Thierno Diallo, Kent Kohn

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

Supported By: Rosen

Site Information

Field: ARS 374 **Previous Crop:** Soybean **Soil Type:** Plano Silt Loam

Soil Test:Date: 11/12/18 **pH:** 6.6 **OM (%)** 2.4 **P (ppm)** 22 **K (ppm)** 131

Plot Management

Tillage Operations: Spring Field Cultivator 5/16/18

Fertilizer:	**Preplant Analysis:**	46-0-0	**ProductRate lbs/A** 325	**Date:**	5 /16/18
	Starter Analysis:	N/A	**Product Rate lbs/A:** N/A	**Date:**	N/A
	Post plant Analysis:	N/A	**Product Rate lbs/A:** N/A	**Date:**	N/A
	Manure:	N/A	**Product Rate lbs/A:** N/A	**Date:**	N/A

Herbicide: 2.4D Low Vol 4 @ 16 oz/A 5/8/18
Tomahawk 5 @ 32 oz/A 5/8/18

Insecticide: N/A

Hybrid: Jung 53SS517RIB

Irrigation:

Planting Date: 5/18/2018 **Planting Depth:** 1.5" **Row Width** 30"

Target Plant Density: 35000 **plants per acre** **Planting Method:** JD1700 w RTK

Harvest Date: 10/24/18 **Harvest Method:** MF 8XP

Experimental Design

Design: RCB **Replications:** 4

Plot Size Seeded: 10' x 50' **Experiment Size:** 1.0 A

Harvest Plot Size: 5' x 50' **Harvest Plant Density:** 33654 **plants per acre**

Factors/Treatments:

Treatment

1) Check
2) DEV DRT @ 8 oz/A @ V4
3) DEV EAM @ 32 oz/A @ V4
4) DEV MPO @ 0.6 dry oz/A @ V4
5) DEV LRP @ 94 grams/A @ V4
6) DEV MPO @ 0.6 dry oz/A @ VT
7) DEV MPO @ 0.6 dry oz/A @ VT+ DEV LRP @ 94 grams/A @ VT
8) DEV DRT @ 8 oz/A @ V4 + DEV MPO @ 0.6 dry oz/A @ V4
9) DEV EAM @ 32 oz/A @ V4 + DEV MPO @ 0.6 dry oz/A @ V4
10) DEV DRT @ 8 oz/A @ V4 + DEV LRP @ 94 grams/A @ V4
11) DEV EAM @ 32 oz/A @ V4 + DEV LRP @ 94 grams/A @ V4
12) DEV MPO @ 0.6 dry oz/A @ V4 + DEV LRP @ 94 grams/A @ V4
13) DEV MPO @ 0.6 dry oz/A @ V4 + DEV PMC @ 2 grams/A @ V4

Results: Table 1811-03

Table:1811- 03 . V4 Biostimulent mixes on corn
Arlington, WI - 2018.

Treatment	Yield	Moisture	Test weight	Lodged			Harvest density	AGI $3.44/bu
				Total	Root	Stalk		
	bu/A	%	lbs/bu	%	%	%	plants/A	$/A
1) Check	193	24.7	52.8	0.1	0.0	0.0	34324	583
2) DEV DRT @ 8 oz/A @ V4	197	25.1	52.9	5.8	0.8	5.0	34250	594
3) DEV EAM @ 32 oz/A @ V4	190	24.9	51.5	1.5	0.7	0.8	32250	574
4) DEV MPO @ 0.6 dry oz/A @ V4	195	24.9	52.9	6.5	1.1	5.4	33324	588
5) DEV LRP @ 94 grams/A @ V4	192	24.5	52.7	0.1	0.0	0.0	32991	580
6) DEV MPO @ 0.6 dry oz/A @ VT	196	24.1	52.7	3.0	2.0	0.9	34991	597
7) DEV MPO @ 0.6 dry oz/A @ VT+ DEV LRP @ 94 grams/A @ VT	191	24.8	52.1	0.1	0.0	0.0	32324	577
8) DEV DRT @ 8 oz/A @ V4 + DEV MPO @ 0.6 dry oz/A @ V4	205	24.9	52.6	1.2	0.0	1.0	32991	620
9) DEV EAM @ 32 oz/A @ V4 + DEV MPO @ 0.6 dry oz/A @ V4	189	25.6	51.7	3.7	1.0	2.6	32371	570
10) DEV DRT @ 8 oz/A @ V4 + DEV LRP @ 94 grams/A @ V4	194	24.4	52.1	3.6	0.0	3.6	34750	587
11) DEV EAM @ 32 oz/A @ V4 + DEV LRP @ 94 grams/A @ V4	185	25.4	51.6	6.2	0.0	6.1	32991	557
12) DEV MPO @ 0.6 dry oz/A @ V4 + DEV LRP @ 94 grams/A @ V4	199	24.8	53.7	3.1	1.1	2.0	33991	602
13) DEV MPO @ 0.6 dry oz/A @ V4 + DEV PMC @ 2 grams/A @ V4	186	25.0	52.9	10.2	0.0	10.1	33324	561
Mean	193	24.8	52.5	3.5	0.5	2.9	33452	584
Probability(%)								
Treatment (T)	96.7	75.4	2.8	17.7	49.0	19.9	19.3	96.5
LSD(0.10)								
Treatment (T)	NS	NS	1	NS	NS	NS	NS	NS

***AGI - Adjusted Gross Income.**

FIELD EXPERIMENT HISTORY

Title: Corn Hybrid Response to Starter Fertilizer in Wisconsin.

Experiment: 12Fertilizer **Trial ID:** 6269 **Year:** 2018

Personnel: Joe Lauer, Thierno Diallo, Kent Kohn.

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

Supported By: HATCH, Wisconsin Fertilizer Research Program

Site Information

Field: ARS411 **Previous Crop:** Alfalfa **Soil Type:** Plano Silt Loam

Soil Test: Date: 11/12/18 **pH:** 6.2 **OM (%)** 3.5 **P (ppm)** 37 **K (ppm)** 106

Plot Management

Tillage Operations: Field Cultivator Disk Chisel

Fertilizer:

	Analysis	Rate	Date
Preplant	46-0-0	250 lbs/A	N/A
Starter	9-11-30-6S-1Zn	200 lbs/A	5/1/2018
	10-34-0	4.08 gal/A	5/1/2018
Post plant	N/A	N/A	N/A
Manure:	Dairy	13235 gal/A	N/A

Herbicide: Resicore 80.0 oz/A
Simazine 4L 16.0 oz//A

Insecticide: Force 3G 4.4 lbs/A

Hybrid: Factor

Irrigation: None

Planting Date: 5/1/18 **Planting Depth:** 1.5" **Row Width:** 30"

Target Plant Density: 32000 **plants per acre** **Planting Method:** Almaco Precision Planter

Harvest Date: 10/09/18 **Harvest Method:** Massey 8XP

Notes:

Experimental Design

RCB in a split-plot

Replications: 3

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

Harvest Plot Size: 5' x 23' **Harvest Plant Density:** **31335** **plants per acre**

Factors/Treatments:

Hybrid (RM):

1) Jung 31DP308 (82)
2) Dekalb DKC31-10 (81)
3) Dairyland DS9686 (86)
4) Munson 4877-3010 (88)
5) Dekalb DKC39-27RIB (89)
6) NK Brand N27P-3110A (92)
7) Jung 46SS427RIB (96)
8) NK Brand N40L-3000GT (98)
9) DuPont Pioneer P9998AMT (99)
10) Dekalb DKC52-68RIB (102)
11) NuTech 5F-504 (104)
12) Renk RK717SSTX (105)
13) Nu-Tech 5F-510 (109)
14) NK Brand N66V-3120EZ1 (109)
15) Dekalb DKC62-20RIB (112)
16) Dekalb DKC65-95RIB (115)

Fertilzer:

1). UTC
2). Pop-up: 10-34-0
3). Starter: 9-11-30-6S-1Zn

Results: Table 1812-01

Table 1812 - 01. Corn Hybrid Response to Starter Fertilizer in Wisconsin.
Arlington, 2018

Treatment number	Fertilizer	Hybrid	Grain yield	Grain moisture	Test weight	Harvest density	*AGI $3.44	Lodged			Plant					
								Total	Stalk	Root	height	N	P	K	S	DM
			bu/A	%	lb/bu	plants/A	$/A	%	%	%	in	%	%	%	%	gr
	UTC		254	26.0	56.7	31163	820	6.7	1.0	5.7	99	--	--	--	--	--
	Pop-up		248	26.0	57.1	31139	800	8.2	0.7	7.5	100	--	--	--	--	--
	Starter		254	27.1	56.2	31763	813	4.7	0.5	4.2	104	--	--	--	--	--
		Dairyland DS9686	252	22.6	58.2	32070	831	2.8	0.4	2.4	95	--	--	--	--	--
		Dekalb DKC31-10	207	21.0	58.4	31481	689	1.1	0.3	0.8	92	--	--	--	--	--
		Dekalb DKC39-27RIB	233	22.0	56.8	30976	771	7.4	1.1	6.4	93	--	--	--	--	--
		Dekalb DKC52-68RIB	268	27.9	54.4	31776	855	1.9	0.1	1.7	104	--	--	--	--	--
		Dekalb DKC62-20RIB	281	33.7	55.6	32070	864	2.3	0.9	1.4	106	--	--	--	--	--
		Dekalb DKC65-95RIB	261	35.4	57.6	31481	796	2.5	0.8	1.7	106	--	--	--	--	--
		DuPont Pioneer P9998AMT	267	27.0	56.9	31565	858	5.4	0.0	5.4	100	--	--	--	--	--
		Jung 31DP308	210	21.7	58.7	30850	698	0.6	0.4	0.1	94	--	--	--	--	--
		Jung 46SS427RIB	268	23.1	55.0	30723	880	3.4	0.1	3.3	99	--	--	--	--	--
		Munson 4877-3010	249	21.8	57.8	31776	824	2.8	0.4	2.4	100	--	--	--	--	--
		NK Brand N27P-3110A	252	22.9	59.4	30934	828	4.8	1.2	3.6	98	--	--	--	--	--
		NK Brand N40L-3000GT	239	24.5	55.5	30976	778	12.6	0.7	11.9	99	--	--	--	--	--
		NK Brand N66V-3120EZ1	252	32.1	55.0	31397	785	21.5	0.4	21.1	112	--	--	--	--	--
		Nu-Tech 5F-510	261	31.1	57.0	31355	817	19.8	4.0	15.8	107	--	--	--	--	--
		NuTech 5F-504	267	27.9	55.3	31102	851	11.0	0.3	10.8	110	--	--	--	--	--
		Renk RK717SSTX	266	26.7	55.2	31144	856	4.9	0.7	4.3	98	--	--	--	--	--
1	UTC	Jung 31DP308	215	21.2	59.4	30934	715	0.0	0.0	0.0	91	4.8	0.6	4.2	0.2	3.5
2	UTC	Dekalb DKC31-10	207	23.2	59.6	31944	679	0.4	0.4	0.0	91	3.8	0.7	4.9	0.3	4.4
3	UTC	Dairyland DS9686	260	21.9	58.5	32323	862	1.2	0.0	1.2	95	4.0	0.5	5.0	0.2	3.5
4	UTC	Munson 4877-3010	245	21.3	57.8	31818	815	1.2	0.0	1.2	97	3.9	0.5	4.8	0.2	2.9
5	UTC	Dekalb DKC39-27RIB	240	21.3	57.0	31060	798	8.1	2.4	5.7	92	4.2	0.6	3.7	0.2	2.7
6	UTC	NK Brand N27P-3110A	248	23.3	60.6	30808	816	6.1	1.6	4.5	94	4.6	0.6	4.7	0.2	3.5
7	UTC	Jung 46SS427RIB	256	22.7	52.4	30050	844	2.5	0.0	2.5	97	4.4	0.5	3.7	0.2	3.5
8	UTC	NK Brand N40L-3000GT	249	23.9	56.1	31186	815	11.3	1.7	9.6	95	4.3	0.5	4.0	0.2	3.1
9	UTC	DuPont Pioneer P9998AMT	270	26.5	56.7	30681	869	11.9	0.0	11.9	95	4.7	0.6	3.9	0.2	3.2
10	UTC	Dekalb DKC52-68RIB	286	27.2	54.8	31565	919	2.8	0.4	2.4	101	4.4	0.6	4.0	0.2	3.7
11	UTC	NuTech 5F-504	270	28.1	55.9	30303	861	15.5	0.0	15.5	110	4.2	0.5	4.5	0.2	2.9
12	UTC	Renk RK717SSTX	268	25.9	53.7	30808	866	2.5	0.8	1.6	97	4.2	0.6	4.6	0.2	3.3
13	UTC	Nu-Tech 5F-510	260	30.5	56.4	30555	817	17.6	5.0	12.7	107	4.5	0.6	4.6	0.2	3.0
14	UTC	NK Brand N66V-3120EZ1	249	31.4	53.9	31186	776	22.7	0.8	21.9	110	4.2	0.6	4.2	0.2	4.3
15	UTC	Dekalb DKC62-20RIB	276	34.1	55.5	32702	846	2.7	1.5	1.2	107	4.3	0.6	4.4	0.2	3.3
16	UTC	Dekalb DKC65-95RIB	270	33.9	58.9	30681	831	0.8	0.8	0.0	105	4.0	0.6	4.3	0.2	3.0

continue

Table 1812 - 01. Corn Hybrid Response to Starter Fertilizer in Wisconsin.(continued) **Arlington, 2018**

Treatment			Grain	Grain	Test	Harvest	*AGI	Lodged			Plant					
number	Fertilizer	Hybrid	yield	moisture	weight	density	$3.44	Total	Stalk	Root	hight	N	P	K	S	DM
			bu/A	%	lb/bu	plants/A	$/A	%	%	%	in	%	%	%	%	gr
17	Pop-up	Jung 31DP308	202	21.9	58.6	30050	668	1.3	0.8	0.4	94	4.3	0.6	4.6	0.2	3.5
18	Pop-up	Dekalb DKC31-10	201	20.4	59.5	31313	672	2.0	0.0	2.0	90	4.3	0.6	4.5	0.2	4.3
19	Pop-up	Dairyland DS9686	242	22.6	58.6	31818	798	4.0	1.2	2.8	94	4.5	0.5	4.7	0.2	4.7
20	Pop-up	Munson 4877-3010	242	22.6	57.9	31060	797	6.1	0.8	5.2	98	4.6	0.5	4.0	0.2	4.4
21	Pop-up	Dekalb DKC39-27RIB	226	22.5	57.4	30681	746	9.0	0.4	8.6	94	4.6	0.6	4.0	0.2	3.6
22	Pop-up	NK Brand N27P-3110A	254	22.6	59.2	30429	839	5.0	0.8	4.2	99	4.4	0.6	4.0	0.2	3.3
23	Pop-up	Jung 46SS427RIB	269	22.8	57.1	31439	886	6.9	0.4	6.5	99	4.2	0.6	4.7	0.2	4.6
24	Pop-up	NK Brand N40L-3000GT	238	23.8	56.0	30303	779	18.6	0.0	18.6	97	4.1	0.5	4.0	0.2	3.9
25	Pop-up	DuPont Pioneer P9998AMT	272	25.4	57.5	31439	882	2.5	0.0	2.5	99	4.5	0.6	4.0	0.2	4.1
26	Pop-up	Dekalb DKC52-68RIB	246	28.0	54.7	31691	784	2.4	0.0	2.4	102	4.0	0.6	4.0	0.2	4.7
27	Pop-up	NuTech 5F-504	267	27.1	55.0	31565	856	9.6	0.4	9.2	107	4.0	0.6	4.8	0.2	3.7
28	Pop-up	Renk RK717SSTX	252	26.8	56.0	30176	810	9.6	0.9	8.8	98	4.2	0.6	4.9	0.2	3.6
29	Pop-up	Nu-Tech 5F-510	257	31.7	57.5	31565	800	22.1	2.4	19.7	107	3.8	0.6	4.6	0.2	4.0
30	Pop-up	NK Brand N66V-3120EZ1	254	30.2	55.0	30808	800	23.0	0.4	22.6	110	3.5	0.6	4.9	0.2	4.3
31	Pop-up	Dekalb DKC62-20RIB	287	31.9	56.2	32070	894	4.3	1.2	3.2	106	4.4	0.6	4.5	0.2	3.6
32	Pop-up	Dekalb DKC65-95RIB	259	35.1	56.7	31818	789	5.1	1.5	3.6	106	4.4	0.6	3.7	0.2	3.1
33	Starter	Jung 31DP308	215	22.0	58.1	31565	711	0.4	0.4	0.0	96	4.2	0.6	5.1	0.3	3.5
34	Starter	Dekalb DKC31-10	213	19.4	56.1	31186	716	0.8	0.4	0.4	95	4.0	0.6	5.4	0.2	3.7
35	Starter	Dairyland DS9686	253	23.4	57.4	32070	831	3.1	0.0	3.1	96	3.9	0.5	4.7	0.2	3.8
36	Starter	Munson 4877-3010	259	21.6	57.6	32449	859	1.2	0.4	0.8	104	4.0	0.5	5.0	0.2	3.2
37	Starter	Dekalb DKC39-27RIB	233	22.2	55.8	31186	771	5.2	0.4	4.8	93	4.3	0.6	5.2	0.2	3.0
38	Starter	NK Brand N27P-3110A	252	22.9	58.3	31565	830	3.2	1.2	2.0	102	3.8	0.5	4.9	0.2	4.0
39	Starter	Jung 46SS427RIB	278	23.7	55.5	30681	910	0.8	0.0	0.8	101	3.7	0.6	4.4	0.2	3.5
40	Starter	NK Brand N40L-3000GT	229	25.8	54.4	31439	742	7.8	0.4	7.4	105	3.9	0.5	4.8	0.2	3.6
41	Starter	DuPont Pioneer P9998AMT	260	29.2	56.5	32575	824	1.9	0.0	1.9	105	3.7	0.5	4.6	0.2	4.1
42	Starter	Dekalb DKC52-68RIB	271	28.5	53.7	32070	862	0.4	0.0	0.4	110	3.7	0.6	4.8	0.2	3.7
43	Starter	NuTech 5F-504	263	28.6	55.2	31439	838	8.0	0.4	7.7	114	4.7	0.5	4.8	0.2	3.2
44	Starter	Renk RK717SSTX	278	27.2	55.9	32449	892	2.7	0.4	2.4	100	3.9	0.6	4.6	0.2	3.1
45	Starter	Nu-Tech 5F-510	266	31.1	57.1	31944	833	19.8	4.8	15.0	108	4.5	0.6	4.7	0.2	3.8
46	Starter	NK Brand N66V-3120EZ1	255	34.8	56.0	32197	778	18.9	0.0	18.9	117	4.3	0.5	4.7	0.2	4.6
47	Starter	Dekalb DKC62-20RIB	279	35.3	55.3	31439	850	0.0	0.0	0.0	107	4.5	0.5	4.2	0.2	3.4
48	Starter	Dekalb DKC65-95RIB	256	37.0	57.1	31944	769	1.6	0.0	1.6	106	4.3	0.5	4.4	0.2	3.0
Mean			252	26.3	56.7	31355	811	6.6	0.7	5.8	101	4.2	0.6	4.5	0.2	3.6
Probability(%):																
Fertilizer(F)			19.7	27.9	24.6	3.1	31.7	7.4	38.8	7.5	0.7	--	--	--	--	--
Hybrid (H)			0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	--	--	--	--	--
F x H			12.8	51.5	45.8	3.4	15.2	59.0	88.9	59.5	60.0	--	--	--	--	--
LSD(0.10):																
Fertilizer(F)			NS	NS	NS	347	NS	2.3	NS	2.2	2	--	--	--	--	--
Hybrid (H)			10	1.5	1.4	624	36	3.6	1.1	3.7	3	--	--	--	--	--
F x H			NS	NS	NS	1081	NS	NS	NS	NS	NS	--	--	--	--	--

*AGI: Adjusted Gross Income.

FIELD EXPERIMENT HISTORY

Title: Corn Hybrid Response to Starter Fertilizer in Wisconsin.

