

2021
Wisconsin Research Report of

**STUDIES ON
CULTURAL PRACTICES AND
MANAGEMENT SYSTEMS FOR
CORN**

Department of Agronomy
College of Agriculture and Life Sciences
University of Wisconsin - Madison

2021 Wisconsin Research Report of Studies on Cultural Practices and Management Systems for Corn

Joe Lauer
Corn Agronomist
358 Moore Hall
(608) 263-7438

jlauer@wisc.edu

<http://corn.agronomy.wisc.edu>

Kent Kohn
Program Manager
566 Moore Hall
(608) 262-1840

kdkohn@wisc.edu

Thierno Diallo
Research Specialist
566 Moore Hall
(608) 262-1840

thdiallo@wisc.edu

Agronomy Department
University of Wisconsin
1575 Linden Drive
Madison, WI 53706
(608) 262-1390

The information presented in this report is for the purpose of informing cooperators in industry of the results of research conducted during 2021. 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 This information is **NOT FOR PUBLICATION** unless prior approval is received.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

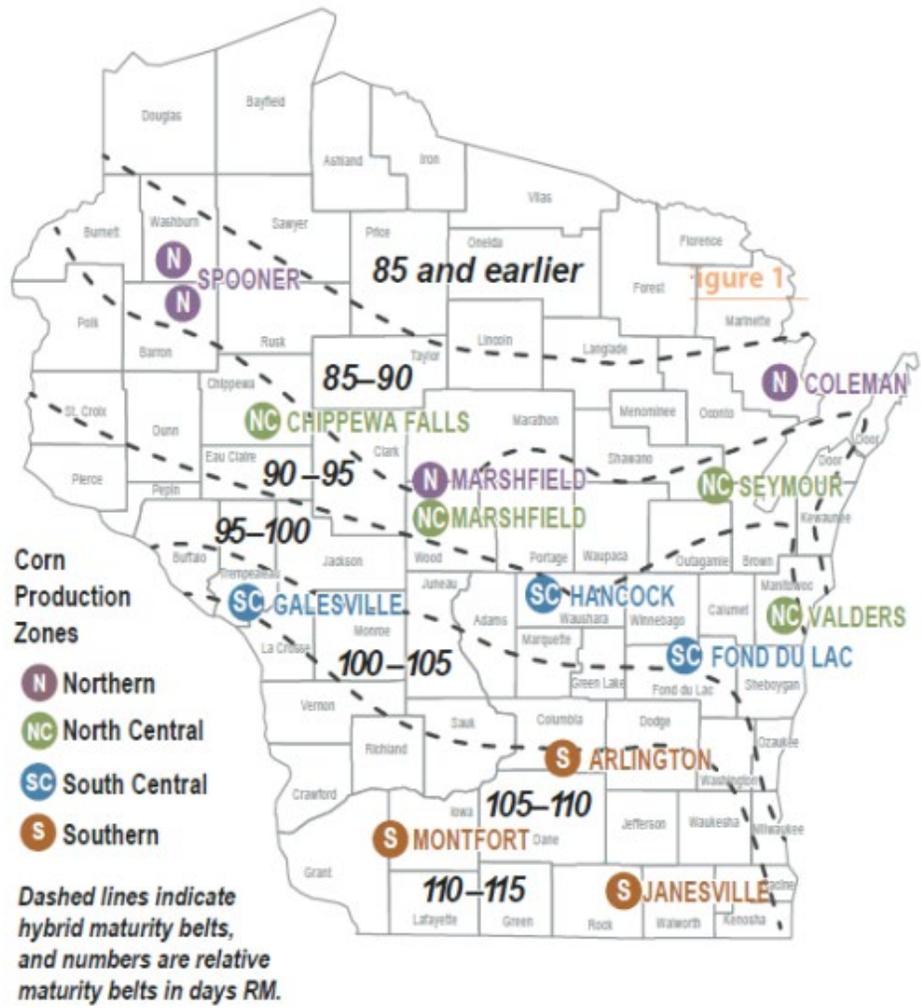
Cooperating UWEX County Agents and ARS Staff: Jerry Clark, Mike Bertram, Arin Crooks, Paul Sytsma, and John Zander

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

Cooperating Academic Staff: John Gaska and Adam Roth

Project Crew: Brock Huffar and Moussa Diallo

Wisconsin Corn
Agronomy Research Sites



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
- AgriGold Seeds
- Dairyland Seeds
- FS InVision
- Jung Seed Genetics
- Legend Seeds
- Monsanto
- National Crop Insurance Services

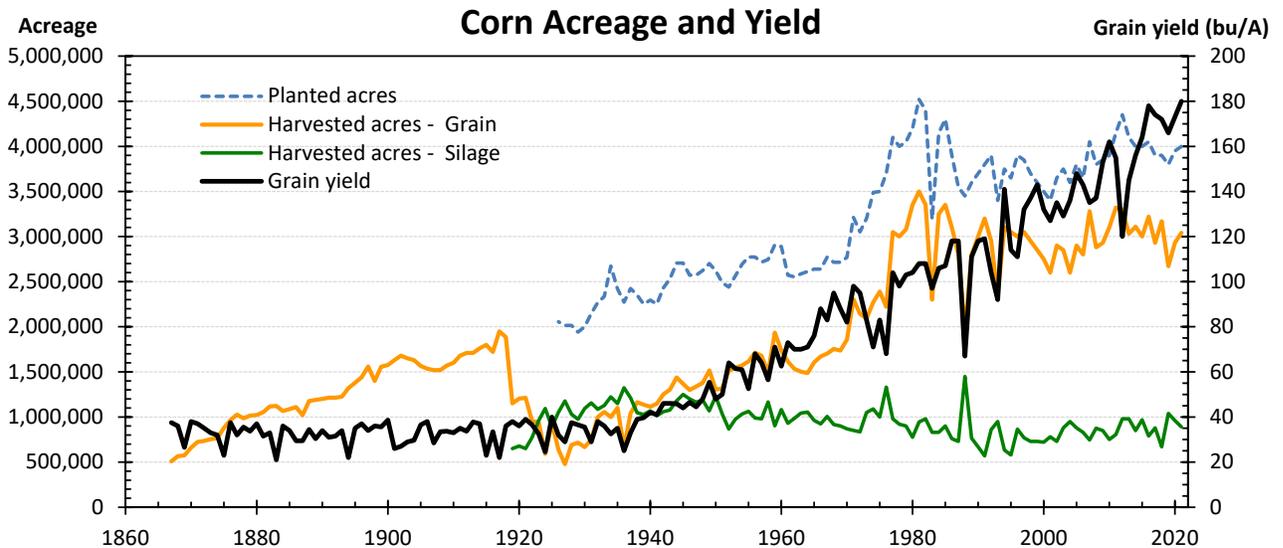
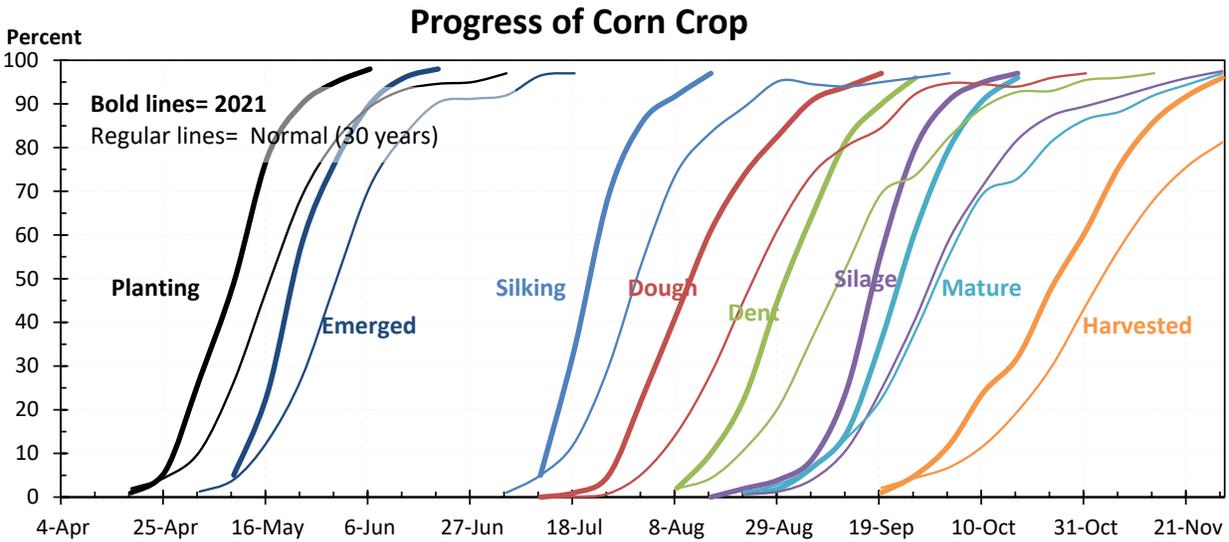
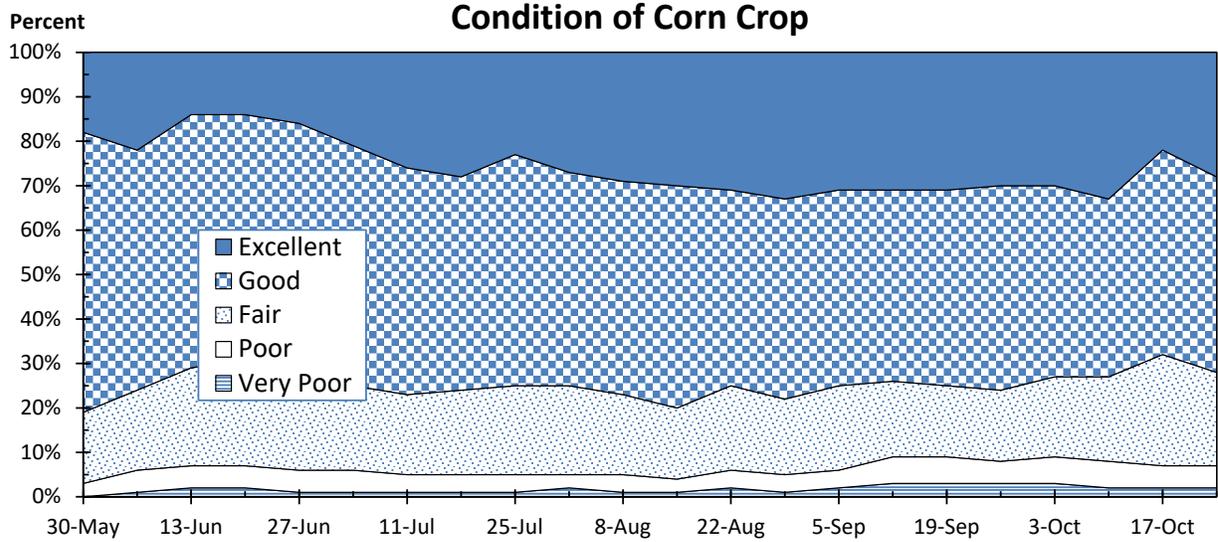
- ProHarvest Seeds
- Renk Seed
- SARE - Sustainable Agriculture Research and Education Grant
- Stine Seeds
- Syngenta Seeds
- Wisconsin Corn Growers Association
- Wisconsin Fertilizer Research Council
- Wyffels Hybrids

TABLE OF CONTENTS

	Location	Experiment	Page	Table
Growing Conditions and Measurements				
2021 Crop Summary			1	
2021 Weather Summary	Arlington		5	
Arlington Monthly Rainfall 1992-2021	Arlington		7	A-1
Arlington Monthly Temperatures 1992-2021	Arlington		8	A-2
2021 Weather Summary	Marshfield		9	
Marshfield Monthly Rainfall 1992-2021	Marshfield		11	A-3
Marshfield Monthly Temperatures 1992-2021	Marshfield		12	A-4
Observations, Data Collected, and Statistical			13	B-1
Soils Information			15	B-2
<u>Corn Hybrid Maturity</u>				
Hybrid Growth and Development	Arlington		16	2101-01,02
	Marshfield		22	2101-03
<u>Private Silage</u>				
Silage – Yield Data	Arlington	01	24	2101-04
	Chippewa Falls	01	26	2101-05
	Fond du Lac	01	28	2101-06
	Galesville	01	30	2101-07
	Marshfield	01	32	2101-08
	Montfort	01	34	2101-09
	Valders	01	36	2101-10
<u>Private Grain</u>				
SARE Farmer Rancher Grant Corn Variety Trial	Seymour	01	38	2101-11
<u>Plant Density</u>				
Grain - Yield Data	Arlington	02	40	2102-01
Silage - Yield Data	Arlington	02	42	2102-02
Grain - Yield Data	Chippewa Falls	02	43	2102-03
Grain - Yield Data	Coleman	02	45	2102-04
Grain - Yield Data	Fond du Lac	02	47	2102-05
Grain - Yield Data	Galesville	02	49	2102-06
Grain - Yield Data	Hancock	02	51	2102-07
Grain - Yield Data	Janesville	02	53	2102-08
Grain - Yield Data	Marshfield	02	55	2102-09
Silage - Yield Data	Marshfield	02	57	2102-10
Grain - Yield Data	Montfort	02	58	2102-11
Grain - Yield Data	Seymour	02	60	2102-12
Grain - Yield Data	Valders	02	62	2102-13
<u>Plant Density-Stine Seeds</u>			64	2102-14

	Location	Experiment	Page	Table
<u>Planting Date</u>				
Grain - Yield Data	Arlington	03	66	2103-01
Silage - Yield Data	Arlington	03	68	2103-02
Corn Leaf Development	Arlington	03	70	2103-03
<u>Row Spacing x Plant Density – Stine Seeds</u>				
Grain and Silage – Yield Data	Arlington	06	74	2106-01
<u>Corn – Alfalfa Rotation</u>				
Corn – Yield Data	Arlington	09	77	2109-01
Alfalfa – Yield Data	Arlington	09	79	2109-02
Silage – Yield Data	Arlington	09	80	2109-03
Corn – Yield Data	Marshfield	09	81	2109-04
Alfalfa – Yield Data	Marshfield	09	83	2109-05
Silage – Yield Data	Marshfield	09	84	2109-06
<u>Corn - Soybean Rotation</u>				
Corn – Yield Data	Arlington	09	85	2109-07
Soybean – Yield Data	Arlington	09	89	2109-08
<u>Corn-Soybean-Wheat Rotation Study</u>				
Corn – Yield Data	Arlington	09	90	2109-09
Silage – Yield Data	Arlington	09	93	2109-10
Soybean – Yield Data	Arlington	09	94	2109-11
Wheat – Yield Data	Arlington	09	95	2109-12
Corn – Yield Data	Marshfield	09	96	2109-13
Silage – Yield Data	Marshfield	09	98	2109-14
Soybean – Yield Data	Marshfield	09	99	2109-15
Wheat – Yield Data	Marshfield	09	100	2109-16
Corn – Yield Data	Lancaster	09	101	2109-17
Soybean – Yield Data	Lancaster	09	104	2109-18
Wheat – Yield Data	Lancaster	09	105	2109-19
Oats – Yield Data	Lancaster	09	106	2109-20
Alfalfa – Yield Data	Lancaster	09	107	2109-21
<u>Sweet Corn Stand Reduction</u>				
National Crop Insurance Services	Arlington	16	108	2116-01
<u>Tillage in Corn and Soybean Production Systems</u>				
Corn – Yield Data	Arlington	17	110	2117-01
Soybean – Yield Data	Arlington	17	113	2117-02
<u>Systems</u>				
Corn-Soybean Rotation	Arlington	19	114	2119-01
Continuous Corn	Arlington	19	118	2119-02

2021 Corn Crop Summary for Wisconsin



Crop Progress Review of 2021

Derived from USDA-NASS report at:

https://www.nass.usda.gov/Statistics_by_State/Wisconsin/Publications/Crop_Progress_&_Condition/

Winter conditions were typical with no unusual freeze damage reported for either winter wheat or alfalfa forage. Topsoil moisture was rated just 4 percent surplus on April 4, 2021, compared to 38 percent surplus on April 5, 2020. Days suitable for fieldwork averaged 4.6 in April 2021 compared to 4.0 days in April 2020. The warm dry spring weather meant crops were planted ahead of normal, while winter wheat and hay fields benefited from early emergence. Spring tillage reached 48 percent complete on April 25, almost 2 weeks ahead of average. By April 25, both west central and southeast Wisconsin showed over one-third of the topsoil moisture as short to very short. After the early warmth, crop progress stayed ahead of average for the rest of the growing season. Statewide crop conditions were mostly lower than the previous year due to poor conditions in areas affected by drought. Generally warm and dry weather gave good access to fields and also helped dry crops down for harvest. By August 15 winter wheat harvest was 96 percent complete, almost a week ahead of the 5-year average. Oat harvest was a week ahead of normal with 97 percent complete by September 12. Soybean harvest was virtually complete by mid-November and corn harvest was coming to an end as November came to a close. Conditions were also favorable for postharvest activities such as tillage and manure application.

The average temperature for June through September was 67.3 degrees, compared to 66.1 degrees in 2020 and a normal of 65.3 degrees. April and June-September all had above normal temperatures while May had below normal temperatures. March was 6.3 degrees above normal. October was 6.6 degrees above normal and November was 0.5 degrees above normal.

The statewide precipitation total for April through September was 21.17 inches, compared to 23.28 inches the previous year and a normal of 23.36 inches. April, May, June and September had below normal precipitation while July and August had above normal precipitation. August precipitation was 1.56 inches above normal while September precipitation was 1.51 inches below normal.

Corn

By May 2, 27 percent of Wisconsin corn acres had been planted, 5 days ahead of the 5-year average. By May 23, 90 percent were planted, 2 weeks ahead of average. The first crop condition rating of the season showed 81 percent good to excellent. Conditions declined through the month of June, but then rebounded slightly with the percentage of good to excellent hovering near the mid-70 's for most of the season. Sixty-one percent of corn acres were in or beyond dough stage by August 15, almost a week ahead of average. Harvest for silage began slightly ahead of normal and progressed quickly. On September 26, corn silage harvest was over 2 weeks ahead of the 5-year average with 80 percent complete. Corn for grain harvest began and finished early. Twelve percent was harvested by October 3, over a week ahead of average. Slightly over three-quarters of the corn for grain was harvested by November 7. As November came to a close, harvest for grain was nearly complete at 96 percent.

Soybean

By May 2, 16 percent of Wisconsin soybean acres had been planted, over a week ahead of 5-year average. By May 30, 91 percent were planted, over two weeks ahead of the average. Soybeans reached 92 percent emerged on June 13, almost two weeks ahead of normal. The early dryness which favored planting was less favorable to early crop growth. The first soybean crop condition rating of the season showed 72 percent rated in good to excellent condition as of June 6. Soybean condition good to excellent ratings spent most of the season in the 70's. Soybeans began setting pods at the end of June. As of July 18, twenty-eight percent of soybeans were setting pods, 5 days ahead of the average. Harvest began in mid-September. By September 26, eleven percent of acres were harvested, 5 days ahead of average. By October 31, eighty-four percent of soybeans were harvested, 6 days ahead of average. Harvest was nearly complete by mid-November with 97 percent harvested, about 2 weeks ahead of normal.

Oats

Favorable conditions during planting season meant oat seeding and emergence began ahead of normal. Ninety-two percent of the 2021 oat crop was planted by mid-May, 15 days ahead of the 5-year average. As of May 30, ninety-one percent of oats were emerged, 12 days ahead of average. Ninety percent of the oat crop was heading or beyond by July 4. Nearly all of the oat crop had turned color by mid-August. By September 5, ninety-three percent of oats for grain were harvested, 6 days ahead of average. Harvest was virtually complete by mid-September. As the growing season began, crop condition was slightly better than average, with 80 percent of oats rated good to excellent on May 23, compared to the 5-year average of 77 percent good to excellent. Condition declined by mid-June and the percent of the crop in good to excellent condition remained in the low- to mid-70's for the remainder of the season. As August began, 76 percent of oats rated good to excellent, compared to the 5-year average of 82 percent.

Winter Wheat

Planting for winter wheat began early in fall 2020 and was at least 10 days ahead of normal throughout planting. As of October 25, planting was 94 percent complete, over 2 weeks ahead of the 5-year average. With early planting, emergence also advanced ahead of normal. As of November 15, ninety-three percent of the crop had emerged, 10 days ahead of average. Fall rainfall and temperatures were both close to average in Wisconsin and the wheat crop responded favorably. As fall came to a close, wheat condition rated 84 percent good to excellent, compared to the 5-year average of 76 percent. The above average crop conditions carried into spring 2021, but below average moisture gradually pulled crop conditions closer to average. The good early conditions allowed winter wheat to progress ahead of normal. As of June 20, ninety-three percent of wheat was headed, 12 days ahead of the 5-year average. On August 8, harvest was 89 percent complete, 6 days ahead of average. The final wheat condition rating of the season, on July 25, was 77 percent good to excellent, compared to the 5-year average of 78 percent.

Alfalfa

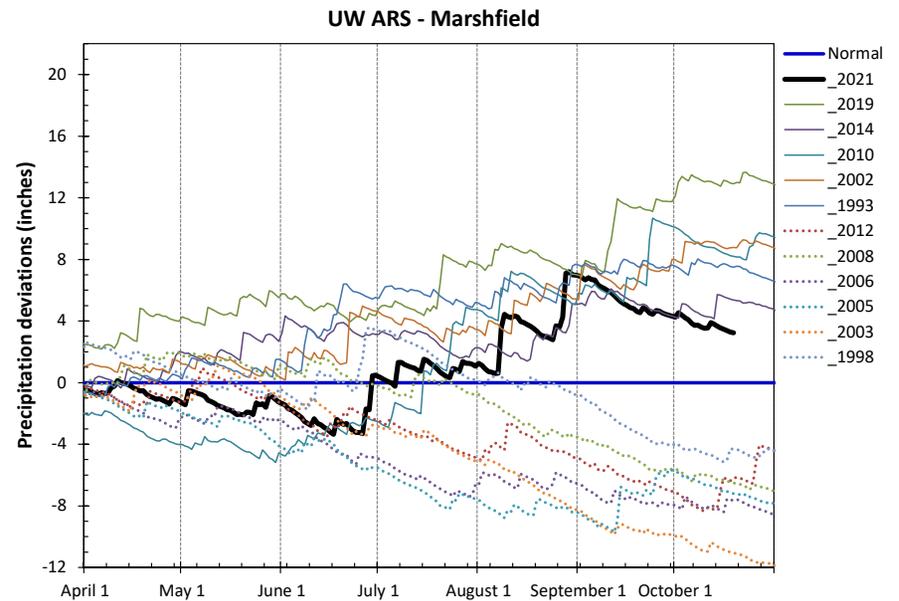
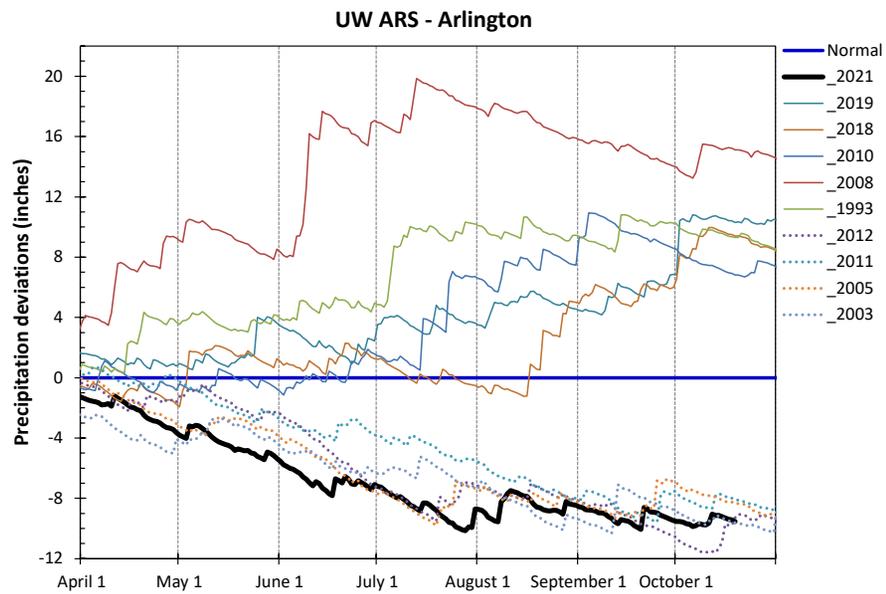
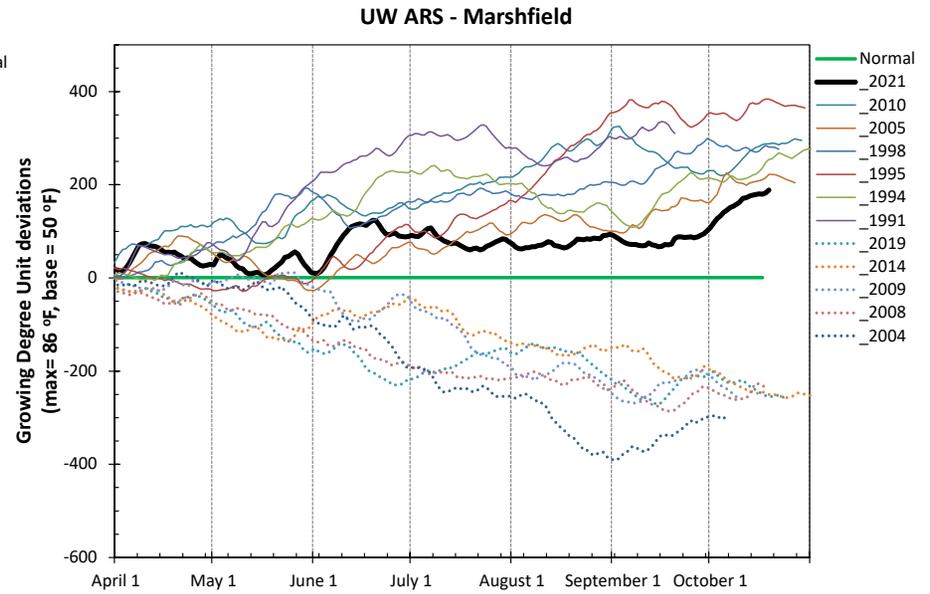
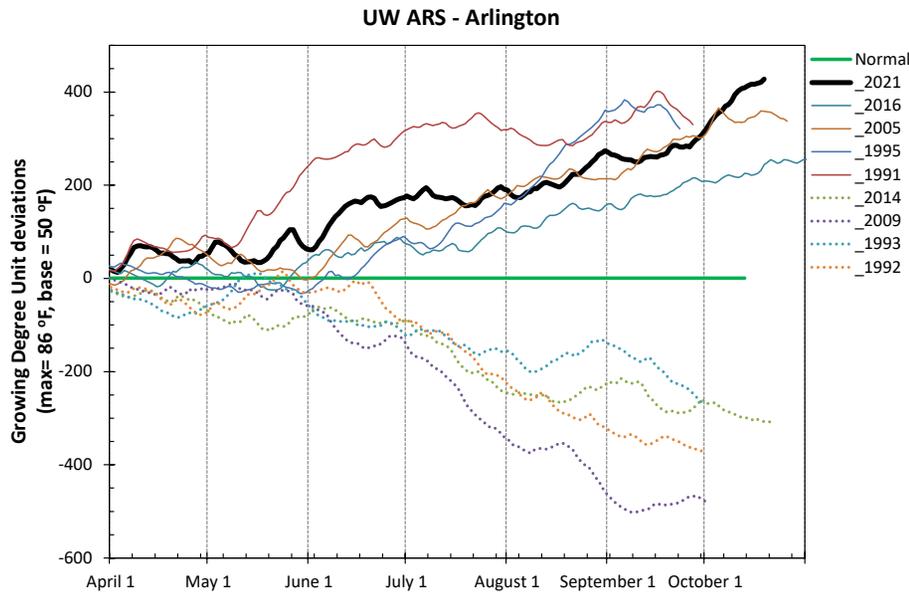
As of May 16, winter freeze damage to alfalfa was rated 3 percent severe, 8 percent moderate and 25

percent light. There was reportedly no damage to the remaining 64 percent of alfalfa, 5 percentage points more than the previous year. Alfalfa hay harvest began on a normal schedule, but sunny weather moved harvest ahead of average for most of the year. The first cutting was 10 percent complete on May 23, equal to the 5-year average. By June 20, the first cutting was 97 percent complete and the second cutting was 11 percent complete, 3 days ahead of average. Subsequent cuttings continued slightly ahead of average. The same sunny weather that allowed good field access also meant below average rainfall for most of the growing season. All hay condition began the year on May 9 with 72 percent in good to excellent condition, 7 percentage points above average. During June conditions deteriorated with the season's lowest rating reported for the week ending June 20 with 59 percent rated good to excellent. For the months of June, July, and August, all hay condition averaged 5 percentage points below normal. By November, some producers were already feeding hay.