Experiment: 12Fertilizer **Trial ID:** 6276 **Year:** 2018

Personnel: Joe Lauer, Kent Kohn, Thierno Diallo

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

Supported By: HATCH, Wisconsin Fertilizer Research Program

Site Information

Field: ARS406 **Previous Crop:** Corn **Soil Type:** Sattre silt loam

Soil Test: Date: 5 /2 /18 **pH:** 6.7 **OM (%)** 3.5 **P (ppm)** 53 **K (ppm)** 168

Plot Management

Tillage Operations: Field Cultivator Chisel plow

Fertilizer:

	Analysis	Rate	Date
Preplant	N/A	N/A	N/A
Starter	9-11-30-6S-1Zn	200 lbs/A	5/2/18
	10-34-0	4.08 gal/A	5/2/18
Post plant	28-0-0	357 lbs/A	N/A
Manure:	Dairy	10000 gal/A	N/A

Herbicide: Acuron 3.0 qt/A **Insecticide:** Force 3G 4.4 lbs/A

Hybrid: Factor

Irrigation: None

Planting Date: 5/2/18 **Planting Depth:** 1.5" **Row Width:** 30"

Target Plant Density: 32000 **plants per acre** **Planting Method:** Almaco Precision Planter

Harvest Date: 10/04/18 **Harvest Method:** Massey 8XP

Notes:

Experimental Design

RCB in a split-plot

Replications: 3

Plot Size Seeded: 10' x 25'

Experiment Size: 0.28 Acre

Harvest Plot Size: 5' x 23'

Harvest Plant Density: **29856** **plants per acre**

Factors/Treatments:

Hybrid (RM):

1) Jung 31DP308 (82)
2) Dekalb DKC39-27RIB (89)
3) Jung 46SS427RIB (96)
4) NK Brand N40L-3000GT (98)
5) DuPont Pioneer P9998AMT(99)
6) Dekalb DKC52-68RIB (102)
7) NuTech 5F-504 (104)
8) Nu-Tech 5F-510 (109)

Fertilzer:

1). UTC
2). Pop-up: 10-34-0
3). Starter: 9-11-30-6S-1Zn

Results: Table 1812-02

Table 1812 - 02. Corn Hybrid Response to Starter Fertilizer in Wisconsin.
Chippewa Falls, 2018

Treatment			Grain	Grain	Test	Harvest	*AGI	Lodged			Plant				
number	Fertilizer	Hybrid	yield	moisture	weight	density	$3.44	Total	Stalk	Root	N	P	K	S	DM
			bu/A	%	lb/bu	plants/A	$/A	%	%	%	%	%	%	%	gr
	Pop-up		233	23.5	53.5	29856	763	1.3	0.7	0.6	--	--	--	--	--
	Starter		246	22.0	53.5	29856	814	0.5	0.5	0.0	--	--	--	--	--
	UTC		239	23.3	53.6	29856	785	1.6	1.2	0.4	--	--	--	--	--
		Dekalb DKC39-27RIB	205	21.7	50.9	29856	681	0.4	0.4	0.0	--	--	--	--	--
		Dekalb DKC52-68RIB	248	25.3	52.7	29856	806	0.5	0.5	0.0	--	--	--	--	--
		DuPont Pioneer P9998AMT	247	23.4	54.5	29856	811	0.4	0.0	0.4	--	--	--	--	--
		Jung 31DP308	182	19.5	53.3	29856	610	1.5	1.5	0.0	--	--	--	--	--
		Jung 46SS427RIB	222	21.0	51.6	29856	739	0.7	0.3	0.4	--	--	--	--	--
		NK Brand N40L-3000GT	243	22.8	53.6	29856	800	1.3	1.3	0.0	--	--	--	--	--
		Nu-Tech 5F-510	294	27.7	57.6	29856	939	1.0	1.0	0.0	--	--	--	--	--
		NuTech 5F-504	275	22.0	54.0	29856	911	3.2	1.3	1.9	--	--	--	--	--
1	UTC	Jung 31DP308	190	20.0	54.0	29856	636	1.2	1.2	0.0	3.7	0.6	5.2	0.2	6.2
5	UTC	Dekalb DKC39-27RIB	206	20.2	50.8	29856	691	0.0	0.1	0.0	3.7	0.7	6.5	0.2	5.8
7	UTC	Jung 46SS427RIB	220	21.2	50.5	29856	730	0.9	0.9	0.0	3.9	0.6	5.7	0.2	4.9
8	UTC	NK Brand N40L-3000GT	236	23.1	53.9	29856	777	2.6	2.6	0.0	3.4	0.5	5.1	0.2	4.8
9	UTC	DuPont Pioneer P9998AMT	253	22.8	55.2	29856	835	1.3	0.0	1.3	3.6	0.7	6.1	0.2	7.5
10	UTC	Dekalb DKC52-68RIB	244	26.0	52.6	29856	789	1.6	1.6	0.0	3.3	0.6	5.3	0.2	6.9
11	UTC	NuTech 5F-504	281	22.6	54.0	29856	926	4.4	2.2	2.2	3.4	0.6	5.8	0.2	5.5
13	UTC	Nu-Tech 5F-510	284	30.4	57.7	29856	892	0.9	0.9	0.0	3.4	0.6	5.6	0.2	5.9
17	Pop-up	Jung 31DP308	172	19.4	53.0	29856	578	1.9	1.9	0.0	3.4	0.6	6.0	0.2	8.0
21	Pop-up	Dekalb DKC39-27RIB	201	25.4	50.8	29856	650	0.8	0.8	0.0	4.3	0.6	5.3	0.2	7.5
23	Pop-up	Jung 46SS427RIB	219	21.5	52.4	29856	725	1.3	0.0	1.3	4.4	0.7	6.1	0.2	8.0
24	Pop-up	NK Brand N40L-3000GT	238	22.8	53.7	29856	786	0.4	0.4	0.0	4.0	0.6	5.5	0.2	5.6
25	Pop-up	DuPont Pioneer P9998AMT	240	24.5	54.7	29856	781	0.0	0.0	0.0	3.8	0.6	4.9	0.2	4.6
26	Pop-up	Dekalb DKC52-68RIB	241	25.0	52.2	29856	785	0.0	0.0	0.0	3.5	0.6	5.3	0.2	8.3
27	Pop-up	NuTech 5F-504	257	22.1	54.2	29856	852	4.4	0.8	3.6	3.7	0.6	5.6	0.1	8.0
29	Pop-up	Nu-Tech 5F-510	296	27.6	56.7	29856	947	1.7	1.7	0.0	3.7	0.6	5.7	0.2	7.4
33	Starter	Jung 31DP308	183	19.0	52.9	29856	617	1.3	1.3	0.0	4.3	0.7	5.7	0.2	6.1
37	Starter	Dekalb DKC39-27RIB	209	19.6	51.1	29856	703	0.4	0.4	0.0	4.0	0.6	6.0	0.2	6.2
39	Starter	Jung 46SS427RIB	227	20.3	51.7	29856	761	0.0	0.0	0.0	3.9	0.7	5.9	0.2	5.9
40	Starter	NK Brand N40L-3000GT	254	22.6	53.2	29856	837	0.9	0.9	0.0	3.8	0.6	5.8	0.2	7.8
41	Starter	DuPont Pioneer P9998AMT	248	22.9	53.7	29856	816	0.0	0.0	0.0	3.7	0.6	5.6	0.2	7.0
42	Starter	Dekalb DKC52-68RIB	260	24.8	53.3	29856	846	0.0	0.0	0.0	4.0	0.6	5.8	0.2	7.6
43	Starter	NuTech 5F-504	288	21.3	53.8	29856	956	0.8	0.8	0.0	4.0	0.6	5.9	0.2	6.0
45	Starter	Nu-Tech 5F-510	301	25.0	58.3	29856	979	0.4	0.4	0.0	3.9	0.7	6.0	0.2	7.1
Mean			240	22.9	53.5	29856	787	1.1	0.8	0.4	3.8	0.6	5.7	0.2	6.6
Probability(%):															
Fertilizer(F)			7.8	25.0	97.1	100.0	7.3	19.3	26.6	47.6	--	--	--	--	--
Hybrid (H)			0.0	0.0	0.0	100.0	0.0	3.3	7.6	17.2	--	--	--	--	--
F x H			70.7	10.5	92.6	100.0	73.1	72.0	60.0	83.7	--	--	--	--	--
LSD(0.10):															
Fertilizer(F)			9	1.8	NS	NS	33	NS	NS	NS	--	--	--	--	--
Hybrid (H)			11	1.5	1.3	NS	41	1.4	0.9	NS	--	--	--	--	--
F x H			NS	NS	NS	NS	NS	NS	NS	NS	--	--	--	--	--

*AGI: Adjusted Gross Income.

FIELD EXPERIMENT HISTORY

Title: Corn Hybrid Response to Starter Fertilizer in Wisconsin.

Experiment: 12Fertilizer **Trial ID:** 6278 **Year:** 2018

Personnel: Joe Lauer, Kent Kohn, Thierno Diallo

Location: Coleman, WI **County:** Marinette

Supported By: HATCH, Wisconsin Fertilizer Research Program

Site Information

Field: N/A **Previous Crop:** wheat **Soil Type:** Oconto Silt Loam

Soil Test: Date: 5 /17/18 **pH:** 6.0 **OM (%)** 3.5 **P (ppm)** 57 **K (ppm)** 132

Plot Management

Tillage Operations: Field Cultivator Fall Chisel

Fertilizer:

	Analysis	Rate	Date
Preplant	18-46-0	25 lbs/A	N/A
	21-0-0-24S	75 lbs/A	N/A
Starter	9-11-30-6S-1Zn	200 lbs/A	5/17/18
	10-34-0	4.08 gal/A	5/17/18
Post plant	N/A	N/A	N/A
Manure:	Dairy	5000 gal	N/A

Herbicide: Acuron 3.0 qt/A **Insecticide:** Force 3G 4.4 lbs/A

Hybrid: Factor

Irrigation: None

Planting Date: 5/17/18 **Planting Depth:** 1.5" **Row Width:** 30"

Target Plant Density: 32000 **plants per acre** **Planting Method:** Almaco Precision Planter

Harvest Date: 10/06/18 **Harvest Method:** Massey 8XP

Notes:

Experimental Design

RCB in a split-plot

Replications: 3

Plot Size Seeded: 10' x 25'

Experiment Size: 0.28 Acre

Harvest Plot Size: 5' x 23'

Harvest Plant Density: 32112 plants per acre

Factors/Treatments:

Hybrid (RM):

1)Jung 31DP308 (82)
2)Dekalb DKC31-10 (81)
3)Munson 4877-3010 (88)
4)Dekalb DKC39-27RIB (89)
5)NK Brand N27P-3110A (92)
6)Jung 46SS427RIB (96)
7)DuPont Pioneer P9998AMT (99)
8)NK Brand N66V-3120EZ1 (109)

Fertilzer:

1). UTC
2). Pop-up: 10-34-0
3). Starter: 9-11-30-6S-1Zn

Results: Table 1812-03

Table 1812 - 03. Corn Hybrid Response to Starter Fertilizer in Wisconsin.
Coleman, 2018

Treatment			Grain	Grain	Test	Harvest	*AGI	Lodged			Plant					
number	Fertilizer	Hybrid	yield	moisture	weight	density	$3.44	Total	Stalk	Root	height	N	P	K	S	DM
			bu/A	%	lb/bu	plants/A	$/A	%	%	%	in	%	%	%	%	gr
	UTC		238	28.0	55.1	32528	759	1.4	1.3	0.2	124	--	--	--	--	--
	Pop-up		234	27.9	55.0	31912	745	2.0	1.9	0.0	126	--	--	--	--	--
	Starter		237	27.9	55.6	31897	757	2.0	2.0	0.1	127	--	--	--	--	--
		Dekalb DKC31-10	211	23.6	58.3	32197	690	1.9	1.9	0.0	123	--	--	--	--	--
		Dekalb DKC39-27RIB	232	25.9	53.2	31481	750	1.6	1.6	0.0	122	--	--	--	--	--
		DuPont Pioneer P9998AMT	261	32.0	55.2	32659	811	0.8	0.8	0.0	126	--	--	--	--	--
		Jung 31DP308	203	22.6	57.5	31776	671	2.8	2.8	0.0	115	--	--	--	--	--
		Jung 46SS427RIB	265	28.6	53.8	32407	842	0.3	0.3	0.0	127	--	--	--	--	--
		Munson 4877-3010	233	24.9	54.2	32407	758	2.4	2.4	0.0	126	--	--	--	--	--
		NK Brand N27P-3110A	239	27.4	54.7	31986	765	0.5	0.5	0.0	124	--	--	--	--	--
		NK Brand N66V-3120EZ1	248	38.5	55.1	31986	739	4.3	3.6	0.7	141	--	--	--	--	--
1	UTC	Jung 31DP308	196	21.9	58.4	31944	648	4.8	4.8	0.0	113	3.6	0.6	6.2	0.2	11.2
2	UTC	Dekalb DKC31-10	211	24.7	58.3	32828	689	0.8	0.8	0.0	122	3.9	0.6	6.5	0.2	9.5
4	UTC	Munson 4877-3010	234	24.5	54.1	32702	762	0.8	0.8	0.0	127	3.4	0.6	6.4	0.3	7.1
5	UTC	Dekalb DKC39-27RIB	245	24.6	52.4	31944	800	1.2	1.2	0.0	120	3.9	0.6	5.8	0.3	6.9
6	UTC	NK Brand N27P-3110A	239	28.7	54.3	33333	758	0.0	0.0	0.0	123	4.0	0.6	5.8	0.2	8.1
7	UTC	Jung 46SS427RIB	271	27.7	52.1	34217	867	0.4	0.4	0.0	128	3.9	0.6	5.9	0.2	9.2
9	UTC	DuPont Pioneer P9998AMT	257	32.2	56.0	31944	799	1.2	1.2	0.0	122	4.1	0.6	5.8	0.2	9.6
13	UTC	NK Brand N66V-3120EZ1	253	39.7	55.4	31313	748	2.4	1.2	1.2	140	3.6	0.6	5.9	0.2	10.6
17	Pop-up	Jung 31DP308	207	23.4	56.0	30429	679	1.7	1.7	0.0	114	4.0	0.6	5.9	0.3	11.3
18	Pop-up	Dekalb DKC31-10	205	22.1	57.5	31565	678	2.4	2.4	0.0	119	3.7	0.7	5.9	0.3	12.3
20	Pop-up	Munson 4877-3010	233	25.8	53.4	32702	752	1.2	1.2	0.0	126	3.8	0.6	5.8	0.2	9.3
21	Pop-up	Dekalb DKC39-27RIB	223	25.9	52.9	30934	721	2.1	2.1	0.0	121	3.4	0.7	5.7	0.2	8.3
22	Pop-up	NK Brand N27P-3110A	239	27.2	54.6	31186	766	0.8	0.8	0.0	128	3.8	0.6	6.3	0.2	11.3
23	Pop-up	Jung 46SS427RIB	263	29.0	55.9	32828	834	0.0	0.0	0.0	125	3.8	0.6	5.2	0.2	10.9
25	Pop-up	DuPont Pioneer P9998AMT	263	32.0	54.7	32828	818	0.0	0.0	0.0	130	4.1	0.6	5.5	0.3	9.4
29	Pop-up	NK Brand N66V-3120EZ1	237	38.2	55.2	32828	708	7.7	7.3	0.4	142	3.5	0.6	5.7	0.3	12.1
33	Starter	Jung 31DP308	208	22.5	57.9	32954	686	1.9	1.9	0.0	117	4.1	0.8	6.2	0.3	12.1
34	Starter	Dekalb DKC31-10	216	24.2	59.3	32197	704	2.4	2.4	0.0	128	3.6	0.7	6.0	0.2	11.1
36	Starter	Munson 4877-3010	233	24.4	55.0	31818	760	5.3	5.3	0.0	125	3.7	0.6	5.9	0.2	9.4
37	Starter	Dekalb DKC39-27RIB	227	27.1	54.3	31565	728	1.5	1.5	0.0	125	3.4	0.6	5.4	0.2	10.1
38	Starter	NK Brand N27P-3110A	239	26.3	55.3	31439	771	0.8	0.8	0.0	123	3.3	0.6	5.9	0.3	9.6
39	Starter	Jung 46SS427RIB	260	29.2	53.4	30176	824	0.5	0.5	0.0	128	3.3	0.6	5.3	0.3	9.9
41	Starter	DuPont Pioneer P9998AMT	263	32.0	54.9	33207	817	1.1	1.1	0.0	127	3.6	0.7	5.9	0.2	10.5
45	Starter	NK Brand N66V-3120EZ1	254	37.7	54.8	31818	761	2.8	2.4	0.4	140	3.6	0.6	5.2	0.2	12.1
Mean			236	27.9	55.3	32112	753	1.8	1.7	0.1	126	3.7	0.6	5.8	0.2	10.1
Probability(%):																
Fertilizer(F)			42.4	99.2	32.9	24.7	49.7	65.6	58.4	22.2	74.0	--	--	--	--	--
Hybrid (H)			0.0	0.0	0.0	54.7	0.0	1.4	6.2	0.0	0.0	--	--	--	--	--
F x H			49.9	47.0	1.1	2.1	57.6	17.5	16.1	2.2	83.8	--	--	--	--	--
LSD(0.10):																
Fertilizer(F)			NS	NS	NS	NS	NS	NS	NS	NS	NS	--	--	--	--	--
Hybrid (H)			9	1.5	0.9	NS	32	1.9	1.9	0.2	5	--	--	--	--	--
F x H			NS	NS	1.6	1701	NS	NS	NS	0.3	NS	--	--	--	--	--

*AGI: Adjusted Gross Income.

FIELD EXPERIMENT HISTORY

Title: Corn Hybrid Response to Starter Fertilizer in Wisconsin.

Experiment: 12Fertilizer **Trial ID:** 6277 **Year:** 2018

Personnel: Joe Lauer, Kent Kohn, Thierno Diallo

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

Supported By: HATCH, Wisconsin Fertilizer Research Program

Site Information

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

Soil Test: Date: 5 /17/18 **pH:** 6.5 **OM (%)** 2.5 **P (ppm)** 21 **K (ppm)** 110

Plot Management

Tillage Operations: Field Cultivator Fall Chisel

Fertilizer:

	Analysis	Rate	Date
Preplant	46-0-0	391.3 lb/A	N/A
Starter	9-11-30-6S-1Zn	200 lbs/A	5/17/18
	10-34-0	4.08 gal/A	5/17/18
Post plant	N/A	N/A	N/A
Manure:	N/A	N/A	N/A

Herbicide: Acuron 3.0 qt/A **Insecticide:** Force 3G 4.4 lbs/A

Hybrid: Factor

Irrigation: None

Planting Date: 5/17/18 **Planting Depth:** 1.5" **Row Width:** 30"

Target Plant Density: 32000 **plants per acre** **Planting Method:** Almaco Precision Planter

Harvest Date: 10/15/18 **Harvest Method:** Massey 8XP

Notes:

Experimental Design

RCB in a split-plot

Replications: 3

Plot Size Seeded: 10' x 25'

Experiment Size: 0.28 Acre

Harvest Plot Size: 5' x 23'

Harvest Plant Density: **32287 plants per acre**

Factors/Treatments:

Hybrid (RM):

1) Jung 31DP308 (82)
2) Dekalb DKC39-27RIB (89)
3) DuPont Pioneer P9998AMT (99)
4) Dekalb DKC52-68RIB (102)
5) NuTech 5F-504 (104)
6) Renk RK717SSTX (105)
7) Nu-Tech 5F-510 (109)
8) NK Brand N66V-3122 (109)

Fertilzer:

1). UTC
2). Pop-up: 10-34-0
3). Starter: 9-11-30-6S-1Zn

Results: Table 1812-04

Table 1812 - 04. Corn Hybrid Response to Starter Fertilizer in Wisconsin.
Fond Du Lac, 2018

Treatment			Grain	Grain	Test	Harvest	*AGI	Lodged			Plant					
number	Fertilizer	Hybrid	yield	moisture	weight	density	$3.44	Total	Stalk	Root	height	N	P	K	S	DM
			bu/A	%	lb/bu	plants/A	$/A	%	%	%	in	%	%	%	%	gr
	UTC		212	26.0	53.3	32907	685	0.4	0.3	0.0	102	--	--	--	--	--
	Pop-up		225	25.1	54.5	31568	729	0.5	0.5	0.0	100	--	--	--	--	--
	Starter		233	25.2	54.6	32386	754	2.6	2.4	0.2	101	--	--	--	--	--
		Dekalb DKC39-27RIB	185	19.5	54.5	31523	623	2.3	2.2	0.1	92	--	--	--	--	--
		Dekalb DKC52-68RIB	247	29.7	52.0	32617	780	0.5	0.5	0.0	102	--	--	--	--	--
		DuPont Pioneer P9998AMT	223	26.2	53.0	32575	719	0.4	0.3	0.1	96	--	--	--	--	--
		Jung 31DP308	174	17.6	57.3	32163	592	4.8	4.7	0.1	89	--	--	--	--	--
		NK Brand N66V-3122	225	32.1	52.4	32365	699	0.4	0.1	0.3	115	--	--	--	--	--
		Nu-Tech 5F-510	263	29.8	55.4	32575	831	0.5	0.5	0.0	109	--	--	--	--	--
		NuTech 5F-504	242	25.8	54.2	33207	781	0.5	0.4	0.1	108	--	--	--	--	--
		Renk RK717SSTX	229	22.5	54.1	31271	756	0.0	0.0	0.0	98	--	--	--	--	--
1	UTC	Jung 31DP308	180	17.8	56.0	33459	610	1.5	1.5	0.0	89	4.0	0.6	6.0	0.2	6.5
5	UTC	Dekalb DKC39-27RIB	188	20.2	54.1	32828	629	0.8	0.4	0.4	92	3.7	0.6	6.0	0.3	6.3
9	UTC	DuPont Pioneer P9998AMT	188	28.1	51.4	32954	598	0.0	0.0	0.0	95	4.1	0.6	6.0	0.2	4.4
10	UTC	Dekalb DKC52-68RIB	243	29.6	51.5	32449	768	0.4	0.4	0.0	105	3.7	0.6	6.2	0.2	7.3
11	UTC	NuTech 5F-504	218	27.2	53.6	33838	699	0.0	0.0	0.0	108	3.3	0.6	6.1	0.2	6.7
12	UTC	Renk RK717SSTX	232	21.9	53.5	31818	768	0.0	0.0	0.0	98	3.6	0.6	6.4	0.2	5.2
13	UTC	Nu-Tech 5F-510	260	30.4	55.1	33080	817	0.0	0.0	0.0	113	3.7	0.6	5.9	0.2	6.1
14	UTC	NK Brand N66V-3122	191	33.3	50.9	32828	588	0.4	0.4	0.0	117	4.2	0.5	5.9	0.3	7.3
17	Pop-up	Jung 31DP308	166	17.5	57.5	30707	563	1.8	1.8	0.0	88	4.2	0.6	6.1	0.3	5.1
21	Pop-up	Dekalb DKC39-27RIB	178	19.6	55.0	30050	599	0.8	0.8	0.0	92					4.4
25	Pop-up	DuPont Pioneer P9998AMT	237	25.7	53.8	32323	768	0.0	0.0	0.0	98	4.2	0.6	6.1	0.2	3.9
26	Pop-up	Dekalb DKC52-68RIB	247	29.4	52.3	31944	782	0.0	0.0	0.0	101	4.1	0.5	5.8	0.2	6.2
27	Pop-up	NuTech 5F-504	249	25.2	54.3	32449	809	0.8	0.4	0.4	106	3.9	0.4	5.9	0.2	4.6
28	Pop-up	Renk RK717SSTX	223	23.1	53.6	31313	735	0.0	0.0	0.0	95	4.1	0.5	6.1	0.2	5.1
29	Pop-up	Nu-Tech 5F-510	260	29.2	56.1	32197	825	0.8	0.8	0.0	108	4.4	0.6	6.5	0.3	4.9
30	Pop-up	NK Brand N66V-3122	240	31.0	53.1	31565	751	0.0	0.0	0.0	114	4.2	0.5	5.6	0.2	4.8
33	Starter	Jung 31DP308	177	17.7	58.5	32323	602	11.0	10.6	0.4	90	3.8	0.5	6.3	0.2	6.5
37	Starter	Dekalb DKC39-27RIB	190	18.9	54.4	31691	641	5.3	5.3	0.0	92	4.3	0.6	6.2	0.2	4.2
41	Starter	DuPont Pioneer P9998AMT	243	24.8	53.6	32449	791	1.2	0.8	0.4	96	4.3	0.6	6.5	0.2	5.8
42	Starter	Dekalb DKC52-68RIB	251	30.2	52.3	33459	791	1.2	1.2	0.0	99	3.8	0.6	5.4	0.2	6.9
43	Starter	NuTech 5F-504	257	25.1	54.7	33333	836	0.8	0.8	0.0	111	4.3	0.5	5.3	0.2	6.0
44	Starter	Renk RK717SSTX	232	22.4	55.2	30681	765	0.0	0.0	0.0	101	4.2	0.6	6.2	0.2	6.3
45	Starter	Nu-Tech 5F-510	270	29.9	55.1	32449	851	0.8	0.8	0.0	107	4.2	0.5	6.4	0.2	6.1
46	Starter	NK Brand N66V-3122	244	32.1	53.2	32702	758	0.8	0.0	0.8	114	3.6	0.5	6.0	0.2	6.8
Mean			224	25.4	54.1	32287	723	1.2	1.1	0.1	101	4.0	0.6	6.0	0.2	5.7
Probability(%):																
Fertilizer(F)			0.9	9.1	6.8	4.1	0.9	9.8	8.2	45.0	42.0	--	--	--	--	--
Hybrid (H)			0.0	0.0	0.0	2.2	0.0	0.0	0.0	56.7	0.0	--	--	--	--	--
F x H			0.0	1.9	50.4	70.8	0.0	0.5	0.3	10.0	74.0	--	--	--	--	--
LSD(0.10):																
Fertilizer(F)			7	0.8	0.9	718	24	1.8	1.6	NS	NS	--	--	--	--	--
Hybrid (H)			9	0.7	0.9	922	31	1.5	1.4	NS	3	--	--	--	--	--
F x H			16	1.3	NS	NS	54	2.8	2.6	0.4	NS	--	--	--	--	--

*AGI: Adjusted Gross Income.

FIELD EXPERIMENT HISTORY

Title: Corn Hybrid Response to Starter Fertilizer in Wisconsin.

Experiment: 12Fertilizer **Trial ID:** 6249 **Year:** 2018

Personnel: Joe Lauer, Thierno Diallo, Kent Kohn.

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

Supported By: HATCH, Wisconsin Fertilizer Research Program

Site Information

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

Soil Test: Date: 4 /30/18 **pH:** 5.2 **OM (%)** 3.2 **P (ppm)** 27 **K (ppm)** 149

Plot Management

Tillage Operations: Field Cultivator

Fertilizer:

	Analysis	Rate	Date
Preplant	46-0-0	217.4 lb/A	N/A
	21-0-0-24S	100 lb/A	N/A
Starter	9-11-30-6S-1Zn	200 lbs/A	4/30/18
	10-34-0	4.08 gal/A	4/30/18
Post plant	N/A	N/A	N/A
Manure:	N/A	N/A	N/A

Herbicide: DiFlexx 1.0 pt/A
Laudis 3.0 oz/A

Insecticide: Force 3G 4.4 lbs/A

Hybrid: Factor

Irrigation: None

Planting Date: 4/30/18 **Planting Depth:** 1.5" **Row Width:** 30"

Target Plant Density: 32000 **plants per acre** **Planting Method:** Almaco Precision Planter

Harvest Date: 0/04/18 **Harvest Method:** Massey 8XP

Notes:

Experimental Design

RCB in a split-plot

Replications: 3

Plot Size Seeded: 10' x 25'

Experiment Size: 0.28 Acre

Harvest Plot Size: 5' x 23'

Harvest Plant Density: **32117** **plants per acre**

Factors/Treatments:

Hybrid (RM):

1) Jung 31DP308 (82)
2) Dekalb DKC39-27RIB (89)
3) DuPont Pioneer P9998AMT (99)
4) Dekalb DKC52-68RIB (102)
5) NuTech 5F-504 (104)
6) Renk RK717SSTX (105)
7) Nu-Tech 5F-510 (109)
8) NK Brand N66V-3120EZ1 (109)

Fertilzer:

1). UTC
2). Pop-up: 10-34-0
3). Starter: 9-11-30-6S-1Zn

Results: Table 1812-05

Table 1812 - 05. Corn Hybrid Response to Starter Fertilizer in Wisconsin.
Galesville, 2018

Treatment			Grain	Grain	Test	Harvest	*AGI	Lodged			Plant				
number	Fertilizer	Hybrid	yield	moisture	weight	density	$3.44	Total	Stalk	Root	N	P	K	S	DM
			bu/A	%	lb/bu	plants/A	$/A	%	%	%	%	%	%	%	gr
	UTC		--	--	--	--	--	--	--	--	--	--	--	--	--
	Pop-up		--	--	--	--	--	--	--	--	--	--	--	--	--
	Starter		224	23.0	56.1	32218	736	7.9	7.4	0.5	--	--	--	--	--
		Jung 31DP308	--	--	--	--	--	--	--	--	--	--	--	--	--
		Dekalb DKC39-27RIB	186	19.5	53.8	32097	625	13.6	13.8	0.0	--	--	--	--	--
		Dekalb DKC52-68RIB	234	24.9	52.8	32569	762	4.3	4.3	0.0	--	--	--	--	--
		DuPont Pioneer P9998AMT	216	22.6	55.9	32012	711	0.5	0.4	0.0	--	--	--	--	--
		NK Brand N66V-3120EZ1	254	27.2	55.7	32039	815	6.4	4.3	2.1	--	--	--	--	--
		Nu-Tech 5F-510	269	25.3	57.6	32039	871	4.1	3.4	0.7	--	--	--	--	--
		NuTech 5F-504	259	22.8	56.1	32039	854	3.4	2.7	0.7	--	--	--	--	--
		Renk RK717SSTX	239	22.6	57.1	32071	787	4.3	3.9	0.5	--	--	--	--	--
1	UTC	Jung 31DP308	--	--	--	--	--	--	--	--	3.2	0.5	6.4	0.2	8.3
5	UTC	Dekalb DKC39-27RIB	196	18.8	51.3	32077	662	8.1	8.4	0.0	3.9	0.5	6.0	0.3	9.1
9	UTC	DuPont Pioneer P9998AMT	208	23.1	56.9	31960	683	0.4	0.2	0.0	3.4	0.6	6.0	0.3	10.3
10	UTC	Dekalb DKC52-68RIB	233	25.5	53.2	32039	754	7.1	7.1	0.0	3.7	0.5	5.9	0.2	9.7
11	UTC	NuTech 5F-504	261	22.8	54.9	32039	861	2.4	1.6	0.8	3.8	0.5	6.6	0.2	8.9
12	UTC	Renk RK717SSTX	237	22.7	56.1	32137	782	7.7	6.9	1.2	3.9	0.5	6.0	0.2	9.9
13	UTC	Nu-Tech 5F-510	281	25.5	58.5	32039	912	2.0	1.2	0.8	3.3	0.5	5.9	0.2	8.8
14	UTC	NK Brand N66V-3120EZ1	251	27.0	55.5	32039	806	7.1	6.3	0.8	3.2	0.5	6.0	0.2	9.6
17	Pop-up	Jung 31DP308	--	--	--	--	--	--	--	--	3.4	0.6	6.2	0.2	9.2
21	Pop-up	Dekalb DKC39-27RIB	169	20.1	55.1	32137	568	9.1	9.1	0.0	3.3	0.5	6.6	0.3	9.7
25	Pop-up	DuPont Pioneer P9998AMT	210	22.2	55.2	32039	695	0.4	0.4	0.0	3.4	0.5	6.5	0.2	11.5
26	Pop-up	Dekalb DKC52-68RIB	240	25.0	53.5	32039	781	2.3	2.3	0.0	3.5	0.5	6.7	0.3	10.1
27	Pop-up	NuTech 5F-504	270	22.0	56.0	32039	893	1.6	1.2	0.4	3.1	0.5	5.1	0.3	10.3
28	Pop-up	Renk RK717SSTX	239	22.4	57.7	32039	789	0.4	0.4	0.0	3.5	0.5	5.1	0.3	9.1
29	Pop-up	Nu-Tech 5F-510	278	25.2	57.7	32039	904	3.1	2.3	0.8	3.3	0.5	6.3	0.3	10.1
30	Pop-up	NK Brand N66V-3120EZ1	260	27.1	56.0	32039	836	5.2	2.0	3.2	3.0	0.5	5.2	0.3	12.2
33	Starter	Jung 31DP308	158	18.8	59.0	31843	535	9.6	9.6	0.0	3.2	0.5	6.4	0.4	9.3
37	Starter	Dekalb DKC39-27RIB	192	19.7	54.9	32077	646	23.7	23.9	0.0	3.1	0.4	5.7	0.3	8.5
41	Starter	DuPont Pioneer P9998AMT	229	22.3	55.7	32039	757	0.8	0.8	0.0	3.2	0.5	5.2	0.3	9.3
42	Starter	Dekalb DKC52-68RIB	230	24.2	51.7	33630	751	3.6	3.6	0.0	3.4	0.5	5.5	0.3	9.3
43	Starter	NuTech 5F-504	247	23.6	57.4	32039	809	6.3	5.5	0.8	3.0	0.4	5.2	0.3	8.3
44	Starter	Renk RK717SSTX	239	22.8	57.6	32039	788	4.7	4.4	0.4	3.3	0.4	5.6	0.3	7.0
45	Starter	Nu-Tech 5F-510	246	25.3	56.6	32039	798	7.1	6.7	0.4	3.0	0.4	6.1	0.3	8.8
46	Starter	NK Brand N66V-3120EZ1	251	27.6	55.7	32039	803	7.1	4.7	2.4	3.0	0.5	5.5	0.3	8.4
Mean			234	23.4	55.7	32117	766	5.5	5.0	0.5	3.3	0.5	5.9	0.3	9.4
Probability(%):															
Fertilizer(F)			68.5	86.8	54.0	58.0	69.3	9.8	9.0	97.1	--	--	--	--	--
Hybrid (H)			0.0	0.0	0.0	63.3	0.0	0.0	0.0	9.1	--	--	--	--	--
F x H			31.6	91.1	33.8	62.2	32.0	5.2	0.5	92.7	--	--	--	--	--
LSD(0.10):															
Fertilizer(F)			NS	NS	NS	NS	NS	3.3	3.2	NS	--	--	--	--	--
Hybrid (H)			15	1.1	1.5	NS	52	2.8	2.2	1.3	--	--	--	--	--
F x H			NS	NS	NS	NS	NS	5.2	4.4	NS	--	--	--	--	--

*AGI: Adjusted Gross Income.

-- Wild life damaged the Hybrid.

FIELD EXPERIMENT HISTORY

Title: Corn Hybrid Response to Starter Fertilizer in Wisconsin.

Experiment: 12Fertilizer **Trial ID:** 395 **Year:** 2018

Personnel: Joe Lauer, Kent Kohn, Thierno Diallo

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

Supported By: HATCH, Wisconsin Fertilizer Research Program

Site Information

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

Soil Test: Date: 5 /3 /18 **pH:** 5.7 **OM (%)** 0.9 **P (ppm)** 62 **K (ppm)** 106

Plot Management

Tillage Operations: Spring Disk

Fertilizer:	Analysis	Rate	Date
Preplant	N/A	N/A	N/A
Starter	9-11-30-6S-1Zn	200 lbs/A	5/3/18
	10-34-0	4.08 gal/A	5/3/18
Post plant	21-0-0-24S	152.3 lbs/A	N/A
	11-52-0	355 lbs/A	N/A
	32-0-0	331 lbs/A	N/A
Manure:	N/A	N/A	N/A

Herbicide: Prowl 2.0 pt/A
Laudis 3.0 oz/A

Insecticide: Force 3G 4.4 lbs/A

Irrigation: May - Sept: 11.1"

Hybrid: Factor

Planting Date: 5/3/2017 **Planting Depth:** 1.5" **Row Width:** 30"

Target Plant Density: 32000 **plants per acre** **Planting Method:** Almaco Precision Planter

Harvest Date: 10/11/2018 **Harvest Method:** Massey 8XP

Notes:

Experimental Design

RCB in a split-plot

Replications: 3

Plot Size Seeded: 10' x 25'

Experiment Size: 0.28 Acre

Harvest Plot Size: 5' x 23'

Harvest Plant Density: **33389** **plants per acre**

Factors/Treatments:

Hybrid (RM):

1) Jung 31DP308 (82)
2) Dekalb DKC39-27RIB (89)
3) DuPont Pioneer P9998AMT (99)
4) Dekalb DKC52-68RIB (102)
5) NuTech 5F-504 (104)
6) Renk RK717SSTX (105)
7) Nu-Tech 5F-510 (109)
8) NK Brand N66V-3122 (109)

Fertilzer:

1). UTC
2). Pop-up: 10-34-0
3). Starter: 9-11-30-6S-1Zn

Results: Table 1812-06

Table 1812 - 06. Corn Hybrid Response to Starter Fertilizer in Wisconsin.
Hancock, 2018

Treatment			Grain	Grain	Test	Harvest	*AGI	Lodged			Plant				
number	Fertilizer	Hybrid	yield	moisture	weight	density	$3.44	Total	Stalk	Root	N	P	K	S	DM
			bu/A	%	lb/bu	plants/A	$/A	%	%	%	%	%	%	%	gr
	UTC		244	24.6	55.5	33343	793	0.4	0.3	0.1	--	--	--	--	--
	Pop-up		240	24.4	55.4	33417	781	0.7	0.6	0.0	--	--	--	--	--
	Starter		245	24.6	55.9	33407	796	0.8	0.7	0.1	--	--	--	--	--
		Dekalb DKC39-27RIB	213	21.6	55.2	33417	705	1.2	1.2	0.0	--	--	--	--	--
		Dekalb DKC52-68RIB	244	27.0	53.0	33249	783	0.6	0.4	0.3	--	--	--	--	--
		DuPont Pioneer P9998AMT	264	23.8	56.4	33417	865	0.1	0.1	0.0	--	--	--	--	--
		Jung 31DP308	211	21.5	57.6	33417	699	0.5	0.5	0.0	--	--	--	--	--
		NK Brand N66V-3120EZ1	248	25.6	54.4	33389	803	1.0	1.0	0.0	--	--	--	--	--
		Nu-Tech 5F-510	273	28.0	55.3	33417	870	0.6	0.5	0.1	--	--	--	--	--
		NuTech 5F-504	264	24.6	55.9	33417	861	0.6	0.3	0.4	--	--	--	--	--
		Renk RK717SSTX	225	24.2	56.8	33389	736	0.2	0.2	0.0	--	--	--	--	--
1	UTC	Jung 31DP308	209	21.2	58.5	33417	696	0.7	0.7	0.0	4.0	0.8	5.1	0.4	4.2
5	UTC	Dekalb DKC39-27RIB	219	21.0	55.5	33417	728	0.8	0.8	0.0	3.7	0.8	5.7	0.4	3.4
9	UTC	DuPont Pioneer P9998AMT	258	23.9	56.5	33417	845	0.0	0.0	0.0	3.9	0.9	5.8	0.3	3.1
10	UTC	Dekalb DKC52-68RIB	242	27.4	53.1	32912	774	1.2	0.4	0.8	4.2	0.8	5.7	0.4	3.8
11	UTC	NuTech 5F-504	275	24.6	55.8	33417	896	0.4	0.4	0.0	3.8	0.8	5.3	0.4	2.7
12	UTC	Renk RK717SSTX	236	24.4	56.1	33417	771	0.0	0.0	0.0	3.9	0.9	5.7	0.3	3.7
13	UTC	Nu-Tech 5F-510	264	27.7	54.0	33417	844	0.0	0.0	0.0	3.8	0.9	5.8	0.4	3.2
14	UTC	NK Brand N66V-3120EZ1	245	26.7	54.7	33333	788	0.0	0.0	0.0	3.9	0.8	5.6	0.3	4.0
17	Pop-up	Jung 31DP308	208	21.3	56.3	33417	693	0.8	0.8	0.0	3.6	0.8	5.8	0.5	3.9
21	Pop-up	Dekalb DKC39-27RIB	200	22.3	53.6	33417	662	0.8	0.8	0.0	3.7	0.8	5.2	0.4	2.5
25	Pop-up	DuPont Pioneer P9998AMT	267	23.5	56.0	33417	874	0.0	0.0	0.0	3.9	0.8	5.5	0.3	2.7
26	Pop-up	Dekalb DKC52-68RIB	243	26.8	52.5	33417	780	0.0	0.0	0.0	4.3	0.8	5.0	0.5	3.5
27	Pop-up	NuTech 5F-504	245	24.2	55.6	33417	801	0.4	0.4	0.0	3.8	0.8	5.2	0.3	2.4
28	Pop-up	Renk RK717SSTX	217	24.1	57.7	33417	710	0.7	0.7	0.0	4.2	0.9	5.1	0.4	3.3
29	Pop-up	Nu-Tech 5F-510	281	28.0	56.9	33417	897	0.4	0.0	0.4	4.7	0.8	5.2	0.4	3.8
30	Pop-up	NK Brand N66V-3120EZ1	257	25.2	54.5	33417	834	2.2	2.2	0.0	4.7	0.8	5.1	0.4	5.0
33	Starter	Jung 31DP308	214	21.8	57.9	33417	710	0.0	0.0	0.0	4.7	0.8	5.4	0.5	4.0
37	Starter	Dekalb DKC39-27RIB	219	21.5	56.6	33417	726	1.9	1.9	0.0	4.6	0.8	6.2	0.5	4.5
41	Starter	DuPont Pioneer P9998AMT	267	23.9	56.6	33417	874	0.4	0.4	0.0	4.6	0.7	5.2	0.3	5.0
42	Starter	Dekalb DKC52-68RIB	247	26.7	53.6	33417	795	0.7	0.7	0.0	4.6	0.7	6.0	0.3	9.0
43	Starter	NuTech 5F-504	272	25.1	56.4	33417	884	1.1	0.0	1.1	4.7	0.8	5.8	0.3	4.5
44	Starter	Renk RK717SSTX	222	24.1	56.7	33333	726	0.0	0.0	0.0	4.4	0.8	5.5	0.3	4.9
45	Starter	Nu-Tech 5F-510	273	28.4	55.1	33417	867	1.5	1.5	0.0	4.0	0.8	5.4	0.4	6.8
46	Starter	NK Brand N66V-3120EZ1	242	24.9	53.9	33417	788	0.7	0.7	0.0	3.9	0.7	5.5	0.4	6.7
Mean			243	24.5	55.6	33389	790	0.6	0.5	0.1	4.1	0.8	5.5	0.4	4.2
Probability(%):															
Fertilizer(F)			77.2	84.3	56.4	21.0	79.4	57.4	56.2	82.2	--	--	--	--	--
Hybrid (H)			0.0	0.0	0.0	9.6	0.0	72.5	57.5	61.3	--	--	--	--	--
F x H			35.5	69.8	22.8	3.7	41.5	72.2	68.1	37.5	--	--	--	--	--
LSD(0.10):															
Fertilizer(F)			NS	NS	NS	NS	NS	NS	NS	NS	--	--	--	--	--
Hybrid (H)			12	0.8	1.2	101	41	NS	NS	NS	--	--	--	--	--
F x H			NS	NS	NS	174	NS	NS	NS	NS	--	--	--	--	--

*AGI: Adjusted Gross Income.

FIELD EXPERIMENT HISTORY

Title: Corn Hybrid Response to Starter Fertilizer in Wisconsin.

Experiment: 12Fertilizer **Trial ID:** 6254 **Year:** 2018

Personnel: Joe Lauer, Thierno Diallo, Kent Kohn.