Pastures

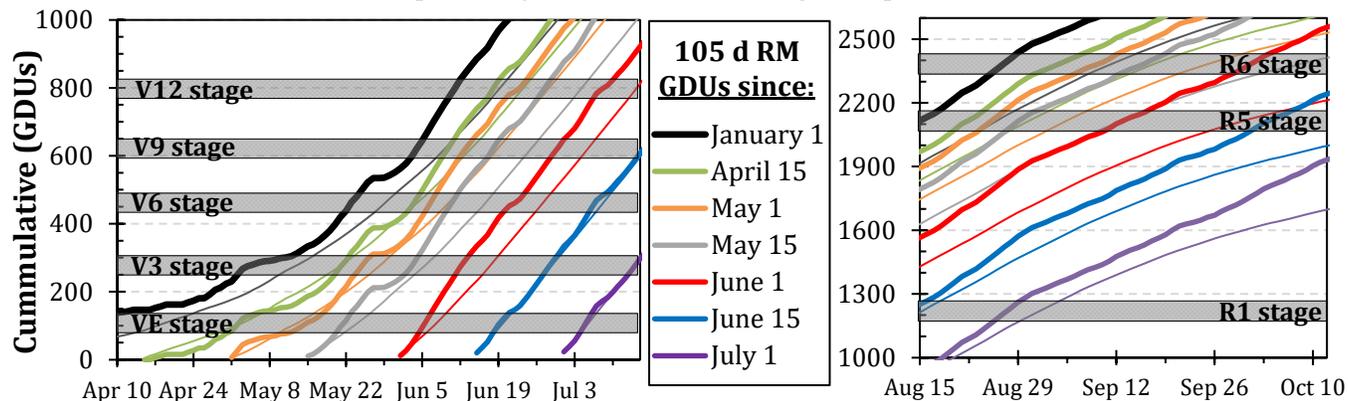
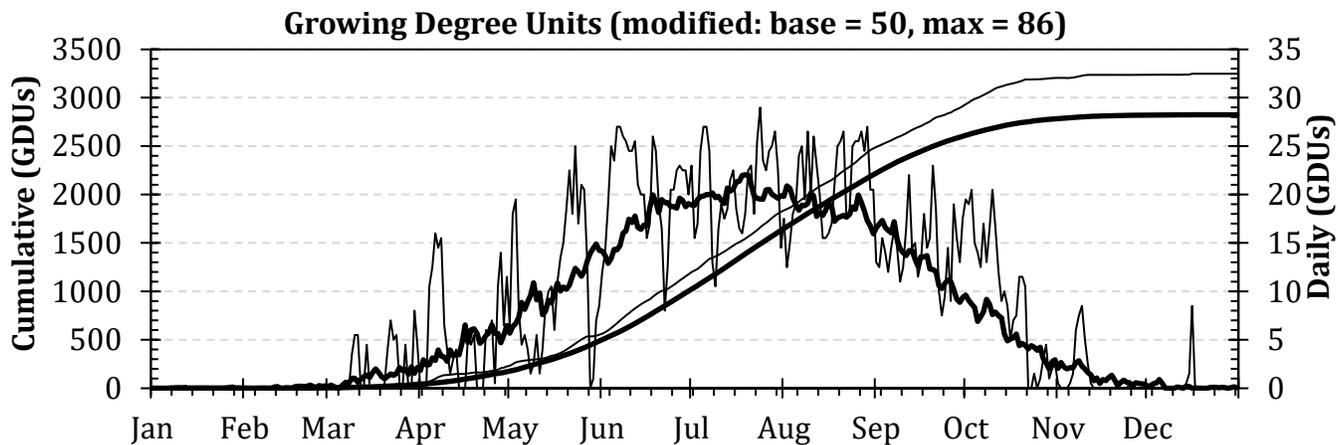
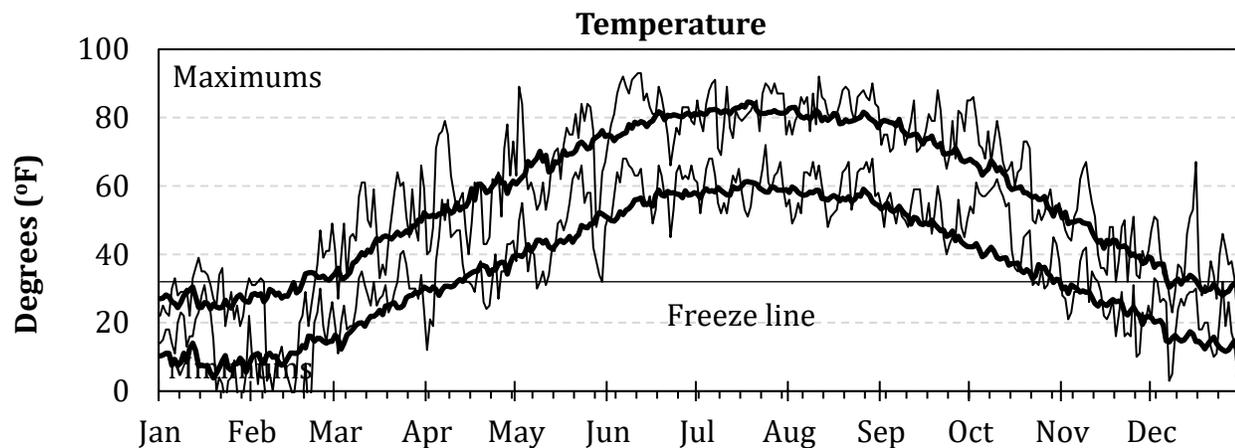
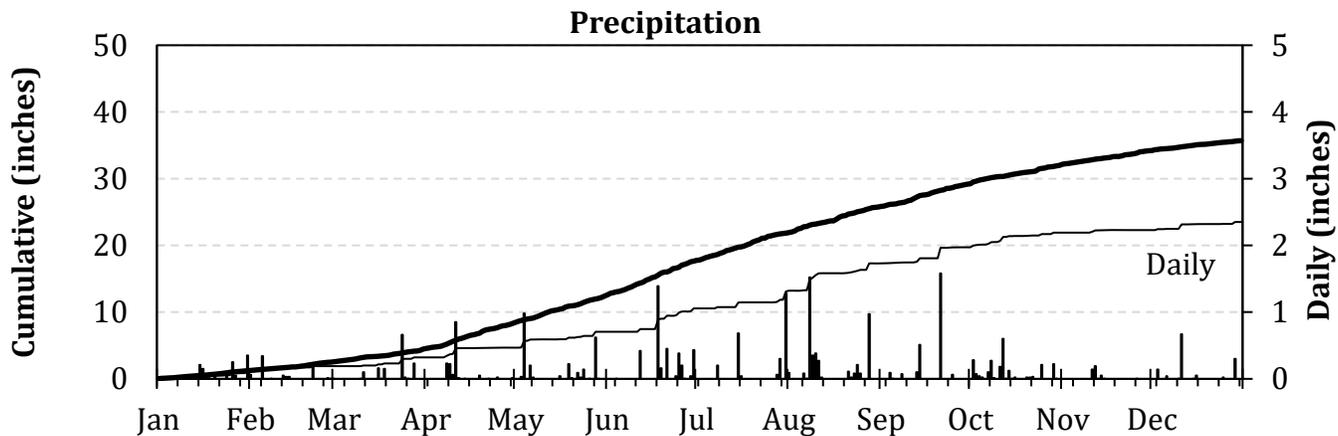
Due to warm early spring weather, pasture and range development began the year ahead of normal. On April 25, sixty-two percent of pasture was rated good to excellent, 13 percentage points above the 5-year average. However low precipitation hindered the usual peak grazing months of June, July, and August. During those months only 58 to 68 percent of pasture was rated good to excellent, 6 to 18 percentage points below the normal ratings. Good to excellent condition rating percentages hovered in the low 60's throughout September and into early October. Fall weather brought some moisture to most of the state, together with above average temperatures. Grazing conditions improved to 71 percent good to excellent by October 24, fifteen percentage points above normal. Crop progress survey participants reported a wide variety of conditions at the end of the year, with excellent grazing in most areas, but very poor grazing in the areas hardest hit by drought.

2021 Seasonal Growing Degree Unit and Precipitation Deviations from April 1 to the current date (or fall killing frost date $\leq 28^{\circ}\text{F}$ or October 31).
 Years were selected using ± 1 standard deviation of the 30-year normal.



2021 Weather Summary for UW ARS - Arlington, WI

Bold Line = 30 year Normal



Average Temperature and Precipitation

Dashed lines = 30-yr Normal; Dashed box = \pm one standard deviation

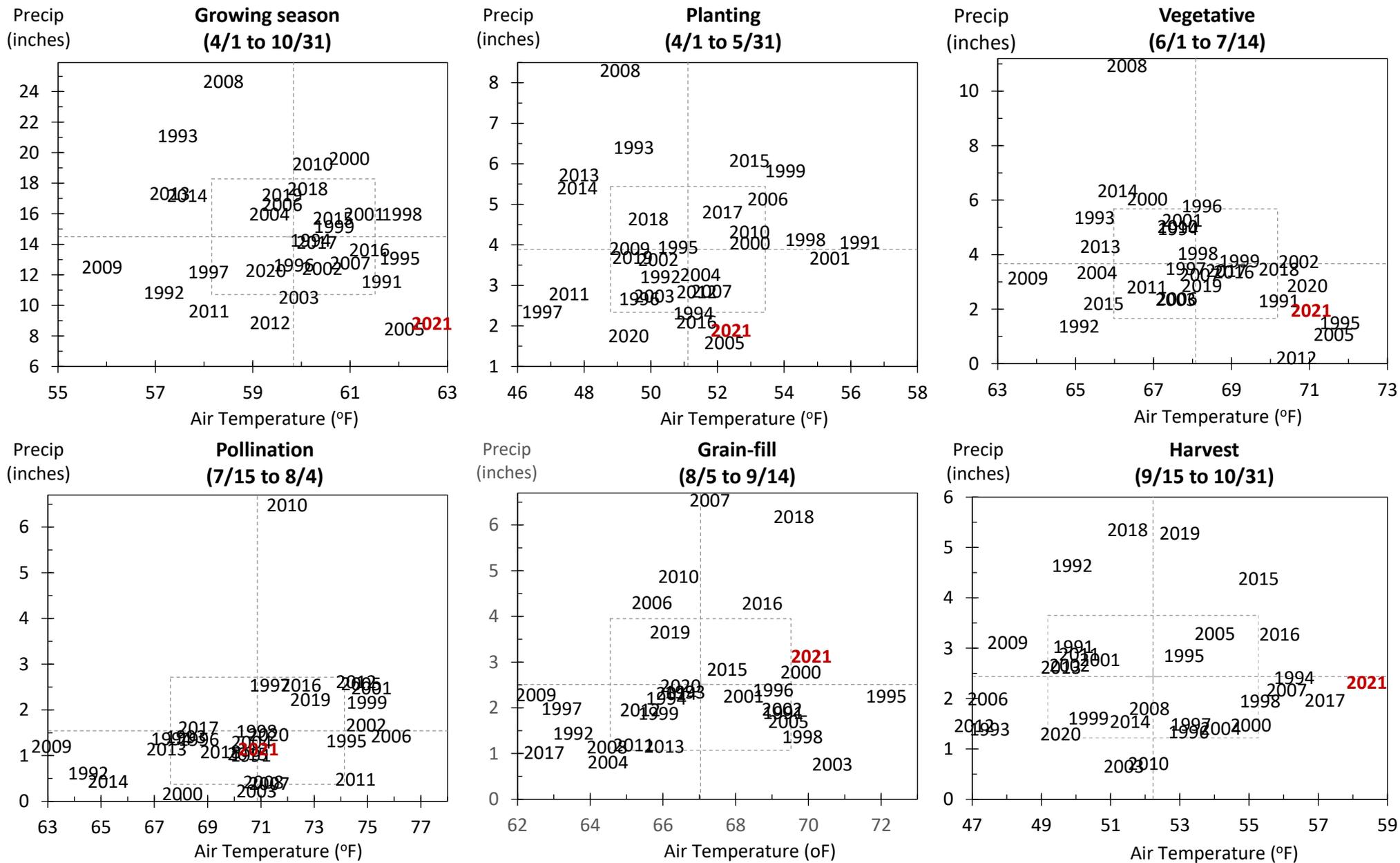


Table A-1. Monthly and total precipitation (inches) data for the Arlington Research Station.

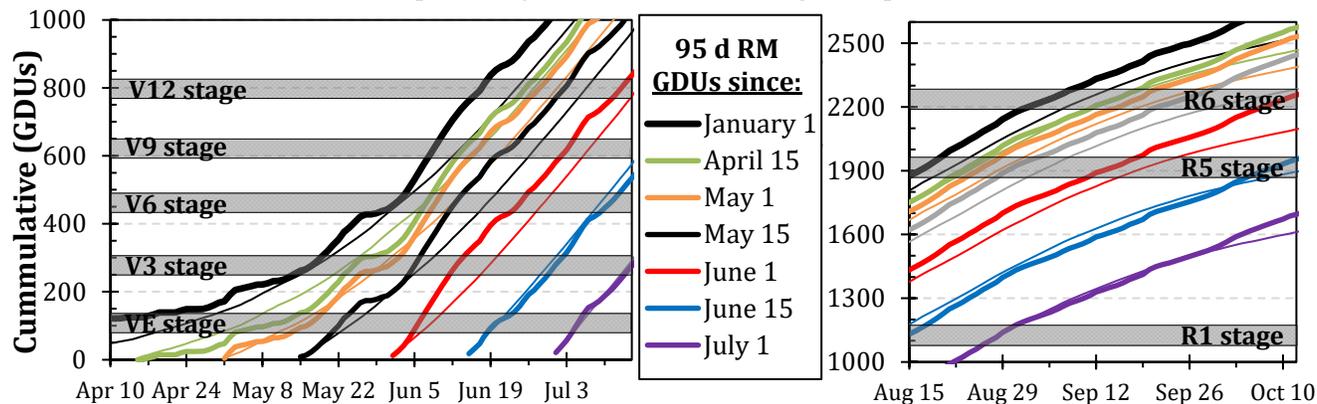
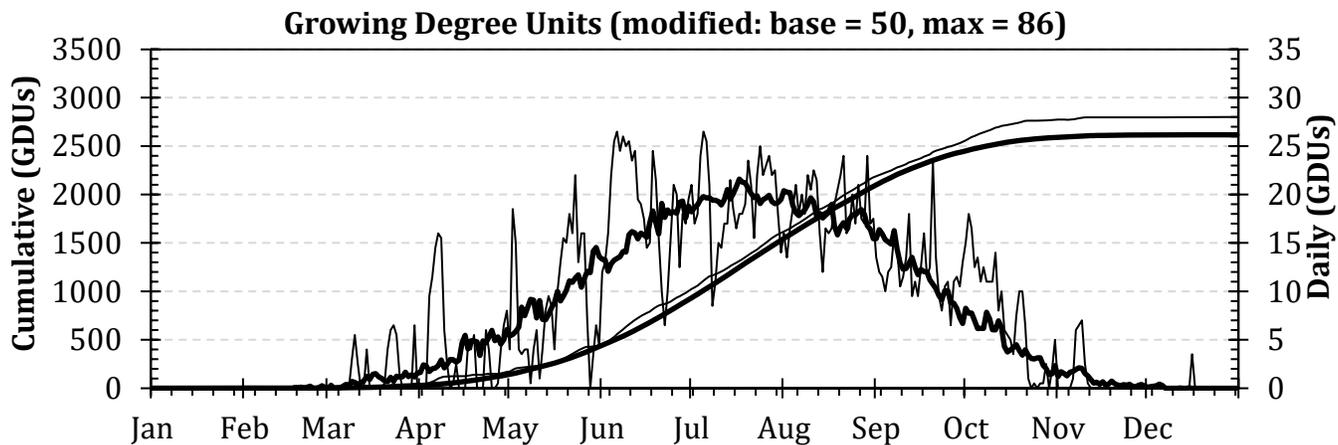
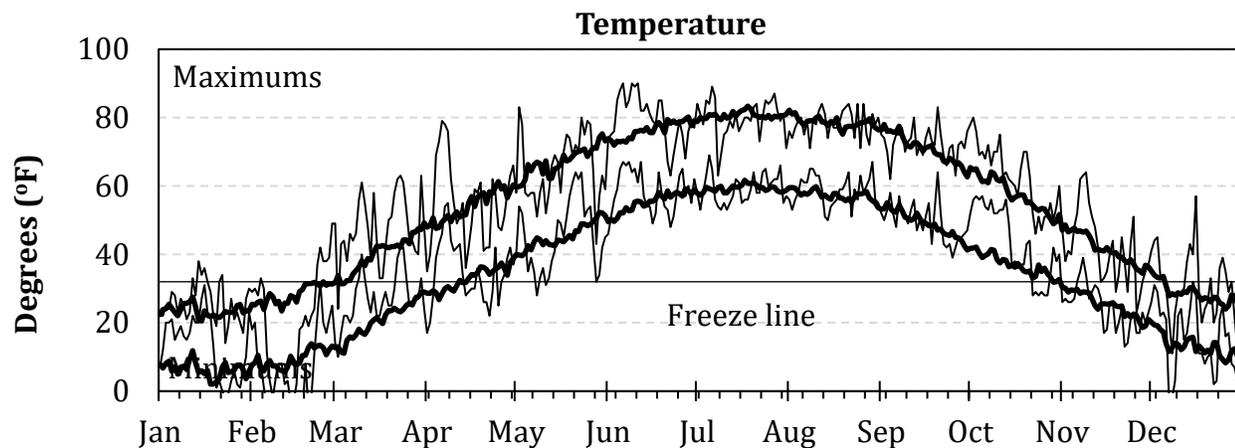
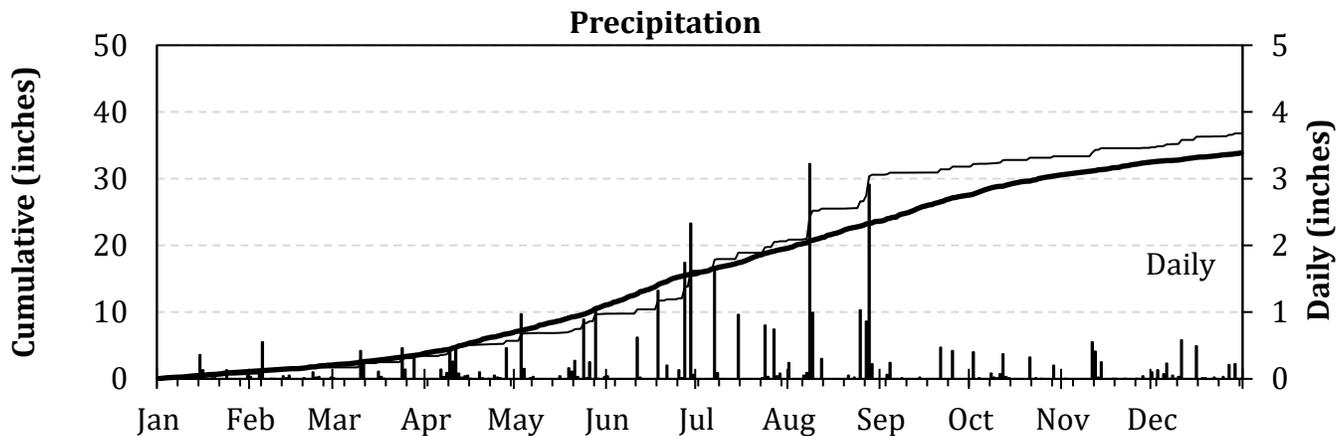
Year	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Annual
1992	0.5	1.6	1.7	4.0	1.2	1.2	5.8	1.9	7.5	1.3	5.2	2.8	34.6
1993	1.6	1.0	2.3	7.1	4.5	6.1	9.4	3.2	4.2	1.2	1.6	0.2	42.3
1994	0.9	2.0	0.1	2.3	2.0	7.9	6.1	4.0	4.7	0.5	2.8	0.8	34.0
1995	1.3	0.1	2.2	3.4	6.0	2.2	2.8	5.0	1.8	4.2	2.4	0.7	31.9
1996	1.8	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
2019	2.1	3.0	1.0	2.9	7.0	4.1	5.4	4.9	5.7	6.5	2.4	1.9	46.8
2020	1.7	1.0	3.4	1.4	4.3	4.4	5.0	3.6	4.3	4.0	2.8	0.9	36.7
2021	1.2	0.7	1.3	1.5	2.4	3.5	2.6	4.2	2.4	2.2	0.4	1.2	23.5
30-year Average	1.2	1.3	1.9	3.7	4.2	5.2	4.1	4.0	3.3	2.7	2.1	1.5	35.2

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

Year	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Annual
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
2019	15	16	28	45	54	66	73	67	64	47	29	29	45
2020	24	21	36	43	56	69	74	70	60	44	42	25	47
2021	21	12	38	48	57	71	71	72	64	56	36	29	48
30-year Average	18	21	33	45	57	67	71	69	61	49	35	24	46

2021 Weather Summary for UW ARS - Marshfield, WI

Bold Line = 30 year Normal



Average Temperature and Precipitation

Dashed lines = 30-yr Normal; Dashed box = \pm one standard deviation

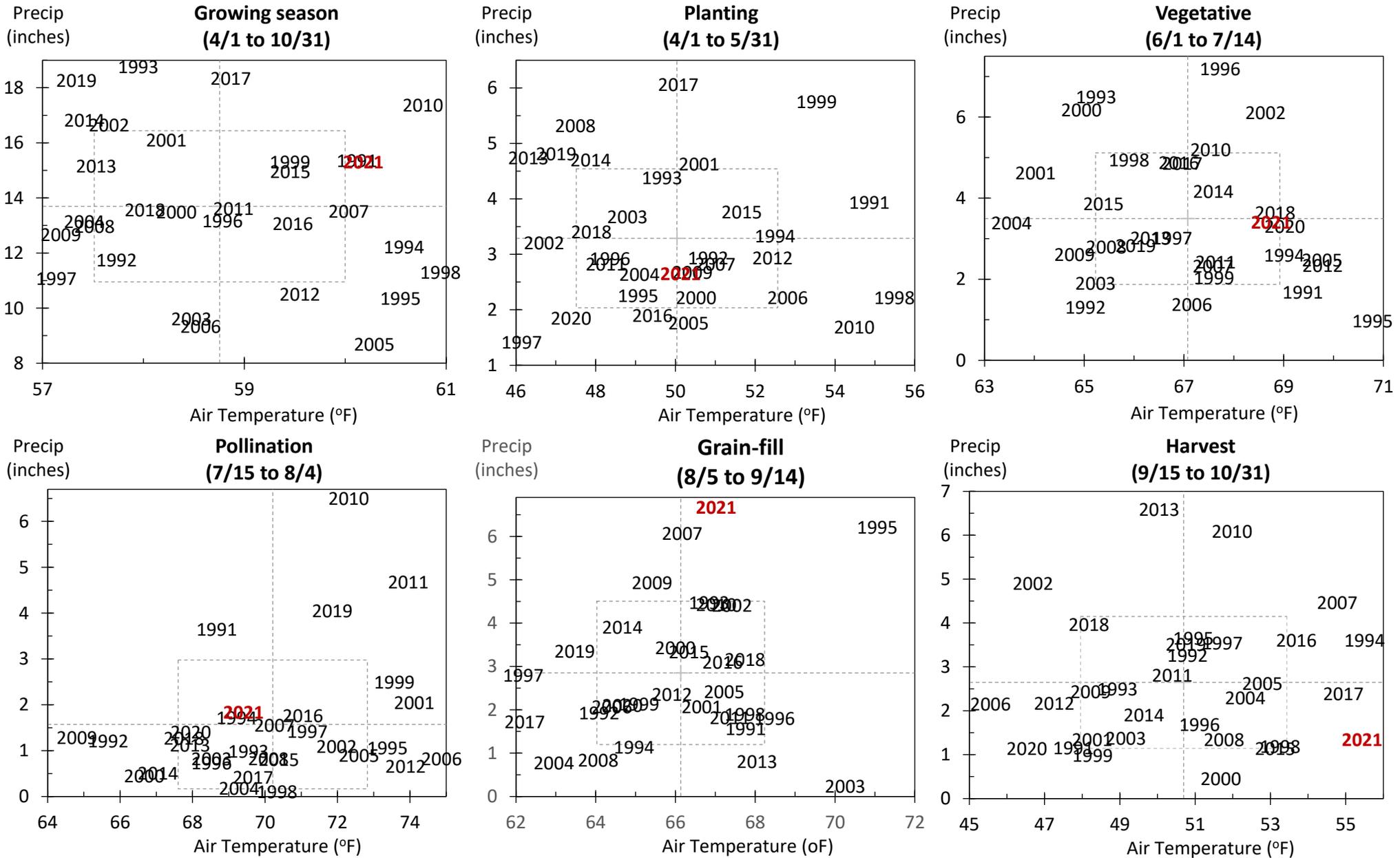


Table A-3. Monthly and total precipitation (inches) data for the Marshfield Research Station.

Year	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Annual
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
2019	1.1	3.7	1.6	4.5	5.6	3.6	7.2	3.4	8.6	4.2	1.6	3.4	48.5
2020	1.0	0.6	3.4	1.7	4.2	4.5	3.6	3.8	2.4	2.8	2.3	0.4	30.5
2021	0.8	1.0	1.7	2.3	4.0	6.5	4.4	10.0	1.2	1.5	1.3	2.2	36.8
30-year Average	1.1	1.0	1.7	3.0	4.0	4.8	3.8	4.3	3.8	3.0	1.8	1.4	33.7

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

Year	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Annual
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
2019	13	11	25	42	52	64	72	66	62	44	28	21	42
2020	20	18	33	40	54	67	71	69	57	41	38	24	44
2021	20	10	37	45	55	69	69	69	61	53	33	23	46
30-year Average	15	18	31	43	56	66	70	68	60	47	34	21	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 Formula	\$/acre (weighted price per bushel x yield) - (yield x (handling + hauling + trucking)) - (storage x 0.02) - (yield x (grain moisture-15.5) x drying). 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. 3 days Weighted Price per Bushel = \$5.22 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 Formula	Bu/acre $(43560 / (\text{plot width} * \text{plot length in feet})) * \text{weight of sample in lbs.} * ((100 - \text{sample moisture}) / (100 - 15.5 \{ \text{moisture standard} \})) / 56 \text{ lb/bu}$
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 Determination	lbs/bushel weight of known volume converted to lbs/bushel
Plant Height	Units Determination Observations	inches or centimeters plant height from soil surface to top leaf (flag) canopy. average of several plants in each plot
Ear Height	Units Determination Observations	inches height from soil surface to base of ear average of several plants in each plot
Broken Stalks	Units Determination Observations Formula	% at harvest number of stalks broken below the ear + number of plants lodged at >45% from the whole plot (22' x 2 rows) (broken stalks + lodged plants) / total stalks x 100%

Table B-1. Observations and Data Collected

Kernel Mass	Units Determination	mg/seed weight of 100 seeds converted to mg/seed
Plant Density	Units Determination Observations	plants per acre Early = plants at v3-v5 stage Late = just prior to harvest plant counts on whole plot (22' x 2 rows)
Ear Density	Units Determination Observations taken	Ears per acre Just prior to harvest Ear counts are taken from whole plot (22' x 2 rows)
Leaf Development	Units Determination Observations	none count of leaf number 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 Observations	% Near Infra-Red Transmittance Spectroscopy using a global calibration equation from Foss Plot subsample
Protein (Grain)	Units Determination Observations	% Near Infra-Red Transmittance Spectroscopy using a global calibration equation from Foss Plot subsample
Oil (Grain)	Units Determination Observations	% Near Infra-Red Transmittance Spectroscopy using a global calibration equation from Foss Plot subsample
Ethanol (Grain)	Units Determination Observations	% Near Infra-Red Transmittance Spectroscopy using a global calibration equation from Pioneer Plot subsample
Diseases ratings	Units Determination Observations	Rating score = 1-9 1,2,3= Worst; 4,5,6= Mid; 7,8,9= Best Based on amount of disease on plant part of interest Plot measured in the field
Forage Yield (Whole Plant)	Units Formula	Tons of dry mater per acre weight of sample in lbs.* $(43560 / (2000 * \text{plot width} * \text{plot length in feet})) * ((100 - \text{sample moisture}) / 100)$
Kernel Milk	Units Determination Observations	% percent milk remaining in kernel at harvest visual average of three ears from a non-harvest row
Kernel Milk Rating (KMR)	Formula Scale	% Kernel Milk x 5 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)	Scale	upright leaves) 0-5
Visual Moisture Rating (VMR)	Formula	KMR + SMR
Crude Protein (CP)	Scale	0-10
Neutral Detergent Fiber	Units	%
Neutral Detergent Fiber	Determination	wet lab or NIRS procedure on plot sub sample
Digestibility	Units	%
Acid Detergent Fiber	Determination	wet lab or NIRS procedure on plot sub sample
In Vitro Digestibility	Units	%
In Vitro Digestibility	Determination	In vitro wet lab or NIRS procedure on plot sub sample
Starch content	Units	%
Starch content	Determination	wet lab or NIRS on plot sub sample
Kernel Rot	Units	none
Kernel Rot	Determination	visual average of 5 plants at V2-V4
Kernel Rot	Scale	1=deterioration 2=no deterioration
Emergence	Units	%
Emergence	Formula	Early stand / late stand count x 100%
Residue cover	Units	%
Residue cover	Determination	Point transects centered on row.
% Survival	Units	%
% Survival	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.
Root Rating	Scale	0-3

Soybean Measurements

AGI (Adjusted Gross Income)	Units	\$/acre
AGI (Adjusted Gross Income)	Formula	(weighted price per bushel x yield) - (yield x (handling + hauling + trucking)) -(storage x 0.02).
AGI (Adjusted Gross Income)	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. 30 days. Weighted Price per Bushel = \$11.93 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.

Table B-1. Observations and Data Collected

Grain Yield	Units	Bu/acre
Grain Yield	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	%
Grain Moisture	Determination	determined by detector on combine 13% is standard soybean moisture
Plant Height	Units	inches
Plant Height	Determination	plant height from soil surface to tip of main stem
Plant Height	Observations	average of several plants in each plot
Plant Lodging	Units	none
Plant Lodging	Determination	based on average erectness of main stem of plant
Plant Lodging	Observations	whole plot is assessed
Plant Lodging	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
Seed Weight	Determination	weight of 300 seeds converted to seeds/lb
Plant Density	Units	plants per acre
Plant Density	Determination	early = plants at V3 to V5 stage late = just prior to harvest
Plant Density	Observations	plants counts are taken from 5 linear feet of plot X the harvested area
% Survival	Units	%
% Survival	Formula	Early stand / late stand count x 100%

Wheat Measurements

AGI (Adjusted Gross Income)	Units	\$/acre
AGI (Adjusted Gross Income)	Formula	(weighted price per bushel x yield) - (yield x (handling + hauling + trucking)) -(storage x 0.02).
AGI (Adjusted Gross Income)	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. 30 days. Weighted Price per Bushel = \$7.06 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
Grain Yield	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	%
Grain Moisture	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: Corn Hybrid Growth and Development
Experiment: 01GD **Trial ID:** 6608 **Year:** 2021
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:** 10/1 /21 **pH** 6.3 **OM (%)** 4 **P (ppm)** 56 **K (ppm)** 75

Plot Management

Tillage Operations: Field Cultivator

Fertilizer: **Preplant Analysis:** 32-0-0 **Rate lbs/A:** 149 **Date:** N/A
Starter Analysis: 9-11-30-6S-1Z **Rate lbs/A:** 200 lbs/ **Date:** 4 /27/21
Post plant Analysis N/A **Rate lbs/A:** N/A **Date:** N/A
Manure: N/A

Herbicide: Resicore 2.5 qt/A **Insecticide:** Force 3G 4.4 lbs/A
Irrigation: None **Hybrid:** Factor

Planting Date: 4/27/21 **Planting Depth:** 1.5" **Row Width:** 30"

Target Plant Density: 35000 plants per acre **Planting Method:** Almaco Precision Planter

Harvest Date: 10/6/21 **Harvest Method:** Massey 8XP

Experimental Design

Design: RCB **Replications:** 3

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

Harvest Plot Size: 5' x 23' **Harvest Plant Density:** 31575 plants per acre

Factors/Treatments:

Hybrid (RM):

- | | |
|----------------------------|----------------------------------|
| 1) Dekalb DKC31-10 (81) | 9) Renk RK579DGV2P (99) |
| 2) Dekalb DKC33-37 (83) | 10) Dekalb DKC51-98RIB (101) |
| 3) Dekalb DKC36-86 (86) | 11) Pioneer P0306Q (103) |
| 4) Pioneer P8736AM (87) | 12) Wyffels W4196RIB (105) |
| 5) Jung 39DP338 (89) | 13) AgriGold A638-74VT2RIB (108) |
| 6) ProHarvest 4255RR2 (92) | 14) Dekalb DKC61-41RIB (111) |
| 7) Dekalb DKC43-75RIB (93) | 15) AgriGold A642-47STX (112) |
| 8) Jung 47DP411 (97) | 16) Dekalb DKC65-94 (115) |
-

Results: Table 2101-01 & 2101-02.

**Table: 2101-01. Determining Corn Hybrid Maturity - Comparison of Hybrids.
Arlington, WI - 2021.**

Hybrid	Relative maturity	Grain yield bu/A	Grain moisture %	Test wt lb/bu	Lodged			AGI \$5.22 \$/A	Silking date	Early dent	Kernel Milk			Black layer
					Total %	Stalk %	Root %				75% doy	50% doy	25% doy	
Dekalb DKC31-10RIB	81	197	16.1	60	1	1	0	982	190	222	228	236	240	245
Dekalb DKC33-37RIB	83	198	15.5	59	3	3	0	987	189	223	229	236	241	248
Dekalb DKC36-86RIB	86	195	16.1	56	1	1	0	972	192	226	232	237	242	248
Pioneer P8736AM	87	229	17.2	59	13	13	0	1136	191	225	231	238	241	245
Jung 39DP338	89	231	16.3	58	15	15	0	1147	192	226	232	238	245	250
ProHarvest 4255RR2	92	235	16.9	57	2	2	0	1165	195	229	235	240	245	251
Dekalb DKC43-75RIB	93	231	15.9	57	3	2	2	1152	193	227	234	239	246	250
Jung 47DP411	97	243	18.1	56	7	7	0	1199	194	229	236	244	252	258
Renk RK579DGVT2P	99	252	17.8	56	2	1	1	1244	195	227	236	243	250	257
Dekalb DKC51-98RIB	101	239	17.7	55	0	0	0	1180	195	229	237	244	250	256
Pioneer P0306Q	103	273	19.8	55	2	2	0	1340	195	231	238	247	251	261
Wyffels W4196RIB	105	256	21.2	55	2	2	0	1250	196	228	236	245	251	256
AgriGold A638-74VT2RIB	108	255	21.7	57	0	0	0	1243	198	237	241	249	256	262
Dekalb DKC61-41VT2RIB	111	254	23.6	51	1	1	0	1225	196	236	242	250	254	261
AgriGold A642-47VT2RIB	112	233	23.7	54	6	6	0	1123	199	239	242	253	259	268
Dekalb DKC65-94	115	246	24.2	55	3	3	0	1183	199	238	243	252	258	267
Mean		235	18.9	56	4	4	0	1158	194	229	236	243	249	255
Probability(%)														
Hybrid (H)		0.0	0.0	0.0	11.2	9.2	51.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LSD(0.10)														
Hybrid (H)		17	1.6	2	NS	8	NS	82	1	2	2	3	3	3

**Table: 2101-02. Determining Corn Hybrid Maturity - Comparison of Hybrids.
Arlington, WI - 2021.**

Hybrid	Observation		Leaf Development			Plant height
	Relative maturity	Day of year	Leaf collars no./plant	Hail adjusters method no./plant	Total leaves no./plant	
		146	2.9	4.2	4.9	5.6
		159	5.4	7.3	8.4	15.4
		173	8.9	12.1	13.4	40.3
		187	14.9	16.1	17.5	84.8
		201	19.1	19.1	19.2	111.2
		215	19.1	19.1	19.2	116.4
Dekalb DKC31-10RIB	81		12.2	13.8	14.4	62.8
Dekalb DKC33-37RIB	83		11.6	12.7	13.3	61.2
Dekalb DKC36-86RIB	86		11.3	12.3	13.2	59.4
Pioneer P8736AM	87		11.7	13.0	13.8	64.7
Jung 39DP338	89		11.5	12.7	13.4	61.0
ProHarvest 4255RR2	92		12.1	13.4	14.0	63.0
Dekalb DKC43-75RIB	93		12.1	13.4	14.2	60.0
Jung 47DP411	97		11.8	13.2	13.9	62.3
Renk RK579DGVT2P	99		12.3	13.5	14.4	65.0
Dekalb DKC51-98RIB	101		12.0	13.3	14.1	62.4
Pioneer P0306Q	103		11.0	12.2	13.0	62.0
Wyffels W4196RIB	105		11.7	12.8	13.8	64.7
AgriGold A638-74VT2RIB	108		10.7	11.9	12.6	64.9
Dekalb DKC61-41VT2RIB	111		12.1	13.3	14.1	62.7
AgriGold A642-47VT2RIB	112		11.8	12.8	14.0	59.7
Dekalb DKC65-94	115		11.4	12.8	13.9	60.8
Dekalb DKC31-10RIB	81	146	2.8	4.3	5.3	5.2
Dekalb DKC31-10RIB	81	159	5.7	8.3	9.0	15.7
Dekalb DKC31-10RIB	81	173	9.7	13.7	14.8	41.5
Dekalb DKC31-10RIB	81	187	16.2	17.7	18.7	86.8
Dekalb DKC31-10RIB	81	201	19.3	19.3	19.3	112.3
Dekalb DKC31-10RIB	81	215	19.3	19.3	19.3	115.2
Dekalb DKC33-37RIB	83	146	2.8	4.0	4.3	5.2
Dekalb DKC33-37RIB	83	159	5.3	7.3	8.2	13.8
Dekalb DKC33-37RIB	83	173	8.8	12.2	13.2	41.0
Dekalb DKC33-37RIB	83	187	15.7	16.2	17.3	87.2
Dekalb DKC33-37RIB	83	201	18.3	18.3	18.3	110.2
Dekalb DKC33-37RIB	83	215	18.3	18.3	18.3	109.8

continued

Table: 2101-02. Determining Corn Hybrid Maturity - Comparison of Hybrids.
Arlington, WI - 2021.

(continued)

Hybrid	Observation		Leaf Development			Plant height
	Relative maturity	Day of year	Leaf collars no./plant	Hail adjusters method no./plant	Total leaves no./plant	
Dekalb DKC36-86RIB	86	146	2.8	3.7	4.7	6.0
Dekalb DKC36-86RIB	86	159	4.8	6.7	7.7	15.5
Dekalb DKC36-86RIB	86	173	8.5	11.3	13.0	39.5
Dekalb DKC36-86RIB	86	187	15.2	15.7	17.3	81.2
Dekalb DKC36-86RIB	86	201	18.3	18.3	18.3	104.8
Dekalb DKC36-86RIB	86	215	18.3	18.3	18.3	109.2
Pioneer P8736AM	87	146	3.0	4.0	4.8	5.5
Pioneer P8736AM	87	159	5.3	7.7	8.3	15.8
Pioneer P8736AM	87	173	9.2	12.7	14.2	46.0
Pioneer P8736AM	87	187	15.5	16.3	17.8	91.3
Pioneer P8736AM	87	201	18.7	18.7	18.7	113.7
Pioneer P8736AM	87	215	18.7	18.7	18.7	115.7
Jung 39DP338	89	146	2.8	4.5	5.0	6.0
Jung 39DP338	89	159	5.7	7.8	8.8	16.5
Jung 39DP338	89	173	9.5	12.5	13.8	40.0
Jung 39DP338	89	187	15.3	15.7	16.8	88.0
Jung 39DP338	89	201	17.8	17.8	17.8	106.3
Jung 39DP338	89	215	17.8	17.8	17.8	109.3
ProHarvest 4255RR2	92	146	3.0	4.3	5.0	6.7
ProHarvest 4255RR2	92	159	5.7	8.0	8.8	17.5
ProHarvest 4255RR2	92	173	9.3	12.7	13.7	41.0
ProHarvest 4255RR2	92	187	15.3	16.5	17.7	84.7
ProHarvest 4255RR2	92	201	19.5	19.5	19.5	112.0
ProHarvest 4255RR2	92	215	19.5	19.5	19.5	116.2
Dekalb DKC43-75RIB	93	146	2.8	4.8	5.3	5.5
Dekalb DKC43-75RIB	93	159	5.8	7.8	9.2	13.3
Dekalb DKC43-75RIB	93	173	9.8	12.8	14.3	38.3
Dekalb DKC43-75RIB	93	187	15.5	16.2	17.7	85.8
Dekalb DKC43-75RIB	93	201	19.3	19.3	19.3	106.3
Dekalb DKC43-75RIB	93	215	19.3	19.3	19.3	110.8
Jung 47DP411	97	146	2.7	4.5	4.8	5.5
Jung 47DP411	97	159	5.7	7.5	8.3	16.0
Jung 47DP411	97	173	9.0	12.0	13.5	41.0
Jung 47DP411	97	187	15.0	16.5	18.2	82.8
Jung 47DP411	97	201	19.3	19.3	19.3	113.8
Jung 47DP411	97	215	19.3	19.3	19.3	114.7

continued

Table: 2101-02. Determining Corn Hybrid Maturity - Comparison of Hybrids.
Arlington, WI - 2021.

(continued)

Hybrid	Observation		Leaf Development			Plant height
	Relative maturity	Day of year	Leaf collars no./plant	Hail adjusters method no./plant	Total leaves no./plant	
Renk RK579DGVT2P	99	146	3.0	4.3	5.3	6.7
Renk RK579DGVT2P	99	159	6.0	7.8	9.0	17.0
Renk RK579DGVT2P	99	173	9.2	12.2	13.7	43.7
Renk RK579DGVT2P	99	187	15.5	16.5	18.3	86.8
Renk RK579DGVT2P	99	201	20.0	20.0	20.0	115.3
Renk RK579DGVT2P	99	215	20.0	20.0	20.0	120.5
Dekalb DKC51-98RIB	101	146	3.0	4.5	5.2	5.7
Dekalb DKC51-98RIB	101	159	5.8	7.5	8.5	15.8
Dekalb DKC51-98RIB	101	173	9.0	12.2	13.5	41.8
Dekalb DKC51-98RIB	101	187	15.0	16.0	18.0	82.8
Dekalb DKC51-98RIB	101	201	19.7	19.7	19.7	112.5
Dekalb DKC51-98RIB	101	215	19.7	19.7	19.7	115.8
Pioneer P0306Q	103	146	3.0	4.2	4.8	5.5
Pioneer P0306Q	103	159	5.0	6.3	7.8	16.0
Pioneer P0306Q	103	173	8.2	11.2	12.3	38.0
Pioneer P0306Q	103	187	13.2	15.0	15.8	81.5
Pioneer P0306Q	103	201	18.3	18.3	18.5	109.2
Pioneer P0306Q	103	215	18.3	18.3	18.5	121.7
Wyffels W4196RIB	105	146	3.0	4.2	5.2	6.2
Wyffels W4196RIB	105	159	5.2	6.8	8.2	18.8
Wyffels W4196RIB	105	173	8.8	11.7	13.2	40.7
Wyffels W4196RIB	105	187	14.5	15.5	17.2	89.5
Wyffels W4196RIB	105	201	19.3	19.3	19.5	113.0
Wyffels W4196RIB	105	215	19.3	19.3	19.5	120.0
AgriGold A638-74VT2RIB	108	146	2.7	3.7	4.3	5.2
AgriGold A638-74VT2RIB	108	159	4.7	6.2	7.5	13.2
AgriGold A638-74VT2RIB	108	173	8.0	11.2	11.7	38.3
AgriGold A638-74VT2RIB	108	187	14.0	15.5	16.5	86.3
AgriGold A638-74VT2RIB	108	201	17.5	17.5	17.7	118.8
AgriGold A638-74VT2RIB	108	215	17.5	17.5	17.7	127.3
Dekalb DKC61-41VT2RIB	111	146	2.7	4.0	4.5	5.0
Dekalb DKC61-41VT2RIB	111	159	5.2	7.0	8.0	13.8
Dekalb DKC61-41VT2RIB	111	173	8.8	12.0	13.2	40.2
Dekalb DKC61-41VT2RIB	111	187	15.2	16.3	17.7	87.0
Dekalb DKC61-41VT2RIB	111	201	20.3	20.3	20.5	111.0
Dekalb DKC61-41VT2RIB	111	215	20.3	20.3	20.5	119.2

continued

Table: 2101-02. Determining Corn Hybrid Maturity - Comparison of Hybrids.
Arlington, WI - 2021.

(continued)

Hybrid	Observation		Leaf Development			Plant height
	Relative maturity	Day of year	Leaf collars no./plant	Hail adjusters method no./plant	Total leaves no./plant	
AgriGold A642-47VT2RIB	112	146	3.0	4.0	4.7	5.2
AgriGold A642-47VT2RIB	112	159	5.3	6.5	8.2	14.3
AgriGold A642-47VT2RIB	112	173	8.8	11.3	13.0	36.8
AgriGold A642-47VT2RIB	112	187	14.2	15.3	17.8	77.5
AgriGold A642-47VT2RIB	112	201	19.8	19.8	20.2	109.0
AgriGold A642-47VT2RIB	112	215	19.8	19.8	20.2	115.2
Dekalb DKC65-94	115	146	2.8	4.0	4.7	5.3
Dekalb DKC65-94	115	159	5.0	7.0	8.2	13.5
Dekalb DKC65-94	115	173	8.2	11.5	12.7	36.7
Dekalb DKC65-94	115	187	14.0	16.0	17.7	77.5
Dekalb DKC65-94	115	201	19.2	19.2	20.0	110.8
Dekalb DKC65-94	115	215	19.2	19.2	20.0	121.2
Mean			11.7	12.9	13.7	62.3
Probability(%)						
Hybrid (H)			0.0	0.0	0.0	0.0
Day Of Year (D)			0.0	0.0	0.0	0.0
H x D			0.0	0.0	0.0	0.0
LSD(0.10)						
Hybrid (H)			0.3	0.3	0.3	1.7
Day Of Year (D)			0.2	0.2	0.2	1.0
H x D			0.7	0.8	0.8	4.1

FIELD EXPERIMENT HISTORY

Title: Corn Hybrid Growth and Development
Experiment: 01GD **Trial ID:** 6609 **Year:** 2021
Personnel: Joe Lauer, Kent Kohn, Thierno Diallo
Location: Marshfield, WI **County:** Wood
Supported By: HATCH

Site Information

Field: **Previous Crop:** Soybean **Soil Type:** Owen Withee Silt Loam
Soil Test: **Date:** 10/1 /21 **pH** 6.5 **OM (%)** 2.7 **P (ppm)** 30 **K (ppm)** 80

Plot Management

Tillage Operations: Field Cultivator

Fertilizer: **Preplant Analysis:** 18-46-0 **Rate lbs/A:** 23 **Date:** N/A
Starter Analysis: 9-11-30-6S-1Z **Rate lbs/A:** 200 lbs/ **Date:** 5 /10/21
Post plant Analysis 29-0-0-3S **Rate lbs/A:** 119 **Date:** N/A
Manure: N/A

Herbicide: Resicore 2.0 qt/A **Insecticide:** Force 3G 4.4 lbs/A
Irrigation: None **Hybrid:** Factor

Planting Date: 5/10/21 **Planting Depth:** 1.5" **Row Width:** 30"

Target Plant Density: 35000 plants per acre **Planting Method:** Almaco Precision Planter

Harvest Date: 10/19/21 **Harvest Method:** Massey 8XP

Experimental Design

Design: RCB **Replications:** 3

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

Harvest Plot Size: 5' x 23' **Harvest Plant Density:** 32575 plants per acre

Factors/Treatments:

Hybrid (RM):

- | | |
|----------------------------|----------------------------------|
| 1) Dekalb DKC31-10 (81) | 9) Renk RK579DGV2P (99) |
| 2) Dekalb DKC33-37 (83) | 10) Dekalb DKC51-98RIB (101) |
| 3) Dekalb DKC36-86 (86) | 11) Pioneer P0306Q (103) |
| 4) Pioneer P8736AM (87) | 12) Wyffels W4196RIB (105) |
| 5) Jung 39DP338 (89) | 13) AgriGold A638-74VT2RIB (108) |
| 6) ProHarvest 4255RR2 (92) | 14) Dekalb DKC61-41RIB (111) |
| 7) Dekalb DKC43-75RIB (93) | 15) AgriGold A642-47STX (112) |
| 8) Jung 47DP411 (97) | 16) Dekalb DKC65-94 (115) |
-

Results: Table 2101-03.

**Table: 2101-03. Determining Corn Hybrid Maturity - Comparison of Hybrids.
Marshfield, WI - 2021.**

Hybrid	Relative maturity	Grain yield bu/A	Grain moisture %	Test weight lb/bu				AGI \$/A
					Total	Stalk	Root	
Dekalb DKC31-10RIB	81	192	19.0	57	0	0	0	947
Dekalb DKC33-37RIB	83	198	21.0	56	2	2	0	968
Dekalb DKC36-86RIB	86	226	21.3	53	0	0	0	1104
Pioneer P8736AM	87	239	22.4	54	0	0	0	1161
Jung 39DP338	89	241	22.3	53	0	0	0	1169
ProHarvest 4255RR2	92	219	23.5	53	1	1	0	1057
Dekalb DKC43-75RIB	93	244	24.1	53	0	0	0	1176
Jung 47DP411	97	246	27.2	52	2	2	0	1168
Renk RK579DGV2P	99	259	26.7	52	0	0	0	1234
Dekalb DKC51-98RIB	101	237	29.5	53	0	0	0	1114
Pioneer P0306Q	103	263	30.0	52	0	0	0	1235
Wyffels W4196RIB	105	278	30.4	53	0	0	0	1302
AgriGold A638-74VT2RIB	108	263	33.1	54	2	0	2	1217
Dekalb DKC61-41VT2RIB	111	273	38.1	52	0	0	0	1240
AgriGold A642-47VT2RIB	112	233	39.4	54	0	0	0	1052
Dekalb DKC65-94	115	240	38.4	54	0	0	0	1088
Mean		241	27.9	53	0	0	0	1140
<u>Probability(%)</u>								
Hybrid (H)		0.0	0.0	0.2	65.4	59.0	48.0	0.0
<u>LSD(0.10)</u>								
Hybrid (H)		20	2.4	1.8	NS	NS	NS	103

FIELD EXPERIMENT HISTORY

Title: Private Silage - Syngenta
Experiment: 01ST **Trial ID:** 6557 **Year:** 2021
Personnel: Joe Lauer, Kent Kohn, Thierno Diallo
Location: Arlington, WI **County:** Columbia
Supported By: Syngenta

Site Information

Field: ARS411 **Previous Crop:** Alfalfa **Soil Type:** Plano Silt Loam
Soil Test: **Date:** 9 /1 /21 **pH** 6.3 **OM (%)** 4.0 **P (ppm)** 56 **K (ppm)** 75

Plot Management

Tillage Operations: Field Cultivator

Fertilizer:	<u>Analysis</u>	<u>Rate</u>	<u>Date</u>
Preplant	32-0-0	149 lbs/A	N/A
Starter	9-11-30-6S-1Zn	18 lbs/A	4 /27/21
Post plant	N/A	N/A	N/A
Manure:	N/A	N/A	N/A

Herbicide: Resicore 2.5 qt/A **Insecticide:** Force 3G 4.4 lbs/A
Irrigation: None **Hybrid:** Factor

Planting Date: 4/27/21 **Planting Depth:** 1.5" **Row Width:** 30"

Target Plant Density: 35000 plants per acre **Planting Method:** Almaco Plot Planter

Harvest Date: 9/9/21 **Harvest Method:** NH 707

Experimental Design

Design: RCB **Replications:** 3
Plot Size Seeded: 5' x 23' **Experiment Size:** 0.12 A
Harvest Plot Size: 2.5' x 23' **Harvest Plant Density:** 33454 plants per acre

Hybrids:

SK6217-5332	SL6909-5222
SK6758-5122	SL7110-5122
SK8749-5222	SL7506-5222
SL6170-3120	SL7849-3120
SL6889-3120	

Results: Table 2101-04.

**Table: 2101-04. Syngenta Corn Silage Evaluation Study.
Arlington, WI - 2021.**

Hybrid	Dry Matter								Milk Per	
	Yield	Moisture	CP	ADF	NDF	IVD	NDFD	Starch	Ton	Acre
	T/A	%	%	%	%	%	%	%	lbs/T	lbs/A
SK6217-5332	10.6	61.8	7.6	20.9	38.9	84.5	60.1	29.6	3226	34191
SK6758-5122	12.0	62.4	7.3	21.4	39.5	84.4	60.5	29.0	3212	38609
SK8749-5222	11.9	66.8	8.0	22.2	40.4	84.2	60.9	25.3	3079	36751
SL6170-3120	12.9	55.3	6.9	17.2	35.1	87.3	63.8	34.7	3289	42346
SL6889-3120	11.2	60.2	8.0	18.5	36.4	85.9	61.2	31.9	3298	36917
SL6909-5222	12.2	63.6	7.5	20.2	38.6	83.3	56.9	29.9	3197	38875
SL7110-5122	12.1	68.0	7.9	20.7	38.2	84.8	60.1	26.1	3010	36292
SL7506-5222	12.1	60.0	7.3	19.2	37.1	86.5	63.5	32.2	3347	40684
SL7849-3120	10.9	60.0	8.2	18.2	35.8	87.3	64.7	32.3	3382	36875
Mean	11.8	62.0	7.6	19.8	37.8	85.3	61.3	30.1	3227	37949
<u>Probability (%)</u>										
Hybrid (H)	1.7	0.0	0.0	0.4	1.6	0.0	0.0	0.0	0.0	1.7
<u>LSD (0.10)</u>										
Hybrid (H)	1.0	2.3	0.3	1.9	2.4	1.2	1.4	2.7	112	3283

FIELD EXPERIMENT HISTORY

Title: Private Silage - Syngenta
Experiment: 01ST **Trial ID:** 6564 **Year:** 2021
Personnel: Joe Lauer, Kent Kohn, Thierno Diallo
Location: Chippewa Falls, WI **County:** Chippewa
Supported By: Syngenta

Site Information

Field: **Previous Crop:** Corn **Soil Type:** Sattre Silt Loam
Soil Test: **Date:** 9 /1 /21 **pH** 5.5 **OM (%)** 1.6 **P (ppm)** 69 **K (ppm)** 117

Plot Management

Tillage Operations: Spring Chisel Field Cultivator

Fertilizer:	<u>Analysis</u>	<u>Rate</u>	<u>Date</u>
Preplant	21-0-0-24S	11 lbs/A	N/A
Starter	9-11-30-6S-1Zn	18 lbs/A	4 /30/21
Post plant	32-0-0	54 lbs/A	N/A
Manure:	Dairy	10000 gal/A	N/A

Herbicide: Atrazine 16 oz/A Accent Q 0.9 oz/A Capreno 3.0 oz/A Sterling Blue 4.0 ozt/A	Insecticide: Force 3G 4.4 lbs/A Hybrid: Factor
---	---

Irrigation: Irrigated

Planting Date: 4/30/21 **Planting Depth:** 1.5" **Row Width:** 30"
Target Plant Density: 35000 plants per acre **Planting Method:** Almaco Plot Planter
Harvest Date: 9/13/21 **Harvest Method:** NH 707

Experimental Design

Design: RCB	Replications: 3
Plot Size Seeded: 5' x 23'	Experiment Size: 0.05 A
Harvest Plot Size: 2.5' x 23'	Harvest Plant Density: 33332 plants per acre

Hybrids:

SK5270-5122
 SK5738-5122
 SK6217-5332
 SL5310-5222
 SL6170-3120

Results: Table 2101-05.

**Table: 2101-05. Syngenta Corn Silage Evaluation Study.
Chippewa Falls, WI - 2021.**

Hybrid	Dry Matter							Milk Per		
	Yield	Moisture	CP	ADF	NDF	IVD	NDFD	Starch	Ton	Acre
	T/A	%	%	%	%	%	%	%	lbs/T	lbs/A
SK5270-5122	11.3	64.3	6.8	20.6	37.8	83.9	57.5	32.5	3310	37340
SK5738-5122	11.0	64.5	7.1	22.1	39.9	82.9	57.4	27.0	2995	33116
SK6217-5332	11.0	65.1	7.7	21.8	40.1	83.0	57.6	28.2	3172	34880
SL5310-5222	10.4	61.5	7.3	20.5	37.9	85.3	61.1	30.7	3240	33567
SL6170-3120	12.0	61.7	6.5	18.6	35.7	85.8	60.3	34.4	3342	39888
Mean	11.1	63.4	7.1	20.7	38.3	84.2	58.8	30.5	3212	35758
<u>Probability (%)</u>										
Hybrid (H)	63.0	18.9	0.4	23.7	20.6	14.7	5.7	3.2	3.3	28.1
<u>LSD (0.10)</u>										
Hybrid (H)	NS	NS	0.4	NS	NS	NS	2.5	3.7	170.3	NS

FIELD EXPERIMENT HISTORY

Title: Private Silage - Syngenta
Experiment: 01ST **Trial ID:** 6549 **Year:** 2021
Personnel: Joe Lauer, Kent Kohn, Thierno Diallo
Location: Fond du Lac, WI **County:** Fond du Lac
Supported By: Syngenta

Site Information

Field: **Previous Crop:** Soybean **Soil Type:** Virgil Silt Loam
Soil Test: **Date:** 9 /1 /21 **pH** 7.0 **OM (%)** 3.3 **P (ppm)** 51 **K (ppm)** 126

Plot Management

Tillage Operations: Strip-Till

Fertilizer:	<u>Analysis</u>	<u>Rate</u>	<u>Date</u>
Preplant	N/A	N/A	N/A
Starter	9-11-30-6S-1Zn	18 lbs/A	4 /27/21
Post plant	32-0-0	165 lbs/A	N/A
Manure:	N/A	N/A	N/A

Herbicide: Acuron 1.5 qt/A **Insecticide:** Force 3G 4.4 lbs/A
Irrigation: None **Hybrid:** Factor

Planting Date: 4/27/21 **Planting Depth:** 1.5" **Row Width:** 30"

Target Plant Density: 35000 plants per acre **Planting Method:** Almaco Plot Planter

Harvest Date: 10/15/21 **Harvest Method:** NH 707

Experimental Design

Design: RCB **Replications:** 3
Plot Size Seeded: 5' x 23' **Experiment Size:** 0.15 A
Harvest Plot Size: 2.5' x 23' **Harvest Plant Density:** 33427 plants per acre

Hybrids:

SK5270-5122	SL6889-3120
SK5738-5122	SL6909-5222
SK6217-5332	SL7110-5122
SK6758-5122	SL7506-5222
SL5310-5222	SL7849-3120
SL6170-3120	

Results: Table 2101-06.