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

Supported By: HATCH, Wisconsin Fertilizer Research Program

Site Information

Field: N/A **Previous Crop:** Corn **Soil Type:** Plano Silt Loam

Soil Test: Date: 5 /1 /18 **pH:** 6.0 **OM (%)** 3.0 **P (ppm)** 29 **K (ppm)** 93

Plot Management

Tillage Operations: Field Cultivator Fall Disk Chisel

Fertilizer:

	Analysis	Rate	Date
Preplant	N/A	N/A	N/A
Starter	9-11-30-6S-1Zn 10-34-0	200 lbs/A 4.08 gal/A	5/1/2018 5/1/2018
Post plant	28-0-0	714.3 lb/A	N/A
Manure:	N/A	N/A	N/A

Herbicide: Acuron 3.0 qt/A **Insecticide:** Force 3G 4.4 lbs/A

Hybrid: Factor

Irrigation: None

Planting Date: 5/1/2018 **Planting Depth:** 1.5" **Row Width:** 30"

Target Plant Density: 32000 **plants per acre** **Planting Method:** Almaco Precision Planter

Harvest Date: 10/28/2018 **Harvest Method:** Massey 8XP

Notes:

Experimental Design

RCB in a split-plot

Replications: 3

Plot Size Seeded: 10' x 25'

Experiment Size: 0.28 Acre

Harvest Plot Size: 5' x 23'

Harvest Plant Density: 31828 plants per acre

Factors/Treatments:

Hybrid (RM):

1) Dekalb DKC31-10 (81)
2) Dekalb DKC39-27RIB (89)
3) Dekalb DKC62-20RIB (112)
4) Dekalb DKC65-95RIB (115)
5) DuPont Pioneer P9998AMT (99)
6) NK Brand N66V-3120EZ1 (109)
7) Nu-Tech 5F-510 (109)
8) Renk RK717SSTX (105)

Fertilzer:

1). UTC
2). Pop-up: 10-34-0
3). Starter: 9-11-30-6S-1Zn

Results: Table 1812-07

Table 1812 - 07. Corn Hybrid Response to Starter Fertilizer in Wisconsin.
Janesville, 2018

Treatment			Grain	Grain	Test	Harvest	*AGI	Lodged			Plant					
number	Fertilizer	Hybrid	yield	moisture	weight	density	$3.44	Total	Stalk	Root	height	N	P	K	S	DM
			bu/A	%	lb/bu	plants/A	$/A	%	%	%	in	%	%	%	%	gr
	UTC		232	22.9	55.7	32007	761	6.2	0.8	5.4	101	--	--	--	--	--
	Pop-up		222	22.7	56.1	31944	730	6.2	0.8	5.4	97	--	--	--	--	--
	Starter		232	23.3	55.7	31534	759	3.8	0.5	3.4	101	--	--	--	--	--
		Dekalb DKC31-10	149	15.6	54.1	31818	513	3.3	0.0	3.3	91	--	--	--	--	--
		Dekalb DKC39-27RIB	193	18.1	54.0	30471	655	3.4	1.6	1.9	92	--	--	--	--	--
		Dekalb DKC62-20RIB	250	25.3	54.8	32659	812	2.1	1.3	0.8	102	--	--	--	--	--
		Dekalb DKC65-95RIB	255	29.2	56.7	32070	809	0.5	0.5	0.0	101	--	--	--	--	--
		DuPont Pioneer P9998AMT	244	20.3	57.6	32491	816	5.2	0.3	5.0	97	--	--	--	--	--
		NK Brand N66V-3120EZ1	235	28.3	54.9	32154	747	14.3	0.5	13.8	113	--	--	--	--	--
		Nu-Tech 5F-510	259	24.7	56.6	32491	844	11.6	0.8	10.8	102	--	--	--	--	--
		Renk RK717SSTX	244	22.1	57.9	30471	807	2.7	0.5	2.2	98	--	--	--	--	--
1	UTC	Dekalb DKC31-10	147	15.2	53.2	31060	504	0.0	0.0	0.0	91	4.1	0.6	1.7	0.2	6.0
5	UTC	Dekalb DKC39-27RIB	204	17.8	54.5	32070	692	4.7	2.4	2.3	95	4.1	0.6	2.2	0.2	5.8
9	UTC	DuPont Pioneer P9998AMT	244	21.9	58.0	32575	809	12.4	0.0	12.4	99	4.0	0.5	2.0	0.2	5.6
12	UTC	Renk RK717SSTX	255	21.9	57.6	32070	843	3.2	0.8	2.3	101	4.4	0.6	2.8	0.2	3.8
13	UTC	Nu-Tech 5F-510	266	23.8	55.3	34090	871	12.1	1.6	10.5	101	4.0	0.6	1.9	0.2	5.4
14	UTC	NK Brand N66V-3120EZ1	228	28.2	54.6	31060	728	15.3	0.0	15.3	111	4.1	0.5	3.0	0.2	6.5
15	UTC	Dekalb DKC62-20RIB	249	24.9	54.9	32070	809	0.8	0.8	0.0	103	3.9	0.6	2.6	0.2	5.2
16	UTC	Dekalb DKC65-95RIB	264	29.3	57.6	31060	834	0.7	0.7	0.0	104	4.4	0.6	2.4	0.2	4.3
17	Pop-up	Dekalb DKC31-10	144	15.8	55.5	32070	496	5.3	0.0	5.3	87	4.2	0.7	2.4	0.2	10.0
21	Pop-up	Dekalb DKC39-27RIB	185	17.9	54.1	30303	626	5.6	2.4	3.2	86	3.8	0.6	2.0	0.2	7.3
25	Pop-up	DuPont Pioneer P9998AMT	244	19.8	57.9	33080	820	3.3	0.8	2.4	94	4.6	0.6	2.1	0.2	7.1
28	Pop-up	Renk RK717SSTX	238	20.0	58.2	32575	798	3.3	0.8	2.5	96	4.4	0.6	2.2	0.2	6.6
29	Pop-up	Nu-Tech 5F-510	246	25.2	57.8	31060	797	13.5	0.0	13.5	102	4.2	0.5	2.4	0.1	6.9
30	Pop-up	NK Brand N66V-3120EZ1	227	28.7	54.9	33585	723	17.7	1.5	16.2	111	4.2	0.5	2.5	0.2	7.3
31	Pop-up	Dekalb DKC62-20RIB	246	24.5	54.1	32070	803	0.0	0.0	0.0	99	4.4	0.6	2.0	0.2	7.8
32	Pop-up	Dekalb DKC65-95RIB	247	29.4	56.0	30808	780	0.8	0.8	0.0	98	4.3	0.7	2.5	0.2	5.4
33	Starter	Dekalb DKC31-10	157	15.8	53.5	32323	538	4.7	0.0	4.7	93	4.6	0.6	3.4	0.2	5.3
37	Starter	Dekalb DKC39-27RIB	191	18.6	53.5	29040	646	0.0	0.0	0.0	93	4.0	0.6	3.6	0.2	5.9
41	Starter	DuPont Pioneer P9998AMT	244	19.3	56.7	32323	820	0.0	0.0	0.0	98	4.0	0.7	3.0	0.2	8.2
44	Starter	Renk RK717SSTX	239	24.5	57.9	31565	779	1.7	0.0	1.7	97	4.5	0.6	4.1	0.2	6.4
45	Starter	Nu-Tech 5F-510	266	25.0	56.7	32323	864	9.2	0.8	8.4	104	4.0	0.6	3.3	0.2	6.4
46	Starter	NK Brand N66V-3120EZ1	248	28.0	55.2	31818	792	9.8	0.0	9.8	116	4.1	0.6	3.4	0.2	6.7
47	Starter	Dekalb DKC62-20RIB	255	26.4	55.4	33333	823	5.4	3.1	2.3	105	4.3	0.5	3.2	0.2	5.0
48	Starter	Dekalb DKC65-95RIB	256	29.0	56.7	29545	812	0.0	0.0	0.0	101	4.5	0.6	3.7	0.2	4.4
Mean			229	23.0	55.8	31828	750	5.4	0.7	4.7	99	4.2	0.6	2.7	0.2	6.2
Probability(%):																
Fertilizer(F)			32.2	32.0	68.9	66.5	32.3	60.6	70.4	66.4	2.5	--	--	--	--	--
Hybrid (H)			0.0	0.0	0.0	4.0	0.0	1.6	28.1	1.0	0.0	--	--	--	--	--
F x H			66.8	4.8	70.3	35.8	57.5	95.8	20.4	97.3	54.5	--	--	--	--	--
LSD(0.10):																
Fertilizer(F)			NS	NS	NS	NS	NS	NS	NS	NS	2	--	--	--	--	--
Hybrid (H)			11	1.1	1.3	1362	36	6.9	NS	6.7	3	--	--	--	--	--
F x H			NS	1.8	NS	NS	NS	NS	NS	NS	NS	--	--	--	--	--

*AGI: Adjusted Gross Income.

FIELD EXPERIMENT HISTORY

Title: Corn Hybrid Response to Starter Fertilizer in Wisconsin.

Experiment: 12Fertilizer **Trial ID:** 6275 **Year:** 2018

Personnel: Joe Lauer, Thierno Diallo, Kent Kohn.

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

Supported By: HATCH, Wisconsin Fertilizer Research Program

Site Information

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

Soil Test: Date: 5/8/2018 **pH:** 6.0 **OM (%)** 2.5 **P (ppm)** 30 **K (ppm)** 91

Plot Management

Tillage Operations: Vertical Tillage Fall Disk Chisel

Fertilizer:

	Analysis	Rate	Date
Preplant	N/A	N/A	N/A
Starter	9-11-30-6S-1Zn 10-34-0	200 lbs/A 4.08 gal/A	5/8/2018 5/8/2018
Post plant	28-0-0	425 lbs/A	N/A
Manure:	N/A	N/A	N/A

Herbicide: Accent Q 1.0 oz/A
Hornet 3.0 oz/A
Me-too-lachlor 1.7 pt/A

Insecticide: Force 3G 4.4 lbs/A

Hybrid: Factor

Irrigation: None

Planting Date: 5/8/2018 **Planting Depth:** 1.5" **Row Width:** 30"

Target Plant Density: 32000 **plants per acre** **Planting Method:** Almaco Precision Planter

Harvest Date: 10/18/2018 **Harvest Method:** Massey 8XP

Notes:

Experimental Design

RCB in a split-plot

Replications: 3

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

Harvest Plot Size: 5' x 23' **Harvest Plant Density: 31395 plants per acre**

Factors/Treatments:

Hybrid (RM):

1) Jung 31DP308 (82)
2) Dekalb DKC31-10 (81)
3) Dairyland DS9686 (86)
4) Munson 4877-3010 (88)
5) Dekalb DKC39-27RIB (89)
6) NK Brand N27P-3110A (92)
7) Jung 46SS427RIB (96)
8) NK Brand N40L-3000GT (98)
9) DuPont Pioneer P9998AMT (99)
10) Dekalb DKC52-68RIB (102)
11) NuTech 5F-504 (104)
12) Renk RK717SSTX (105)
13) Nu-Tech 5F-510 (109)
14) NK Brand N66V-3120EZ1 (109)
15) Dekalb DKC62-20RIB (112)
16) Dekalb DKC65-95RIB (115)

Fertilzer:

1). UTC
2). Pop-up: 10-34-0
3). Starter: 9-11-30-6S-1Zn

Results: Table 1812-08

Table 1812 - 08. Corn Hybrid Response to Starter Fertilizer in Wisconsin.
Marshfield, 2018

Treatment number	Fertilizer	Hybrid	Grain yield	Grain moisture	Test weight	Harvest density	*AGI $3.44	Lodged			Plant					
								Total	Stalk	Root	height	N	P	K	S	DM
			bu/A	%	lb/bu	plants/A	$/A	%	%	%	in	%	%	%	%	gr
	UTC		185	30.5	54.4	32087	580	0.5	0.5	0.1	91	--	--	--	--	--
	Pop-up		181	28.6	54.7	30720	572	3.5	2.9	0.6	91	--	--	--	--	--
	Starter		188	29.2	55.4	31377	593	1.5	0.7	0.8	93	--	--	--	--	--
		Dairyland DS9686	157	23.7	56.2	31066	516	8.0	7.6	0.4	87	--	--	--	--	--
		Dekalb DKC31-10	147	21.8	57.1	31445	487	0.9	0.9	0.0	86	--	--	--	--	--
		Dekalb DKC39-27RIB	176	24.2	53.3	30639	576	1.2	0.7	0.5	87	--	--	--	--	--
		Dekalb DKC52-68RIB	211	32.8	53.4	32533	652	0.0	0.0	0.0	91	--	--	--	--	--
		Dekalb DKC62-20RIB	201	37.6	54.0	32786	605	0.5	0.2	0.2	97	--	--	--	--	--
		Dekalb DKC65-95RIB	198	39.3	55.5	31271	587	0.3	0.0	0.3	97	--	--	--	--	--
		DuPont Pioneer P9998AMT	195	30.1	53.9	31734	614	0.1	0.0	0.1	85	--	--	--	--	--
		Jung 31DP308	138	21.1	57.5	31303	458	11.0	9.9	1.1	83	--	--	--	--	--
		Jung 46SS427RIB	194	26.7	53.8	31734	623	0.6	0.3	0.3	88	--	--	--	--	--
		Munson 4877-3010	184	22.7	55.1	31823	607	1.1	0.4	0.7	89	--	--	--	--	--
		NK Brand N27P-3110A	184	25.2	55.5	30766	598	2.6	0.8	1.9	93	--	--	--	--	--
		NK Brand N40L-3000GT	186	30.3	52.9	28451	587	2.0	0.3	1.7	95	--	--	--	--	--
		NK Brand N66V-3120EZ1	188	37.3	54.3	31565	564	0.5	0.4	0.1	106	--	--	--	--	--
		Nu-Tech 5F-510	201	35.1	55.5	32702	612	0.1	0.1	0.0	93	--	--	--	--	--
		NuTech 5F-504	209	32.3	54.4	31902	648	0.0	0.0	0.0	96	--	--	--	--	--
		Renk RK717SSTX	185	30.7	54.7	30597	579	0.5	0.1	0.4	91	--	--	--	--	--
1	UTC	Jung 31DP308	153	20.6	55.6	32466	510	1.2	1.2	0.0	79	3.3	0.3	3.9	0.2	1.4
2	UTC	Dekalb DKC31-10	151	22.9	55.5	32449	496	0.4	0.4	0.0	86	3.4	0.4	3.9	0.2	1.9
3	UTC	Dairyland DS9686	164	26.7	54.4	31439	527	1.9	1.9	0.0	88	3.2	0.3	4.0	0.2	1.4
4	UTC	Munson 4877-3010	188	22.9	55.0	31818	618	0.8	0.8	0.0	88	3.0	0.3	4.1	0.2	1.3
5	UTC	Dekalb DKC39-27RIB	175	24.1	52.2	32070	573	0.4	0.4	0.0	88	2.9	0.4	4.3	0.3	1.3
6	UTC	NK Brand N27P-3110A	177	27.9	54.4	30934	564	0.8	0.8	0.0	90	3.1	0.3	4.1	0.2	1.4
7	UTC	Jung 46SS427RIB	195	27.6	52.1	32449	624	0.0	0.0	0.0	88	3.5	0.3	4.4	0.2	1.5
8	UTC	NK Brand N40L-3000GT	185	32.5	53.2	29545	575	1.7	0.9	0.9	95	3.3	0.3	3.8	0.2	1.6
9	UTC	DuPont Pioneer P9998AMT	193	31.7	54.1	32702	602	0.0	0.0	0.0	84	3.5	0.4	3.7	0.2	1.5
10	UTC	Dekalb DKC52-68RIB	204	34.1	53.5	33459	625	0.0	0.0	0.0	89	3.8	0.4	3.8	0.2	1.9
11	UTC	NuTech 5F-504	200	33.5	54.7	31691	617	0.0	0.0	0.0	95	3.4	0.4	4.1	0.2	1.2
12	UTC	Renk RK717SSTX	192	32.4	55.2	31186	597	0.4	0.4	0.0	90	3.6	0.3	3.9	0.2	1.1
13	UTC	Nu-Tech 5F-510	212	34.8	56.2	33459	649	0.0	0.0	0.0	94	3.7	0.3	3.2	0.2	1.5
14	UTC	NK Brand N66V-3120EZ1	188	36.9	54.4	31944	568	0.4	0.4	0.0	104	3.2	0.3	3.2	0.2	1.8
15	UTC	Dekalb DKC62-20RIB	194	39.6	54.1	32828	576	0.4	0.4	0.0	98	3.3	0.4	4.4	0.2	1.4
16	UTC	Dekalb DKC65-95RIB	192	39.8	55.2	32954	567	0.4	0.0	0.4	94	3.7	0.4	4.1	0.2	1.4

Table 112 - 01. Corn Hybrid Response to Starter Fertilizer in Wisconsin.
continued **Marshfield, 2018**

Treatment			Grain	Grain	Test	Harvest	*AGI	Lodged			Plant					
number	Fertilizer	Hybrid	yield	moisture	weight	density	$3.44	Total	Stalk	Root	hight	N	P	K	S	DM
			bu/A	%	lb/bu	plants/A	$/A	%	%	%	in	%	%	%	%	gr
17	Pop-up	Jung 31DP308	104	20.2	58.2	31140	347	28.4	27.2	1.3	85	3.3	0.4	3.3	0.2	2.3
18	Pop-up	Dekalb DKC31-10	139	21.0	57.3	30934	462	1.7	1.7	0.0	84	3.2	0.4	3.1	0.2	2.6
19	Pop-up	Dairyland DS9686	151	22.4	56.6	29941	498	15.0	13.7	1.3	87	3.4	0.4	3.3	0.2	2.1
20	Pop-up	Munson 4877-3010	181	22.0	54.3	31708	599	0.6	0.0	0.6	90	3.0	0.4	2.5	0.2	1.8
21	Pop-up	Dekalb DKC39-27RIB	173	23.8	53.8	27904	566	2.1	1.7	0.4	84	3.5	0.2	2.0	0.1	2.3
22	Pop-up	NK Brand N27P-3110A	191	23.6	55.7	30681	626	3.4	0.0	3.4	91	3.4	0.3	3.8	0.2	2.0
23	Pop-up	Jung 46SS427RIB	189	26.4	53.9	31313	608	0.8	0.8	0.0	88	3.2	0.3	3.6	0.2	2.4
24	Pop-up	NK Brand N40L-3000GT	190	27.7	52.5	27272	609	1.9	0.0	1.9	94	3.4	0.4	3.2	0.2	2.4
25	Pop-up	DuPont Pioneer P9998AMT	195	28.3	53.2	31186	621	0.0	0.0	0.0	85	2.8	0.4	2.6	0.2	2.5
26	Pop-up	Dekalb DKC52-68RIB	215	31.4	52.8	31818	670	0.0	0.0	0.0	90	3.2	0.4	3.1	0.2	2.6
27	Pop-up	NuTech 5F-504	206	32.0	54.5	31060	642	0.0	0.0	0.0	96	3.4	0.4	3.6	0.2	2.1
28	Pop-up	Renk RK717SSTX	183	29.2	54.0	29419	580	0.4	0.0	0.4	93	3.4	0.4	3.3	0.2	2.6
29	Pop-up	Nu-Tech 5F-510	192	34.5	55.2	31313	588	0.4	0.4	0.0	92	3.5	0.3	3.4	0.2	2.7
30	Pop-up	NK Brand N66V-3120EZ1	181	38.6	54.3	32702	540	0.4	0.0	0.4	107	3.4	0.4	2.8	0.2	2.7
31	Pop-up	Dekalb DKC62-20RIB	203	36.6	53.6	32575	611	0.4	0.4	0.0	95	3.4	0.4	3.1	0.2	2.7
32	Pop-up	Dekalb DKC65-95RIB	198	39.3	55.8	30555	588	0.4	0.0	0.4	96	3.2	0.4	3.6	0.2	2.2
33	Starter	Jung 31DP308	157	22.5	58.6	30303	517	3.3	1.3	2.0	84	3.8	0.4	4.8	0.2	2.4
34	Starter	Dekalb DKC31-10	152	21.7	58.6	30951	502	0.6	0.6	0.0	87	4.1	0.5	5.1	0.3	3.0
35	Starter	Dairyland DS9686	158	22.1	57.7	31818	522	7.2	7.2	0.0	87	4.0	0.4	4.6	0.3	2.4
36	Starter	Munson 4877-3010	184	23.2	56.0	31944	604	2.0	0.4	1.6	90	3.5	0.3	4.8	0.2	1.7
37	Starter	Dekalb DKC39-27RIB	181	24.6	54.0	31944	589	1.2	0.0	1.2	88	3.9	0.4	4.5	0.2	2.5
38	Starter	NK Brand N27P-3110A	185	24.2	56.5	30681	604	3.7	1.5	2.2	98	3.8	0.4	4.1	0.2	2.1
39	Starter	Jung 46SS427RIB	197	26.1	55.3	31439	636	0.8	0.0	0.8	88	3.9	0.4	4.5	0.2	1.9
40	Starter	NK Brand N40L-3000GT	184	30.7	53.1	28535	576	2.3	0.0	2.3	95	3.7	0.4	4.1	0.2	2.4
41	Starter	DuPont Pioneer P9998AMT	196	30.2	54.4	31313	617	0.4	0.0	0.4	88	4.0	0.5	4.4	0.2	2.3
42	Starter	Dekalb DKC52-68RIB	214	32.9	54.0	32323	661	0.0	0.0	0.0	93	4.0	0.5	4.0	0.2	2.3
43	Starter	NuTech 5F-504	219	31.4	53.9	32954	684	0.0	0.0	0.0	98	4.0	0.5	4.4	0.2	2.4
44	Starter	Renk RK717SSTX	178	30.6	54.7	31186	560	0.8	0.0	0.8	89	3.9	0.5	4.8	0.2	1.9
45	Starter	Nu-Tech 5F-510	198	35.9	55.1	33333	600	0.0	0.0	0.0	94	4.0	0.5	4.5	0.2	2.3
46	Starter	NK Brand N66V-3120EZ1	193	36.2	54.2	30050	585	0.8	0.8	0.0	108	3.4	0.4	4.5	0.2	2.3
47	Starter	Dekalb DKC62-20RIB	208	36.5	54.4	32954	629	0.7	0.0	0.7	98	3.6	0.5	4.4	0.2	2.1
48	Starter	Dekalb DKC65-95RIB	203	38.7	55.5	30303	605	0.0	0.0	0.0	100	3.6	0.6	4.5	0.2	2.1
Mean			185	29.4	54.8	31395	582	1.8	1.4	0.5	91	3.5	0.4	3.9	0.2	2.0
Probability(%):																
Fertilizer(F)			9.0	12.2	23.8	2.7	16.4	1.1	1.2	8.0	32.3	--	--	--	--	--
Hybrid (H)			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	--	--	--	--	--
F x H			2.6	18.8	32.2	31.1	3.2	0.0	0.0	81.6	97.1	--	--	--	--	--
LSD(0.10):																
Fertilizer(F)			5	NS	NS	639	NS	1.1	1.0	0.5	NS	--	--	--	--	--
Hybrid (H)			9	1.4	1.1	1151	31	1.9	1.7	0.9	3	--	--	--	--	--
F x H			16	NS	NS	NS	54	3.3	3.0	NS	NS	--	--	--	--	--

*AGI: Adjusted Gross Income.