Table: 2101-06. Syngenta Corn Silage Evaluation Study.
Fond du Lac, WI - 2021.

Hybrid	Dry Matter								Milk Per	
	Yield	Moisture	CP	ADF	NDF	IVD	NDFD	Starch	Ton	Acre
	T/A	%	%	%	%	%	%	%	lbs/T	lbs/A
SK5270-5122	10.2	66.5	7.1	20.1	37.1	85.1	60.0	30.9	3249	33328
SK5738-5122	12.0	68.5	7.7	21.8	39.4	83.8	58.8	26.7	3065	36814
SK6217-5332	11.4	69.0	7.7	20.9	38.8	85.0	61.5	27.4	3152	35829
SK6758-5122	12.5	68.6	6.9	23.0	40.6	83.7	59.8	25.3	2972	37215
SL5310-5222	11.3	66.1	7.4	19.6	36.6	86.3	62.5	31.5	3368	38043
SL6170-3120	13.8	66.0	7.1	18.4	35.5	87.0	63.4	33.9	3494	48432
SL6889-3120	10.7	71.4	7.7	24.1	42.5	82.2	58.2	23.0	2903	31005
SL6909-5222	10.7	69.5	7.7	22.3	40.0	83.4	58.6	26.3	3062	32969
SL7110-5122	13.4	70.6	7.5	19.0	35.5	85.7	59.8	30.6	3187	42945
SL7506-5222	11.6	69.3	7.1	21.5	38.9	84.9	61.4	29.4	3267	37831
SL7849-3120	11.6	67.6	7.8	20.9	38.2	85.1	60.9	29.9	3315	38328
Mean	11.7	68.5	7.4	21.1	38.5	84.7	60.5	28.6	3185	37522
<u>Probability (%)</u>										
Hybrid (H)	0.0	6.2	0.4	10.5	14.8	16.6	21.4	2.4	0.5	0.2
<u>LSD (0.10)</u>										
Hybrid (H)	1.1	2.9	0.4	NS	NS	NS	NS	4.6	218	5423

FIELD EXPERIMENT HISTORY

Title: Private Silage - Syngenta
Experiment: 01ST **Trial ID:** 6548 **Year:** 2021
Personnel: Joe Lauer, Kent Kohn, Thierno Diallo
Location: Galesville, WI **County:** Trempeleau
Supported By: Syngenta

Site Information

Field: **Previous Crop:** Soybean **Soil Type:** Downs Silt Loam
Soil Test: **Date:** 9 /1 /21 **pH** 5.1 **OM (%)** 3.1 **P (ppm)** 93 **K (ppm)** 160

Plot Management

Tillage Operations: Field Cultivator

Fertilizer:		<u>Analysis</u>	<u>Rate</u>	<u>Date</u>
	Preplant	46-0-0	100 lbs/A	N/A
		21-0-0-24S	21 lbs/A	N/A
		18-46-0	18 lbs/A	N/A
	Starter	9-11-30-6S-1Zn	18 lbs/A	5 /7 /21
	Post plant	N/A	N/A	N/A
	Manure:	N/A	N/A	N/A

Herbicide: Callisto 3.0 oz/A **Insecticide:** Force 3G 4.4 lbs/A
 Dual II Mag 3.0 pt/A **Hybrid:** Factor

Irrigation: None

Planting Date: 5/7/21 **Planting Depth:** 1.5" **Row Width:** 30"

Target Plant Density: 35000 plants per acre **Planting Method:** Almaco Plot Planter

Harvest Date: 9/30/21 **Harvest Method:** NH 707

Experimental Design

Design: RCB **Replications:** 3
Plot Size Seeded: 5' x 23' **Experiment Size:** 0.15 A
Harvest Plot Size: 2.5' x 23' **Harvest Plant Density:** 32461 plants per acre

Hybrids:

SK5270-5122	SL6889-3120
SK5738-5122	SL6909-5222
SK6217-5332	SL7110-5122
SK6758-5122	SL7506-5222
SL5310-5222	SL7849-3120
SL6170-3120	

Results: Table 2101-07.

**Table: 2101-07. Syngenta Corn Silage Evaluation Study.
Galesville, WI - 2021.**

Hybrid	Dry Matter								Milk Per	
	Yield	Moisture	CP	ADF	NDF	IVD	NDFD	Starch	Ton	Acre
	T/A	%	%	%	%	%	%	%	lbs/T	lbs/A
SK5270-5122	10.6	68.6	7.4	23.3	40.6	83.1	58.3	27.3	3115	33071
SK5738-5122	11.5	71.6	7.7	23.3	40.7	82.7	57.5	24.8	2932	33763
SK6217-5332	10.7	71.7	8.1	23.3	41.3	82.1	56.7	26.1	3070	32811
SK6758-5122	12.2	71.9	7.4	25.5	43.3	81.0	56.2	24.4	2962	36196
SL5310-5222	10.3	69.5	7.6	26.2	44.1	81.6	58.4	24.9	3111	31940
SL6170-3120	14.5	67.9	7.2	19.4	36.2	85.8	60.8	32.4	3349	48649
SL6889-3120	10.7	72.4	8.3	23.3	41.4	82.7	58.3	24.4	2991	32072
SL6909-5222	11.5	70.4	7.2	22.6	40.6	82.5	56.8	25.5	2921	33644
SL7110-5122	12.5	74.2	7.8	23.5	40.5	82.8	57.5	24.6	2912	36427
SL7506-5222	11.7	71.6	7.6	25.0	43.0	82.8	60.2	25.3	3128	36996
SL7849-3120	11.4	68.9	8.1	21.6	39.3	84.4	60.5	28.9	3281	37515
Mean	11.6	70.8	7.7	23.4	41.0	82.9	58.3	26.2	3070	35735
<u>Probability (%)</u>										
Hybrid (H)	0.1	0.8	0.4	10.0	15.7	13.6	2.1	17.4	7.3	0.9
<u>LSD (0.10)</u>										
Hybrid (H)	1.3	2.5	0.5	NS	NS	NS	2.3	NS	245	6255

FIELD EXPERIMENT HISTORY

Title: Private Silage - Syngenta
Experiment: 01ST **Trial ID:** 6563 **Year:** 2021
Personnel: Joe Lauer, Kent Kohn, Thierno Diallo
Location: Marshfield, WI **County:** Marathon
Supported By: Syngenta

Site Information

Field: **Previous Crop:** Soybean **Soil Type:** Fenwood Silt Loam
Soil Test: **Date:** 9 /1 /21 **pH** 6.5 **OM (%)** 2.7 **P (ppm)** 30 **K (ppm)** 80

Plot Management

Tillage Operations: Strip-Till Vertical-Till

Fertilizer:	<u>Analysis</u>	<u>Rate</u>	<u>Date</u>
Preplant	18-46-0	N/A	23 lbs/A
Starter	9-11-30-6S-1Zn	18 lbs/A	5 /1 /21
Post plant	29-0-0-3S	119 lbs/A	N/A
Manure:	Dairy	25 ton	N/A

Herbicide: Resicore 2.0 qt/A **Insecticide:** Force 3G 4.4 lbs/A

Irrigation: None **Hybrid:** Factor

Planting Date: 5/10/21 **Planting Depth:** 1.5" **Row Width:** 30"

Target Plant Density: 35000 plants per acre **Planting Method:** Almaco Plot Planter

Harvest Date: 9/22/21 **Harvest Method:** NH 707

Experimental Design

Design: RCB **Replications:** 3

Plot Size Seeded: 5' x 23' **Experiment Size:** 0.05 A

Harvest Plot Size: 2.5' x 23' **Harvest Plant Density:** 32325 plants per acre

Hybrids:

SK5270-5122
 SK5738-5122
 SK6217-5332
 SL5310-5222
 SL6170-3120

Results: Table 2101-08.

**Table: 2101-08. Syngenta Corn Silage Evaluation Study.
Marshfield, WI - 2021.**

Hybrid	Dry Matter							Milk Per		
	Yield	Moisture	CP	ADF	NDF	IVD	NDFD	Starch	Ton	Acre
	T/A	%	%	%	%	%	%	%	lbs/T	lbs/A
SK5270-5122	9.8	70.3	7.1	24.4	42.8	81.9	57.8	23.7	2905	28535
SK5738-5122	10.7	70.1	7.0	22.4	39.9	83.6	58.9	26.6	3012	32210
SK6217-5332	10.0	72.0	7.3	24.3	42.9	81.4	56.6	23.5	2880	28819
SL5310-5222	11.0	68.7	6.5	23.8	41.8	83.1	59.7	23.4	2832	31001
SL6170-3120	12.5	67.7	6.4	20.4	38.0	84.8	60.1	30.5	3213	40061
Mean	10.8	69.8	6.9	23.1	41.1	83.0	58.6	25.5	2968	32125
<u>Probability (%)</u>										
Hybrid (H)	1.2	1.2	1.2	2.2	3.3	4.5	8.8	1.7	7.7	0.6
<u>LSD (0.10)</u>										
Hybrid (H)	1.1	1.7	0.4	1.9	2.6	1.8	2.2	3.3	224.3	4232

FIELD EXPERIMENT HISTORY

Title: Private Silage - Syngenta
Experiment: 01ST **Trial ID:** 6556 **Year:** 2021
Personnel: Joe Lauer, Kent Kohn, Thierno Diallo
Location: Montfort, WI **County:** Iowa
Supported By: Syngenta

Site Information

Field: **Previous Crop:** Soybean **Soil Type:** Dodgeville Silt Loam
Soil Test: **Date:** 9 /1 /21 **pH** 6.1 **OM (%)** 3.2 **P (ppm)** 78 **K (ppm)** 99

Plot Management

Tillage Operations: Strip-Till

Fertilizer:		<u>Analysis</u>	<u>Rate</u>	<u>Date</u>
	Preplant	32-0-0	160 lbs/A	N/A
		12-0-026S	13 lbs/A	N/A
		46-0-0	23 lbs/A	N/A
		11-52-0	6 lbs/A	N/A
	Starter	9-11-30-6S-1Zn	18 lbs/A	4 /26/21
	Post plant	N/A	N/A	N/A
	Manure:	N/A	N/A	N/A

Herbicide: Atrazine 4L 32.0 oz/A **Insecticide:** Force 3G 4.4 lbs/A
 Explorer 3.0 oz/A **Hybrid:** Factor
 Roundup 25.6 oz/A
 Zidua 3.25 oz/A

Irrigation: None

Planting Date: 4/26/21 **Planting Depth:** 1.5" **Row Width:** 30"

Target Plant Density: 35000 plants per acre **Planting Method:** Almaco Plot Planter

Harvest Date: 9/30/21 **Harvest Method:** NH 707

Experimental Design

Design: RCB **Replications:** 3
Plot Size Seeded: 5' x 23' **Experiment Size:** 0.12 A
Harvest Plot Size: 2.5' x 23' **Harvest Plant Density:** 32969 plants per acre

Hybrids:

SK6217-5332	SL6909-5222
SK6758-5122	SL7110-5122
SK8749-5222	SL7506-5222
SL6170-3120	SL7849-3120
SL6889-3120	

Results: Table 2101-09.

**Table: 2101-09. Syngenta Corn Silage Evaluation Study.
Montfort, WI - 2021.**

Hybrid	Dry Matter								Milk Per	
	Yield	Moisture	CP	ADF	NDF	IVD	NDFD	Starch	Ton	Acre
	T/A	%	%	%	%	%	%	%	lbs/T	lbs/A
SK6217-5332	10.0	67.0	8.1	22.2	39.4	83.5	58.0	29.9	3323	33347
SK6758-5122	11.2	68.3	7.2	22.8	40.8	83.6	59.9	28.0	3215	35999
SK8749-5222	11.8	69.9	7.9	21.1	38.4	85.1	61.3	29.5	3302	39171
SL6170-3120	12.0	61.7	7.2	18.2	35.1	86.8	62.3	36.4	3542	42656
SL6889-3120	10.3	67.4	7.8	22.5	40.6	83.4	59.0	28.2	3244	33486
SL6909-5222	10.5	67.5	7.5	23.0	41.5	81.9	56.8	27.7	3158	33509
SL7110-5122	12.0	70.0	7.7	22.6	39.6	82.3	55.3	27.4	3042	36538
SL7506-5222	10.7	64.2	7.3	20.9	38.1	85.3	61.5	33.2	3488	37419
SL7849-3120	10.7	65.6	8.1	21.3	38.8	84.7	60.6	30.8	3421	36526
Mean	11.0	66.8	7.6	21.6	39.1	84.1	59.4	30.1	3304	36517
<u>Probability (%)</u>										
Hybrid (H)	2.5	0.3	0.7	24.5	23.7	10.2	0.9	3.9	1.6	9.5
<u>LSD (0.10)</u>										
Hybrid (H)	1.1	2.9	0.4	NS	NS	NS	2.9	4.4	212	5155

FIELD EXPERIMENT HISTORY

Title: Private Silage - Syngenta
Experiment: 01ST **Trial ID:** 6562 **Year:** 2021
Personnel: Joe Lauer, Kent Kohn, Thierno Diallo
Location: Valders, WI **County:** Manitowoc
Supported By: Syngenta

Site Information

Field: **Previous Crop:** Corn **Soil Type:** Kewaunee Clay Loam
Soil Test: **Date:** 9 /1 /21 **pH** 7.4 **OM (%)** 2.8 **P (ppm)** 31 **K (ppm)** 82

Plot Management

Tillage Operations: Chisel Plow Field Cultivator

Fertilizer:	<u>Analysis</u>	<u>Rate</u>	<u>Date</u>
Preplant	N/A	N/A	N/A
Starter	9-11-30-6S-1Zn	18 lbs/A	4 /29/21
Post plant	32-0-0	131 lbs/A	N/A
Manure:	Dairy	10000 gal/A	N/A

Herbicide: Atrazine 1.0 lb/A
 Realm Q 4.0oz/A
 TripleFlex 3.0 qt/A

Insecticide: Force 3G 4.4 lbs/A
Hybrid: Factor

Irrigation: None

Planting Date: 4/29/21 **Planting Depth:** 1.5" **Row Width:** 30"
Target Plant Density: 35000 plants per acre **Planting Method:** Almaco Plot Planter
Harvest Date: 9/16/21 **Harvest Method:** NH 707

Experimental Design

Design: RCB **Replications:** 3
Plot Size Seeded: 5' x 23' **Experiment Size:** 0.05 A
Harvest Plot Size: 2.5' x 23' **Harvest Plant Density:** 33083 plants per acre

Hybrids:

SK5270-5122
 SK5738-5122
 SK6217-5332
 SL5310-5222
 SL6170-3120

Results: Table 2101-10.

**Table: 2101-10. Syngenta Corn Silage Evaluation Study.
Valders, WI - 2021.**

Hybrid	Dry Matter							Milk Per		
	Yield	Moisture	CP	ADF	NDF	IVD	NDFD	Starch	Ton	Acre
	T/A	%	%	%	%	%	%	%	lbs/T	lbs/A
SK5270-5122	9.5	58.9	6.4	19.5	37.2	85.0	59.6	32.9	3222	30570
SK5738-5122	10.6	63.4	7.2	20.7	39.0	83.9	58.8	28.3	3099	32890
SK6217-5332	10.9	62.8	7.4	19.1	36.7	85.4	60.2	33.3	3402	36966
SL5310-5222	9.9	64.5	7.1	22.6	41.5	83.3	59.6	27.2	3164	31402
SL6170-3120	11.8	61.5	6.7	17.3	34.3	87.4	63.1	36.1	3482	41058
Mean	10.5	62.2	6.9	19.8	37.7	85.0	60.3	31.5	3274	34577
<u>Probability (%)</u>										
Hybrid (H)	32.5	0.6	2.9	0.7	0.5	1.3	3.5	0.1	0.3	11.9
<u>LSD (0.10)</u>										
Hybrid (H)	NS	2.0	0.5	1.8	2.4	1.6	2.1	2.4	134	NS

FIELD EXPERIMENT HISTORY

Title: SARE Farmer Rancher Grant Corn Variety Trial
Experiment: 01HT **Trial ID:** 6592 **Year:** 2021
Personnel: Joe Lauer, Kent Kohn, Thierno Diallo and Frank Kutka
Location: Seymour, WI **County:** Outagamie
Supported By: SARE Farmer Rancher Grant

Site Information

Field: **Previous Crop:** Soybean **Soil Type:** Onaway Silt Loam
Soil Test: **Date:** 9 /01/21 **pH** 7.1 **OM (%)** 2.1 **P (ppm)** 63 **K (ppm)** 112

Plot Management

Tillage Operations: Chisel Plow Field Cultivator
Fertilizer: **Preplant Analysis:** 46-0-0 **Rate lbs/A:** 46 lbs **Date:** N/A
11-52-0 17 lbs N/A
Starter Analysis: 9-11-30-6S-1Zn **Rate lbs/A:** 18 lbs **Date:** 5 /6 /21
Post plant Analysis: 32-0-0 **Rate lbs/A:** 124 lbs **Date:** N/A
Manure: None

Herbicide: Atrazine 0.75 lb/A **Insecticide:** Force 3G 4.4 lbs
Dual II Mag 1.0 pt/A **Hybrid:** Factor
Explorer 3.0 qt/A
Irrigation: None
Planting Date: 5/6/21 **Planting Depth:** 1.5" **Row Width:** 30"
Target Plant Density: 32000 **plants per acre** **Planting Method:** Almaco Precision Planter
Harvest Date: 10/18/21 **Harvest Method:** Massey8XP

Experimental Design

Design: RCB **Replications:** 3
Plot Size Seeded: 10' x 23' **Experiment Size:** 0.57 Acre
Harvest Plot Size: 5' x 23' **Harvest Plant Density:** 32106 **plants per acre**

Factors/Treatments:

Hybrids:

B73s/Dairyland	Dairyland/(FBHJ/Euro Flint S3)	Sequia/Dairyland
B37s/Dairyland	ND2004/Dairyland	Dairyland/Coroico Cross
Iodents/Dairyland	ND2006/Dairyland	Minnesota 13
Pioneer Mixed/Dairyland	(CG-BS16/Syn A-NL)/Dairyland	Dublin
Mo17s/Dairyland	Cateto Cross/Dairyland	Stan's OP
MN13s/Dairyland	NDBSK/Dairyland	Wapsie Valley
EP1/CO255//Dairyland	Silver King/Dairyland	Tommy Boy
80-1/No. 380//Dairyland	Dairyland/Cuzco Cross	Dairyland
Pete Seeger Cross/Dairyland	Dairyland/Cacahuacintle Cross	8833
Wachichu/Compton's Early//Dairyland	Dairyland/Conico Cross	8924

Results: Table 2101-11

**Table: 2101-11. SARE Farmer Rancher Grant Corn Variety Trial
Seymour, WI - 2021.**

Hybrid	Harvest density	Grain yield	Grain moisture	Test wt	Lodged			*AGR \$5.22
					Total	Stalk	Root	
	plants/A	bu/A	%	lb/bu	%	%	%	\$/A
B73s/Dairyland	33585	173	20.1	59	3	3	0	850
B37s/Dairyland	24116	147	20.9	61	7	6	1	716
Iodents/Dairyland	33080	186	21.6	60	2	2	0	906
Pioneer Mixed/Dairyland	32702	161	19.9	59	5	4	2	790
Mo17s/Dairyland	32575	160	19.9	59	8	8	0	785
MN13s/Dairyland	32828	136	19.0	61	5	5	0	671
EP1/CO255//Dairyland	33459	146	20.6	60	3	3	0	716
80-1/No. 380//Dairyland	32070	133	21.2	62	13	13	0	649
Pete Seeger Cross/Dairyland	33964	134	20.0	59	8	6	1	659
Wachichu/Compton's Early//Dairyland	33838	152	20.9	58	10	10	0	744
Dairyland/(FBHJ/Euro Flint S3)	31439	134	19.8	61	6	6	0	657
ND2004/Dairyland	32449	168	20.2	60	1	1	0	822
ND2006/Dairyland	31691	139	20.7	57	6	6	0	677
(CG-BS16/Syn A-NL)/Dairyland	33964	127	18.3	61	7	6	2	627
Cateto Cross/Dairyland	34090	124	21.5	60	6	6	0	603
NDBSK/Dairyland	32702	158	22.0	57	4	4	0	767
Silver King/Dairyland	31944	131	20.6	55	15	15	0	639
Dairyland/Cuzco Cross	32954	144	30.0	53	10	5	5	679
Dairyland/Cacahuacintle Cross	32575	136	23.2	57	10	5	4	656
Dairyland/Conico Cross	30681	164	22.7	59	10	9	2	795
Sequia/Dairyland	33080	134	21.0	56	5	5	0	655
Dairyland/Coroico Cross	32070	144	23.8	56	3	3	0	693
Minnesota 13	32197	146	17.8	58	9	9	0	720
Dublin	28787	119	24.1	55	23	10	12	575
Stan's OP	31313	175	19.1	57	6	4	2	859
Wapsie Valley	33333	142	21.6	60	18	10	8	691
Tommy Boy	24368	138	22.3	61	20	11	9	671
Dairyland	32197	129	19.9	61	2	2	0	634
8833	33080	238	19.4	58	2	2	0	1170
8924	33333	223	17.0	58	3	2	1	1104
Mean	32016	151	21.0	59	8	6	2	739
<u>Probability(%)</u>								
Hybrid (H)	0.0	0.0	0.0	0.0	0.1	12.8	1.0	0.0
<u>LSD(0.10)</u>								
Hybrid (H)	1810	19	2.3	3	8	NS	5	97

FIELD EXPERIMENT HISTORY

Title: Plant Density and Hybrid Influence on Corn Grain and Silage Performance
Experiment: 02PD **Trial ID:** 6610 **Year:** 2021
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:** 9 /1 /21 **pH** 6.3 **OM (%)** 4.0 **P (ppm)** 56 **K (ppm)** 75

Plot Management

Tillage Operations: Field Cultivator

		<u>Analysis:</u>	<u>Rate lbs/A</u>	<u>Date:</u>
Fertilizer:	Preplant :	32-0-0	149 lbs/A	N/A
	Starter :	9-11-30-6S-1Zn	18 lbs/A	4 /27/21
	Post plant :	N/A	N/A	N/A
	Manure:	N/A	N/A	N/A
Herbicide:	Resicore 2.5 qt/A		Insecticide: Force 3G 4.4 lbs/A	
Irrigation:	None		Hybrid: See Factors	
Planting Date:	4/27/21	Planting Depth: 1.5"	Row Width: 30"	
Target Plant Density:	See Factors		Planting Method: Almaco Plot Planter	
Harvest Date:	S: 9/9/21 G: 10/6/21		Harvest Method: S: New Holland 707 G: Massey 8XP	

Experimental Design

Design: RCB	Replications: 3
Plot Size Seeded: 10' x 25'	Experiment Size: 0.25 A
Harvest Plot Size: S: 2.5' x 23' G: 5' x 23'	Harvest Plant Density: 33091

Factors/Treatments:

<u>Target Plant Density:</u>	<u>Hybrid:</u>
1) 20000	1) Jung 47DP411 97RM
2) 26000	2) Dairyland DS-4440AMXT 106RM
3) 32000	
4) 38000	
5) 44000	
6) 50000	

Results: Tables 2102-01 & 2102-02.

**Table: 2102-01. Plant Density and Hybrid Influence on Corn Grain.
Arlington, WI - 2021.**

Hybrid	Target	Harvest	Yield	Moisture	Test	Lodged			AGR
	density	density				Total	Stalk	Root	
	plants/A	plants/A	bu/A	%	lbs/bu	%	%	%	\$/A
Dairyland DS-4440AMXT		33291	255	23.1	54	0.6	0.1	0.5	1234
Jung 47DP411		32891	245	19.2	55	5.4	5.1	0.2	1202
	20000	18182	211	22.5	54	0.8	0.3	0.4	1022
	26000	25378	236	21.7	55	0.7	0.5	0.2	1148
	32000	30050	257	20.5	54	1.6	1.2	0.4	1258
	38000	35416	255	20.9	56	2.8	2.8	0.0	1245
	44000	42361	271	20.5	56	6.0	4.9	1.0	1325
	50000	47158	269	20.6	55	6.2	6.0	0.1	1313
Dairyland DS-4440AMXT	20000	17550	193	24.2	53	0.9	0.0	0.9	929
Dairyland DS-4440AMXT	26000	25757	237	23.6	53	0.0	0.0	0.0	1146
Dairyland DS-4440AMXT	32000	30681	261	21.9	54	0.4	0.0	0.4	1267
Dairyland DS-4440AMXT	38000	36111	273	23.2	57	0.0	0.0	0.0	1318
Dairyland DS-4440AMXT	44000	42297	282	22.5	55	2.1	0.6	1.5	1370
Dairyland DS-4440AMXT	50000	47348	284	23.0	54	0.5	0.3	0.3	1376
Jung 47DP411	20000	18813	228	20.8	54	0.7	0.7	0.0	1116
Jung 47DP411	26000	25000	234	19.7	56	1.4	1.0	0.5	1149
Jung 47DP411	32000	29419	254	19.1	55	2.9	2.5	0.4	1249
Jung 47DP411	38000	34722	238	18.7	55	5.6	5.6	0.0	1172
Jung 47DP411	44000	42424	260	18.6	57	9.8	9.3	0.6	1280
Jung 47DP411	50000	46969	253	18.2	56	11.8	11.8	0.0	1249
Mean		33091	250	21.1	55	3.0	2.6	0.4	1218
<u>Probability(%)</u>									
Hybrid (H)		47.9	0.6	0.0	1.1	2.5	1.9	26.7	8.4
Plant Density (D)		0.0	0.0	1.3	3.6	40.1	45.0	18.4	0.0
Hybrid x Plant Density		75.1	0.0	58.9	0.9	55.8	53.6	49.6	0.0
<u>LSD (0.10)</u>									
Hybrid (H)		NS	6	0.6	1	3.4	3.4	NS	30
Plant Density (D)		1649	10	1.0	1	NS	NS	NS	53
Hybrid x Plant Density		NS	14	NS	2	NS	NS	NS	74.3

Table: 2102-02. Plant Density and Hybrid Influence on Silage Performance.
Arlington WI - 2021.

Hybrid	Target density plants/A	Harvest density plants/A	Dry Matter		Kernel milk %	KMR 0-5	SMR 0-5	VMR 0-10	Crude protein %	ADF %	NDF %	In Vitro			Milk per	
			Yield T/A	Moist %								Digest %	NDFD %	Starch %	Ton lbs/T	Acre lbs/A
Dairyland DS-4440AMXT		32723	10.8	60.8	38.9	1.9	2.2	4.2	7.5	18.9	35.6	86.6	62.4	32.0	3261	35182
Jung 47DP411		32891	10.9	50.5	19.2	1.0	0.6	1.6	6.6	17.4	33.7	86.6	60.2	37.7	3258	35469
	20000	18750	9.1	60.1	40.8	2.0	2.1	4.1	7.5	19.2	36.3	86.0	61.5	31.0	3162	28918
	26000	24810	10.6	56.3	30.0	1.5	1.5	3.0	7.1	17.6	34.0	87.2	62.5	35.2	3284	34763
	32000	30050	10.6	55.9	23.3	1.2	1.9	3.1	6.9	17.8	34.1	86.9	61.8	36.3	3313	35143
	38000	35921	11.5	53.8	23.3	1.2	1.2	2.4	7.0	17.0	33.0	87.3	61.5	37.2	3327	38149
	44000	40025	11.3	54.2	28.3	1.4	0.9	2.3	6.9	17.9	34.3	86.6	60.9	36.1	3291	37187
	50000	47285	11.9	53.7	28.3	1.4	1.1	2.5	6.9	19.5	36.3	85.3	59.6	33.6	3181	37794
Dairyland DS-4440AMXT	20000	18813	8.5	64.9	50.0	2.5	3.1	5.6	7.8	20.7	38.4	85.2	61.5	26.6	3059	26020
Dairyland DS-4440AMXT	26000	25126	10.7	59.7	40.0	2.0	2.1	4.1	7.4	17.5	34.0	87.8	64.1	34.1	3349	36081
Dairyland DS-4440AMXT	32000	29545	10.7	61.5	33.3	1.7	3.1	4.7	7.5	19.1	35.2	86.9	63.0	32.8	3334	35954
Dairyland DS-4440AMXT	38000	35732	11.6	59.9	33.3	1.7	1.8	3.5	7.5	17.5	33.3	87.8	63.2	34.7	3347	38766
Dairyland DS-4440AMXT	44000	39898	11.1	60.1	36.7	1.8	1.6	3.4	7.3	19.6	36.5	86.0	61.6	31.8	3247	35977
Dairyland DS-4440AMXT	50000	47222	11.9	58.8	40.0	2.0	1.8	3.8	7.5	19.2	36.0	86.0	61.0	32.2	3230	38295
Jung 47DP411	20000	18687	9.8	55.2	31.7	1.6	1.1	2.7	7.2	17.7	34.2	86.8	61.5	35.5	3265	31816
Jung 47DP411	26000	24495	10.4	52.9	20.0	1.0	0.8	1.8	6.9	17.7	34.0	86.7	60.8	36.2	3218	33446
Jung 47DP411	32000	30555	10.4	50.3	13.3	0.7	0.8	1.5	6.4	16.6	32.9	87.0	60.6	39.7	3292	34332
Jung 47DP411	38000	36111	11.3	47.7	13.3	0.7	0.7	1.3	6.5	16.6	32.6	86.9	59.8	39.7	3307	37532
Jung 47DP411	44000	40151	11.5	48.2	20.0	1.0	0.2	1.2	6.5	16.2	32.0	87.3	60.2	40.4	3335	38396
Jung 47DP411	50000	47348	11.9	48.5	16.7	0.8	0.3	1.2	6.3	19.7	36.6	84.7	58.2	34.9	3131	37293
Mean		32807	10.8	55.7	29.0	1.5	1.4	2.9	7.0	18.2	34.6	86.6	61.3	34.9	3260	35326
Probability(%)																
Hybrid (H)		78.8	74.2	0.4	4.1	4.1	0.7	1.1	1.6	11.2	12.0	94.5	4.4	2.3	95.7	87.2
Plant Density (D)		0.0	0.1	0.0	20.1	20.0	0.0	0.8	5.0	12.0	6.6	5.2	5.3	0.8	1.0	0.1
Hybrid x Density (H x D)		97.2	65.5	28.0	99.8	99.8	18.7	81.8	48.4	22.9	21.4	16.5	34.4	16.0	2.5	28.8
LSD (0.10)																
Hybrid (H)		NS	NS	2.0	12.0	0.6	0.4	0.8	0.3	NS	NS	NS	1.4	2.6	NS	NS
Plant Density (D)		1636	0.9	2.1	NS	NS	0.4	0.8	0.3	NS	2.1	1.1	1.4	2.6	85	3367
Hybrid x Density (H x D)		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	130	NS

FIELD EXPERIMENT HISTORY

Title: Plant Density and Hybrid Influence on Corn Grain
Experiment: 02PD **Trial ID:** 6541 **Year:** 2021
Personnel: Joe Lauer, Kent Kohn, Thierno Diallo
Location: Chippewa Falls, WI **County:** Chippewa, WI
Supported By: HATCH

Site Information

Field: **Previous Crop:** Corn **Soil Type:** Sattre Silt Loam
Soil Test: **Date:** 9 /1 /21 **pH** 5.5 **OM (%)** 1.6 **P (ppm)** 69 **K (ppm)** 117

Plot Management

Tillage Operations: Spring Chisel Field Cultivator

	<u>Analysis:</u>	<u>Rate lbs/A</u>	<u>Date:</u>
Fertilizer:	Preplant : 21-0-0-24S	11 lbs/A	N/A
	Starter : 9-11-30-6S-1Zn	18 lbs/A	4 /30/21
	Post plant : 32-0-0	54 lbs/A	N/A
	Manure: Dairy	10000 gal/A	N/A
Herbicide:	Atrazine 16 oz/A Accent Q 0.9 oz/A Capreno 3.0 oz/A Sterling Blue 4.0 ozt/A	Insecticide: Force 3G 4.4 lbs/A	
Irrigation:	Irrigated	Hybrid: See Factors	
Planting Date:	4/30/21	Planting Depth: 1.5"	Row Width: 30"
Target Plant Density:	See Factors	Planting Method:	Almaco Plot Planter
Harvest Date:	10/4/21	Harvest Method:	Massey 8XP

Experimental Design

Design: RCB **Replications:** 3
Plot Size Seeded: 10' x 25' **Experiment Size:** 0.5 A
Harvest Plot Size: 5' x 23' **Harvest Plant Density:** 34690

Factors/Treatments:

<u>Target Plant Density:</u>	<u>Hybrid:</u>
1) 20000	1) Dekalb DKC43-75RIB 93RM
2) 26000	2) Jung 47DP411 97RM
3) 32000	
4) 38000	
5) 44000	
6) 50000	

Results: Tables 2102-03.

FIELD EXPERIMENT HISTORY

Title: Plant Density and Hybrid Influence on Corn Grain
Experiment: 02PD **Trial ID:** 6540 **Year:** 2021
Personnel: Joe Lauer, Kent Kohn, Thierno Diallo
Location: Coleman, WI **County:** Marinette
Supported By: HATCH

Site Information

Field: **Previous Crop:** Soybean **Soil Type:** Oconto Silt Loam
Soil Test: **Date:** 9 /1 /21 **pH** 6.7 **OM (%)** 2.1 **P (ppm)** 41 **K (ppm)** 83

Plot Management

Tillage Operations: Disk Chisel Field Cultivator

		<u>Analysis:</u>	<u>Rate lbs/A</u>	<u>Date:</u>
Fertilizer:	Preplant :	18-46-0	9 lbs/A	N/A
		21-0-0-24S	21 lbs/A	N/A
		46-0-0	138 lbs/A	N/A
	Starter :	9-11-30-6S-1Zn	18 lbs/A	5 /6 /21
	Post plant :	N/A	N/A	N/A
	Manure:	N/A	N/A	N/A
Herbicide:	Accent Q 5.0 oz/A Explorer 3.0 oz/A Status 5.0 oz/A		Insecticide: Force 3G 4.4 lbs/A	
Irrigation:	None		Hybrid: See Factors	
Planting Date:	5/6/21	Planting Depth:	1.5"	Row Width: 30"
Target Plant Density:	See Factors	Planting Method:	Almaco Plot Planter	
Harvest Date:	10/18/21	Harvest Method:	Massey 8XP	

Experimental Design

Design: RCB **Replications:** 3
Plot Size Seeded: 10' x 25' **Experiment Size:** 0.5 A
Harvest Plot Size: 5' x 23' **Harvest Plant Density:** 33491

Factors/Treatments:

<u>Target Plant Density:</u>	<u>Hybrid:</u>
1) 20000	1) Dekalb DKC43-75RIB 93RM
2) 26000	2) Jung 47DP411 97RM
3) 32000	
4) 38000	
5) 44000	
6) 50000	

Results: Tables 2102-04.

FIELD EXPERIMENT HISTORY

Title: Plant Density and Hybrid Influence on Corn Grain
Experiment: 02PD **Trial ID:** 6539 **Year:** 2021
Personnel: Joe Lauer, Kent Kohn, Thierno Diallo
Location: Fond du Lac, WI **County:** Fond du Lac
Supported By: HATCH

Site Information

Field: **Previous Crop:** Soybean **Soil Type:** Virgil Silt Loam
Soil Test: **Date:** 9 /1 /21 **pH** 7.0 **OM (%)** 3.3 **P (ppm)** 51 **K (ppm)** 126

Plot Management

Tillage Operations: Strip-Till

		<u>Analysis:</u>	<u>Rate lbs/A</u>	<u>Date:</u>
Fertilizer:	Preplant :	N/A	N/A	N/A
	Starter :	9-11-30-6S-1Zn	18 lbs/A	4 /27/21
	Post plant :	32-0-0	165 lbs/A	N/A
	Manure:	N/A	N/A	N/A
Herbicide:	Acuron 1.5 qt/A		Insecticide: Force 3G 4.4 lbs/A	
Irrigation:	None		Hybrid: See Factors	
Planting Date:	4/27/21	Planting Depth: 1.5"	Row Width: 30"	
Target Plant Density:	See Factors	Planting Method:	Almaco Plot Planter	
Harvest Date:	10/15/21	Harvest Method:	Massey 8XP	

Experimental Design

Design: RCB **Replications:** 3
Plot Size Seeded: 10' x 25' **Experiment Size:** 0.5 A
Harvest Plot Size: 5' x 23' **Harvest Plant Density:** 32175

Factors/Treatments:

<u>Target Plant Density:</u>	<u>Hybrid:</u>
1) 20000	1) Jung 47DP411 97RM
2) 26000	2) Dairyland DS-4440AMXT 106RM
3) 32000	
4) 38000	
5) 44000	
6) 50000	

Results: Tables 2102-05.

**Table: 2102-05. Plant Density and Hybrid Influence on Corn Grain.
Fond du Lac, WI - 2021.**

Hybrid	Target	Harvest	Yield	Moisture	Test	Lodged			AGR
	density	density				Total	Stalk	Root	
	plants/A	plants/A	bu/A	%	lbs/bu	%	%	%	\$/A
Dairyland DS-4440AMXT		32323	257	29.4	52	0.2	0.1	0.1	1213
Jung 47DP411		32028	261	26.2	52	0.1	0.1	0.0	1249
	20000	18560	220	30.1	52	0.0	0.0	0.0	1032
	26000	25063	249	27.6	52	0.3	0.3	0.0	1184
	32000	29798	262	27.7	52	0.0	0.0	0.0	1243
	38000	34217	271	27.3	52	0.2	0.2	0.0	1287
	44000	40845	277	27.2	52	0.2	0.0	0.2	1318
	50000	44570	277	26.8	52	0.4	0.4	0.0	1322
Dairyland DS-4440AMXT	20000	18687	213	30.0	52	0.0	0.0	0.0	1001
Dairyland DS-4440AMXT	26000	24621	246	29.1	52	0.5	0.5	0.0	1160
Dairyland DS-4440AMXT	32000	29798	257	29.4	52	0.0	0.0	0.0	1209
Dairyland DS-4440AMXT	38000	34217	274	29.4	52	0.4	0.4	0.0	1290
Dairyland DS-4440AMXT	44000	42424	286	29.2	52	0.3	0.0	0.3	1347
Dairyland DS-4440AMXT	50000	44191	269	29.2	53	0.0	0.0	0.0	1268
Jung 47DP411	20000	18434	226	30.1	51	0.0	0.0	0.0	1062
Jung 47DP411	26000	25505	253	26.1	52	0.0	0.0	0.0	1208
Jung 47DP411	32000	29798	267	26.0	52	0.0	0.0	0.0	1277
Jung 47DP411	38000	34217	268	25.3	52	0.0	0.0	0.0	1283
Jung 47DP411	44000	39267	269	25.1	51	0.0	0.0	0.0	1288
Jung 47DP411	50000	44949	286	24.4	52	0.9	0.9	0.0	1375
Mean		32175	259	27.8	52	0.2	0.1	0.0	1231
<u>Probability(%)</u>									
Hybrid (H)		64.4	15.5	0.0	7.3	72.5	99.9	32.8	1.2
Plant Density (D)		0.0	0.0	0.1	90.0	51.0	34.3	44.1	0.0
Hybrid x Plant Density		49.0	1.2	1.3	70.5	12.0	9.9	44.1	2.1
<u>LSD (0.10)</u>									
Hybrid (H)		NS	NS	0.6	0	NS	NS	NS	23
Plant Density (D)		1872	8	1	NS	NS	NS	NS	39
Hybrid x Plant Density		NS	11.5	1.5	NS	NS	0.6	NS	55.6

FIELD EXPERIMENT HISTORY

Title: Plant Density and Hybrid Influence on Corn Grain
Experiment: 02PD **Trial ID:** 6538 **Year:** 2021
Personnel: Joe Lauer, Kent Kohn, Thierno Diallo
Location: Galesville, WI **County:** Trempeau
Supported By: HATCH

Site Information

Field: **Previous Crop:** Soybean **Soil Type:** Downs Silt Loam
Soil Test: **Date:** 9 /1 /21 **pH** 5.1 **OM (%)** 3.1 **P (ppm)** 93 **K (ppm)** 160

Plot Management

Tillage Operations: Field Cultivator

		<u>Analysis:</u>	<u>Rate lbs/A</u>	<u>Date:</u>
Fertilizer:	Preplant :	46-0-0	100 lbs/A	N/A
		21-0-0-24S	21 lbs/A	N/A
		18-46-0	18 lbs/A	N/A
	Starter :	9-11-30-6S-1Zn	18 lbs/A	5 /7 /21
	Post plant :	N/A	N/A	N/A
	Manure:	N/A	N/A	N/A
Herbicide:	Callisto 3.0 oz/A Dual II Mag 3.0 pt/A		Insecticide: Force 3G 4.4 lbs/A	
Irrigation:	None		Hybrid: See Factors	
Planting Date:	5/7/21	Planting Depth:	1.5"	Row Width: 30"
Target Plant Density:	See Factors	Planting Method:	Almaco Plot Planter	
Harvest Date:	9/30/21	Harvest Method:	Massey 8XP	

Experimental Design

Design: RCB **Replications:** 3
Plot Size Seeded: 10' x 25' **Experiment Size:** 0.5 A
Harvest Plot Size: 5' x 23' **Harvest Plant Density:** 33101

Factors/Treatments:

<u>Target Plant Density:</u>	<u>Hybrid:</u>
1) 20000	1) Jung 47DP411 97RM
2) 26000	2) Dairyland DS-4440AMXT 106RM
3) 32000	
4) 38000	
5) 44000	
6) 50000	

Results: Tables 2102-06.

**Table: 2102-06. Plant Density and Hybrid Influence on Corn Grain.
Galesville, WI - 2021.**

Hybrid	Target	Harvest	Yield	Moisture	Test	Lodged			AGR
	density	density				Total	Stalk	Root	
	plants/A	plants/A	bu/A	%	lbs/bu	%	%	%	\$/A
Dairyland DS-4440AMXT		32428	262	27.6	52	0.1	0.1	0.0	1246
Jung 47DP411		33775	256	27.9	52	1.7	1.6	0.1	1216
	20000	19255	243	28.5	52	1.0	1.0	0.0	1149
	26000	25378	273	27.6	51	0.0	0.0	0.0	1296
	32000	31250	257	28.5	52	0.8	0.8	0.0	1216
	38000	36237	257	27.3	52	0.3	0.2	0.2	1223
	44000	41414	260	27.1	52	0.6	0.6	0.0	1240
	50000	45075	266	27.6	52	2.7	2.7	0.0	1263
Dairyland DS-4440AMXT	20000	18939	261	26.9	52	0.0	0.0	0.0	1245
Dairyland DS-4440AMXT	26000	25126	279	27.1	51	0.0	0.0	0.0	1325
Dairyland DS-4440AMXT	32000	30429	259	30.0	52	0.8	0.8	0.0	1218
Dairyland DS-4440AMXT	38000	34974	250	28.4	52	0.0	0.0	0.0	1185
Dairyland DS-4440AMXT	44000	40025	272	25.3	52	0.0	0.0	0.0	1302
Dairyland DS-4440AMXT	50000	45075	253	27.8	52	0.0	0.0	0.0	1201
Jung 47DP411	20000	19570	224	30.0	52	2.0	2.0	0.0	1053
Jung 47DP411	26000	25631	267	28.2	52	0.0	0.0	0.0	1266
Jung 47DP411	32000	32070	255	27.0	51	0.8	0.8	0.0	1214
Jung 47DP411	38000	37499	264	26.2	52	0.7	0.3	0.3	1261
Jung 47DP411	44000	42802	249	28.9	53	1.2	1.2	0.0	1177
Jung 47DP411	50000	45075	278	27.3	52	5.4	5.4	0.0	1325
Mean		33101	259	27.8	52	0.9	0.9	0.0	1231
<u>Probability(%)</u>									
Hybrid (H)		0.8	39.5	64.5	35.3	0.7	0.8	32.8	39.2
Plant Density (D)		0.0	25.9	82.3	43.6	8.9	6.9	44.1	27.0
Hybrid x Plant Density		42.0	15.3	7.9	84.0	5.6	4.4	44.1	11.6
<u>LSD (0.10)</u>									
Hybrid (H)		788	NS	NS	NS	0.9	0.9	NS	NS
Plant Density (D)		1364	NS	NS	NS	1.5	1.5	NS	NS
Hybrid x Plant Density		NS	NS	3.1	NS	2.2	2.1	NS	NS

FIELD EXPERIMENT HISTORY

Title: Plant Density and Hybrid Influence on Corn Grain
Experiment: 02PD **Trial ID:** 6537 **Year:** 2021
Personnel: Joe Lauer, Kent Kohn, Thierno Diallo
Location: Hancock, WI **County:** Waushara
Supported By: HATCH

Site Information

Field: **Previous Crop:** Potato **Soil Type:** Plainfield Sand
Soil Test: **Date:** 9 /1 /21 **pH** 5.3 **OM (%)** 0.7 **P (ppm)** 126 **K (ppm)** 50

Plot Management

Tillage Operations: Soil Finisher

		<u>Analysis:</u>	<u>Rate lbs/A</u>	<u>Date:</u>
Fertilizer:	Preplant :	N/A	N/A	N/A
	Starter :	9-11-30-6S-1Zn	18 lbs/A	4 /30/21
	Post plant :	21-0-024S	32 lbs/A	N/A
		46-0-0	161 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:	Irrigated		Hybrid: See Factors	
Planting Date:	5/4/21	Planting Depth:	1.5"	Row Width: 30"
Target Plant Density:	See Factors	Planting Method:	Almaco Plot Planter	
Harvest Date:	10/1/21	Harvest Method:	Massey 8XP	

Experimental Design

Design: RCB **Replications:** 3
Plot Size Seeded: 10' x 25' **Experiment Size:** 0.5 A
Harvest Plot Size: 5' x 23' **Harvest Plant Density:** 33196

Factors/Treatments:

<u>Target Plant Density:</u>	<u>Hybrid:</u>
1) 20000	1) Jung 47DP411 97RM
2) 26000	2) Dairyland DS-4440AMXT 106RM
3) 32000	
4) 38000	
5) 44000	
6) 50000	

Results: Tables 2102-07.

**Table: 2102-07. Plant Density and Hybrid Influence on Corn Grain.
Hancock, WI - 2021.**

Hybrid	Target	Harvest	Yield	Moisture	Test	Lodged			AGR
	density	density				Total	Stalk	Root	
	plants/A	plants/A	bu/A	%	lbs/bu	%	%	%	\$/A
Dairyland DS-4440AMXT		32807	233	23.4	54	0.1	0.0	0.1	1128
Jung 47DP411		33585	210	17.2	55	4.6	4.6	0.0	1041
	20000	19381	179	21.3	54	7.6	7.3	0.3	873
	26000	25000	209	21.4	54	0.8	0.8	0.0	1016
	32000	29356	224	20.1	54	1.3	1.3	0.0	1094
	38000	34595	237	19.5	54	0.3	0.3	0.0	1160
	44000	42676	242	19.7	54	0.1	0.1	0.0	1187
	50000	48169	240	19.9	55	3.8	3.8	0.0	1176
Dairyland DS-4440AMXT	20000	19192	189	24.5	54	0.7	0.0	0.7	909
Dairyland DS-4440AMXT	26000	24495	216	25.1	54	0.0	0.0	0.0	1034
Dairyland DS-4440AMXT	32000	29040	236	22.5	52	0.0	0.0	0.0	1147
Dairyland DS-4440AMXT	38000	33964	254	23.0	54	0.0	0.0	0.0	1228
Dairyland DS-4440AMXT	44000	42550	256	22.4	53	0.0	0.0	0.0	1244
Dairyland DS-4440AMXT	50000	47600	249	22.9	55	0.0	0.0	0.0	1205
Jung 47DP411	20000	19570	170	18.0	55	14.5	14.5	0.0	837
Jung 47DP411	26000	25505	202	17.6	53	1.6	1.6	0.0	998
Jung 47DP411	32000	29671	211	17.8	56	2.6	2.6	0.0	1042
Jung 47DP411	38000	35227	220	15.9	54	0.7	0.7	0.0	1092
Jung 47DP411	44000	42802	228	17.0	55	0.3	0.3	0.0	1130
Jung 47DP411	50000	48737	231	16.8	55	7.7	7.7	0.0	1146
Mean		33196	222	20.3	54	2.3	2.3	0.1	1084
<u>Probability(%)</u>									
Hybrid (H)		8.1	0.0	0.0	4.6	0.3	0.2	32.8	0.0
Plant Density (D)		0.0	0.0	4.7	40.2	2.6	3.3	44.1	0.0
Hybrid x Plant Density		97.4	34.0	38.4	33.2	4.9	3.3	44.1	31.3
<u>LSD (0.10)</u>									
Hybrid (H)		731	4.8	0.7	1	2.3	2.3	NS	23
Plant Density (D)		1266	8	1.2	NS	4.0	3.9	NS	41
Hybrid x Plant Density		NS	NS	NS	NS	5.6	5.5	NS	NS

FIELD EXPERIMENT HISTORY

Title: Plant Density and Hybrid Influence on Corn Grain
Experiment: 02PD **Trial ID:** 6536 **Year:** 2021
Personnel: Joe Lauer, Kent Kohn, Thierno Diallo
Location: Janesville, WI **County:** Rock
Supported By: HATCH

Site Information

Field: **Previous Crop:** Corn **Soil Type:** Plano Silt Loam
Soil Test: **Date:** 9/1/21 **pH:** 6.4 **OM (%)** 3.6 **P (ppm)** 104 **K (ppm)** 175

Plot Management

Tillage Operations: Spring Chisel Field

		<u>Analysis:</u>	<u>Rate lbs/A</u>	<u>Date:</u>	
Fertilizer:	Preplant :	N/A	N/A	N/A	
	Starter :	9-11-30-6S-1Zn	18 lbs/A	4/27/21	
	Post plant :	12-0-026S	13 lbs/A	N/A	
		10-34-0	16 lbs/A	N/A	
		32-0-0	142 lbs/A	N/A	
	Manure:	N/A	N/A	N/A	
Herbicide:	Acuron 3.0 qt/A		Insecticide:	Force 3G 4.4 lbs/A	
Irrigation:	None		Hybrid:	See Factors	
Planting Date:	4/27/21	Planting Depth:	1.5"	Row Width:	30"
Target Plant Density:	See Factors	Planting Method:	Almaco Plot Planter		
Harvest Date:	9/30/21	Harvest Method:	Massey 8XP		

Experimental Design

Design: RCB **Replications:** 3
Plot Size Seeded: 10' x 25' **Experiment Size:** 0.5 A
Harvest Plot Size: 5' x 23' **Harvest Plant Density:** 33554

Factors/Treatments:

<u>Target Plant Density:</u>	<u>Hybrid:</u>
1) 20000	1) Jung 47DP411 97RM
2) 26000	2) Dairyland DS-4440AMXT 106RM
3) 32000	
4) 38000	
5) 44000	
6) 50000	

Results: Tables 2102-08.

**Table: 2102-08. Plant Density and Hybrid Influence on Corn Grain.
Janesville, WI - 2021.**

Hybrid	Target	Harvest	Yield	Moisture	Test	Lodged			AGR
	density	density				Total	Stalk	Root	
	plants/A	plants/A	bu/A	%	lbs/bu	%	%	%	\$/A
Dairyland DS-4440AMXT		33101	226	17.6	58	0.1	0.1	0.0	1118
Jung 47DP411		34006	217	12.3	58	0.7	0.7	0.0	1081
	20000	19697	193	15.1	58	0.0	0.0	0.0	960
	26000	25378	208	15.2	57	0.2	0.2	0.0	1033
	32000	30871	222	15.1	58	0.2	0.2	0.0	1103
	38000	37058	229	14.5	58	0.2	0.2	0.0	1141
	44000	41540	236	15.1	58	0.7	0.7	0.0	1174
	50000	46780	238	14.6	57	1.1	0.9	0.1	1184
Dairyland DS-4440AMXT	20000	19318	192	17.5	57	0.0	0.0	0.0	951
Dairyland DS-4440AMXT	26000	25252	216	17.9	57	0.0	0.0	0.0	1066
Dairyland DS-4440AMXT	32000	30429	230	18.0	58	0.0	0.0	0.0	1138
Dairyland DS-4440AMXT	38000	36616	233	16.7	58	0.0	0.0	0.0	1157
Dairyland DS-4440AMXT	44000	41287	241	17.9	59	0.0	0.0	0.0	1192
Dairyland DS-4440AMXT	50000	45706	243	17.4	58	0.6	0.6	0.0	1201
Jung 47DP411	20000	20075	194	12.7	59	0.0	0.0	0.0	970
Jung 47DP411	26000	25505	201	12.5	57	0.5	0.5	0.0	1001
Jung 47DP411	32000	31313	214	12.3	57	0.4	0.4	0.0	1069
Jung 47DP411	38000	37499	225	12.2	58	0.3	0.3	0.0	1124
Jung 47DP411	44000	41792	232	12.3	58	1.5	1.5	0.0	1156
Jung 47DP411	50000	47853	234	11.7	57	1.6	1.3	0.3	1166
Mean		33554	221	14.9	58	0.4	0.4	0.0	1099
<u>Probability(%)</u>									
Hybrid (H)		7.7	0.6	0.0	82.7	4.3	6.6	32.8	2.3
Plant Density (D)		0.0	0.0	42.6	16.2	28.9	43.8	44.1	0.0
Hybrid x Plant Density		90.6	56.7	64.8	9.0	72.3	79.1	44.1	61.0
<u>LSD (0.10)</u>									
Hybrid (H)		836	5	0.4	NS	0.5	0.5	NS	26
Plant Density (D)		1448	9	NS	NS	NS	NS	NS	44
Hybrid x Plant Density		NS	NS	NS	1.5	NS	NS	NS	NS

FIELD EXPERIMENT HISTORY

Title: Plant Density and Hybrid Influence on Corn Grain and Silage Performance
Experiment: 02PD **Trial ID:** 6535 **Year:** 2021
Personnel: Joe Lauer, Kent Kohn, Thierno Diallo
Location: Marshfield, WI **County:** Wood
Supported By: HATCH

Site Information

Field: **Previous Crop:** Soybean **Soil Type:** Fenwood Silt Loam
Soil Test: **Date:** 9 /1 /21 **pH** 6.5 **OM (%)** 2.7 **P (ppm)** 30 **K (ppm)** 80

Plot Management

Tillage Operations: Strip-Till Vertical-Till

		<u>Analysis:</u>	<u>Rate lbs/A</u>	<u>Date:</u>
Fertilizer:	Preplant :	18-46-0	N/A	23 lbs/A
	Starter :	9-11-30-6S-1Zn	18 lbs/A	5 /1 /21
	Post plant :	29-0-0-3S	119 lbs/A	N/A
	Manure:	Dairy	25 ton	N/A
Herbicide:	Resicore 2.0 qt/A		Insecticide:	Force 3G 4.4 lbs/A
Irrigation:	None		Hybrid:	See Factors
Planting Date:	5/10/21	Planting Depth:	1.5"	Row Width: 30"
Target Plant Density:	See Factors	Planting Method:	Almaco Plot Planter	
Harvest Date:	S: 9/22/21 G: 10/19/21	Harvest Method:	S: New Holland 707 G: Massey 8XP	

Experimental Design

Design: RCB	Replications: 3
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: 32912

Factors/Treatments:

<u>Target Plant Density:</u>	<u>Hybrid :</u>
1) 20000	1) Dekalb DKC43-75RIB 93RM
2) 26000	2) Jung 47DP411 97RM
3) 32000	
4) 38000	
5) 44000	
6) 50000	

Results: Tables 2102-09 & 2102-10.

FIELD EXPERIMENT HISTORY

Title: Plant Density and Hybrid Influence on Corn Grain
Experiment: 02PD **Trial ID:** 6534 **Year:** 2021
Personnel: Joe Lauer, Kent Kohn, Thierno Diallo
Location: Montfort, WI **County:** Iowa
Supported By: HATCH

Site Information

Field: **Previous Crop:** Soybean **Soil Type:** Dodgeville Silt Loam
Soil Test: **Date:** 9 /1 /21 **pH** 6.1 **OM (%)** 3.2 **P (ppm)** 78 **K (ppm)** 99

Plot Management

Tillage Operations: Strip-Till

		<u>Analysis:</u>	<u>Rate lbs/A</u>	<u>Date:</u>
Fertilizer:	Preplant :	32-0-0	160 lbs/A	N/A
		12-0-026S	13 lbs/A	N/A
		46-0-0	23 lbs/A	N/A
		11-52-0	6 lbs/A	N/A
	Starter :	9-11-30-6S-1Zn	18 lbs/A	4 /26/21
	Post plant :	N/A	N/A	N/A
	Manure:	N/A	N/A	N/A
Herbicide:	Atrazine 4L 32.0 oz/A Explorer 3.0 oz/A Roundup 25.6 oz/A Zidua 3.25 oz/A		Insecticide:	Force 3G 4.4 lbs/A
Irrigation:	None		Hybrid:	See Factors
Planting Date:	4/26/21	Planting Depth:	1.5"	Row Width: 30"
Target Plant Density:	See Factors		Planting Method:	Almaco Plot Planter
Harvest Date:	9/30/21		Harvest Method:	Massey 8XP

Experimental Design

Design: RCB **Replications:** 3
Plot Size Seeded: 10' x 25' **Experiment Size:** 0.5 A
Harvest Plot Size: 5' x 23' **Harvest Plant Density:** 33343

Factors/Treatments:

<u>Target Plant Density:</u>	<u>Hybrid:</u>
1) 20000	1) Jung 47DP411 97RM
2) 26000	2) Dairyland DS-4440AMXT 106RM
3) 32000	
4) 38000	
5) 44000	
6) 50000	

Results: Tables 2102-11.