FIELD EXPERIMENT HISTORY

Title: Corn Hybrid Response to Starter Fertilizer in Wisconsin.

Experiment: 12Fertilizer **Trial ID:** 6252 **Year:** 2018

Personnel: Joe Lauer, Thierno Diallo, Kent Kohn.

Location: Montfort, WI **County:** Grant

Supported By: HATCH, Wisconsin Fertilizer Research Program

Site Information

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

Soil Test: Date: 4 /28/18 **pH:** 6.8 **OM (%)** 2.9 **P (ppm)** 41 **K (ppm)** 162

Plot Management

Tillage Operations: Strip-till

Fertilizer:

	Analysis	Rate	Date
Preplant	21-0-0-24S	100 lb/A	N/A
	11-52-0	54.5 lb/A	N/A
Starter	9-11-30-6S-1Zn	200 lbs/A	5/8/2017
	10-34-0	4.08 gal/A	5/8/2017
Post plant	N/A	N/A	N/A
Manure:	N/A	N/A	N/A

Herbicide: Compadre 2.6 oz/A
Atrazine 4L 28.8 oz/A
Callisto 3.0 oz/A
Zidua 2.0 oz/A

Insecticide: Force 3G 4.4 lbs/A

Hybrid: Factor

Irrigation: None

Planting Date: 4/28/2018 **Planting Depth:** 1.5" **Row Width:** 30"

Target Plant Density: 32000 **plants per acre** **Planting Method:** Almaco Precision Planter

Harvest Date: 9/27/18 **Harvest Method:** Massey 8XP

Notes:

Experimental Design

RCB in a split-plot

Replications: 3

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

Harvest Plot Size: 5' x 23' **Harvest Plant Density:** **32028 plants per acre**

Factors/Treatments:

Hybrid (RM):

1) Dekalb DKC31-10 (81)
2) Dekalb DKC39-27RIB (89)
3) Dekalb DKC62-20RIB (112)
4) Dekalb DKC65-95RIB (115)
5) DuPont Pioneer P9998AMT (99)
6) NK Brand N66V-3120EZ1 (109)
7) Nu-Tech 5F-510 (109)
8) Renk RK717SSTX (105)

Fertilzer:

1). UTC
2). Pop-up: 10-34-0
3). Starter: 9-11-30-6S-1Zn

Results: Table 1812-09

Table 1812 - 09 Corn Hybrid Response to Starter Fertilizer in Wisconsin.
Montfort, 2018

Treatment			Grain	Grain	Test	Harvest	*AGI	Lodged			Plant				
number	Fertilizer	Hybrid	yield	moisture	weight	density	$3.44	Total	Stalk	Root	N	P	K	S	DM
			bu/A	%	lb/bu	plants/A	$/A	%	%	%	%	%	%	%	gr
	UTC		229	19.5	57.5	32028	769	9.7	9.1	0.6	--	--	--	--	--
	Pop-up		--	--	--	--	--	--	--	--	--	--	--	--	--
	Starter*		--	--	--	--	--	--	--	--	--	--	--	--	--
		Dekalb DKC31-10	--	--	--	--	--	--	--	--	--	--	--	--	--
		Dekalb DKC39-27RIB	184	16.4	56.2	32028	628	8.0	7.7	0.3	--	--	--	--	--
		Dekalb DKC62-20RIB	234	20.6	56.0	32028	780	7.1	7.1	0.0	--	--	--	--	--
		Dekalb DKC65-95RIB	229	21.0	57.4	32028	761	1.6	1.6	0.0	--	--	--	--	--
		DuPont Pioneer P9998AMT	249	19.4	58.3	32028	837	2.1	1.6	0.5	--	--	--	--	--
		NK Brand N66V-3120EZ1	225	20.1	57.3	32028	752	10.2	10.2	0.0	--	--	--	--	--
		Nu-Tech 5F-510	245	21.1	58.1	32028	817	7.2	7.0	0.3	--	--	--	--	--
		Renk RK717SSTX	224	17.9	58.3	32028	761	4.6	4.3	0.3	--	--	--	--	--
1	UTC	Dekalb DKC31-10	236	20.7	57.2	32028	788	39.4	34.9	4.7	4.7	0.6	5.9	0.2	4.3
5	UTC	Dekalb DKC39-27RIB	177	16.4	56.9	32028	607	11.0	10.6	0.4	4.6	0.6	4.7	0.2	3.1
9	UTC	DuPont Pioneer P9998AMT	254	19.4	58.6	32028	855	0.8	0.8	0.0	4.8	0.6	5.1	0.3	3.7
12	UTC	Renk RK717SSTX	231	17.1	57.2	32028	786	7.9	7.9	0.0	3.9	0.6	4.5	0.3	3.3
13	UTC	Nu-Tech 5F-510	242	20.9	58.0	32028	807	3.2	3.2	0.0	3.9	0.6	4.8	0.2	3.0
14	UTC	NK Brand N66V-3120EZ1	225	20.1	58.1	32028	752	6.7	6.7	0.0	4.4	0.5	5.0	0.2	3.3
15	UTC	Dekalb DKC62-20RIB	237	20.7	56.7	32028	791	7.5	7.5	0.0	4.7	0.6	4.6	0.2	3.2
16	UTC	Dekalb DKC65-95RIB	229	20.9	56.9	32028	762	1.2	1.2	0.0	4.6	0.6	4.9	0.2	2.3
17	Pop-up	Dekalb DKC31-10	--	--	--	--	--	--	--	--	4.4	0.5	4.3	0.2	5.6
21	Pop-up	Dekalb DKC39-27RIB	188	16.1	55.7	32028	647	3.8	3.8	0.1	4.4	0.4	4.5	0.3	3.7
25	Pop-up	DuPont Pioneer P9998AMT	240	19.2	58.3	32028	809	0.8	0.8	0.0	4.6	0.5	4.5	0.2	4.3
28	Pop-up	Renk RK717SSTX	222	18.2	58.8	32028	753	0.8	0.8	0.0	4.1	0.5	4.7	0.2	4.5
29	Pop-up	Nu-Tech 5F-510	247	21.1	58.4	32028	821	5.5	4.7	0.8	4.1	0.5	4.8	0.2	4.4
30	Pop-up	NK Brand N66V-3120EZ1	223	20.7	57.1	32028	743	9.5	9.5	0.0	3.9	0.5	4.9	0.2	4.2
31	Pop-up	Dekalb DKC62-20RIB	237	20.4	56.1	32028	794	3.5	3.5	0.0	4.3	0.5	4.2	0.2	4.6
32	Pop-up	Dekalb DKC65-95RIB	223	21.0	58.3	32028	744	1.6	1.6	0.0	4.1	0.5	5.0	0.2	4.1
33	Starter	Dekalb DKC31-10	--	--	--	--	--	--	--	--	4.5	0.6	4.9	0.2	4.8
37	Starter	Dekalb DKC39-27RIB	185	16.7	56.1	32028	631	9.1	8.7	0.4	4.3	0.5	4.9	0.2	3.7
41	Starter	DuPont Pioneer P9998AMT	252	19.7	58.1	32028	847	4.7	3.2	1.6	4.3	0.5	5.0	0.2	3.9
44	Starter	Renk RK717SSTX	220	18.5	59.0	32028	744	5.1	4.3	0.8	3.8	0.5	4.8	0.2	3.4
45	Starter	Nu-Tech 5F-510	247	21.2	57.8	32028	822	13.0	13.0	0.0	4.3	0.6	5.1	0.2	4.0
46	Starter	NK Brand N66V-3120EZ1	226	19.5	56.8	32028	760	14.6	14.6	0.0	3.5	0.5	5.3	0.3	4.4
47	Starter	Dekalb DKC62-20RIB	226	20.7	55.3	32028	755	10.2	10.2	0.0	4.1	0.6	4.7	0.2	4.2
48	Starter	Dekalb DKC65-95RIB	234	21.2	57.1	32028	777	2.0	2.0	0.0	4.5	0.6	5.1	0.3	4.4
Mean			227	19.5	57.4	32028	763	7.1	6.7	0.4	4.3	0.5	4.8	0.2	3.9
Probability(%):															
Fertilizer(F)			90.1	46.2	50.7	100.0	89.1	12.4	14.1	56.6	--	--	--	--	--
Hybrid (H)			0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	--	--	--	--	--
F x H			89.8	46.7	23.0	100.0	89.0	69.7	64.1	43.1	--	--	--	--	--
LSD(0.10):															
Fertilizer(F)			NS	NS	NS	NS	NS	NS	NS	NS	--	--	--	--	--
Hybrid (H)			11	0.6	0.8	NS	37	4.5	4.4	0.6	--	--	--	--	--
F x H			NS	NS	NS	NS	NS	NS	NS	NS	--	--	--	--	--

*AGI: Adjusted Gross Income.

-- Many plots of the same hybrid dropped.

FIELD EXPERIMENT HISTORY

Title: Corn Hybrid Response to Starter Fertilizer in Wisconsin.

Experiment: 12Fertilizer **Trial ID:** 6274 **Year:** 2018

Personnel: Joe Lauer, Thierno Diallo, Kent Kohn.

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

Supported By: HATCH, Wisconsin Fertilizer Research Program

Site Information

Field: N/A **Previous Crop:** Soybean **Soil Type:** Onaway Silt Loam

Soil Test: Date: 5 /17/18 **pH:** 6.9 **OM (%)** 2.3 **P (ppm)** 25.3 **K (ppm)** 146

Plot Management

Tillage Operations: Field Cultivator Fall Disk Chisel

Fertilizer:

	Analysis	Rate	Date
Preplant	46-0-0	152.2 lbs/A	N/A
	11-52-0	154 lbs/A	N/A
Starter	9-11-30-6S-1Zn	200 lbs/A	5/17/2018
	10-34-0	4.08 gal/A	5/17/2018
Post plant	32-0-0	221 lbs/A	N/A
Manure:	N/A	N/A	N/A

Herbicide: Roundup 30 oz/A
Capreno 4.0 oz/A
Atrazine 0.75 lb/A

Insecticide: Force 3G 4.4 lbs/A

Hybrid: Factor

Irrigation: None

Planting Date: 5/17/2018 **Planting Depth:** 1.5" **Row Width:** 30"

Target Plant Density: 32000 **plants per acre** **Planting Method:** Almaco Precision Planter

Harvest Date: 10/16/2018 **Harvest Method:** Massey 8XP

Notes:

Experimental Design

RCB in a split-plot

Replications: 3

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

Harvest Plot Size: 5' x 23' **Harvest Plant Density:** **32791 plants per acre**

Factors/Treatments:

Hybrid (RM):

1)Dekalb DKC39-27RIB (89)
2)Dekalb DKC52-68RIB (102)
3) DuPont Pioneer P9998AMT (99)
4)Jung 31DP308 (82)
5)Jung 46SS427RIB (96)
6) NK Brand N40L-3000GT (98)
7) NuTech 5F-504 (104)
8) Nu-Tech 5F-510 (109)

Fertilzer:

1). UTC
2). Pop-up: 10-34-0
3). Starter: 9-11-30-6S-1Zn

Results: Table 1812-10

Table 1812 - 10. Corn Hybrid Response to Starter Fertilizer in Wisconsin.
Seymour, 2018

Treatment			Grain	Grain	Test	Harvest	*AGI	Lodged			Plant					
number	Fertilizer	Hybrid	yield	moisture	weight	density	$3.44	Total	Stalk	Root	height	N	P	K	S	DM
			bu/A	%	lb/bu	plants/A	$/A	%	%	%	in	%	%	%	%	gr
	UTC		204	24.4	54.6	33238	665	9.8	9.6	0.2	99	--	--	--	--	--
	Pop-up		212	24.5	54.8	31628	690	9.5	9.4	0.0	102	--	--	--	--	--
	Starter		204	24.9	54.5	33506	663	7.7	7.6	0.1	99	--	--	--	--	--
		Dekalb DKC39-27RIB	190	20.0	54.9	32659	638	18.5	18.3	0.2	94	--	--	--	--	--
		Dekalb DKC52-68RIB	218	28.5	52.5	33417	694	4.3	4.3	0.0	104	--	--	--	--	--
		DuPont Pioneer P9998AMT	216	24.8	54.4	33249	703	4.5	4.3	0.2	98	--	--	--	--	--
		Jung 31DP308	174	18.7	57.9	33080	588	25.4	24.9	0.5	93	--	--	--	--	--
		Jung 46SS427RIB	216	22.5	54.5	33291	714	3.2	3.2	0.0	98	--	--	--	--	--
		NK Brand N40L-3000GT	200	24.5	53.9	32323	653	11.2	11.2	0.0	100	--	--	--	--	--
		Nu-Tech 5F-510	214	30.3	54.8	31523	672	1.0	1.0	0.0	104	--	--	--	--	--
		NuTech 5F-504	225	27.2	54.2	32786	722	3.8	3.8	0.0	108	--	--	--	--	--
1	UTC	Jung 31DP308	165	18.7	57.1	33207	557	27.9	26.8	1.1	89	3.1	0.4	4.2	0.3	9.8
5	UTC	Dekalb DKC39-27RIB	194	20.1	55.7	32449	650	16.0	15.3	0.7	94	3.1	0.4	3.8	0.3	8.2
7	UTC	Jung 46SS427RIB	212	22.3	54.9	33964	701	3.0	3.0	0.0	95	3.4	0.5	4.4	0.3	9.1
8	UTC	NK Brand N40L-3000GT	199	24.1	54.8	32954	649	19.4	19.4	0.0	101	3.3	0.5	6.1	0.3	10.5
9	UTC	DuPont Pioneer P9998AMT	214	25.1	53.4	33459	696	1.9	1.9	0.0	98	3.5	0.4	4.4	0.2	8.5
10	UTC	Dekalb DKC52-68RIB	223	27.9	52.2	33585	712	4.9	4.9	0.0	103	3.0	0.5	4.7	0.3	10.7
11	UTC	NuTech 5F-504	213	26.5	54.2	32575	685	4.3	4.3	0.0	106	3.3	0.4	3.7	0.2	9.2
13	UTC	Nu-Tech 5F-510	214	30.2	54.3	33712	674	1.1	1.1	0.0	105	3.4	0.4	4.6	0.3	8.1
17	Pop-up	Jung 31DP308	184	19.1	58.0	32828	620	19.1	18.8	0.4	95	3.0	0.6	6.0	0.3	12.1
21	Pop-up	Dekalb DKC39-27RIB	194	20.2	54.6	32449	649	21.9	21.9	0.0	96	3.9	0.5	4.7	0.3	12.1
23	Pop-up	Jung 46SS427RIB	228	22.3	55.1	31818	752	2.4	2.4	0.0	102	3.7	0.5	5.5	0.3	11.3
24	Pop-up	NK Brand N40L-3000GT	204	24.8	53.9	31060	664	10.4	10.4	0.0	103	3.2	0.4	4.8	0.3	11.9
25	Pop-up	DuPont Pioneer P9998AMT	215	24.5	54.5	32575	700	9.8	9.8	0.0	98	4.0	0.5	4.0	0.3	11.6
26	Pop-up	Dekalb DKC52-68RIB	222	28.3	52.6	33207	705	5.4	5.4	0.0	106	3.6	0.5	5.3	0.3	12.3
27	Pop-up	NuTech 5F-504	230	27.0	54.7	32323	738	4.7	4.7	0.0	108	3.6	0.5	5.9	0.3	10.5
29	Pop-up	Nu-Tech 5F-510	218	29.5	55.1	26767	689	2.0	2.0	0.0	103	3.6	0.5	5.8	0.3	10.5
33	Starter	Jung 31DP308	173	18.2	58.7	33207	588	29.0	29.0	0.0	94	3.9	0.5	4.6	0.3	8.5
37	Starter	Dekalb DKC39-27RIB	183	19.6	54.3	33080	616	17.6	17.6	0.0	92	3.3	0.5	4.4	0.3	8.3
39	Starter	Jung 46SS427RIB	209	23.0	53.6	34090	689	4.1	4.1	0.0	97	3.6	0.5	5.0	0.3	10.3
40	Starter	NK Brand N40L-3000GT	198	24.7	53.1	32954	646	3.8	3.8	0.0	97	3.4	0.4	4.6	0.3	10.2
41	Starter	DuPont Pioneer P9998AMT	219	24.8	55.2	33712	712	1.8	1.1	0.7	98	3.2	0.5	5.7	0.3	9.9
42	Starter	Dekalb DKC52-68RIB	210	29.4	52.7	33459	664	2.6	2.6	0.0	102	4.0	0.5	4.7	0.3	9.8
43	Starter	NuTech 5F-504	233	28.1	53.9	33459	742	2.3	2.3	0.0	111	3.5	0.5	4.8	0.3	9.3
45	Starter	Nu-Tech 5F-510	209	31.3	54.8	34090	652	0.0	0.0	0.0	105	4.1	0.5	4.1	0.3	10.2
Mean			207	24.6	54.6	32791	673	9.0	8.9	0.1	100	3.5	0.5	4.8	0.3	10.1
Probability(%):																
Fertilizer(F)			48.9	44.7	87.8	8.6	45.9	82.4	83.3	53.6	61.5	--	--	--	--	--
Hybrid (H)			0.0	0.0	0.0	67.4	0.0	0.0	0.0	43.5	0.0	--	--	--	--	--
F x H			83.8	91.4	41.6	43.1	88.7	73.5	68.6	61.4	57.5	--	--	--	--	--
LSD(0.10):																
Fertilizer(F)			NS	NS	NS	1393	NS	NS	NS	NS	NS	--	--	--	--	--
Hybrid (H)			11	1.1	1.0	NS	38	6.5	6.5	NS	3	--	--	--	--	--
F x H			NS	NS	NS	NS	NS	NS	NS	NS	NS	--	--	--	--	--

*AGI: Adjusted Gross Income.

FIELD EXPERIMENT HISTORY

Title: Corn Hybrid Response to Starter Fertilizer in Wisconsin.

Experiment: 12Fertilizer **Trial ID:** 6273 **Year:** 2018

Personnel: Joe Lauer, Thierno Diallo, Kent Kohn.

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

Supported By: HATCH, Wisconsin Fertilizer Research Program

Site Information

Field: N/A **Previous Crop:** Alfalfa **Soil Type:** Kewanee Clay Loam

Soil Test: Date: 10/23/2018 **pH:** 7.2 **OM (%)** 2.9 **P (ppm)** 29 **K (ppm)** 97

Plot Management

Tillage Operations: Field Cultivator Chisel Plow

Fertilizer:

	Analysis	Rate	Date
Preplant	N/A	N/A	N/A
Starter	9-11-30-6S-1Zn 10-34-0	200 lbs/A 4.08 gal/A	5/8/2017 5/8/2017
Post plant	28-0-0-5	182 lbs/A	N/A
Manure:	Dairy	10000 gal/A	N/A

Herbicide: Realm Q 4.0 oz/A
Atrazine 1.0 lb/A

Insecticide: Force 3G 4.4 lbs/A

Hybrid: Factor

Irrigation: None

Planting Date: 5/23/2018 **Planting Depth:** 1.5" **Row Width:** 30"

Target Plant Density: 32000 **plants per acre** **Planting Method:** Almaco Precision Planter

Harvest Date: 10/15/2018 **Harvest Method:** Massey 8XP

Notes:

Experimental Design

RCB in a split-plot

Replications: 3

Plot Size Seeded: 10' x 25'

Experiment Size: 0.28 Acre

Harvest Plot Size: 5' x 23'

Harvest Plant Density: 32115 plants per acre

Factors/Treatments:

Hybrid (RM):

1)Dekalb DKC39-27RIB (89)
2)Dekalb DKC52-68RIB (102)
3) DuPont Pioneer P9998AMT (99)
4)Jung 31DP308 (82)
5)Jung 46SS427RIB (96)
6) NK Brand N40L-3000GT (98)
7) NuTech 5F-504 (104)
8) Nu-Tech 5F-510 (109)

Fertilzer:

1). UTC
2). Pop-up: 10-34-0
3). Starter: 9-11-30-6S-1Zn

Results: Table 1812-11

Table 1812 - 11. Corn Hybrid Response to Starter Fertilizer in Wisconsin.
Valders, 2018