FIELD EXPERIMENT HISTORY

Title: Plant Density and Hybrid Influence on Corn Grain
Experiment: 02PD **Trial ID:** 6533 **Year:** 2021
Personnel: Joe Lauer, Kent Kohn, Thierno Diallo
Location: Seymour, WI **County:** Outagamie
Supported By: HATCH

Site Information

Field: **Previous Crop:** Soybean **Soil Type:** Onaway Silt Loam
Soil Test: **Date:** 9 /1 /21 **pH** 7.1 **OM (%)** 2.1 **P (ppm)** 63 **K (ppm)** 112

Plot Management

Tillage Operations: Chisel Plow FieldCultivator

		<u>Analysis:</u>	<u>Rate lbs/A</u>	<u>Date:</u>
Fertilizer:	Preplant :	46-0-0	46 lbs/A	N/A
	Starter :	9-11-30-6S-1Zn	18 lbs/A	5 /6 /21
	Post plant :	32-0-0	124 lbs/A	N/A
	Manure:	N/A	N/A	N/A
Herbicide:	Atrazine 0.75 lbs/A Dual II Mag 1.0 pt/A Explorer 3.0 oz/A		Insecticide: Force 3G 4.4 lbs/A	
Irrigation:	None		Hybrid: See Factors	
Planting Date:	5/6/21	Planting Depth:	1.5"	Row Width: 30"
Target Plant Density:	See Factors	Planting Method:	Almaco Plot Planter	
Harvest Date:	10/18/21	Harvest Method:	Massey 8XP	

Experimental Design

Design: RCB **Replications:** 3
Plot Size Seeded: 10' x 25' **Experiment Size:** 0.5 A
Harvest Plot Size: 5' x 23' **Harvest Plant Density:** 33859

Factors/Treatments:

<u>Target Plant Density:</u>	<u>Hybrid:</u>
1) 20000	1) Dekalb DKC43-75RIB 93RM
2) 26000	2) Jung 47DP411 97RM
3) 32000	
4) 38000	
5) 44000	
6) 50000	

Results: Tables 2102-12.

FIELD EXPERIMENT HISTORY

Title: Plant Density and Hybrid Influence on Corn Grain
Experiment: 02PD **Trial ID:** 6532 **Year:** 2021
Personnel: Joe Lauer, Kent Kohn, Thierno Diallo
Location: Valders, WI **County:** Manitowoc
Supported By: HATCH

Site Information

Field: **Previous Crop:** Alfalfa **Soil Type:** Kewaunee Clay Loam
Soil Test: **Date:** 9/1/21 **pH:** 7.4 **OM (%):** 2.8 **P (ppm):** 31 **K (ppm):** 82

Plot Management

Tillage Operations: Chisel Plow Field Cultivator

		<u>Analysis:</u>	<u>Rate lbs/A</u>	<u>Date:</u>
Fertilizer:	Preplant :	N/A	N/A	N/A
	Starter :	9-11-30-6S-1Zn	18 lbs/A	4/29/21
	Post plant :	32-0-0	131 lbs/A	N/A
	Manure:	Dairy	10000 gal/A	N/A
Herbicide:	Atrazine 1.0 lb/A Realm Q 4.0oz/A TripleFlex 3.0 qt/A		Insecticide: Force 3G 4.4 lbs/A	
Irrigation:	None		Hybrid: See Factors	
Planting Date:	4/29/21	Planting Depth:	1.5"	Row Width: 30"
Target Plant Density:	See Factors	Planting Method:	Almaco Plot Planter	
Harvest Date:	9/19/21	Harvest Method:	Massey 8XP	

Experimental Design

Design: RCB **Replications:** 3
Plot Size Seeded: 10' x 25' **Experiment Size:** 0.5 A
Harvest Plot Size: 5' x 23' **Harvest Plant Density:** 31502

Factors/Treatments:

<u>Target Plant Density:</u>	<u>Hybrid:</u>
1) 20000	1) Dekalb DKC43-75RIB 93RM
2) 26000	2) Jung 47DP411 97RM
3) 32000	
4) 38000	
5) 44000	
6) 50000	

Results: Tables 2102-13.

**Table: 2102-13. Plant Density and Hybrid Influence on Corn Grain.
Valders, WI - 2021.**

Hybrid	Target	Harvest	Yield	Moisture	Test	Lodged			AGR
	density	density				Total	Stalk	Root	
	plants/A	plants/A	bu/A	%	lbs/bu	%	%	%	\$/A
Dekalb DKC43-75RIB		31334	231	21.4	55	0.5	0.5	0.0	1128
Jung 47DP411		31670	254	24.7	52	0.4	0.3	0.1	1219
	20000	18497	211	24.2	53	0.4	0.4	0.0	1014
	26000	24495	228	24.0	53	0.0	0.0	0.0	1101
	32000	28851	238	22.4	54	0.4	0.4	0.0	1153
	38000	34595	253	23.2	53	0.2	0.0	0.2	1221
	44000	38446	259	21.9	54	0.7	0.7	0.0	1257
	50000	44128	267	22.5	54	0.9	0.9	0.0	1294
Dekalb DKC43-75RIB	20000	18560	193	22.5	55	0.7	0.7	0.0	937
Dekalb DKC43-75RIB	26000	23611	214	22.9	55	0.0	0.0	0.0	1038
Dekalb DKC43-75RIB	32000	28787	225	20.6	55	0.9	0.9	0.0	1100
Dekalb DKC43-75RIB	38000	34722	249	21.9	54	0.0	0.0	0.0	1213
Dekalb DKC43-75RIB	44000	36868	248	19.6	56	0.0	0.0	0.0	1217
Dekalb DKC43-75RIB	50000	45454	258	20.7	55	1.1	1.1	0.0	1262
Jung 47DP411	20000	18434	228	26.0	51	0.0	0.0	0.0	1091
Jung 47DP411	26000	25378	243	25.1	51	0.0	0.0	0.0	1164
Jung 47DP411	32000	28914	250	24.1	52	0.0	0.0	0.0	1206
Jung 47DP411	38000	34469	256	24.5	52	0.4	0.0	0.4	1229
Jung 47DP411	44000	40025	269	24.1	52	1.3	1.3	0.0	1298
Jung 47DP411	50000	42802	275	24.2	52	0.6	0.6	0.0	1325
Mean		31502	242	23.0	53	0.4	0.4	0.0	1173
<u>Probability(%)</u>									
Hybrid (H)		44.4	0.0	0.0	0.0	83.3	69.7	32.8	0.0
Plant Density (D)		0.0	0.0	1.0	26.6	73.5	62.8	44.1	0.0
Hybrid x Plant Density		1.8	51.9	59.2	88.0	45.0	46.6	44.1	50.2
<u>LSD (0.10)</u>									
Hybrid (H)		NS	8	0.7	1	NS	NS	NS	36
Plant Density (D)		1285	13	1	NS	NS	NS	NS	63
Hybrid x Plant Density		1816.9	NS	NS	NS	NS	NS	NS	NS

FIELD EXPERIMENT HISTORY

Title: Stine Seeds Plant Density and Hybrid Corn Grain Trial.
Experiment: 02PD Stine **Trial ID:** 6542 **Year:** 2021
Personnel: Joe Lauer, Kent Kohn, Thierno Diallo
Location: Arlington, WI **County:** Columbia
Supported By: Stine Seeds

Site Information

Field: ARS411 **Previous Crop:** Alfalfa **Soil Type:** Plano Silt Loam
Soil Test: **Date:** 9 /1 /21 **pH** 6.8 **OM (%)** 3.8 **P (ppm)** 46 **K (ppm)** 78

Plot Management

Tillage Operations: Field Cultivator

		<u>Analysis:</u>	<u>Rate lbs/A</u>	<u>Date:</u>
Fertilizer:	Preplant :	32-0-0	149 lbs/A	N/A
	Starter :	9-11-30-6S-1Zn	200 lbs/A	5 /10/21
	Post plant :	N/A	N/A	N/A
	Manure:	N/A	N/A	N/A
Herbicide:	Resicore 2.5 qt/A		Insecticide: Force 3G 4.4 lbs/A	
Irrigation:	None		Hybrid: See Factors	
Planting Date:	5/10/21	Planting Depth: 1.5"	Row Width: 30"	
Target Plant Density:	See Factors		Planting Method: Almaco Plot Planter	
Harvest Date:	10/6/21		Harvest Method: Massey 8XP	

Experimental Design

Design: RCB **Replications:** 3
Plot Size Seeded: 10' x 25' **Experiment Size:** 0.25 A
Harvest Plot Size: 5' x 23' **Harvest Plant Density:** 31965

Factors/Treatments:

<u>Target Plant Density:</u>	<u>Hybrid:</u>
1) 28000	1) Stine 9319-10
2) 32000	2) Stine 9547-G
3) 35000	3) Stine EXP104B-20
4) 38000	

Results: Tables 2102-14.

**Table: 2102-14. Stine Seeds Plant Density and Hybrid Corn Grain Trial.
Arlington, WI - 2021.**

Hybrid	Target	Density	Yield	Moisture	Test	Lodged			Silk	Plant	*AGR
	density	Harvest				Total	Stalk	Root		Height	\$5.22
	plants/A	plants/A	bu/A	%	lbs/bu	%	%	%	DOY	inches	\$/A
Stine 9319-10		30839	227	19.7	57	1.9	1.5	0.5	198	109	1112
Stine 9547-G		33996	238	23.8	50	8.4	8.4	0.0	199	95	1149
Stine EXP104B-20		31060	226	22.3	53	0.2	0.3	0.0	198	97	1096
	28000	27483	223	21.8	52	2.0	1.9	0.1	197	99	1085
	32000	31313	230	22.0	53	0.8	0.8	0.0	198	101	1120
	35000	33291	231	22.0	54	3.8	3.8	0.0	198	100	1121
	38000	35774	236	21.9	53	7.6	7.1	0.6	199	101	1150
Stine 9319-10	28000	26767	224	19.3	55	0.3	0.0	0.3	196	105	1099
Stine 9319-10	32000	29292	223	19.7	56	2.0	2.0	0.0	197	111	1093
Stine 9319-10	35000	32449	229	20.0	58	0.7	0.7	0.0	198	111	1120
Stine 9319-10	38000	34848	231	19.7	56	4.7	3.3	1.7	199	108	1135
Stine 9547-G	28000	29040	233	24.0	49	5.7	5.7	0.0	198	95	1120
Stine 9547-G	32000	33838	242	24.0	49	0.3	0.3	0.0	198	95	1168
Stine 9547-G	35000	35353	236	23.7	51	10.7	10.7	0.0	199	94	1141
Stine 9547-G	38000	37752	242	23.7	52	17.0	17.0	0.0	199	95	1166
Stine EXP104B-20	28000	26641	213	22.0	53	0.0	0.0	0.0	197	96	1035
Stine EXP104B-20	32000	30808	226	22.3	54	0.0	0.0	0.0	198	97	1098
Stine EXP104B-20	35000	32071	227	22.3	52	0.0	0.0	0.0	198	95	1101
Stine EXP104B-20	38000	34722	237	22.3	52	1.0	1.0	0.0	198	99	1149
Mean		31965	230	21.9	53	3.5	3.4	0.2	198	100	1119
<u>Probability(%)</u>											
Hybrid		0.0	2.2	0.0	0.0	0.8	0.6	27.1	1.7	0.0	8.5
Plant Density		0.0	12.1	92.8	11.1	12.4	14.8	47.1	1.0	75.3	14.5
Hybrid x Plant Density		79.5	79.8	96.1	0.3	36.0	30.8	53.1	58.0	74.8	84.2
<u>LSD (0.10)</u>											
Hybrid		944	8	0.6	1	4.2	4.2	NS	1	3	40
Plant Density		1090	NS	NS	NS	NS	NS	NS	1	NS	NS
Hybrid x Plant Density		NS	NS	NS	1	NS	NS	NS	NS	NS	NS

FIELD EXPERIMENT HISTORY

Title: Date of Planting and Hybrid Influence on Corn Forage and Corn Grain Yield
Experiment: 03DOP **Trial ID:** 6531 **Year:** 2021
Personnel: Joe Lauer, Kent Kohn, Thierno Diallo
Location: Arlington, WI **County:** Columbia
Supported By: HATCH

Site Information

Field: ARS358 **Previous Crop:** Alfalfa **Soil Type:** Plano Silt Loam
Soil Test: **Date:** 11/1 /16 **pH** 5.9 **OM (%)** 2.9 **P (ppm)** 16 **K (ppm)** 102

Plot Management

Tillage Operations: Field Cultivator

	<u>Analysis:</u>	<u>Rate lbs/A:</u>	<u>Date:</u>
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: 10/22/21	Harvest Method:	S: New Holland 707 G: Massey Ferguson 8XP

Experimental Design

Design: RCB split-plot (2 x 4 Factorial for split) **Replications:** 4
Plot Size Seeded: 10' x 33' **Experiment Size:** 1.7 A
Harvest Plot Size: S: 30' x 2.5'
 G: 30' x 5' **Harvest Plant Density:** 33096 plants per acre

Factors/Treatments:

<u>Planting Date:</u>	<u>Hybrid:</u>	<u>Harvest Date:</u>
1) April 16	1) Jung 49DP441	1) September 02
2) April 28	2) Pioneer P0720Q	2) September 23
3) May 17		
4) June 01		
5) June 15		

Results: Tables 2103-01, 2103-02 & 2103-03.

Table: 2103-02.Planting Date and Harvest Timing Influence on Corn Silage Performance.

Arlington, WI - 2021.

Planting date	Hybrid	Harvest date	Plant density plants/A	Whole Plant													
				Dry Matter		Kernel milk %	KMR 0-5	SMR 0-5	VMR 0-10	Crude		In Vitro			Milk per		
				yield tons/A	Moisture %					protein %	ADF %	NDF %	Digest %	NDFD %	Starch %	Ton lbs/T	Acre lbs/A
	Jung 49DP441		32762	7.9	61.8	53	2.6	1.4	4.0	7.2	21.2	39.1	85.8	63.8	28.9	3175	25500
	Pioneer P0720Q		33026	8.5	66.0	61	3.1	2.2	5.2	7.1	21.3	39.2	85.5	62.8	26.2	3000	25907
April 16			31944	8.5	56.3	31	1.5	0.7	2.3	6.6	18.3	34.9	87.5	64.3	33.9	3270	28011
April 28			32142	8.8	56.7	36	1.8	1.1	2.9	6.6	18.2	35.0	87.3	63.6	34.8	3336	29423
May 17			33330	8.4	63.9	48	2.4	1.5	3.9	7.1	20.0	37.2	86.0	62.3	30.2	3186	26961
June 01			33726	8.5	67.6	77	3.8	2.3	6.1	7.3	22.1	39.9	85.4	63.3	26.6	3113	26637
June 15			33330	6.6	75.1	94	4.7	3.2	7.9	8.3	27.5	48.6	82.0	63.0	12.2	2531	17486
		Sept 02	33119	7.8	71.3	79	4.0	2.6	6.5	7.6	22.6	41.2	85.3	64.6	22.5	2959	23755
		Sept 23	32670	8.6	56.5	35	1.7	1.0	2.7	6.7	19.9	37.0	85.9	62.0	32.6	3215	27653
April 16	Jung 49DP441		31944	8.7	52.1	29	1.4	0.6	2.0	6.5	17.7	34.4	88.1	65.5	36.6	3411	29545
April 28	Jung 49DP441		32208	8.5	53.6	30	1.5	0.8	2.3	6.6	18.4	35.4	87.3	64.1	36.0	3421	29061
May 17	Jung 49DP441		33330	7.9	62.7	38	1.9	1.1	2.9	7.1	20.5	37.8	85.8	62.4	30.6	3209	25492
June 01	Jung 49DP441		33462	8.3	65.3	74	3.7	1.7	5.4	7.3	21.9	39.7	85.6	63.7	28.3	3199	26517
June 15	Jung 49DP441		32868	6.2	75.2	94	4.7	2.7	7.4	8.6	27.3	48.2	82.2	63.1	13.2	2633	16885
April 16	Pioneer P0720Q		31944	8.4	60.5	33	1.6	0.9	2.5	6.6	18.9	35.4	86.9	63.0	31.3	3128	26477
April 28	Pioneer P0720Q		32076	9.2	59.7	41	2.1	1.4	3.5	6.6	17.9	34.6	87.2	63.1	33.6	3251	29785
May 17	Pioneer P0720Q		33330	8.9	65.1	58	2.9	1.9	4.9	7.1	19.5	36.6	86.2	62.2	29.9	3163	28431
June 01	Pioneer P0720Q		33990	8.8	69.8	80	4.0	2.8	6.8	7.3	22.3	40.1	85.2	63.0	24.8	3026	26757
June 15	Pioneer P0720Q		33792	7.1	75.0	94	4.7	3.7	8.5	8.0	27.8	49.1	81.8	62.8	11.2	2429	18088
	Jung 49DP441	Sept 02	33053	7.8	70.4	77	3.8	2.3	6.2	7.6	22.4	41.0	85.5	64.8	24.1	3066	24613
	Jung 49DP441	Sept 23	32472	8.0	53.2	29	1.5	0.4	1.9	6.8	19.9	37.2	86.1	62.8	33.8	3284	26387
	Pioneer P0720Q	Sept 02	33185	7.8	72.2	82	4.1	2.8	6.9	7.6	22.7	41.5	85.2	64.4	20.9	2853	22897
	Pioneer P0720Q	Sept 23	32868	9.1	59.8	41	2.0	1.5	3.6	6.6	19.8	36.8	85.7	61.2	31.4	3147	28918
April 16		Sept 02	32472	8.5	65.1	59	3.0	1.2	4.1	6.7	18.5	35.4	87.8	65.4	31.6	3316	28318
April 16		Sept 23	31416	8.6	47.5	2	0.1	0.3	0.4	6.4	18.1	34.5	87.3	63.1	36.3	3224	27705
April 28		Sept 02	31812	8.7	65.2	63	3.2	1.8	5.0	6.9	18.1	34.9	88.0	65.5	33.1	3423	29760
April 28		Sept 23	32472	9.0	48.1	8	0.4	0.4	0.8	6.3	18.2	35.0	86.6	61.7	36.5	3249	29086
May 17		Sept 02	33990	8.4	70.3	77	3.8	2.3	6.1	7.4	21.3	39.0	85.8	63.5	26.1	3106	26130
May 17		Sept 23	32670	8.5	57.5	19	0.9	0.7	1.7	6.8	18.8	35.4	86.3	61.1	34.3	3267	27792
June 01		Sept 02	34320	8.1	74.5	98	4.9	3.4	8.2	7.9	23.5	42.1	85.2	64.8	21.0	2928	23679
June 01		Sept 23	33132	9.0	60.6	56	2.8	1.1	4.0	6.6	20.7	37.7	85.6	61.8	32.1	3297	29595
June 15		Sept 02	33000	5.4	81.5	100	5.0	4.1	9.1	9.1	31.6	54.8	80.1	63.7	0.6	2023	10886
June 15		Sept 23	33660	7.9	68.7	89	4.4	2.3	6.8	7.5	23.4	42.5	84.0	62.3	23.8	3039	24086

continued

Table: 2103-02 Planting Date and Harvest Timing Influence on Corn Silage Performance.

continued.

Arlington, WI - 2021.

Planting date	Hybrid	Harvest date	Plant density plants/A	Whole Plant													
				Dry Matter		Kernel	KMR	SMR	VMR	Crude	In Vitro			Milk per			
			yield	Moisture	milk	0-5	0-5	0-10	protein	ADF	NDF	Digest	NDFD	Starch	Ton	Acre	
			tons/A	%	%				%	%	%	%	%	%	lbs/T	lbs/A	
April 16	Jung 49DP441	Sept 02	32472	8.8	63.0	56	2.8	1.1	3.9	6.6	18.2	35.3	88.0	66.1	33.8	3463	30626
April 16	Jung 49DP441	Sept 23	31416	8.5	41.3	1	0.1	0.1	0.1	6.4	17.2	33.6	88.2	64.9	39.3	3359	28465
April 28	Jung 49DP441	Sept 02	32076	8.6	63.7	56	2.8	1.6	4.4	6.8	17.7	34.2	88.4	65.9	35.5	3556	30576
April 28	Jung 49DP441	Sept 23	32340	8.4	43.6	4	0.2	0.0	0.2	6.3	19.2	36.5	86.2	62.3	36.5	3286	27545
May 17	Jung 49DP441	Sept 02	34056	8.2	70.0	74	3.7	1.9	5.6	7.3	22.1	39.9	85.3	63.2	26.2	3144	25949
May 17	Jung 49DP441	Sept 23	32604	7.6	55.4	1	0.1	0.2	0.3	7.0	19.0	35.7	86.4	61.7	34.9	3274	25034
June 01	Jung 49DP441	Sept 02	34320	8.1	73.7	98	4.9	3.1	8.0	7.9	23.0	41.1	85.6	64.9	23.3	3059	24692
June 01	Jung 49DP441	Sept 23	32604	8.5	56.9	50	2.5	0.3	2.8	6.6	20.9	38.2	85.6	62.4	33.4	3339	28342
June 15	Jung 49DP441	Sept 02	32340	5.3	81.5	100	5.0	4.0	9.0	9.4	31.3	54.5	80.2	63.6	1.6	2106	11220
June 15	Jung 49DP441	Sept 23	33396	7.1	68.9	89	4.4	1.5	5.9	7.8	23.3	41.9	84.3	62.6	24.8	3160	22550
April 16	Pioneer P0720Q	Sept 02	32472	8.2	67.2	63	3.1	1.3	4.4	6.9	18.8	35.4	87.5	64.7	29.4	3168	26010
April 16	Pioneer P0720Q	Sept 23	31416	8.7	53.7	3	0.1	0.6	0.7	6.4	19.0	35.4	86.3	61.4	33.2	3089	26944
April 28	Pioneer P0720Q	Sept 02	31548	8.8	66.7	70	3.5	2.1	5.6	6.9	18.5	35.7	87.6	65.1	30.8	3291	28944
April 28	Pioneer P0720Q	Sept 23	32604	9.5	52.6	13	0.6	0.7	1.3	6.2	17.3	33.5	86.9	61.0	36.5	3211	30626
May 17	Pioneer P0720Q	Sept 02	33924	8.5	70.6	80	4.0	2.7	6.7	7.5	20.4	38.1	86.2	63.8	26.0	3067	26311
May 17	Pioneer P0720Q	Sept 23	32736	9.3	59.6	36	1.8	1.2	3.0	6.6	18.7	35.1	86.2	60.6	33.8	3259	30550
June 01	Pioneer P0720Q	Sept 02	34320	8.1	75.3	98	4.9	3.6	8.5	8.0	24.0	43.0	84.8	64.7	18.7	2798	22665
June 01	Pioneer P0720Q	Sept 23	33660	9.5	64.4	63	3.1	2.0	5.1	6.6	20.5	37.1	85.6	61.2	30.9	3255	30848
June 15	Pioneer P0720Q	Sept 02	33660	5.4	81.4	100	5.0	4.3	9.3	8.8	31.9	55.2	80.0	63.7	-0.4	1941	10553
June 15	Pioneer P0720Q	Sept 23	33924	8.7	68.6	89	4.4	3.2	7.6	7.3	23.6	43.0	83.6	62.0	22.7	2918	25622
Mean			32894	8.2	63.9	57	2.9	1.8	4.6	7.2	21.2	39.1	85.6	63.3	27.5	3087	25704
Probability(%)																	
Hybrid (H)			41.6	12.0	2.0	1.9	1.9	0.5	0.6	30.8	78.2	89.0	29.4	11.1	2.9	0.9	70.6
PlantDate(P)			0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.5	0.0	0.0	0.0
HxP			72.6	61.2	6.7	1.5	1.5	15.1	15.3	2.0	33.8	44.8	48.6	46.8	32.7	16.9	42.7
HarvDate(D)			11.9	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.8	0.0	0.0	0.0	0.0
HxD			64.0	0.8	1.3	3.7	3.7	0.2	0.0	12.3	47.7	31.6	80.7	16.5	53.3	19.9	0.8
PxD			5.3	0.2	27.4	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	44.4	0.0	0.0	0.0
HxPxD			85.2	98.2	65.1	0.3	0.3	14.8	3.0	59.8	13.2	7.1	36.4	97.7	50.5	56.8	99.3
LSD(0.10)																	
Hybrid (H)			NS	NS	2.2	4	0.2	0.2	0.4	NS	NS	NS	NS	NS	1.6	68	NS
PlantDate(P)			756	0.7	2.5	5	0.2	0.3	0.5	0.2	1.0	1.2	0.7	1.1	1.9	78	2654
HxP			NS	NS	3.5	7	0.3	NS	NS	0.3	NS	NS	NS	NS	NS	NS	NS
HarvDate(D)			NS	0.3	1.5	2	0.1	0.2	0.2	0.1	0.5	0.7	0.4	0.7	1.1	49	1265
HxD			NS	0.5	2.2	4	0.2	0.2	0.3	NS	NS	NS	NS	NS	NS	NS	1990
PxD			1060	0.9	NS	6	0.3	0.4	0.5	0.3	1.2	1.6	1.0	NS	2.5	109	3253
HxPxD			NS	NS	NS	9	0.4	NS	0.8	NS	NS	2.3	NS	NS	NS	NS	NS

**Table: 2103-03. Planting Date and Hybrid Influence on Corn Leaf Development.
Arlington, WI - 2021.**

Hybrid	Date of planting	Observation date	Leaf Development			Plant height
			Leaf collars	Hail adjusters method	Total leaves	
		day of year	no./plant	no./plant	no./plant	inches
		146	1.9	2.7	3.8	4.4
		159	3.5	4.4	5.7	8.4
		173	6.8	9.1	10.3	20.6
		187	9.6	11.5	13.1	45.8
		201	14.0	14.7	16.2	76.0
		215	17.0	17.2	17.9	95.2
	April 16		11.4	12.7	13.6	52.6
	April 28		10.6	11.8	12.7	51.3
	May 17		8.6	9.6	10.8	41.9
	June 01		8.4	9.4	11.1	44.9
	June 15		7.8	9.1	11.1	38.2
	April 16	146	2.8	4.1	5.3	5.9
	April 16	159	5.6	7.1	8.4	13.6
	April 16	173	8.6	11.4	12.9	30.4
	April 16	187	13.6	15.3	16.8	68.8
	April 16	201	18.9	18.9	19.3	95.1
	April 16	215	19.2	19.2	19.2	101.9
	April 28	146	2.6	3.5	4.4	5.1
	April 28	159	4.9	6.3	7.4	10.6
	April 28	173	7.8	10.4	11.7	26.7
	April 28	187	12.6	14.9	16.1	63.9
	April 28	201	17.2	17.2	18.3	96.4
	April 28	215	18.6	18.6	18.6	104.9
	May 17	146	0.3	0.4	1.8	2.3
	May 17	159	3.3	4.2	5.1	6.8
	May 17	173	6.5	8.2	9.4	16.5
	May 17	187	9.6	12.2	13.8	47.5
	May 17	201	14.1	14.8	16.4	79.7
	May 17	215	18.1	18.1	18.1	98.7
	June 01	146	-	-	-	-
	June 01	159	0.1	0.0	2.1	2.4
	June 01	173	4.1	6.2	7.3	8.9
	June 01	187	7.8	9.8	11.8	36.6
	June 01	201	12.2	13.4	15.6	72.8
	June 01	215	17.5	17.5	18.6	103.7

Continued

Table: 2103-03. Planting Date and Hybrid Influence on Corn Leaf Development.

(continued)

Arlington, WI - 2021.

Hybrid	Date of planting	Observation date	Leaf Development			Plant height
			Leaf collars	Hail adjusters method	Total leaves	
			no./plant	no./plant	no./plant	
		day of year				inches
	June 15	146	-	-	-	-
	June 15	159	-	-	-	-
	June 15	173	-	-	-	-
	June 15	187	4.3	5.6	6.9	11.9
	June 15	201	7.5	9.2	11.3	36.0
	June 15	215	11.6	12.6	15.0	66.6
Jung 49DP441			10.2	11.4	12.6	46.6
Pioneer P0720Q			9.0	10.1	11.3	46.8
Jung 49DP441		146	2.0	2.9	3.8	4.5
Jung 49DP441		159	3.8	4.6	6.0	8.9
Jung 49DP441		173	7.2	9.5	10.8	21.1
Jung 49DP441		187	10.2	12.3	13.9	47.3
Jung 49DP441		201	15.0	15.7	17.1	75.8
Jung 49DP441		215	18.0	18.2	18.9	92.5
Pioneer P0720Q		146	1.8	2.5	3.8	4.3
Pioneer P0720Q		159	3.2	4.2	5.5	7.8
Pioneer P0720Q		173	6.3	8.7	9.9	20.2
Pioneer P0720Q		187	9.0	10.8	12.3	44.3
Pioneer P0720Q		201	13.0	13.7	15.2	76.2
Pioneer P0720Q		215	16.0	16.2	16.9	97.8
Jung 49DP441	April 16		12.3	13.6	14.5	53.3
Jung 49DP441	April 28		11.2	12.4	13.3	50.7
Jung 49DP441	May 17		9.2	10.1	11.2	40.8
Jung 49DP441	June 01		8.9	9.9	11.7	45.5
Jung 49DP441	June 15		8.3	9.8	11.8	38.5
Pioneer P0720Q	April 16		10.6	11.7	12.7	51.9
Pioneer P0720Q	April 28		10.0	11.2	12.2	51.8
Pioneer P0720Q	May 17		8.1	9.2	10.3	43.1
Pioneer P0720Q	June 01		7.9	8.8	10.4	44.3
Pioneer P0720Q	June 15		7.3	8.5	10.4	37.9
Jung 49DP441	April 16	146	3.1	4.4	5.5	6.3
Jung 49DP441	April 16	159	6.0	7.8	9.1	14.3
Jung 49DP441	April 16	173	9.4	12.5	13.8	31.1
Jung 49DP441	April 16	187	15.0	16.8	18.4	72.6
Jung 49DP441	April 16	201	20.1	20.1	20.3	96.8
Jung 49DP441	April 16	215	20.3	20.3	20.3	98.8

Continued

Table: 2103-03. Planting Date and Hybrid Influence on Corn Leaf Development.

(continued)

Arlington, WI - 2021.

Hybrid	Date of planting	Observation date	Leaf Development			Plant height
			Leaf collars	Hail adjusters method	Total leaves	
			no./plant	no./plant	no./plant	
		day of year				inches
Jung 49DP441	April 28	146	2.6	3.6	4.4	5.3
Jung 49DP441	April 28	159	5.0	6.6	7.6	11.5
Jung 49DP441	April 28	173	8.1	10.6	12.0	27.8
Jung 49DP441	April 28	187	13.6	15.8	17.0	65.5
Jung 49DP441	April 28	201	18.6	18.6	19.3	93.6
Jung 49DP441	April 28	215	19.3	19.3	19.3	100.8
Jung 49DP441	May 17	146	0.4	0.6	1.5	2.1
Jung 49DP441	May 17	159	3.8	4.1	5.1	7.3
Jung 49DP441	May 17	173	6.9	8.4	9.8	16.0
Jung 49DP441	May 17	187	9.9	12.8	14.4	47.4
Jung 49DP441	May 17	201	15.3	15.5	17.3	79.1
Jung 49DP441	May 17	215	19.0	19.0	19.0	92.8
Jung 49DP441	June 01	146	-	-	-	-
Jung 49DP441	June 01	159	0.3	0.0	2.1	2.8
Jung 49DP441	June 01	173	4.3	6.4	7.6	9.4
Jung 49DP441	June 01	187	8.0	10.1	12.5	38.4
Jung 49DP441	June 01	201	13.0	14.3	16.5	72.8
Jung 49DP441	June 01	215	18.8	18.8	19.8	104.0
Jung 49DP441	June 15	146	-	-	-	-
Jung 49DP441	June 15	159	-	-	-	-
Jung 49DP441	June 15	173	-	-	-	-
Jung 49DP441	June 15	187	4.5	5.9	7.0	12.4
Jung 49DP441	June 15	201	7.9	9.9	12.1	36.8
Jung 49DP441	June 15	215	12.5	13.6	16.1	66.3
Pioneer P0720Q	April 16	146	2.5	3.9	5.0	5.5
Pioneer P0720Q	April 16	159	5.3	6.4	7.8	12.9
Pioneer P0720Q	April 16	173	7.8	10.4	12.0	29.6
Pioneer P0720Q	April 16	187	12.3	13.8	15.3	65.0
Pioneer P0720Q	April 16	201	17.6	17.6	18.3	93.5
Pioneer P0720Q	April 16	215	18.1	18.1	18.1	105.1
Pioneer P0720Q	April 28	146	2.5	3.4	4.5	5.0
Pioneer P0720Q	April 28	159	4.9	6.0	7.1	9.8
Pioneer P0720Q	April 28	173	7.5	10.3	11.4	25.6
Pioneer P0720Q	April 28	187	11.6	14.0	15.3	62.3
Pioneer P0720Q	April 28	201	15.8	15.8	17.3	99.1
Pioneer P0720Q	April 28	215	17.9	17.9	17.9	109.1

Continued

Table: 2103-03. Planting Date and Hybrid Influence on Corn Leaf Development.

(continued)

Arlington, WI - 2021.

Hybrid	Date of planting	Observation date	Leaf Development			Plant height
			Leaf collars	Hail adjusters method	Total leaves	
		day of year	no./plant	no./plant	no./plant	inches
Pioneer P0720Q	May 17	146	0.3	0.3	2.0	2.5
Pioneer P0720Q	May 17	159	2.8	4.3	5.0	6.4
Pioneer P0720Q	May 17	173	6.1	8.0	9.1	17.0
Pioneer P0720Q	May 17	187	9.3	11.6	13.1	47.6
Pioneer P0720Q	May 17	201	13.0	14.0	15.6	80.3
Pioneer P0720Q	May 17	215	17.1	17.1	17.1	104.6
Pioneer P0720Q	June 01	146	-	-	-	-
Pioneer P0720Q	June 01	159	0.0	0.0	2.0	2.1
Pioneer P0720Q	June 01	173	4.0	6.0	7.0	8.5
Pioneer P0720Q	June 01	187	7.6	9.4	11.1	34.9
Pioneer P0720Q	June 01	201	11.4	12.5	14.6	72.8
Pioneer P0720Q	June 01	215	16.3	16.3	17.4	103.4
Pioneer P0720Q	June 15	146	-	-	-	-
Pioneer P0720Q	June 15	159	-	-	-	-
Pioneer P0720Q	June 15	173	-	-	-	-
Pioneer P0720Q	June 15	187	4.1	5.4	6.9	11.5
Pioneer P0720Q	June 15	201	7.1	8.5	10.4	35.3
Pioneer P0720Q	June 15	215	10.8	11.5	13.9	66.9
Mean			9.6	10.7	12.0	46.7
<u>Probability(%)</u>						
Hybrid(H)			4.4	2.1	0.5	39.9
Date of Planting (D)			0.0	0.0	0.0	0.0
HxD			8.1	0.8	0.6	15.7
Sample DOY (S)			0.0	0.0	0.0	0.0
H x S			0.0	0.0	0.0	0.0
DxS			0.0	0.0	0.0	0.0
HxDxS			18.59	35.6	36.7	45.5
<u>LSD(0.10)</u>						
Hybrid(H)			0.1	0.3	0.3	NS
Date of Planting (D)			0.3	0.2	0.2	1.1
HxD			0.3	0.2	0.3	NS
Sample DOY (S)			0.2	0.2	0.2	1.2
H x S			0.3	0.2	0.3	1.7
DxS			0.5	0.5	0.4	2.6
HxDxS			NS	NS	NS	NS

FIELD EXPERIMENT HISTORY

Title: Plant Density and Row Spacing Effects on Corn Grain and Silage Yield.
Experiment: 06PDxRS **Trial ID:** 6530 **Year:** 2021
Personnel: Joe Lauer, Kent Kohn, Thierno Diallo
Location: Arlington, WI **County:** Columbia
Supported By: Stine Seeds

Site Information

Field: ARS411 **Previous Crop:** Alfalfa **Soil Type:** Plano Silt Loam
Soil Test: **Date:** 9 /1 /21 **pH** 6.8 **OM (%)** 3.8 **P (ppm)** 46 **K (ppm)** 78

Plot Management

Tillage Operations: Field Cultivator

	<u>Analysis:</u>	<u>Rate lbs/A:</u>	<u>Date:</u>
Fertilizer:			
Preplant :	32-0-0	149 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: Resicore 2.5 qt/A		Insecticide: None	
Irrigation: None		Hybrid: Treatment	
Planting Date: 5/13/21	Planting Depth: 1.5"	Row Width: See Treatments	
Target Plant Density: See Treatments	Planting Method: Kinze InterRow Planter		
Harvest Date: S: 9/20/21 G: 10/22/21	Harvest Method: S:USDA Kemper G:MF 8XP		

Experimental Design

Design: Factorial **Replications:** 3
Plot Size Seeded: 10' x 50' **Experiment Size:** 1.6 Acre
Harvest Plot Size: S:3.75' x 25'
G:5' x 25' **Harvest Plant Density:** 35196

Factors/Treatments:

Treatments: (Hybrid) (Plant Density) (Row Space)

1 Stine 9709-G PD-32000 RS-30	15 Stine 9814-20 PD-32000 RS-30
2 Stine 9709-G PD-35000 RS-30	16 Stine 9814-20 PD-35000 RS-30
3 Stine 9709-G PD-38000 RS-30	17 Stine 9814-20 PD-38000 RS-30
4 Stine 9709-G PD-35000 RS-15	18 Stine 9814-20 PD-35000 RS-15
5 Stine 9709-G PD-40000 RS-15	19 Stine 9814-20 PD-40000 RS-15
6 Stine 9709-G PD-45000 RS-15	20 Stine 9814-20 PD-45000 RS-15
8 Stine 9655-G PD-32000 RS-30	22 Jung 53DP511 PD-32000 RS-30
9 Stine 9655-G PD-35000 RS-30	23 Jung 53DP511 PD-35000 RS-30
10 Stine 9655-G PD-38000 RS-30	24 Jung 53DP511 PD-38000 RS-30
11 Stine 9655-G PD-35000 RS-15	25 Jung 53DP511 PD-35000 RS-15
12 Stine 9655-G PD-40000 RS-15	26 Jung 53DP511 PD-40000 RS-15
13 Stine 9655-G PD-45000 RS-15	27 Jung 53DP511 PD-45000 RS-15

Results: Table 2106-01.

**Table: 2106-01. Plant Density and Row Spacing Effects on Corn Grain and Silage Yield.
Arlington, WI - 2021.**

Treatment number	Hybrid	Target Density plants/A	Row spacing inches	Grain									Plant height inches	*AGR \$5.22 \$/A
				Harvest Density plants/A	Yield bu/A	Moisture %	Test weight lbs/bu	Lodged			Silk DOY			
								Total %	Stalk %	Root %				
1	Stine 9709-G	32000	30	29621	240	24.9	54	1	1	0	201	102	1152	
2	Stine 9709-G	35000	30	36590	248	22.9	54	6	6	0	201	107	1200	
3	Stine 9709-G	38000	30	41121	255	21.6	54	7	7	0	201	103	1243	
4	Stine 9709-G	35000	15	28808	220	21.8	55	1	1	0	200	101	1072	
5	Stine 9709-G	40000	15	32873	257	21.3	54	1	1	0	200	99	1255	
6	Stine 9709-G	45000	15	40888	261	20.8	55	2	2	0	200	103	1274	
8	Stine 9655-G	32000	30	31131	227	21.0	56	2	1	1	199	100	1107	
9	Stine 9655-G	35000	30	36823	244	19.2	57	2	1	1	199	95	1199	
10	Stine 9655-G	38000	30	42747	251	19.4	56	1	1	0	200	100	1233	
11	Stine 9655-G	35000	15	29969	218	21.0	57	2	2	0	199	96	1062	
12	Stine 9655-G	40000	15	34964	247	20.5	56	1	1	0	199	99	1207	
13	Stine 9655-G	45000	15	38100	267	19.8	56	1	1	0	199	101	1308	
15	Stine 9814-20	32000	30	31363	263	27.4	56	0	0	0	206	117	1251	
16	Stine 9814-20	35000	30	37752	271	28.1	55	0	0	0	208	113	1282	
17	Stine 9814-20	38000	30	42398	266	28.1	55	1	1	0	208	118	1259	
18	Stine 9814-20	35000	15	28575	265	28.8	56	3	2	1	205	116	1252	
19	Stine 9814-20	40000	15	35313	281	26.6	55	1	1	0	207	117	1341	
20	Stine 9814-20	45000	15	36242	268	28.0	55	0	0	0	207	121	1271	
22	Jung 53DP511	32000	30	27995	252	20.8	57	2	2	0	199	101	1226	
23	Jung 53DP511	35000	30	36010	234	16.6	57	3	3	0	199	97	1161	
24	Jung 53DP511	38000	30	41934	208	18.1	57	14	14	0	200	107	1028	
25	Jung 53DP511	35000	15	29272	205	18.0	58	5	5	0	199	103	1011	
26	Jung 53DP511	40000	15	34848	212	17.0	58	8	7	0	199	107	1053	
27	Jung 53DP511	45000	15	39378	230	16.8	57	4	4	0	199	104	1141	
Mean				35196	245	22.0	56	3	3	0	201	105	1191	
Probability(%)														
Treatment				0.0	0.1	0.0	0.0	3.0	3.1	66.9	0.0	0.0	0.5	
LSD (0.10)														
Treatment				3431	31	2.7	2	5	5	NS	1	8	144	

Continued

*AGR (Adjusted Gross Return)

Weighted Price per Bushel = \$3.58 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.

Table: 2106-01. Plant Density and Row Spacing Effects on Corn Grain and Silage Yield.

(continued)

Arlington, WI - 2021.

Treatment number	Hybrid	Target Density plants/A	Row spacing inches	Whole Plant															
				Harvest Density plants/A	Dry Matter yield tons/A	Moisture %	Kernel milk %	KMR 0-5	SMR 0-5	VMR 0-10	Crude			<i>In Vitro</i>			Milk per		
											protein %	ADF %	NDF %	Digest %	NDFD %	Starch %	Ton lbs/T	Acres lbs/A	
1	Stine 9709-G	32000	30	29040	11.0	52	21.7	1.1	1.3	2.4	7.2	16.1	32.3	88.2	63.5	38.9	3404	37261	
2	Stine 9709-G	35000	30	36590	11.2	50	11.7	0.6	0.8	1.4	7.0	16.2	32.5	87.8	62.6	38.4	3335	37352	
3	Stine 9709-G	38000	30	39494	10.6	49	23.3	1.2	1.0	2.2	6.8	16.3	33.2	87.1	61.2	37.6	3269	34534	
4	Stine 9709-G	35000	15	28692	10.5	54	15.0	0.7	1.4	2.2	7.2	16.0	31.9	88.6	64.3	39.6	3453	36377	
5	Stine 9709-G	40000	15	30899	11.3	51	18.3	0.9	1.3	2.2	7.4	13.5	29.6	89.7	65.2	41.4	3465	38981	
6	Stine 9709-G	45000	15	41469	12.1	46	10.0	0.5	0.8	1.3	6.7	15.8	32.4	87.5	61.6	39.9	3353	40473	
8	Stine 9655-G	32000	30	31596	10.4	52	13.3	0.7	1.4	2.0	7.1	15.4	31.5	88.3	62.8	39.5	3358	34952	
9	Stine 9655-G	35000	30	36358	11.2	49	20.0	1.0	1.2	2.2	7.0	14.4	30.8	88.6	63.1	41.7	3414	37803	
10	Stine 9655-G	38000	30	42050	11.4	48	10.0	0.5	0.8	1.3	6.9	16.7	33.3	87.8	63.3	37.9	3334	37905	
11	Stine 9655-G	35000	15	29040	10.5	53	23.3	1.2	1.1	2.3	7.4	16.0	32.3	87.9	62.7	37.5	3334	35136	
12	Stine 9655-G	40000	15	32641	10.9	52	13.3	0.7	0.5	1.1	7.2	16.4	32.5	87.8	62.6	38.0	3310	35999	
13	Stine 9655-G	45000	15	39146	12.5	47	8.3	0.4	0.9	1.3	6.7	16.8	33.2	87.3	61.8	38.4	3317	41495	
15	Stine 9814-20	32000	30	30666	11.2	61	48.3	2.4	1.9	4.3	7.8	19.2	36.3	85.6	60.3	30.5	3190	35747	
16	Stine 9814-20	35000	30	36242	11.0	60	55.0	2.8	2.1	4.9	7.4	19.6	36.7	85.6	60.7	31.4	3236	35719	
17	Stine 9814-20	38000	30	42166	11.2	60	50.0	2.5	1.8	4.3	7.5	20.9	38.4	84.3	59.1	29.5	3139	35216	
18	Stine 9814-20	35000	15	28459	11.1	61	51.7	2.6	2.2	4.8	7.8	19.4	37.1	85.1	59.9	30.7	3221	35870	
19	Stine 9814-20	40000	15	32989	11.6	62	51.7	2.6	2.0	4.6	7.7	20.3	37.5	85.0	60.0	30.6	3249	37734	
20	Stine 9814-20	45000	15	39262	11.5	61	55.0	2.8	2.3	5.1	7.5	19.2	36.1	85.7	60.3	31.5	3211	37056	
22	Jung 53DP511	32000	30	29969	9.7	44	6.7	0.3	0.4	0.7	6.6	14.9	30.3	88.9	63.7	41.5	3385	32702	
23	Jung 53DP511	35000	30	35080	10.0	41	1.7	0.1	0.3	0.4	6.4	14.5	30.3	88.9	63.2	43.0	3421	34241	
24	Jung 53DP511	38000	30	40191	10.7	39	1.7	0.1	0.3	0.4	6.8	14.7	30.9	88.7	63.5	42.1	3417	36628	
25	Jung 53DP511	35000	15	29505	11.1	43	3.3	0.2	0.1	0.3	6.7	15.3	31.7	87.8	61.5	41.1	3333	36852	
26	Jung 53DP511	40000	15	34732	10.9	44	8.3	0.4	0.5	0.9	6.6	14.3	29.6	88.8	62.2	43.8	3415	37390	
27	Jung 53DP511	45000	15	39611	10.4	40	5.0	0.2	0.1	0.4	6.5	16.7	32.5	87.8	62.5	39.8	3351	34878	
Mean				34829	11.0	51	21.9	1.1	1.1	2.2	7.1	16.6	33.0	87.4	62.2	37.7	3330	36596	
Probability(%)																			
Treatment				0.0	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	3.3	11.9	
LSD (0.10)																			
Treatment				2116	1.0	4	12.9	0.6	0.8	1.3	0.5	2.7	3.4	1.9	2.3	4.1	151	NS	

FIELD EXPERIMENT HISTORY

Title: Alfalfa - Corn Response to Rotation
Experiment: 09AC **Trial ID** 6529 **Year** 2021
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

<u>Tillage Operations:</u>	<u>Analysis:</u>	<u>Rate lbs/A:</u>	<u>Date:</u>
NT			
Fertilizer:	Preplant : N/A	N/A	N/A
	Starter : N/A	N/A	N/A
	Post plant : 32-0-0	CC: 593	6/07/21
		CA: 500	6/07/21
Herbicide:	Manure: N/A	N/A	N/A
C: Status @ 4 oz/A + Durango DMA @ 24 oz/A 6/16/21		Insecticide:	
Rifle @ 16 oz/A 5/26/20		Hybrid: C:Jung 56SS538RIB	
A: Lambda T-2 @ 1.6 oz/A 6/10/21		A: Dekalb DKA40-51RR	
Durango DMA @ 48 oz/A 5/26/21			
Lambda T-2 @ 1.6 oz/A + Volunteer @ 8oz/A			
+ Durango DMA @ 36 oz/A 07/09/21			
Irrigation: None	Planting Depth: C:1.5"	Row Width: 30"	
Planting Date: C:5/12/21	A: 0.25"		
A:4/23/21		Planting Method: JD1700 w RTK	
Target Plant Density: 35000 plants/A		A: JD750 No-Till Drill	
Harvest Date: C: 10/14/21		Harvest Method: C: MF 8XP	
S: 9/21/21		S: Hagee harvester	
Notes: A: 6/2; 7/1; 7/29; 8/30/21		Al: Almaco Harvester	

Experimental Design

Design: RCB split-split-block	Replications: 3
Plot Size Seeded: 75' x 60	Experiment Size: 3.47 A
Factors/Treatments:	Harvest Plot Size: G:5' x 71'
<u>Rotation - 2021 Treatments:</u>	S: 5' x 71'
1) AAACC-2A	A:4.33' x 71'
2) AAACC-3A	
3) AAACC-1C	
4) AAACC-2C	
5) AAACC-1A	
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 2109-01, 2109-02 & 2109-03

**Table:2109-01. Alfalfa-Corn Rotation Study - Corn.
Arlington, WI - 2021.**

Rotation	Density	Yield bu/A	Moisture %	Test weight lbs/bu	Lodged			Harvest density plants/A	*AGI \$5.22/bu \$/A
					Total %	Stalk %	Root %		
AAACC-1C		243	29.0	51.3	3.0	3.0	0.0	37611	1148
AAACC-2C		211	32.9	52.8	1.0	1.0	0.0	36667	978
AACC-1C		240	27.5	51.6	2.0	2.0	0.0	37611	1140
AACC-2C		217	32.2	52.0	1.9	1.5	0.4	37333	1009
CC-CC		217	32.3	51.9	0.9	0.9	0.0	36722	1010
	25000	209	29.7	51.7	0.8	0.8	0.0	24733	985
	30000	220	30.4	53.0	2.0	2.0	0.0	30733	1033
	35000	229	30.7	52.0	1.7	1.7	0.0	35000	1074
	40000	231	31.3	51.5	1.5	1.5	0.0	39067	1081
	45000	235	30.9	51.6	1.2	1.0	0.1	44933	1100
	50000	229	31.5	51.6	3.5	3.3	0.3	48667	1068
AAACC-1C	25000	221	28.2	50.9	0.0	0.0	0.0	26000	1046
AAACC-1C	30000	238	28.3	50.7	4.3	4.3	0.0	30667	1125
AAACC-1C	35000	245	29.2	53.3	4.8	4.8	0.0	33667	1157
AAACC-1C	40000	256	28.8	51.0	0.8	0.8	0.0	39667	1207
AAACC-1C	45000	254	29.8	51.1	0.0	0.0	0.0	45667	1193
AAACC-1C	50000	247	29.4	50.9	8.0	8.0	0.0	50000	1162
AAACC-2C	25000	199	32.0	52.0	2.6	2.6	0.0	24333	926
AAACC-2C	30000	208	33.0	58.4	0.0	0.0	0.0	29333	965
AAACC-2C	35000	215	32.8	51.3	0.0	0.0	0.0	35000	997
AAACC-2C	40000	223	32.8	51.6	1.6	1.6	0.0	40333	1034
AAACC-2C	45000	211	32.9	51.5	0.0	0.0	0.0	42333	981
AAACC-2C	50000	208	34.0	51.9	2.0	2.0	0.0	48667	963
AACC-1C	25000	218	26.0	51.8	0.0	0.0	0.0	24000	1042
AACC-1C	30000	234	26.4	51.8	3.1	3.1	0.0	32000	1118
AACC-1C	35000	239	27.1	51.5	3.5	3.5	0.0	37000	1136
AACC-1C	40000	246	29.1	51.0	0.9	0.9	0.0	36667	1162
AACC-1C	45000	263	27.5	51.8	1.4	1.4	0.0	46000	1250
AACC-1C	50000	240	28.5	51.4	3.5	3.5	0.0	50000	1134
AACC-2C	25000	204	30.9	51.6	1.3	1.3	0.0	25000	957
AACC-2C	30000	207	32.2	52.0	0.0	0.0	0.0	30667	962
AACC-2C	35000	217	32.9	52.1	0.0	0.0	0.0	34667	1010
AACC-2C	40000	209	33.2	51.9	4.3	4.3	0.0	41000	971
AACC-2C	45000	227	31.5	52.0	2.2	1.5	0.7	45333	1061
AACC-2C	50000	234	32.3	52.1	3.5	2.0	1.4	47333	1091
CC-CC	25000	204	31.4	52.3	0.0	0.0	0.0	24333	955
CC-CC	30000	213	32.0	52.1	2.4	2.4	0.0	31000	994
CC-CC	35000	229	31.6	51.8	0.0	0.0	0.0	34667	1071
CC-CC	40000	222	32.7	51.9	0.0	0.0	0.0	37667	1032
CC-CC	45000	219	32.5	51.8	2.2	2.2	0.0	45333	1017
CC-CC	50000	214	33.6	51.7	0.7	0.7	0.0	47333	989
Mean		225	30.8	51.9	1.8	1.7	0.1	37189	1057
Probability(%)									
Rotation (R)		0.0	0.0	44.3	19.6	19.9	14.5	38.1	0.0
Density (D)		0.0	0.1	54.5	16.2	25.7	52.4	0.0	0.1
R x D		71.1	78.9	57.9	24.4	24.7	65.3	12.1	72.5
LSD(0.10)									
Rotation (R)		8	0.7	NS	NS	NS	NS	NS	40
Density (D)		9	1	NS	NS	NS	NS	1167	44
R x D		NS	NS	NS	NS	NS	NS	NS	NS

*AGI - Adjusted Gross Income.

**Table:2109-02. Alfalfa-Corn Rotation Study -Alfalfa.
Arlington, WI - 2021.**

Rotation	Harvest Date				Total
	2-Jun T Dm/A	1-Jul T Dm/A	29-Jul T Dm/A	30-Aug T Dm/A	
AAACC-1A	0.0	0.2	0.2	0.4	0.8
AAACC-2A	0.8	0.5	0.2	0.3	1.7
AAACC-3A	0.8	0.5	0.3	0.3	1.9
AACC(S)-1A	0.0	0.2	0.2	0.3	0.7
AACC(S)-2A	0.7	0.4	0.3	0.2	1.6
AACC-1A	0.0	0.3	0.3	0.4	0.9
AACC-2A	0.8	0.5	0.3	0.2	1.8
Mean	0.4	0.4	0.2	0.3	1.3
<u>Probability (%)</u>					
Rotation (R)	0.1	5.2	94.5	1.5	5.1
<u>LSD 10%</u>					
Rotation (R)	0.4	0.2	NS	0.1	0.7

Table: 2109-03. Alfalfa-Corn Rotation Study - Silage.
Arlington, WI 2021

Rotation	Density	Whole Plant											Harvest density plants/A
		Dry Matter		Kernel milk %	Crude protein %	ADF %	NDF %	<i>In Vitro</i> Digest %	NDFD %	Starch %	Milk per		
		Yield T/A	Moisture %								Ton lb	Acre lb	
AACC-1Cs		10.5	51.3	5.6	6.5	15.9	32.2	86.9	59.4	37.7	3150	33200	38222
AACC-2Cs		9.4	51.6	8.9	6.4	16.1	32.7	86.6	59.1	37.7	3163	29800	37556
	25000	9.1	52.2	9.2	6.6	15.5	31.9	87.4	60.7	37.7	3174	28710	31000
	30000	9.7	51.1	6.7	6.5	16.2	32.6	86.6	59.1	37.4	3138	30391	30833
	35000	9.9	52.2	6.7	6.3	17.3	34.0	86.1	59.1	35.3	3063	30354	38500
	40000	10.6	50.6	5.0	6.5	15.9	31.8	86.9	59.1	39.0	3210	34090	42000
	45000	10.4	51.3	7.5	6.5	15.3	31.8	87.1	59.5	38.7	3205	33334	41667
	50000	10.2	51.1	8.3	6.4	16.0	32.5	86.4	58.1	38.1	3150	32122	43333
AACC(S)-1C	25000	9.3	52.8	10.0	6.4	16.6	33.4	86.7	60.1	35.5	3077	28594	34000
AACC(S)-1C	30000	10.0	51.0	5.0	6.6	15.7	32.0	86.9	59.4	38.1	3162	31500	28333
AACC(S)-1C	35000	10.7	51.2	5.0	6.2	17.7	34.4	85.9	58.9	34.8	3024	32419	39333
AACC(S)-1C	40000	11.4	50.1	5.0	6.8	14.1	29.4	88.4	60.7	41.5	3313	37685	40000
AACC(S)-1C	45000	10.9	51.8	3.3	6.5	15.8	32.6	86.5	58.6	37.8	3170	34629	41667
AACC(S)-1C	50000	10.9	50.7	5.0	6.4	15.4	31.5	87.0	59.0	38.6	3153	34375	46000
AACC(S)-2C	25000	8.8	51.7	8.3	6.7	14.3	30.4	88.2	61.4	39.9	3270	28827	28000
AACC(S)-2C	30000	9.4	51.3	8.3	6.4	16.6	33.2	86.3	58.8	36.7	3114	29281	33333
AACC(S)-2C	35000	9.1	53.1	8.3	6.4	16.9	33.6	86.4	59.4	35.9	3102	28290	37667
AACC(S)-2C	40000	9.8	51.1	5.0	6.2	17.7	34.2	85.5	57.6	36.6	3107	30494	44000
AACC(S)-2C	45000	9.9	50.8	11.7	6.5	14.8	31.0	87.7	60.3	39.7	3240	32039	41667
AACC(S)-2C	50000	9.5	51.4	11.7	6.4	16.5	33.5	85.7	57.2	37.6	3148	29868	40667
Mean		10.0	51.4	7.2	6.5	16.0	32.4	86.8	59.3	37.7	3156	31500	37889
Probability(%)													
Rotation (R)		0.0	65.1	3.6	62.1	66.7	59.4	58.8	70.0	97.2	72.0	0.0	78.8
Density (D)		0.5	66.6	67.3	91.0	41.0	59.2	69.7	65.1	29.3	28.3	0.8	1.7
R x D		49.1	74.9	39.7	35.2	8.7	10.4	14.9	54.6	13.0	10.3	20.8	70.9
LSD(0.10)													
Rotation (R)		0.4	NS	2.6	NS	NS	NS	NS	NS	NS	NS	1398	NS
Density (D)		0.6	NS	NS	NS	NS	NS	NS	NS	NS	NS	2422	7276
R x D		NS	NS	NS	NS	2.4	NS	NS	NS	NS	NS	NS	NS

FIELD EXPERIMENT HISTORY

Title: Alfalfa - Corn Response to Rotation
Experiment: 09AC **Trial ID** 6528 **Year** 2021
Personnel: Joe Lauer, Thierno Diallo, Kent Kohn, Jason Cavadini
Location: Marshfield, WI **County:** Marathon
Supported By: HATCH

Site Information

Field: 402 **Previous Crop:** See Factors **Soil Type:** Plano Silt Loam
Soil Test Date 10/10/19 **pH** 7.3 **OM (%)** 3.3 **P (ppm)** 23 **K (ppm)** 88

Plot Management

Tillage Operations:	No-Till	<u>Analysis:</u>	<u>Rate lbs/A:</u>	<u>Date:</u>
	Preplant :	9-23-30 0-0-60	170 lbs 150 lbs	5/13/21 5/13/21
Fertilizer:	Starter :	N/A	N/A	N/A
	Post plant :	C: 29-0-0	40 gal	6 /16/21
Herbicide:	Manure:	N/A	N/A	N/A
C: Verdict 16 oz/ac Roundup PowerMax 32 oz/ac A: None			Insecticide: N/A	
			Hybrid: C: Legand LNG 9085 A: Dairyland 3420 wet	
Irrigation:	None	Planting Depth:	C:1.5" A: 0.25"	Row Width: 30"
Planting Date:	C:5/13/21 A: 5/13/21		Planting Method: JD1750	
Target Plant Density:			A: Brillion seeder	
Harvest Date:	C: 11/4/21 CS: 9/15/21 A: 6/15, 7/19 , 831/21		Harvest Method: C: Almaco Plot Combine CS: Hand harvest A: MARS Forage plot harvester	
Notes:				

Experimental Design

Design: RCB	Replications: 3
Plot Size Seeded: 60 x 60	Experiment Size: 5.40 A
Factors/Treatments:	Harvest Plot Size: G: 60' x 5' S: .10' x 2.5' A: 60' x 3.5'
<u>Rotation - 2021 Treatments:</u>	
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 2109-04, 2109-05 & 2109-06

**Table: 2109-04 Alfalfa and Corn Rotation- Corn
Marshfield, WI - 2021.**

Rotation	Yield	Moisture	Test Weight	Stalk Lodging	Harvest Population	*AGI \$5.22/bu
	bu/A	%	in.	%	ppa	\$/A
AAACC	140	23.8	52.6	7.1	29589	673
AAACC	144	24.6	52.5	4.5	30073	691
AACC	128	28.9	52.5	3.2	25878	606
AACC	166	24.3	52.4	4.6	31363	800
Continuous Corn	106	24.5	52.5	4.6	28911	509
Mean	137	25.2	52.5	4.8	29163	656
<u>Probability (%)</u>						
Treatment	2.5	0.3	80.1	57.4	10.2	2.4
<u>LSD 10%</u>						
Treatment	26	2	NS	NS	NS	124

**Table: 2109-05 Alfalfa and Corn Rotation- Established Alfalfa
Marshfield, WI - 2021.**

Rotation	Yield	Yield	Yield	Yield
	15-Jun	19-Jul	31-Aug	Season
	tn dm/A	tn dm/A	tn dm/A	tn dm/A
AAACC-1A	-	0.6	1.7	2.3
AAACC-2A	-	0.9	1.6	2.6
AAACC-3A	1.3	0.9	0.6	2.8
AACC-1A	-	0.5	1.7	2.3
AACC-2A	-	0.8	1.7	2.5
AACC(S)-1A	-	0.7	1.4	2.2
AACC(S)-2A	-	0.9	1.6	2.5
Mean	1.3	0.8	1.5	2.5
<u>Probability (%)</u>				
Rotation (R)	-	2.1	0.0	9.4
<u>LSD 10%</u>				
Rotation (R)	-	0.2	0.3	0.3
-	New seeding, no data			

Table:2109-06 Alfalfa and Corn Rotation- Corn Silage

Marshfield, WI - 2021.