Treatment			Grain	Grain	Test	Harvest	*AGI	Lodged			Plant					
number	Fertilizer	Hybrid	yield	moisture	weight	density	$3.44	Total	Stalk	Root	height	N	P	K	S	DM
			bu/A	%	lb/bu	plants/A	$/A	%	%	%	in	%	%	%	%	gr
	Pop-up		222	24.4	54.2	31282	720	2.5	2.4	0.1	103	--	--	--	--	--
	Starter		226	24.1	54.4	32086	737	3.9	3.9	0.1	103	--	--	--	--	--
	UTC		235	24.6	54.0	32978	765	1.3	1.3	0.0	106	--	--	--	--	--
		Dekalb DKC39-27RIB	205	21.1	54.5	31688	683	4.1	4.1	0.0	101	--	--	--	--	--
		Dekalb DKC52-68RIB	249	28.0	51.8	32399	794	1.1	0.9	0.1	103	--	--	--	--	--
		DuPont Pioneer P9998AMT	237	25.3	53.3	32912	768	1.1	1.1	0.0	100	--	--	--	--	--
		Jung 31DP308	173	18.7	57.3	31397	582	8.5	8.5	0.0	100	--	--	--	--	--
		Jung 46SS427RIB	238	21.9	54.4	33417	788	1.6	1.6	0.0	102	--	--	--	--	--
		NK Brand N40L-3000GT	225	25.1	53.9	31439	731	2.0	2.0	0.0	106	--	--	--	--	--
		Nu-Tech 5F-510	247	29.3	54.4	32070	782	1.1	1.1	0.0	112	--	--	--	--	--
		NuTech 5F-504	246	25.6	54.4	31601	797	1.4	1.2	0.2	109	--	--	--	--	--
1	UTC	Jung 31DP308	187	19.2	57.1	32807	629	2.9	2.9	0.0	103	3.8	0.4	3.7	0.3	4.1
5	UTC	Dekalb DKC39-27RIB	211	21.3	53.6	33186	702	1.1	1.1	0.0	106	3.5	0.4	2.8	0.3	5.1
7	UTC	Jung 46SS427RIB	245	21.4	54.2	35353	815	1.2	1.2	0.0	105	3.8	0.4	3.4	0.4	5.3
8	UTC	NK Brand N40L-3000GT	221	26.4	53.3	30176	711	2.1	2.1	0.0	105	3.5	0.4	3.5	0.4	5.9
9	UTC	DuPont Pioneer P9998AMT	249	25.3	53.2	34722	808	0.0	0.0	0.0	102	3.5	0.4	2.8	0.4	5.6
10	UTC	Dekalb DKC52-68RIB	249	27.9	51.9	32828	794	1.2	1.2	0.0	105	3.7	0.4	2.9	0.3	4.7
11	UTC	NuTech 5F-504	252	25.7	54.7	32429	816	0.6	0.6	0.0	109	3.4	0.4	3.1	0.4	4.0
13	UTC	Nu-Tech 5F-510	266	29.3	54.4	32323	843	1.6	1.6	0.0	113	4.0	0.4	3.1	0.4	4.3
17	Pop-up	Jung 31DP308	155	18.4	56.7	31275	522	9.8	9.8	0.0	95	3.3	0.3	3.2	0.3	5.9
21	Pop-up	Dekalb DKC39-27RIB	197	20.9	55.3	29997	654	2.1	2.1	0.0	98	3.4	0.4	2.5	0.4	6.5
23	Pop-up	Jung 46SS427RIB	236	22.0	55.1	32702	782	1.5	1.5	0.0	104	3.1	0.3	2.3	0.4	4.9
24	Pop-up	NK Brand N40L-3000GT	228	25.2	54.0	31060	740	1.2	1.2	0.0	106	3.4	0.3	2.9	0.4	6.9
25	Pop-up	DuPont Pioneer P9998AMT	221	25.9	52.9	31565	716	2.0	2.0	0.0	96	3.2	0.3	2.2	0.4	4.2
26	Pop-up	Dekalb DKC52-68RIB	255	27.9	51.4	31818	813	0.4	0.4	0.0	102	4.0	0.4	2.9	0.4	6.3
27	Pop-up	NuTech 5F-504	245	26.0	53.9	30905	792	1.2	0.6	0.6	113	3.1	0.3	2.5	0.3	5.2
29	Pop-up	Nu-Tech 5F-510	235	29.4	54.5	30934	744	1.6	1.6	0.0	111	3.8	0.3	2.7	0.3	6.7
33	Starter	Jung 31DP308	176	18.4	58.1	30110	593	12.7	12.7	0.0	100	3.4	0.4	3.5	0.4	6.5
37	Starter	Dekalb DKC39-27RIB	208	21.1	54.7	31881	692	9.0	9.0	0.0	99	3.7	0.3	3.5	0.3	3.8
39	Starter	Jung 46SS427RIB	232	22.2	53.8	32197	767	2.0	2.0	0.0	97	3.2	0.3	3.6	0.4	6.3
40	Starter	NK Brand N40L-3000GT	227	23.8	54.3	33080	743	2.6	2.6	0.0	107	3.4	0.3	3.9	0.4	5.8
41	Starter	DuPont Pioneer P9998AMT	240	24.8	53.8	32449	781	1.2	1.2	0.0	103	3.5	0.3	3.2	0.4	4.3
42	Starter	Dekalb DKC52-68RIB	243	28.2	52.0	32551	774	1.6	1.2	0.4	102	3.3	0.4	3.3	0.4	6.3
43	Starter	NuTech 5F-504	241	25.0	54.5	31468	784	2.4	2.4	0.0	105	3.2	0.3	3.4	0.3	5.1
45	Starter	Nu-Tech 5F-510	240	29.4	54.3	32954	760	0.0	0.0	0.0	112	3.2	0.4	3.1	0.4	5.5
Mean			228	24.4	54.2	32115	741	2.6	2.5	0.0	104	3.5	0.4	3.1	0.4	5.4
Probability(%):																
Fertilizer(F)			21.4	64.4	75.4	11.3	22.6	10.0	10.8	58.4	32.3	--	--	--	--	--
Hybrid (H)			0.0	0.0	0.0	13.8	0.0	0.4	0.4	47.4	0.0	--	--	--	--	--
F x H			91.0	65.7	91.5	26.7	89.7	27.2	27.0	33.0	64.2	--	--	--	--	--
LSD(0.10):																
Fertilizer(F)			NS	NS	NS	NS	NS	NS	NS	NS	NS	--	--	--	--	--
Hybrid (H)			18	1.0	1.1	NS	60	2.5	2.5	NS	5	--	--	--	--	--
F x H			NS	NS	NS	NS	NS	NS	NS	NS	NS	--	--	--	--	--

*AGI: Adjusted Gross Income.

Table 1812 - 12. Corn Hybrid Response to Starter Fertilizer in Wisconsin - Soil analysis.

Arlington, 2018

Location	OM			pH			P			K		
	%	CV	STDDEV	%	CV	STDDEV	%	CV	STDDEV	%	CV	STDDEV
Arlington, WI	3.48	4.33	0.15	6.25	1.57	0.10	36.50	18.32	6.68	106.17	11.78	12.50
Chippewa Falls, WI	2.52	2.91	0.07	6.34	1.53	0.09	33.54	15.97	5.35	146.30	27.21	39.81
Coleman, WI	1.30	2.51	0.03	5.97	1.11	0.06	56.50	4.84	2.73	131.77	9.06	11.94
Fond du Lac, WI	2.52	6.67	0.16	6.51	4.64	0.30	20.93	22.36	4.68	109.60	6.29	6.89
Galesville, WI	3.21	2.25	0.07	5.23	5.03	0.26	26.97	17.24	4.64	148.60	8.11	12.05
Hancock, WI	0.95	9.06	0.08	5.71	0.62	0.03	61.84	5.17	3.19	105.50	12.38	13.06
Janesville, WI	3.01	1.17	0.03	6.00	1.21	0.07	28.83	19.86	5.72	92.80	16.20	15.03
Marshfield, WI	2.79	5.23	0.14	6.14	4.00	0.24	30.40	16.67	5.06	84.97	17.06	14.49
Montfort, WI	2.94	2.47	0.07	6.84	3.75	0.25	40.84	2.18	0.89	161.73	1.95	3.14
Seymour, WI	2.26	15.36	0.34	6.91	1.75	0.12	25.31	19.95	5.05	146.40	5.94	8.69
Valders, WI	2.95	5.36	0.15	7.24	0.29	0.02	28.93	19.56	5.66	97.13	8.92	8.66
Overall STD			0.76			0.57			13.12			29.00

Table: 1812-13. Hybrid Maturity - Corn Leaf Development. Arlington, WI - 2018.

Hybrid	Observation date	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
Dairyland DS9686		11.6	12.0	13.8	64.3
Dekalb DKC31-10		12.4	13.8	14.7	62.4
Dekalb DKC39-27RIB		11.9	11.7	13.8	61.7
Dekalb DKC52-68RIB		11.6	11.7	13.8	63.7
Dekalb DKC62-20RIB		11.0	11.4	13.2	65.3
Dekalb DKC65-95RIB		11.5	15.4	14.0	61.1
DuPont Pioneer P9998AMT		10.9	11.2	13.1	64.7
Jung 31DP308		12.3	13.4	14.5	59.7
Jung 46SS427RIB		11.4	11.7	13.6	64.0
Munson 4877-3010		11.6	11.9	14.0	65.2
NK Brand N27P-3110A		11.2	11.2	13.3	62.3
NK Brand N40L-3000GT		11.5	13.1	14.1	61.8
NK Brand N66V-3120EZ1		11.8	12.3	14.3	68.1
Nu-Tech 5F-510		11.2	12.2	13.5	63.3
NuTech 5F-504		11.3	11.5	13.5	67.1
Renk RK717SSTX		10.9	11.7	13.1	63.3
	149	4.5	5.4	6.1	9.4
	163	6.5	8.8	10.2	26.9
	176	10.3	13.1	14.9	62.7
	190	16.9	15.9	18.3	105.8
	204	19.3	18.1	19.3	113.3
Dairyland DS9686	149	4.7	5.7	6.2	9.0
Dekalb DKC31-10	149	5.0	6.7	7.0	9.3
Dekalb DKC39-27RIB	149	4.5	5.2	6.0	10.8
Dekalb DKC52-68RIB	149	4.5	5.3	6.3	10.1
Dekalb DKC62-20RIB	149	4.5	5.0	5.5	9.0
Dekalb DKC65-95RIB	149	4.5	5.2	6.2	9.0
DuPont Pioneer P9998AMT	149	4.3	5.2	6.0	8.5
Jung 31DP308	149	4.7	6.0	6.7	9.7
Jung 46SS427RIB	149	4.7	5.3	6.2	9.8
Munson 4877-3010	149	4.5	5.3	6.2	9.8
NK Brand N27P-3110A	149	4.3	4.5	5.2	9.0
NK Brand N40L-3000GT	149	4.5	5.5	6.2	7.8
NK Brand N66V-3120EZ1	149	4.8	6.0	6.7	10.3
Nu-Tech 5F-510	149	4.3	5.5	6.2	9.7
NuTech 5F-504	149	4.3	5.2	6.2	10.0
Renk RK717SSTX	149	4.3	4.8	5.5	8.7

Continued

Table: 1812-13. Hybrid Maturity - Corn Leaf Development.
(continued) **Arlington, WI - 2018.**

Hybrid	Observation date	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
Dairyland DS9686	163	6.5	9.3	10.3	26.3
Dekalb DKC31-10	163	7.0	10.5	12.0	30.0
Dekalb DKC39-27RIB	163	7.0	8.7	10.3	27.7
Dekalb DKC52-68RIB	163	6.5	8.7	9.8	26.3
Dekalb DKC62-20RIB	163	6.2	8.2	9.5	26.5
Dekalb DKC65-95RIB	163	6.3	9.0	10.2	23.5
DuPont Pioneer P9998AMT	163	6.3	7.8	9.7	26.7
Jung 31DP308	163	7.2	9.3	11.2	25.8
Jung 46SS427RIB	163	6.3	8.7	10.0	30.2
Munson 4877-3010	163	6.5	9.0	10.5	26.3
NK Brand N27P-3110A	163	6.2	8.3	9.7	24.5
NK Brand N40L-3000GT	163	6.3	9.3	10.5	24.2
NK Brand N66V-3120EZ1	163	6.8	9.2	10.5	28.5
Nu-Tech 5F-510	163	6.0	8.8	9.7	26.2
NuTech 5F-504	163	6.3	7.8	10.0	29.7
Renk RK717SSTX	163	6.2	8.3	9.8	27.5
Dairyland DS9686	176	10.5	13.3	15.2	65.0
Dekalb DKC31-10	176	12.3	15.7	17.0	68.7
Dekalb DKC39-27RIB	176	11.0	13.2	15.2	61.7
Dekalb DKC52-68RIB	176	10.2	12.8	14.7	62.0
Dekalb DKC62-20RIB	176	9.2	12.2	14.0	64.2
Dekalb DKC65-95RIB	176	9.8	12.8	14.8	55.2
DuPont Pioneer P9998AMT	176	9.7	12.2	14.3	62.8
Jung 31DP308	176	11.7	14.2	16.7	65.0
Jung 46SS427RIB	176	10.0	13.3	15.0	63.8
Munson 4877-3010	176	10.3	13.0	15.0	64.2
NK Brand N27P-3110A	176	9.8	12.3	13.7	58.0
NK Brand N40L-3000GT	176	10.2	14.3	15.3	58.0
NK Brand N66V-3120EZ1	176	10.0	13.0	15.0	66.2
Nu-Tech 5F-510	176	9.8	12.8	14.3	59.7
NuTech 5F-504	176	10.0	12.2	14.2	68.3
Renk RK717SSTX	176	9.7	12.5	14.2	60.7
Dairyland DS9686	190	17.3	15.7	18.7	109.5
Dekalb DKC31-10	190	18.7	18.7	18.7	102.8
Dekalb DKC39-27RIB	190	18.2	15.5	18.5	102.2
Dekalb DKC52-68RIB	190	17.0	15.3	18.5	105.8
Dekalb DKC62-20RIB	190	15.7	15.0	17.7	107.2
Dekalb DKC65-95RIB	190	16.5	15.8	18.7	100.8
DuPont Pioneer P9998AMT	190	15.8	15.0	17.0	109.2
Jung 31DP308	190	18.8	18.8	18.8	100.3

Continued

Table: 1812-13. Hybrid Maturity - Corn Leaf Development.
(continued) **Arlington, WI - 2018.**

Hybrid	Observation date	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
Jung 46SS427RIB	190	17.2	15.5	18.2	104.5
Munson 4877-3010	190	17.5	15.7	19.0	110.5
NK Brand N27P-3110A	190	16.0	14.8	18.0	103.8
NK Brand N40L-3000GT	190	17.0	17.3	18.7	107.3
NK Brand N66V-3120EZ1	190	16.5	14.3	18.7	111.7
Nu-Tech 5F-510	190	16.0	15.7	17.7	103.5
NuTech 5F-504	190	16.3	15.5	17.8	106.8
Renk RK717SSTX	190	15.8	15.8	17.7	106.5
Dairyland DS9686	204	18.8	16.2	18.8	111.5
Dekalb DKC31-10	204	18.8	17.5	18.8	101.2
Dekalb DKC39-27RIB	204	19.0	15.8	19.0	106.2
Dekalb DKC52-68RIB	204	19.7	16.5	19.7	114.0
Dekalb DKC62-20RIB	204	19.3	16.5	19.3	119.5
Dekalb DKC65-95RIB	204	20.2	34.0	20.2	116.8
DuPont Pioneer P9998AMT	204	18.3	15.7	18.3	116.3
Jung 31DP308	204	19.0	18.8	19.0	97.7
Jung 46SS427RIB	204	18.7	15.8	18.7	111.5
Munson 4877-3010	204	19.3	16.5	19.3	115.2
NK Brand N27P-3110A	204	19.8	15.8	19.8	116.2
NK Brand N40L-3000GT	204	19.7	19.2	19.7	111.5
NK Brand N66V-3120EZ1	204	20.7	18.8	20.7	123.7
Nu-Tech 5F-510	204	19.7	18.2	19.7	117.5
NuTech 5F-504	204	19.5	16.8	19.5	120.5
Renk RK717SSTX	204	18.5	16.8	18.5	113.0
Mean		11.5	12.3	13.8	63.6
Probability(%)					
Hybrid(H)		0.0	6.2	0.0	0.0
Sample DOY (S)		0.0	0.0	0.0	0.0
H x S		0.0	40.4	0.0	0.0
LSD(0.10)					
Hybrid(H)		0.3	2.1	0.3	1.8
Sample DOY (S)		0.2	1.2	0.2	1.0
H x S		0.7	NS	0.7	4.0

FIELD EXPERIMENT HISTORY

Title: **Reduced Phosphore Rates and Additive Effects**

Experiment: 12Fertilizer **Trial ID:** 6329 **Year:** 2018

Personnel: Joe Lauer, Thierno Diallo, Kent Kohn

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

Supported By: Rosen

Site Information

Field: ARS 374 **Previous Crop:** Soybean **Soil Type:** Plano Silt Loam

Soil Test:Date: 11/12/18 **pH:** 6.6 **OM (%)** 2.8 **P (ppm)** 31 **K (ppm)** 107

Plot Management

Tillage Operations: Spring Field Cultivator 5/16/18

Fertilizer:	**Preplant Analysis:**	46-0-0	**ProductRate lbs/A**	325	**Date:**	5/16/18
	Starter Analysis:	N/A	**Product Rate lbs/A:**	N/A	**Date:**	N/A
	Post plant Analysis:	N/A	**Product Rate lbs/A:**	N/A	**Date:**	N/A
	Manure:	N/A	**Product Rate lbs/A**	N/A	**Date:**	N/A

Herbicide: 2.4D Low Vol 4 @ 16 oz/A 5/8/18
Tomahawk 5 @ 32 oz/A 5/8/18
Tomahawk 5 @ 32 oz/A 6/12/18
Laudis @ 3 oz/A 6/12/18

Insecticide: N/A

Hybrid: Jung 53SS517RIB

Irrigation: None

Planting Date: 5/18/2018 **Planting Depth:** 1.5" **Row Width** 30"

Target Plant Density: 35000 **plants per acre** **Planting Method:** JD1700 w RTK

Harvest Date: 10/24/18 **Harvest Method:** MF 8XP

Experimental Design

Design: RCB **Replications:** 4

Plot Size Seeded: 10' x 50' **Experiment Size:** 0.5 A

Harvest Plot Size: 5' x 50' **Harvest Plant Density:** 33107 **plants per acre**

Factors/Treatments:

Treatment

1) Check @ 0 lbs P /A NA
2) MAP @ 150 lbs/A Preplant
3) MAP @ 100 lbs/A Preplant
4) MAP @ 50 lbs/A Preplant
5) MAP @ 150 lbs/A Preplant + DEV UMP @ 3 qt/ton Preplant
6) MAP @ 100 lbs/A Preplant + DEV UMP @ 3 qt/ton Preplant
7) MAP @ 50 lbs/A Preplant + DEV UMP @ 3 qt/ton Preplant

Results: Table 1812-14

Table:1812-14 .Reduced Phosphore Rates and Additive Effects in corn.
Arlington, WI - 2018.

Treatment	Yield	Moisture	Test weight	Lodged			Harvest density	AGI $3.44/bu
				Total	Root	Stalk		
	bu/A	%	lbs/bu	%	%	%	plants/A	$/A
1) Check @ 0 lbs P /A NA	200	24.9	52.8	1.5	0.0	1.5	33250	606
2) MAP @ 150 lbs/A Preplant	230	23.0	53.9	3.8	0.7	3.0	33750	704
3) MAP @ 100 lbs/A Preplant	224	23.7	53.9	2.3	0.8	1.6	32750	682
4) MAP @ 50 lbs/A Preplant	212	23.7	54.0	0.0	0.0	0.0	34000	647
5) MAP @ 150 lbs/A Preplant + DEV UMP @ 3 qt/ton Preplant	227	24.1	53.5	2.2	2.2	0.0	32750	691
6) MAP @ 100 lbs/A Preplant + DEV UMP @ 3 qt/ton Preplant	216	24.0	53.0	2.4	1.6	0.8	32500	658
7) MAP @ 50 lbs/A Preplant + DEV UMP @ 3 qt/ton Preplant	211	23.4	53.6	7.6	0.7	6.8	32750	644
Mean	217	23.8	53.5	2.8	0.9	2.0	33107	662
Probability(%)								
Treatment (T)	0.0	5.8	34.7	12.6	64.2	1.1	78.6	0.0
LSD(0.10)								
Treatment (T)	9	0.9	NS	NS	NS	3.0	NS	29

***AGI - Adjusted Gross Income.**

FIELD EXPERIMENT HISTORY

Title: Sweet Corn Stand Reduction

Experiment: 16Sweet **Trial ID:** 6256 **Year:** 2018

Personnel: Joe Lauer, Thierno Diallo, Kent Kohn.

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

Supported By: HATCH, National Crop Insurance Services.

Site Information

Field: ARS 373 **Previous Crop:** Soybean **Soil Type:** Plano Silt Loam

Soil Test Date: 11/12/18 **pH:** 7.0 **OM (%):** 2.6 **P (ppm):** 15 **K (ppm):** 109

Plot Management

Tillage Operations: Field Cultivator

		Analysis:	Product Rate lbs/A:	Date:
Fertilizer:	**Preplant :**	46-0-0	240	5 /16/18
	Starter :	N/A	N/A	N/A
	Post plant :	N/A	N/A	N/A
	Manure:	N/A	N/A	N/A

Herbicide: 2.4D @ 16 oz/A 5/8/18
Tomahawk @ 32 oz/A 5/8/18
Laudis 3.0 oz/A 6/29/18
Accent Q 1.5 oz/A 6/29/18

Insecticide: N/A

Hybrid: Syngenta - Overland

Irrigation: N/A

Planting Date: 5/18/18 **Planting Depth:** 1.5" **Row Width:** 30"

Target Plant Density: 27000 plants per acre **Planting Method:** JD1700 w RTK

Harvest Date: 8/16/18 **Harvest Method:** Hand Harvest

Notes:

Experimental Design

Design: RCB 3 x 4 Factorial **Replications** 4

Plot Size Seeded: 10' x 25' **Experiment Size:** 0.5 A

Harvest Plot Size: 5' x 17.4' **Harvest Plant Density:** 18933 **plants per acre**

Factors/Treatments:

Stand reduction or Leaf removal @ stage:

1) 0% @ 5 leaf stage (approximately V3 stage by collar method)
2) 25% @ 5 leaf stage (approximately V3 stage by collar method)
3) 50% @ 5 leaf stage (approximately V3 stage by collar method)
4) 75% @ 5 leaf stage (approximately V3 stage by collar method)
5) Leaf removal of 50% @ 5 leaf stage (approximately V3 stage by collar method)
6) 0% @ 10 leaf stage (approximately V8 stage by collar method)
7) 25% @ 10 leaf stage (approximately V8 stage by collar method)
8) 50% @ 10 leaf stage (approximately V8 stage by collar method)
9) 75% @ 10 leaf stage (approximately V8 stage by collar method)
10) Leaf removal of 50% @ 10 leaf stage (approximately V8 stage by collar method)
11) 0% @ 15 leaf stage (approximately V13 stage by collar method)
12) 25% @ 15 leaf stage (approximately V13 stage by collar method)
13) 50% @ 15 leaf stage (approximately V13 stage by collar method)
14) 75% @ 15 leaf stage (approximately V13 stage by collar method)
15) Leaf removal of 50% @ 15 leaf stage (approximately V13 stage by collar method)

Results: Table 1816-01

Table:1816-01. Influence of Sweet Corn Stand Reduction on Yield.
Arlington, WI - 2018.

Thin time	Thin percent	Main Unhusked ear yield	Secondary Unhusked ear yield	5-ear Unhusked yield	5-ear Husked yield	Cut grain moisture	Fresh grain yield	Dry grain yield	Tiller number	Tiller hight	Silking day of year	Plant hight	Harvest density
	%	T/A	T/A	T/A	T/A	%	T/A	T/A	no.	in	DOY	in	plants/A
V3		7.9	1.4	9.2	6.4	78.5	4.1	0.9	16	32	200	72	18700
V8		7.8	0.9	8.7	6.4	78.6	4.2	0.9	8	27	199	71	18800
V13		7.2	0.6	7.8	5.9	79.0	3.6	0.8	6	20	200	72	19049
	0	9.5	0.1	9.6	7.8	78.6	4.9	1.0	7	21	200	75	27250
	25	8.6	0.3	9.0	7.1	78.4	4.4	1.0	9	23	199	74	21250
	50	6.5	1.0	7.4	5.2	78.6	3.5	0.7	13	22	200	71	14500
	75	3.5	2.6	6.0	2.8	79.0	1.8	0.4	10	41	199	69	7417
	L50	10.1	0.8	10.9	8.3	78.9	5.4	1.1	11	24	200	71	23832
V3	0	9.4	0.1	9.6	7.7	78.0	4.9	1.1	11	24	200	74	26750
V3	25	8.9	0.5	9.4	7.5	78.0	4.7	1.0	12	25	200	74	22000
V3	50	7.6	1.4	9.0	6.1	78.7	4.1	0.9	23	27	200	71	16250
V3	75	3.8	3.5	7.3	3.1	79.5	2.0	0.4	19	57	200	72	7750
V3	L50	9.5	1.3	10.8	7.5	78.4	5.0	1.1	15	29	200	69	20750
V8	0	10.1	0.2	10.2	8.3	78.7	5.4	1.1	7	18	200	76	27750
V8	25	8.9	0.1	9.0	7.3	78.1	4.6	1.0	8	24	199	74	21750
V8	50	6.0	1.1	7.1	4.9	78.6	3.2	0.7	8	27	199	69	13250
V8	75	3.5	2.9	6.4	2.9	78.9	1.9	0.4	7	46	199	67	7500
V8	L50	10.6	0.4	11.0	8.8	78.7	5.8	1.2	11	20	200	70	23750
V13	0	8.9	0.1	9.0	7.4	79.1	4.3	0.9	4	22	200	74	27250
V13	25	8.1	0.4	8.6	6.5	79.1	4.1	0.8	9	21	199	73	20000
V13	50	5.7	0.5	6.2	4.7	78.6	3.1	0.7	7	13	200	73	14000
V13	75	3.1	1.3	4.4	2.4	78.7	1.5	0.3	4	20	200	67	7000
V13	L50	10.3	0.6	11.0	8.6	79.6	5.3	1.1	7	22	199	73	26995
Mean		7.6	1.0	8.6	6.2	78.7	4.0	0.9	10	26	200	72	18850
Probability(%)													
Thin time (T)		9.6	0.1	0.1	10.8	13.9	1.0	0.3	0.0	0.0	19.4	57.9	82.4
Thin percent (P)		0.0	0.0	0.0	0.0	35.2	0.0	0.0	4.9	0.0	45.3	0.0	0.0
T x P		22.9	1.3	8.6	12.6	34.7	18.8	32.1	4.0	0.1	60.6	3.2	0.2
LSD (0.10)													
Thin time (T)		0.5	0.3	0.6	0.5	NS	0.3	0.1	2	4	NS	NS	NS
Thin percent (P)		0.7	0.4	0.8	0.6	NS	0.4	0.1	3	6	NS	2	1240
T x P		NS	0.7	1.3	NS	NS	NS	NS	5	10	NS	3	2147

FIELD EXPERIMENT HISTORY

Title: **Tillage in Corn and Soybean Production Systems**

Experiment: 17Tillage **Trial ID:** 6257 **Year:** 2018

Personnel: J. G. Lauer, T. H. Diallo, K. D. Kohn

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

Supported By: HATCH

Site Information

Field: 396 **Previous Crop:** Corn / Soybean **Soil Type:** Plano Silt Loam

Soil Test: **Date:** 11/12/18 **pH** 6.9 **OM (%)** 3.7 **P (ppm)** 60 **K (ppm)** 186

Plot Management

Tillage Operations: See Factors

		Analysis:	Product Rate lbs/A:	Date:
Fertilizer:	**Preplant :**	0-0-60	125 lb/A	4 /30/18
	Starter :	9-23-31 0-0-62	160 lb/A 140 lb/A	5/818 5/8/18
	Post plant :	28-0-0	CC: 678 CS: 571	6/6/18 6/6/18
	Manure:	N/A	N/A	N/A

Herbicide: Medal II EC 24 oz/A 4/27/18
Tomahawk 5 @ 22 oz/A 4/27/18
Tomahawk 5 @ 22 oz/A 6/7/18

Hybrid/Variety: C: SS: Dekalb DKC55-84RIB
S: RR: Syngenta NK Brand S20-T6

Irrigation: NO

Row Width: 30"

Planting Date: C: 5/8/18
S: 4/30/18

Planting Depth: C: 1.5"
S: 1"

Planting Method: JD1700 w RTK

Harvest Method: C: MF 8XP plot combine
S: Almaco plot combine

Target Plant Density: 35000 **Plants/Acre**

Harvest Date: C: 10/23/18
S: 10/16/18

Notes: T2 and T3 were similar as well as T4 and T5 in 2016

Experimental Design

Design: RCB Split-plot

Replications: 4

Plot Size Seeded: 10' x 50'

Experiment Size: 3.6 A

Harvest Plot Size: 5' x 46'

Factors/Treatments:

Rotation

1) CC
2) CS

Tillage:

1) Rotational tillage: NT with fertilizer surface broadcast (2016)
2) T1: Strip-Till with fertilizer banded. Soybean planted to 15-inch rows.
3) T2: Strip-Till with fertilizer banded. Soybean planted to 30-inch rows.
4) T3: Strip-Till with fertilizer surface broadcast. Soybean planted to 15-inch rows.
5) T4: Strip-Till with fertilizer surface broadcast. Soybean planted to 30-inch rows.
6) NT: Spring one 13-wave coulter with trash whippers on planter; with fertilizer surface broadcast

Fungicide:

1) S1 - UTC
2) S2 - 4 fl oz/a Priaxor in-furrow

Results: Tables 1817-01 & 1817-02

Table:1817- 01 .Tillage in Corn and Soybean Production Systems - Corn
Arlington, WI - 2018.

Rotation	Tillage	Fungicide	Yield	Moisture	Test weight	Lodged			Harvest density	AGI
						Total	Stalk	Root		$3.44/bu
			bu/A	%	lbs/bu	%	%	%	plants/A	$/A
CC			206	25.6	51.4	4.1	1.9	2.1	33583	621
SC			221	23.0	52.8	4.4	3.6	0.9	33563	677
	NT		209	23.9	52.6	5.6	3.1	2.6	34313	635
	RT		199	25.2	51.7	3.1	2.8	0.4	32313	601
	T1		217	23.8	52.1	4.5	3.1	1.4	34063	660
	T2		225	24.1	52.0	2.4	0.9	1.5	33688	684
	T3		220	24.7	52.2	4.6	2.8	1.8	33500	665
	T4		214	24.0	52.1	5.2	3.9	1.3	33563	652
		Priaxor	215	24.4	52.0	3.7	2.4	1.3	33500	652
		UTC	213	24.1	52.2	4.8	3.1	1.7	33646	646
CC	NT		201	25.1	51.9	2.6	0.7	1.9	33500	606
CC	RT		190	26.4	50.8	3.9	3.1	0.7	32750	570
CC	T1		211	25.3	51.2	4.0	1.5	2.5	34125	636
CC	T2		217	25.6	51.4	4.0	1.1	2.9	33750	651
CC	T3		215	25.4	51.8	5.5	2.2	3.2	33625	648
CC	T4		205	25.4	51.6	4.4	2.9	1.5	33750	616
SC	NT		216	22.7	53.4	8.7	5.4	3.3	35125	664
SC	RT		208	23.9	52.6	2.4	2.4	0.0	31875	631
SC	T1		222	22.2	53.1	5.1	4.7	0.3	34000	684
SC	T2		234	22.5	52.5	0.7	0.7	0.0	33625	717
SC	T3		224	24.0	52.7	3.7	3.3	0.4	33375	682
SC	T4		224	22.6	52.7	6.0	4.8	1.1	33375	688
CC		Priaxor	205	25.9	51.3	4.1	1.9	2.2	33083	616
CC		UTC	208	25.2	51.5	4.1	2.0	2.1	34083	626
SC		Priaxor	225	23.0	52.8	3.4	3.0	0.4	33917	689
SC		UTC	218	23.0	52.9	5.5	4.1	1.3	33208	666
	NT	Priaxor	206	24.1	52.3	3.2	2.1	1.1	35000	625
	NT	UTC	212	23.7	52.9	8.1	4.0	4.0	33625	645
	RT	Priaxor	200	25.4	51.7	1.6	1.2	0.4	31750	604
	RT	UTC	198	25.0	51.7	4.7	4.3	0.4	32875	597
	T1	Priaxor	221	23.5	52.3	3.9	2.1	1.8	33875	673
	T1	UTC	213	24.0	52.0	5.1	4.0	1.1	34250	646
	T2	Priaxor	226	24.3	51.6	2.5	1.4	1.1	33750	686
	T2	UTC	224	23.9	52.3	2.2	0.4	1.9	33625	682
	T3	Priaxor	223	25.1	52.1	5.2	2.6	2.5	32875	672
	T3	UTC	217	24.2	52.4	4.0	2.9	1.1	34125	658
	T4	Priaxor	216	24.2	52.3	6.0	5.2	0.8	33750	655
	T4	UTC	213	23.8	52.0	4.4	2.6	1.8	33375	648
CC	NT	Priaxor	200	25.1	51.6	2.3	0.0	2.3	33750	603
CC	NT	UTC	202	25.2	52.1	2.9	1.5	1.5	33250	609
CC	RT	Priaxor	185	26.9	50.8	3.1	2.4	0.8	31750	551
CC	RT	UTC	196	26.0	50.7	4.6	3.9	0.7	33750	588

continue

Table:1817- 01 .Tillage in Corn and Soybean Production Systems - Corn
(continued) **Arlington, WI - 2018.**

Rotation	Tillage	Fungicide	Yield	Moisture	Test weight	Lodged			Harvest density	AGI $3.44/bu
						Total	Root	Stalk		
			bu/A	%	lbs/bu	%	%	%	plants/A	$/A
CC	T1	Priaxor	214	25.0	51.2	4.4	1.5	2.9	33250	645
CC	T1	UTC	208	25.6	51.2	3.6	1.5	2.1	35000	626
CC	T2	Priaxor	213	26.2	50.9	3.6	1.4	2.2	33250	637
CC	T2	UTC	220	25.1	52.0	4.5	0.8	3.7	34250	665
CC	T3	Priaxor	214	26.2	51.8	6.5	2.3	4.3	32750	642
CC	T3	UTC	216	24.6	51.8	4.4	2.2	2.2	34500	654
CC	T4	Priaxor	205	26.0	51.6	4.4	3.6	0.8	33750	616
CC	T4	UTC	204	24.9	51.5	4.4	2.2	2.2	33750	616
SC	NT	Priaxor	211	23.0	53.1	4.1	4.1	0.0	36250	646
SC	NT	UTC	222	22.3	53.7	13.2	6.6	6.6	34000	681
SC	RT	Priaxor	216	23.9	52.6	0.0	0.0	0.0	31750	657
SC	RT	UTC	199	24.0	52.7	4.8	4.8	0.0	32000	605
SC	T1	Priaxor	228	22.1	53.3	3.5	2.8	0.7	34500	700
SC	T1	UTC	217	22.3	52.8	6.6	6.6	0.0	33500	667
SC	T2	Priaxor	239	22.4	52.3	1.4	1.4	0.0	34250	735
SC	T2	UTC	228	22.7	52.7	0.0	0.0	0.0	33000	698
SC	T3	Priaxor	231	24.1	52.4	3.8	3.0	0.8	33000	702
SC	T3	UTC	218	23.9	53.0	3.7	3.7	0.0	33750	662
SC	T4	Priaxor	226	22.4	52.9	7.5	6.7	0.8	33750	695
SC	T4	UTC	222	22.7	52.5	4.5	3.0	1.5	33000	680
Mean			214	24.3	52.1	4.2	2.7	1.5	33573	649
Probability(%)										
Rotation (R)			13.3	2.7	0.5	90.3	43.1	27.8	95.6	6.7
Tillage (T)			0.0	2.3	16.2	76.4	53.5	71.7	4.4	0.0
Fungicide (F)			21.7	10.7	21.1	39.6	43.4	57.0	66.9	32.1
R x T			88.5	42.5	53.4	48.5	48.3	55.6	43.6	83.4
R x F			1.5	12.1	75.2	39.8	53.3	46.4	1.6	1.1
T x F			46.5	58.7	24.5	60.9	30.9	61.2	24.0	45.8
R x T x F			15.0	47.6	76.7	76.6	86.3	55.4	95.9	12.5
LSD(0.10)										
Rotation (R)			NS	1.5	0.4	NS	NS	NS	NS	47
Tillage (T)			8	0.8	NS	NS	NS	NS	1025	25
Fungicide (F)			NS	NS	NS	NS	NS	NS	NS	NS
R x T			NS	NS	NS	NS	NS	NS	NS	NS
R x F			10	NS	NS	NS	NS	NS	817	29
T x F			NS	NS	NS	NS	NS	NS	NS	NS
R x T x F			NS	NS	NS	NS	NS	NS	NS	NS

Table:1817- 02 .Tillage, Rotation and Planting Density in Corn and Soybean - Soybean . Arlington, WI - 2018.

Tillage treatment	Fungicide	Yield	Moisture	*AGI $8.48/bu
		bu/A	%	$/A
NT		70	12.4	581
RT		67	12.2	552
T1		79	12.4	652
T2		73	12.4	600
T3		74	12.4	612
T4		71	12.4	585
	Priaxor	73	12.4	602
	UTC	72	12.4	592
NT	Priaxor	70	12.5	579
NT	UTC	71	12.4	582
RT	Priaxor	67	12.2	551
RT	UTC	67	12.2	552
T1	Priaxor	81	12.5	670
T1	UTC	77	12.4	635
T2	Priaxor	73	12.4	604
T2	UTC	72	12.3	597
T3	Priaxor	75	12.4	621
T3	UTC	73	12.5	604
T4	Priaxor	71	12.5	587
T4	UTC	71	12.4	583
Mean		72	12.4	597
Probability(%)				
Tillage (T)		0.0	2.2	0.0
Fungicide (F)		19.4	22.6	19.4
T x F		70.6	90.7	70.6
LSD(0.10)				
Tillage (T)		3	0.1	22
Fungicide (F)		NS	NS	NS
T x F		NS	NS	NS

*AGI - Adjusted Gross Income

In 2016, for Reps 1 and 3, T1/T2 was applied to T3/T4; and T3/T4 to T1/T2.

FIELD EXPERIMENT HISTORY

Title: **Multi-factor effects for continuous and rotated corn**

Experiment: 19Systems **Trial ID:** 6258 **Year:** 2018

Personnel: J.G. Lauer, T. Diallo and K.D. Kohn

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

Supported By: HATCH

Site Information

Field: ARS:336 **Previous Crop:** See factors **Soil Type:** Plano Silt Loam

Soil Test: **Date:** 11/12/18 **pH:** 6.2 **OM (%)** 3 **P (ppm)** 16 **K (ppm)** 136

Plot Management

Tillage Operations: CT & NT Field cultivator (CT only)

Fertilizer:

	Analysis:	Rate lbs/A:	Date:
Preplant :	N/A	N/A	N/A
Starter :	N/A	N/A	N/A
Post plant :	28-0-0	See factors	6 /12/18
Manure:	N/A	N/A	N/A

Herbicide: Medal II EC @ 24 oz/a 4/27/18
Tomahawk 5 @ 22 oz/A 4/27/18
Tomahawk 5 @ 22 oz/A 6/7/18

Insecticide: N/A

Hybrid: 1) RR: P9998AMXT
2) SS:Jung 53SS517RIB
3) Soybean: Asgrow AG20X7

Irrigation: None

Planting Date: C: 5/718
S: 5/18/18

Planting Depth: 1.5"

Target Plant Density: See Factors

Row Width: 30"

Planting Method: JD1700 w RTK

Harvest Date: C: 10/22/18

Notes: S: 10/24/18

Harvest Method: C: MF 8XP Combine
S: Almaco combine

Experimental Design

Design: FracRep: split-split-plot

Replications: 1

Plot Size Seeded: MP: 10' x 35'

Experiment Size: 1.2

Harvest Plot Size: C & S : 5' x 31

Harvest Plant Density: See Factors

Factors/Treatments:

Tillage:

1) No-Till
2) Conventional

Nitrogen Rate:

1)- 160 lbs/A
2) - 210 lbs/A

Fungicide:

1) - UTC
2) - Headline

Rotation:

1) - CC
2) - CS

Plant Density:

1-35000 Plants/A
2-45000 Plants/A

Genotype:

1- RR: P9998AMXT
2- SS:Jung 53SS517RIB

Results: Table 1819-01

Table: 1819-01 . Multi-factor effects on continuous and rotated corn.
Arlington, WI - 2018.

Tillage	Rotation	Genotype	Plant Density	N rate	Fungicide	Grain yield	Grain moisture	Test weight	Lodged Total	Lodged Stalk	Lodged Root	Harvest density	*AGI $3.44/bu
			plants/A	lbs/A		bu/A	%	lbs	%	%	%	plants/A	$
					Headline	211	24.1	55.9	1.2	0.3	0.9	33348	642
					UTC	211	24.3	56.4	1.3	0.0	1.3	33199	640
				160		200	24.3	56.1	1.5	0.1	1.4	33449	609
				160	Headline	200	24.3	55.9	1.6	0.2	1.4	33438	606
				160	UTC	201	24.3	56.3	1.5	0.0	1.5	33460	612
				210		222	24.2	56.3	1.0	0.2	0.8	33098	674
				210	Headline	223	24.0	56.0	0.8	0.4	0.4	33258	678
				210	UTC	220	24.3	56.5	1.1	0.0	1.1	32938	669
			35000			209	24.0	56.5	1.1	0.3	0.8	31449	634
			35000		Headline	209	24.1	56.3	1.0	0.6	0.5	31500	636
			35000		UTC	208	24.0	56.6	1.2	0.0	1.1	31397	633
			35000	160		199	24.3	56.4	1.6	0.2	1.4	32022	604
			35000	210		218	23.7	56.6	0.6	0.4	0.2	30875	665
			45000			214	24.4	55.9	1.4	0.0	1.4	35098	648
			45000		Headline	213	24.2	55.6	1.3	0.0	1.3	35195	648
			45000		UTC	214	24.6	56.3	1.5	0.0	1.5	35000	648
			45000	160		202	24.3	55.8	1.5	0.0	1.5	34875	613
			45000	210		225	24.6	56.0	1.3	0.0	1.3	35320	683
		P9998AMXT (RR)				212	22.4	56.7	1.5	0.0	1.5	32949	650
		P9998AMXT (RR)			Headline	209	22.4	56.4	1.5	0.0	1.5	32813	643
		P9998AMXT (RR)			UTC	214	22.3	57.0	1.5	0.0	1.5	33085	658
		P9998AMXT (RR)		160		201	22.6	56.7	1.7	0.0	1.7	33647	616
		P9998AMXT (RR)		210		222	22.1	56.7	1.2	0.0	1.2	32250	684
		P9998AMXT (RR)	35000			209	22.0	57.2	1.0	0.0	1.0	30710	643
		P9998AMXT (RR)	45000			214	22.7	56.2	1.9	0.0	1.9	35188	658
		Jung 53SS517RIB (SS)				211	26.1	55.7	1.0	0.3	0.7	33598	632
		Jung 53SS517RIB (SS)			Headline	213	25.9	55.5	0.9	0.6	0.3	33883	641
		Jung 53SS517RIB (SS)			UTC	208	26.2	55.8	1.1	0.0	1.1	33313	623
		Jung 53SS517RIB (SS)		160		200	26.0	55.5	1.3	0.2	1.1	33250	601
		Jung 53SS517RIB (SS)		210		221	26.2	55.8	0.7	0.4	0.3	33945	663
		Jung 53SS517RIB (SS)	35000			209	26.1	55.7	1.2	0.6	0.6	32188	626
		Jung 53SS517RIB (SS)	45000			213	26.1	55.6	0.8	0.0	0.9	35008	638
	CC					211	24.2	56.2	1.1	0.2	0.8	32917	642
	CC				Headline	211	23.9	56.3	1.2	0.4	0.8	32625	642
	CC				UTC	212	24.5	56.2	0.9	0.0	0.8	33210	642
	CC			160		202	24.0	56.3	1.4	0.0	1.3	32397	613
	CC			210		221	24.4	56.1	0.7	0.4	0.3	33438	671
	CC		35000			209	23.7	56.5	1.0	0.4	0.6	31210	637
	CC		45000			214	24.6	55.9	1.1	0.0	1.1	34625	647
	CC	P9998AMXT (RR)				214	22.1	56.9	1.0	0.0	0.9	32522	660
	CC	Jung 53SS517RIB (SS)				208	26.2	55.5	1.1	0.4	0.7	33313	624

continue

Table: 1819-01 . Multi-factor effects on continuous and rotated corn.
(continued) **Arlington, WI - 2018.**

Tillage	Rotation	Genotype	Plant Density	N rate	Fungicide	Grain yield	Grain moisture	Test weight	Lodged			Harvest density	*AGI
									Total	Stalk	Root		$3.44/bu
			plants/A	lbs/A		bu/A	%	lbs	%	%	%	plants/A	$
	CS					211	24.3	56.2	1.4	0.1	1.4	33629	640
	CS				Headline	212	24.4	55.6	1.1	0.2	1.0	34070	642
	CS				UTC	210	24.1	56.7	1.7	0.0	1.7	33188	639
	CS			160		199	24.6	55.9	1.7	0.2	1.5	34500	604
	CS			210		222	23.9	56.4	1.2	0.0	1.2	32758	676
	CS		35000			208	24.3	56.4	1.2	0.2	1.0	31688	632
	CS		45000			214	24.2	55.9	1.7	0.0	1.7	35570	648
	CS	P9998AMXT (RR)				209	22.6	56.4	2.0	0.0	2.0	33375	640
	CS	Jung 53SS517RIB (SS)				213	25.9	55.9	0.9	0.2	0.7	33883	640
CT						219	23.3	57.1	1.2	0.0	1.2	32579	670
CT					Headline	219	23.4	56.7	1.0	0.0	1.0	32170	668
CT					UTC	220	23.3	57.4	1.4	0.0	1.3	32987	671
CT				160		211	23.4	56.9	1.8	0.0	1.8	32425	644
CT				210		227	23.3	57.2	0.6	0.0	0.6	32732	695
CT			35000			216	23.1	57.4	1.1	0.0	1.1	31112	661
CT			45000			223	23.6	56.8	1.3	0.0	1.3	34045	678
CT		P9998AMXT (RR)				219	21.3	57.5	1.3	0.0	1.2	31737	679
CT		Jung 53SS517RIB (SS)				219	25.4	56.6	1.1	0.0	1.1	33420	660
CT	CC					219	23.2	57.0	1.1	0.0	1.0	32612	670
CT	CS					219	23.5	57.1	1.3	0.0	1.3	32545	669
NT						203	25.1	55.3	1.3	0.3	1.0	33967	613
NT					Headline	204	24.9	55.2	1.3	0.6	0.8	34525	615
NT					UTC	202	25.3	55.4	1.2	0.0	1.2	33410	610
NT				160		190	25.2	55.3	1.2	0.2	1.0	34472	573
NT				210		216	25.0	55.3	1.4	0.4	1.0	33463	652
NT			35000			201	24.9	55.6	1.1	0.6	0.5	31785	608
NT			45000			205	25.2	55.0	1.5	0.0	1.5	36150	617
NT		P9998AMXT (RR)				204	23.4	55.8	1.7	0.0	1.7	34160	622
NT		Jung 53SS517RIB (SS)				202	26.8	54.7	0.9	0.6	0.3	33775	604
NT	CC					204	25.2	55.4	1.1	0.4	0.6	33222	614
NT	CS					202	25.0	55.2	1.5	0.1	1.4	34713	611
Mean						211	24.2	56.2	1.2	0.2	1.1	33273	641

continue

Table: 1819-01 . Multi-factor effects on continuous and rotated corn.
(continued) **Arlington, WI - 2018.**

Tillage	Rotation	Genotype	Plant Density	N rate	Fungicide	Grain yield	Grain moisture	Test weight	Lodged			Harvest density	*AGI
									Total	Stalk	Root		$3.44/bu
			plants/A	lbs/A		bu/A	%	lbs	%	%	%	plants/A	$
Probability(%)													
Fungicide						93.5	61.2	20.6	82.7	16.8	45.4	75.6	90.9
Genotype						83.4	0.0	0.7	39.2	16.8	15.0	18.0	12.4
Genotype*Fungicide						19.2	53.7	64.2	83.6	12.2	42.3	38.9	18.0
Genotype*NRate						96.6	26.6	69.5	92.0	51.5	72.6	3.6	82.7
Genotype*PD						84.9	23.7	25.1	30.6	16.3	54.2	9.3	91.6
NRate						0.0	62.8	64.8	33.7	64.1	22.2	46.6	0.0
NRate*Fungicide						56.4	70.7	98.2	74.4	51.5	55.0	72.5	53.8
PD						19.8	17.6	13.2	61.1	10.9	25.1	0.0	25.9
PD*Fungicide						85.3	37.9	54.1	97.5	16.3	62.9	92.5	93.6
PD*NRate						57.8	13.4	96.1	47.5	62.0	33.5	10.6	69.9
Rotation						89.1	78.5	89.8	50.7	48.6	32.6	14.3	86.5
Rotation*Fungicide						78.0	9.5	13.7	42.7	62.0	49.0	13.6	89.5
Rotation*Genotype						17.8	16.9	23.1	25.7	62.0	28.8	77.1	14.3
Rotation*NRate						67.7	5.7	43.6	92.0	16.3	53.0	0.6	53.7
Rotation*PD						91.1	7.2	93.1	66.4	51.5	81.2	63.2	78.1
Tillage						0.0	0.0	0.0	87.3	17.6	74.5	0.5	0.0
Tillage*Fungicide						76.9	37.4	50.4	71.4	16.8	91.3	4.9	71.7
Tillage*Genotype						86.8	18.5	79.5	54.6	16.8	24.3	3.5	97.6
Tillage*NRate						20.9	77.2	73.0	23.9	64.1	26.2	17.4	22.1
Tillage*PD						71.7	75.5	96.0	93.0	10.9	48.9	14.0	72.8
Tillage*Rotation						84.5	41.1	67.9	87.0	48.6	66.3	10.9	91.8
LSD(0.10)													
Fungicide						NS	NS	NS	NS	NS	NS	NS	NS
Genotype						NS	0.5	0.6	NS	NS	NS	NS	NS
Genotype*Fungicide						NS	NS	NS	NS	NS	NS	1137	NS
Genotype*NRate						NS	NS	NS	NS	NS	NS	1137	NS
Genotype*PD						NS	NS	NS	NS	NS	NS	1137	NS
NRate						6	NS	NS	NS	NS	NS	NS	NS
NRate*Fungicide						NS	NS	NS	NS	NS	NS	NS	NS
PD						NS	NS	NS	NS	NS	NS	801	NS
PD*Fungicide						NS	NS	NS	NS	NS	NS	NS	NS
PD*NRate						NS	NS	NS	NS	NS	NS	NS	NS
Rotation						NS	NS	NS	NS	NS	NS	NS	NS
Rotation*Fungicide						NS	0.7	NS	NS	NS	NS	NS	NS
Rotation*Genotype						NS	NS	NS	NS	NS	NS	NS	NS
Rotation*NRate						NS	0.7	NS	NS	NS	NS	1137	NS
Rotation*PD						NS	0.7	NS	NS	NS	NS	NS	NS
Tillage						6	0.5	0.6	NS	NS	NS	786	19
Tillage*Fungicide						NS	NS	NS	NS	NS	NS	1126	NS
Tillage*Genotype						NS	NS	NS	NS	NS	NS	1126	NS
Tillage*NRate						NS	NS	NS	NS	NS	NS	NS	NS
Tillage*PD						NS	NS	NS	NS	NS	NS	NS	NS
Tillage*Rotation						NS	NS	NS	NS	NS	NS	NS	NS

*AGI: Adjusted Gross Income

FIELD EXPERIMENT HISTORY

Title: **Multi-factor effects for continuous corn**

Experiment: 19Systems **Trial ID:** 6259 **Year:** 2018

Personnel: J.G. Lauer, T. Diallo and K.D. Kohn

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

Supported By: HATCH

Site Information

Field: ARS336 **Previous Crop:** See factors **Soil Type:** Plano Silt Loam

Soil Test: **Date:** 11/12/18 **pH:** 6.2 **OM (%)** 3 **P (ppm)** 16 **K (ppm)** 136

Plot Management

Tillage Operations: CT & NT Field cultivator (CT only)

Fertilizer:	Analysis:	Rate lbs/A:	Date:
Preplant :	N/A	N/A	N/A
Starter :	N/A	N/A	N/A
Post plant :	28-0-0	See factors	6 /12/18
Manure:	N/A	N/A	N/A

Herbicide: Medal II EC @ 24 oz/a 4/27/18
Tomahawk 5 @ 22 oz/A 4/27/18
Tomahawk 5 @ 22 oz/A 6/7/18

Insecticide: N/A

Hybrid: 1) RR: P9998AMXT
2) SS:Jung 53SS517RIB

Irrigation: None

Planting Date: C: 5/7/18

Planting Depth: 1.5"

Row Width: 30"

Target Plant Density: See Factors

Planting Method: JD1700 w RTK

Harvest Date: C: 10/22/18

Harvest Method: MF 8XP combine

Notes:

Experimental Design

Design: FracRep: split-split-plot

Replications: 1

Plot Size Seeded: MP: 10' x 35'

Experiment Size: 0.5 Ac

Harvest Plot Size: 5' x 31

Harvest Plant Density: See Factors

Factors/Treatments:

Tillage:

1) No-Till
2) Conventional

Nitrogen Rate:

1)- 160 lbs/A
2) - 210 lbs/A

Fungicide:

1) - UTC
2) - Headline

Micro Nutrients:

1) - UTC
2) - Smart trio

Plant Density:

1-35000 Plants/A
2-45000 Plants/A

Genotype:

1- RR: P9998AMXT
2- SS:Jung 53SS517RIB

Results: Table 1819-02

Table: 1819-02 . Multi-factor effects on continuous corn.
Arlington, WI - 2018

Tillage	Genotype	Plant Density	N rate	Micro Mix	Fungicide	Grain yield	Grain moisture	Test weight	Lodged			Harvest density	AGI
									Total	Stalk	Root		$3.44/bu
		plants/A	lbs/A			bu/A	%	lbs	%	%	%	plants/A	$
					Headline	207	24.8	55.0	1.0	0.2	0.8	35182	627
					UTC	212	24.4	54.8	0.4	0.0	0.3	35099	643
				UTC		209	24.3	55.1	0.7	0.3	0.3	35211	633
				UTC	Headline	205	24.5	55.1	0.7	0.7	0.1	35826	623
				UTC	UTC	212	24.0	55.1	0.6	0.0	0.6	34596	644
				Smart Trio		211	24.9	54.7	0.7	-0.1	0.8	35070	637
				Smart Trio	Headline	209	25.0	55.0	1.3	-0.2	1.5	34539	632
				Smart Trio	UTC	212	24.8	54.4	0.1	0.0	0.1	35602	642
			160			199	24.6	55.2	0.7	0.0	0.7	34836	603
			160		Headline	195	24.8	55.2	0.8	0.0	0.8	34451	590
			160		UTC	203	24.4	55.2	0.6	0.0	0.6	35221	617
			160	UTC		197	24.2	55.5	0.7	0.0	0.7	34922	600
			160	Smart Trio		201	24.9	54.9	0.7	0.0	0.7	34750	607
			210			220	24.6	54.7	0.7	0.3	0.5	35445	667
			210		Headline	220	24.8	54.9	1.3	0.5	0.8	35914	664
			210		UTC	221	24.5	54.4	0.1	0.0	0.1	34977	669
			210	UTC		220	24.3	54.8	0.6	0.6	0.0	35500	667
			210	Smart Trio		221	24.9	54.5	0.8	-0.1	0.9	35391	667
		35000				212	24.4	55.2	0.4	0.0	0.3	32523	644
		35000			Headline	211	24.9	55.6	0.8	0.0	0.8	31951	639
		35000			UTC	213	23.9	54.8	-0.1	0.0	-0.1	33096	649
		35000		UTC		212	24.2	55.4	0.0	0.0	0.0	32547	644
		35000		Smart Trio		212	24.5	55.0	0.7	0.0	0.7	32500	644
		35000	160			204	24.1	55.1	0.0	0.0	0.0	32047	620
		35000	210			220	24.6	55.3	0.7	0.0	0.7	33000	668
		45000				207	24.8	54.6	1.0	0.3	0.8	37758	626
		45000			Headline	203	24.7	54.5	1.2	0.5	0.8	38414	615
		45000			UTC	211	24.9	54.8	0.8	0.0	0.8	37102	637
		45000		UTC		205	24.3	54.9	1.3	0.6	0.7	37875	622
		45000		Smart Trio		209	25.3	54.4	0.7	-0.1	0.9	37641	630
		45000	160			194	25.0	55.2	1.4	0.0	1.4	37625	587
		45000	210			220	24.6	54.1	0.7	0.5	0.2	37891	665
	P9998AMXT (RR)					209	22.7	55.3	0.8	0.0	0.8	35211	640
	P9998AMXT (RR)				Headline	206	23.0	55.6	1.1	0.0	1.1	34951	631
	P9998AMXT (RR)				UTC	211	22.5	54.9	0.6	0.0	0.6	35471	649
	P9998AMXT (RR)			UTC		208	22.0	55.3	0.7	0.0	0.7	35672	641
	P9998AMXT (RR)			Smart Trio		209	23.4	55.2	1.0	0.0	1.0	34750	638
	P9998AMXT (RR)		160			196	23.0	55.8	1.4	0.0	1.3	34922	600
	P9998AMXT (RR)		210			221	22.4	54.8	0.3	0.0	0.3	35500	679
	P9998AMXT (RR)	35000				214	22.2	55.8	0.0	0.0	0.0	32422	658
	P9998AMXT (RR)	45000				203	23.3	54.7	1.7	0.0	1.7	38000	621

continue

Table: 1819-02 . Multi-factor effects on continuous corn.
(continued) **Arlington, WI - 2018**

Tillage	Genotype	Plant Density	N rate	Micro Mix	Fungicide	Grain yield	Grain moisture	Test weight	Lodged			Harvest density	AGI $3.44/bu
									Total	Stalk	Root		
		plants/A	lbs/A			bu/A	%	lbs	%	%	%	plants/A	$
	Jung 53SS517RIB (SS)					211	26.4	54.6	0.6	0.3	0.3	35070	631
	Jung 53SS517RIB (SS)				Headline	208	26.5	54.5	1.0	0.5	0.5	35414	623
	Jung 53SS517RIB (SS)				UTC	213	26.3	54.6	0.1	0.0	0.1	34727	638
	Jung 53SS517RIB (SS)			UTC		209	26.5	55.0	0.6	0.6	0.0	34750	625
	Jung 53SS517RIB (SS)			Smart Trio		212	26.4	54.2	0.5	-0.1	0.6	35391	636
	Jung 53SS517RIB (SS)		160			202	26.1	54.6	0.0	0.0	0.0	34750	607
	Jung 53SS517RIB (SS)		210			219	26.8	54.6	1.1	0.5	0.6	35391	654
	Jung 53SS517RIB (SS)	35000				211	26.6	54.6	0.7	0.0	0.7	32625	630
	Jung 53SS517RIB (SS)	45000				211	26.3	54.6	0.4	0.5	-0.1	37516	631
CT						215	23.5	55.9	0.7	0.2	0.5	35182	657
CT					Headline	214	23.7	56.1	1.4	0.5	0.9	35240	652
CT					UTC	217	23.4	55.6	0.0	0.0	0.0	35125	661
CT				UTC		211	23.3	56.3	0.7	0.7	0.1	35201	645
CT				Smart Trio		219	23.8	55.5	0.6	-0.2	0.8	35164	668
CT			160			206	23.2	55.9	0.1	0.0	0.1	34076	629
CT			210			225	23.8	55.9	1.3	0.5	0.8	36289	684
CT		35000				219	23.2	56.1	0.8	0.0	0.8	31951	670
CT		45000				211	23.8	55.7	0.6	0.5	0.1	38414	643
CT	P9998AMXT (RR)					211	21.5	56.3	0.4	0.0	0.4	35701	652
CT	Jung 53SS517RIB (SS)					220	25.6	55.5	1.0	0.5	0.5	34664	661
NT						204	25.6	54.0	0.7	0.0	0.7	35099	613
NT					Headline	200	25.9	54.0	0.7	0.0	0.7	35125	602
NT					UTC	207	25.4	54.0	0.7	0.1	0.7	35073	625
NT				UTC		206	25.2	54.0	0.6	0.0	0.6	35221	621
NT				Smart Trio		202	26.1	53.9	0.8	0.0	0.8	34977	606
NT			160			192	25.9	54.5	1.2	0.0	1.2	35596	578
NT			210			215	25.4	53.5	0.1	0.0	0.1	34602	649
NT		35000				205	25.5	54.3	-0.1	0.0	-0.1	33096	618
NT		45000				203	25.8	53.6	1.5	0.0	1.5	37102	609
NT	P9998AMXT (RR)					206	24.0	54.2	1.2	0.0	1.2	34721	627
NT	Jung 53SS517RIB (SS)					202	27.3	53.7	0.1	0.0	0.1	35477	600
Mean						210	24.6	54.9	0.7	0.1	0.6	35141	635

Table: 1819-02 . Multi-factor effects on continuous corn.
(continued) **Arlington, WI - 2018**

Tillage	Genotype	Plant Density	N rate	Micro Mix	Fungicide	Grain yield	Grain moisture	Test weight	Lodged Total	Lodged Stalk	Lodged Root	Harvest density	AGI $3.44/bu
		plants/A	lbs/A			bu/A	%	lbs	%	%	%	plants/A	$
Mean						210	24.6	54.9	0.7	0.1	0.6	35141	635
Probability(%)													
Fungicide						22.3	54.4	66.9	17.3	39.8	18.1	91.2	21.9
Genotype						58.9	0.0	28.3	56.3	35.5	13.8	85.6	48.9
Genotype*Fungicide						94.7	80.8	57.4	79.3	42.0	81.9	44.8	89.0
Genotype*Micro						74.0	22.2	61.4	62.0	16.6	72.9	33.0	58.7
Genotype*NRate						32.8	28.2	44.6	4.7	31.6	3.4	96.8	25.2
Genotype*PD						19.6	26.1	42.3	5.2	31.6	0.1	66.5	15.9
Micro						59.4	28.2	49.7	87.8	13.1	17.8	85.6	77.4
Micro*Fungicide						69.3	90.5	63.8	33.3	11.6	1.6	15.9	69.3
NRate						0.0	93.1	40.2	93.4	35.5	56.5	43.4	0.0
NRate*Fungicide						36.2	93.7	72.5	36.7	42.0	48.4	28.8	40.2
NRate*Micro						77.3	98.0	83.3	87.9	16.6	21.1	96.8	76.8
PD						20.2	46.4	35.9	18.3	35.5	21.6	0.0	18.2
PD*Fungicide						44.3	30.4	40.4	56.6	42.0	16.3	13.2	61.6
PD*Micro						62.6	59.2	91.4	19.2	16.6	39.6	90.6	74.2
PD*NRate						28.0	44.2	31.3	17.1	31.6	1.2	66.5	26.5
Tillage						0.8	0.2	0.4	99.9	39.8	52.6	91.2	0.3
Tillage*Fungicide						61.4	92.2	69.7	16.7	31.6	21.1	96.8	63.1
Tillage*Genotype						11.7	53.8	82.2	12.3	42.0	10.4	26.6	18.6
Tillage*Micro						14.5	77.7	56.1	72.4	11.6	48.4	89.5	16.1
Tillage*NRate						61.4	39.2	44.5	3.5	42.0	1.6	5.4	54.4
Tillage*PD						48.3	85.1	80.1	6.8	42.0	0.3	13.2	47.8
LSD(0.10)													
Fungicide						NS	NS	NS	NS	NS	NS	NS	NS
Genotype						NS	1.0	NS	NS	NS	NS	NS	NS
Genotype*Fungicide						NS	NS	NS	NS	NS	NS	NS	NS
Genotype*Micro						NS	NS	NS	NS	NS	NS	NS	NS
Genotype*NRate						NS	NS	NS	1.2	NS	0.8	NS	NS
Genotype*PD						NS	NS	NS	1.2	NS	0.8	NS	NS
Micro						NS	NS	NS	NS	NS	NS	NS	NS
Micro*Fungicide						NS	NS	NS	NS	NS	0.8	NS	NS
NRate						7	NS	NS	NS	NS	NS	NS	22
NRate*Fungicide						NS	NS	NS	NS	NS	NS	NS	NS
NRate*Micro						NS	NS	NS	NS	NS	NS	NS	NS
PD						NS	NS	NS	NS	NS	NS	1321	NS
PD*Fungicide						NS	NS	NS	NS	NS	NS	NS	NS
PD*Micro						NS	NS	NS	NS	NS	NS	NS	NS
PD*NRate						NS	NS	NS	NS	NS	0.8	NS	NS
Tillage						7	1.0	1.0	NS	NS	NS	NS	22
Tillage*Fungicide						NS	NS	NS	NS	NS	NS	NS	NS
Tillage*Genotype						NS	NS	NS	NS	NS	NS	NS	NS
Tillage*Micro						NS	NS	NS	NS	NS	NS	NS	NS
Tillage*NRate						NS	NS	NS	1.2	NS	0.8	1868	NS
Tillage*PD						NS	NS	NS	1.2	NS	0.8	NS	NS

*AGI: Adjusted Gross Income

Printing for Spine of Book

2018 Annual Research Report – Lauer, Kohn, and Diallo