Rotation	Yield tn dm/A	Moisture %	Kernel milk %	Harvest Population ppa	CP %	ADF %	NDF %	NDFD %	NFC %	Starch %	TDN %	Milk per	
												Ton lb	Acre lb
AACsCs	7.1	63.3	50	32912	6.7	24.1	42.4	56.8	47.6	36.1	71.0	3209	23870
AACsCs	4.9	69.3	50	30202	5.8	27.4	47.6	60.1	43.6	30.7	71.3	3202	19892
Mean	6.0	66.3	50	31557	6.3	25.7	45.0	58.5	45.6	33.4	71.1	3206	21881
<u>Probability (%)</u>													
Treatment	11.2	3.1	-	22.2	31.2	16.1	12.3	2.4	28.2	31.1	84.4	94.9	41.6
<u>LSD 10%</u>													
Treatment	NS	3.2	-	NS	NS	NS	NS	1.5	NS	NS	NS	NS	NS

FIELD EXPERIMENT HISTORY

Title: Corn - Soybean Response to Tillage and Rotation
Experiment: 09CS **Trial ID** 6526 **Year** 2021
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

<u>Tillage Operations:</u>	<u>Analysis:</u>	<u>Rate lbs/A:</u>	<u>Date:</u>
Fertilizer: Preplant :	N/A	N/A	N/A
Starter :	N/A	N/A	N/A
Post plant :	32-0-0	CC: 593 CS: 500	6/08/21 6/08/21
Manure:	N/A	N/A	N/A
Herbicide: Moccasin II Plus @ 24 oz/acre 4/27/21 Durango DMA @ 36 oz/acre 4/27/21 Durango DMA @ 36 oz/acre 6/9/21		Insecticide: See Seed Treatments	
		Hybrid: C:Jung 56SS538RIB S: NK Brand S24-A5X	
Irrigation: No		Row Width: 30"	
Planting Date: C: 5/13/21 S: 5/5/21		Planting Depth: 1.5"	
Target Plant Density: Corn: 32500 Plants/A Soybean: 160000 Plants/A		Planting Method: JD 1700 with RTK	
Harvest Date: C: 10/14/21 S: 10/16/21		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: 2020 Treatments

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

Density:

- 1) 25000
- 2) 35000
- 3) 45000

**Table2109-07: Corn/Soybean Rotation and Tillage Study - Corn.
Arlington, WI - 2021.**

Tillage	Rotation	Density	Yield bu/A	Moisture %	Test weight lbs/bu	Lodged			Harvest density plants/A	AGI \$5.22/bu \$/A
						Total %	Stalk %	Root %		
Conv			217	30.2	53.7	2.2	2.1	0.1	33869	1022
Notill			222	31.8	53.4	0.9	0.9	0.0	34536	1034
	1C		252	27.4	53.6	2.3	2.3	0.0	35333	1198
	2C		208	31.4	53.6	1.0	1.0	0.0	34125	972
	3C		193	32.1	53.3	1.0	1.0	0.0	33792	899
	4C		210	32.3	53.6	1.1	1.0	0.1	32500	976
	5C		212	32.8	53.8	2.5	2.4	0.1	34000	983
	C		257	29.0	53.4	1.1	1.1	0.0	35167	1215
	CC		205	32.1	53.6	1.6	1.5	0.1	34500	953
		25K	211	30.9	53.5	0.5	0.5	0.1	25732	988
		35K	222	31.2	53.5	1.4	1.3	0.1	34196	1040
		45K	225	30.9	53.7	2.6	2.6	0.0	42679	1057
Conv	1C		246	27.0	54.2	4.0	4.0	0.0	34000	1171
Conv	2C		197	30.6	53.8	1.0	1.0	0.0	34333	925
Conv	3C		198	31.4	53.4	2.0	2.0	0.0	34000	924
Conv	4C		214	30.9	53.6	2.0	1.7	0.3	33000	1002
Conv	5C		209	31.8	53.7	3.1	2.9	0.2	33917	977
Conv	C		257	28.0	53.7	0.6	0.6	0.0	34583	1220
Conv	CC		200	31.5	53.8	2.6	2.3	0.3	33250	935
Notill	1C		258	27.9	53.0	0.7	0.7	0.0	36667	1224
Notill	2C		219	32.2	53.4	1.0	1.0	0.0	33917	1019
Notill	3C		188	32.8	53.1	0.0	0.0	0.0	33583	874
Notill	4C		205	33.7	53.7	0.3	0.3	0.0	32000	951
Notill	5C		214	33.8	54.0	1.9	1.9	0.0	34083	989
Notill	C		257	30.0	53.1	1.5	1.5	0.0	35750	1210
Notill	CC		209	32.6	53.4	0.6	0.6	0.0	35750	972
Conv		25K	210	30.0	53.7	0.5	0.4	0.1	25929	990
Conv		35K	219	30.5	53.6	1.5	1.4	0.1	33929	1029
Conv		45K	223	30.0	53.9	4.6	4.5	0.1	41750	1047
Notill		25K	211	31.8	53.3	0.6	0.6	0.0	25536	986
Notill		35K	225	32.0	53.4	1.3	1.3	0.0	34464	1051
Notill		45K	228	31.7	53.4	0.7	0.7	0.0	43607	1066
	1C	25K	232	28.1	53.2	0.0	0.0	0.0	26375	1101
	1C	35K	256	27.6	53.5	2.8	2.8	0.0	34250	1215
	1C	45K	268	26.6	54.1	4.2	4.2	0.0	45375	1277
	2C	25K	198	31.4	53.9	1.0	1.0	0.0	25000	927
	2C	35K	216	31.7	53.5	0.4	0.4	0.0	35750	1007
	2C	45K	210	31.0	53.3	1.8	1.8	0.0	41625	983
	3C	25K	194	30.9	53.0	0.0	0.0	0.0	25750	908
	3C	35K	192	32.5	53.1	0.0	0.0	0.0	34500	895
	3C	45K	192	32.7	53.6	3.0	3.0	0.0	41125	894

continue

Table 2109-07: Corn/Soybean Rotation and Tillage Study - Corn.(continued) **Arlington, WI - 2021.**

Tillage	Rotation	Density	Yield bu/A	Moisture %	Test weight lbs/bu	Lodged			Harvest density plants/A	AGI \$5.22/bu \$/A
						Total %	Stalk %	Root %		
	4C	25K	206	31.4	53.8	0.4	0.0	0.4	25125	965
	4C	35K	213	31.9	54.0	1.1	1.1	0.0	31750	995
	4C	45K	209	33.7	53.1	1.9	1.9	0.0	40625	968
	5C	25K	201	33.5	53.9	1.5	1.5	0.0	26000	930
	5C	35K	216	33.4	53.5	2.7	2.7	0.0	33625	999
	5C	45K	218	31.5	54.0	3.3	3.0	0.3	42375	1020
	C	25K	246	29.6	52.7	1.0	1.0	0.0	26625	1160
	C	35K	258	29.3	53.4	1.7	1.7	0.0	36125	1215
	C	45K	268	28.1	54.0	0.6	0.6	0.0	42750	1271
	CC	25K	197	31.4	53.8	0.0	0.0	0.0	25250	923
	CC	35K	205	32.3	53.5	1.2	0.8	0.4	33375	954
	CC	45K	212	32.5	53.7	3.6	3.6	0.0	44875	984
Conv	1C	25K	224	27.9	53.7	0.0	0.0	0.0	25250	1063
Conv	1C	35K	249	27.5	54.3	4.1	4.1	0.0	33750	1183
Conv	1C	45K	265	25.5	54.7	8.0	8.0	0.0	43000	1267
Conv	2C	25K	195	30.1	54.2	0.0	0.0	0.0	25500	916
Conv	2C	35K	201	31.4	53.6	0.7	0.7	0.0	36250	937
Conv	2C	45K	196	30.5	53.7	2.4	2.4	0.0	41250	921
Conv	3C	25K	199	30.2	53.8	0.0	0.0	0.0	25250	934
Conv	3C	35K	192	32.0	52.8	0.0	0.0	0.0	34750	897
Conv	3C	45K	202	32.0	53.6	5.9	5.9	0.0	42000	940
Conv	4C	25K	211	29.5	54.0	0.9	0.0	0.9	26250	996
Conv	4C	35K	221	30.2	54.0	1.4	1.4	0.0	32500	1038
Conv	4C	45K	210	33.2	52.8	3.8	3.8	0.0	40250	971
Conv	5C	25K	196	33.2	53.7	0.9	0.9	0.0	26750	908
Conv	5C	35K	213	32.4	53.4	1.7	1.7	0.0	33500	993
Conv	5C	45K	219	29.9	53.9	6.5	5.9	0.6	41500	1030
Conv	C	25K	249	28.6	52.7	1.9	1.9	0.0	26750	1179
Conv	C	35K	258	28.4	53.8	0.0	0.0	0.0	35250	1220
Conv	C	45K	265	27.1	54.7	0.0	0.0	0.0	41750	1261
Conv	CC	25K	199	30.6	53.8	0.0	0.0	0.0	25750	931
Conv	CC	35K	201	31.7	53.4	2.3	1.6	0.8	31500	936
Conv	CC	45K	202	32.1	54.2	5.3	5.3	0.0	42500	939
Notill	1C	25K	241	28.3	52.8	0.0	0.0	0.0	27500	1139
Notill	1C	35K	263	27.7	52.6	1.5	1.5	0.0	34750	1247
Notill	1C	45K	271	27.7	53.4	0.5	0.5	0.0	47750	1286
Notill	2C	25K	202	32.8	53.7	1.9	1.9	0.0	24500	937
Notill	2C	35K	231	32.1	53.5	0.0	0.0	0.0	35250	1077
Notill	2C	45K	224	31.6	53.0	1.2	1.2	0.0	42000	1044
Notill	3C	25K	189	31.7	52.2	0.0	0.0	0.0	26250	883
Notill	3C	35K	192	33.1	53.5	0.0	0.0	0.0	34250	892
Notill	3C	45K	183	33.5	53.6	0.0	0.0	0.0	40250	848
Notill	4C	25K	202	33.4	53.6	0.0	0.0	0.0	24000	934
Notill	4C	35K	206	33.6	54.0	0.8	0.8	0.0	31000	953
Notill	4C	45K	209	34.2	53.4	0.0	0.0	0.0	41000	966

continue

**Table 2109-08. Corn/Soybean Rotation and Tillage Study - Soybean.
Arlington, WI - 2021**

Tillage	Rotation	Yield bu/A	Moisture %	AGI \$11.93/bu \$/A
Conv		60.5	11.2	708
Notill		62.2	11.1	728
	1S	63.6	11.0	744
	2S	63.6	11.5	744
	3S	61.1	11.1	715
	4S	58.8	11.3	688
	5S	59.3	11.6	694
	S	64.0	10.5	749
	SS	59.3	10.9	693
Conv	1S	64.5	11.2	754
Conv	2S	61.3	11.5	717
Conv	3S	59.6	11.1	698
Conv	4S	55.9	11.3	654
Conv	5S	59.4	11.6	695
Conv	S	64.5	10.6	755
Conv	SS	58.6	11.0	685
Notill	1S	62.7	10.9	734
Notill	2S	65.9	11.4	771
Notill	3S	62.5	11.0	732
Notill	4S	61.7	11.4	721
Notill	5S	59.2	11.6	693
Notill	S	63.6	10.4	744
Notill	SS	59.9	10.7	701
Mean		61.4	11.1	718
<u>Probability(%)</u>				
Tillage (T)		16.0	67.5	16.1
Rotation (R)		0.5	55.3	0.5
T x R		23.0	100.0	23.1
<u>LSD(0.10)</u>				
Tillage (T)		NS	NS	NS
Rotation (R)		2.9	NS	34
T x R		NS	NS	NS

FIELD EXPERIMENT HISTORY

Title: Corn - Soybean - Wheat Response to Rotation: Cover Crops
Experiment: 09CSW **Trial ID:** 6525 **Year:** 2021
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:

Fertilizer:	Preplant :	Analysis:	Rate lbs/A:	Date:
		N/A	N/A	N/A
	Starter :	N/A	N/A	N/A
	Post plant :	C: 32-0-0 W: 46-0-0 N/A	C: 593 S: 0 lb/A W: 163 lb/A	6//14/21 4/05/20

Herbicide:	Manure:	Hybrid:
C,S: Durango DMA @ 32oz/a 4/22/21 2, 4-D LVA 4 @18 oz/a 4/22/21 Mocassin II Plus 24.0 oz/a 4/22/21 Durango DMA @ 36oz/a 6/9/21 w: Powerflex 2 oz/A 5/15/18 MPC Amine 8 oz/A 5/15/18		C: Dekalb DKC51-98RIB S: .NK S14-U9X W: Growmark FS 624

Planting Date: C: 5/14/21 S: 5/12/21 W: 09/25 & 10/10/20	Planting Depth: C: 1.5" S,W: 1"	Planting Method: C,S: JD1700 with RTK W: JD750 No-Till Drill
---	---	--

Target Plant Density: 35000	Harvest Method: C:MF 8XP combine
	Row Width: C,S: 30" W: 0.5" CS: NH 707 S,W: Almaco Plot combine

Harvest Date: C: 10/16/21, CS: 9/20/21
 S: 10/28/21, W: 7/21/21

Fungicide: N/A

Notes: 2020 Even out year, no cover crop or N treatment. Rotation and Density for corn.

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:

<u>Rotation:</u>	<u>Plant Density:</u>
1) CC	1) 25000 ppa
2) SS	2) 30000 ppa
3) WW	3) 35000 ppa
4) CS-C	4) 40000 ppa
5) CS-S	5) 45000 ppa
6) GS1: CSW-C	6) 50000 ppa
7) GS1: CSW-S(e)	
8) GS1: CSW-W	
9) GS2: CWS-C(e)	
10) GS2: CWS-W	
11) GS2: CWS-S	
12) Flex: CWS-C(s)	
13) Flex: CWS-W(s)	
14) Flex: CWS-S	

Results: Tables 2109-09 to 2109-12

**Table: 2109 - 09 . Corn, Soybean and Wheat Rotation - Corn
Arlington, WI - 2021.**

Rotation	Density	Yield bu/A	Moisture %	Test weight lbs/bu	Lodged			Harvest plants plants/A	AGI \$5.22/bu \$/A
					Total %	Stalk %	Root %		
CC-C		202	27.6	52.1	0.9	0.6	0.3	33722	958
CSW-C		243	25.0	53.2	0.4	0.4	0.0	35194	1165
CWS-C(e)		216	23.0	53.9	1.6	1.6	0.0	35250	1043
SC-C		221	22.9	54.1	1.0	1.0	0.0	33861	1071
	25K	205	24.8	53.4	1.8	1.8	0.0	23875	987
	30K	215	25.3	53.3	0.8	0.5	0.3	28542	1029
	35K	218	24.6	52.9	0.2	0.2	0.0	32250	1050
	40K	233	23.9	53.6	1.2	1.2	0.0	36833	1121
	45K	224	24.6	53.1	1.1	1.1	0.0	41458	1079
	50K	227	24.5	53.6	0.9	0.8	0.1	44083	1090
CC-C	25K	192	28.5	51.7	0.8	0.8	0.0	22167	907
CC-C	30K	195	27.0	52.6	2.6	1.3	1.3	27833	927
CC-C	35K	205	28.5	51.3	0.0	0.0	0.0	32000	967
CC-C	40K	211	26.9	52.1	0.5	0.5	0.0	35167	1003
CC-C	45K	198	27.3	52.4	1.1	1.1	0.0	43000	942
CC-C	50K	211	27.4	52.4	0.4	0.0	0.4	42167	1004
CSW-C	25K	221	25.4	53.2	0.0	0.0	0.0	24500	1061
CSW-C	30K	236	25.5	53.3	0.0	0.0	0.0	30500	1129
CSW-C	35K	238	24.1	53.6	0.0	0.0	0.0	31833	1147
CSW-C	40K	256	24.6	52.7	0.5	0.5	0.0	38500	1232
CSW-C	45K	250	25.1	53.7	0.4	0.4	0.0	40833	1199
CSW-C	50K	255	25.0	52.7	1.8	1.8	0.0	45000	1223
CWS-C(e)	25K	204	22.5	54.2	5.9	5.9	0.0	25333	988
CWS-C(e)	30K	208	24.5	53.0	0.5	0.5	0.0	29667	1000
CWS-C(e)	35K	214	22.6	53.5	0.5	0.5	0.0	33167	1038
CWS-C(e)	40K	241	21.8	55.0	0.9	0.9	0.0	37500	1169
CWS-C(e)	45K	227	23.7	53.3	1.2	1.2	0.0	43000	1095
CWS-C(e)	50K	200	23.0	54.7	0.8	0.8	0.0	42833	967
SC-C	25K	204	22.6	54.6	0.6	0.6	0.0	23500	991
SC-C	30K	220	24.1	54.2	0.0	0.0	0.0	26167	1058
SC-C	35K	217	23.3	53.3	0.5	0.5	0.0	32000	1047
SC-C	40K	223	22.4	54.6	2.8	2.8	0.0	36167	1080
SC-C	45K	223	22.2	53.2	1.7	1.7	0.0	39000	1081
SC-C	50K	241	22.8	54.5	0.7	0.7	0.0	46333	1169

continue

Table: 2109 - 09 : Corn, Soybean and Wheat Rotation - Corn**(continued) Arlington, WI - 2120.**

	Yield bu/A	Moisture %	Test weight lbs/bu	Lodged			Harvest plants plants/A	AGI \$5.22/bu \$/A
				Total %	Stalk %	Root %		
Mean	220	24.6	53.3	1.0	0.9	0.1	34507	1059
<u>Probability(%)</u>								
Rotation (R)	46.6	0.1	0.6	76.4	69.2	30.4	8.3	43.6
Density (D)	0.0	12.6	64.3	38.7	25.8	48.6	0.0	0.0
R x D	4.4	29.8	51.5	2.7	5.0	56.9	1.9	6.3
<u>LSD(0.10)</u>								
Rotation (R)	NS	1	1	NS	NS	NS	1193	NS
Density (D)	8	NS	NS	NS	NS	NS	1247	40
R x D	37	NS	NS	3	3	NS	2494	181

AGI*: Adjusted Gross Income.

**Table: 2109-10. Corn, Soybean and Wheat Rotation - Corn Silage
Arlington, WI 2021**

Density	Dry Matter		Kernel milk	Crude protein	Whole Plant					Milk per		Plant population plants/A
	Yield	Moisture			ADF	<i>In Vitro</i>		Starch	Ton	Acre		
	tons/A	%	%	%	%	%	%	%	%	lbs/T	lbs/T	
25K	9.2	49.1	8.7	6.6	16.3	32.7	86.5	58.85	37.8	3186	29205	24970
30K	10.4	45.3	5.0	6.6	16.2	32.9	86.8	60.1	37.0	3143	32578	29000
35K	9.4	47.1	5.0	6.4	16.8	33.7	86.3	59.2	36.7	3133	29559	36833
40K	10.3	45.6	4.2	6.5	16.3	32.8	86.6	59.6	38.2	3207	32955	35667
45K	11.0	44.9	3.3	6.7	15.3	31.6	87.5	60.3	38.7	3214	35406	42667
50K	10.3	44.6	5.0	6.4	16.4	33.5	86.4	59.6	37.3	3167	32824	40833
Mean	10.1	46.1	5.2	6.6	16.2	32.9	86.7	59.6	37.6	3175	32088	34995
Probability(%)												
Density(D)	1.2	9.8	66.7	58.8	95.5	92.7	95.1	93.1	96.9	96.9	4.3	0.0
LSD(0.10)												
Density(D)	0.8	2.7	NS	NS	NS	NS	NS	NS	NS	NS	3392.7	4305

**Table: 2109 - 11 . Corn, Soybean and Wheat Rotation - Soybean
Arlington, WI - 2021.**

Rotation	Yield bu/A	Moisture %	AGI \$11.93/bu \$/A
CS-S	59.5	13.3	696
CSW-S(e)	54.4	13.6	636
CWS(L)-S	67.2	13.3	786
CWS-S	62.7	13.1	734
SS-S	53.9	13.4	629
Mean	59.5	13.3	696
<u>Probability(%)</u>			
Rotation (R)	0.2	11.4	0.2
<u>LSD(0.10)</u>			
Rotation (R)	4.5	NS	52

AGI*: Adjusted Gross Income.

**Table: 2109 - 12 . Corn, Soybean and Wheat Rotation -Wheat.
Arlington, WI - 2021.**

Rotation	Yield bu/A	Moisture %	Test weight lbs/bu	AGI \$7.06/bu \$/A
CSW-W	96	16.6	54.4	646
CWS(L)-W(s)	84	16.9	55.5	568
CWS-W	71	16.6	56.4	479
WW-W	--	--	--	--
Mean	83	16.7	55.4	565
<u>Probability(%)</u>				
Rotation (R)	7.0	7.1	2.4	7.0
<u>LSD(0.10)</u>				
Rotation (R)	16	0	1	107

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:** 6524 **Year:** 2021
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 Silt
Soil Test: Date: 20/19/ **pH** 7.2 **OM (%)** 3.1 **P (ppm)** 54 **K (ppm)** 126

Plot Management

Tillage Operations:

Fertilizer:	Preplant :	<u>Analysis:</u>	<u>Rate lbs/A:</u>	<u>Date:</u>
		C,S:9-23-30	170 lbs	5/13/21
	Starter :		150 lbs	
	Post plant :	C: 29-0-0	40 gal	6/16/21
		W: 0-0-60	150 lbs	5/13/21
		W: 46-0-0	300 lbs	4/26/21
	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 W: pre Roundup Pmax 32 oz		Hybrid: C: Legand LNG 9085 S: Stine 12EB32 W: (SRW) PIP 721	
Planting Date:	C: 5/13/21 S: 5/13/21 W:10/8/20	Planting Depth: C: 1.5" S,W: 1"	Planting Method: C: JD 1750 planter S,W: Great Plains 1206 Nt drill	
Target Plant Density:	35000		Harvest Method: CS: Hand Harvest	
Harvest Date:	C: 11/4/21, CS: 9/15/21 S: 10/20/21, W:8/5/21		Row Width: C: 30" S: 15" W: 7.5"	C,S,W: Almaco plot combine
			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: 2021Treatments

- 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 2109-13 to 2109-16

**Table: 2109-13 Corn, Soybean, and Wheat Rotation- Corn
Marshfield, WI - 2021.**

Rotation	Yield bu/A	Moisture %	Test Weight in.	Harvest Population ppa	Stalk Lodging %	AGI \$5.22/bu \$/A
Continuous	178	22.3	52.6	30,879	9.3	865
Alternating	197	24.2	52.9	33,138	8.9	951
Grain System I	167	22.7	52.7	28,975	6.8	809
Mean	181	23.1	52.8	30,998	8.4	875
<u>Probability (%)</u>						
Treatment	60.4	12.1	27.3	44.7	90.4	62.6
<u>LSD 10%</u>						
Treatment	NS	NS	NS	NS	NS	NS

**Table:2109 - 14. Corn, Soybean, and Wheat Rotation- Corn Silage
Marshfield, WI - 2021.**

Rotation	Yield tn dm/A	Moisture %	Kernel milk %	Harvest Population ppa	CP %	ADF %	NDF %	NDFD %	TDN %	NFC %	Starch %	Milk per	
												Ton lb	Acre lb
Continuous	7.76	66.2	50	32,525	6.1	27.2	46.8	56.6	68.8	43.9	33.1	3,109	23,274
Alternating	8.01	68.4	50	33,493	6.1	26.8	46.3	56.0	69.1	44.5	32.4	3,119	23,984
Grain System I	7.12	66.4	50	31,750	5.3	26.5	51.4	58.9	69.3	45.1	35.7	3,219	22,938
Mean	7.6	67.0	50	32,589	5.8	26.9	48.2	57.2	69.0	44.5	33.7	3,149	23,399
<u>Probability (%)</u>													
Treatment	37.5	18.8	-	13.6	4.3	79.7	8.0	0.8	79.8	50.7	8.7	1.1	83.9
<u>LSD 10%</u>													
Treatment	NS	NS	-	NS	1	NS	4	1	NS	NS	3	59	NS

**Table: 2109 - 15 . Corn, Soybean and Wheat Rotation -Soybean
Marshfield, WI - 2021.**

Rotation	Yield bu/A	Moisture %	Test Weight lb/bu	AGI \$11.93/bu \$/A
Continuous	40	11.9	57.6	464
Alternating	46	10.8	58.1	537
Grain System I	53	11.1	58.0	615
Mean	46	11.3	57.9	539
<u>Probability (%)</u>				
Treatment <u>LSD 10%</u>	23.3	1.6	35.1	23.3
Treatment	NS	0.5	NS	NS

AGI*: Adjusted Gross Income.

**Table: 2109 - 16 . Corn, Soybean and Wheat Rotation -Wheat.
Marshfield, WI - 2021.**

Rotation	Yield bu/A	Moisture %	Test Weight lb/bu	Height in.	Lodging 1 to 5	AGI \$7.06/bu \$/A
Continuous	36	13.0	55.3	31	1.0	249
Grain System I	50	12.7	54.6	30	1.0	342
Mean	43	12.8	55.0	30	1.0	296
<u>Probability (%)</u>						
Treatment	26.0	15.7	57.0	64.4	-	26.0
<u>LSD 10%</u>						
Treatment	NS	NS	NS	NS	-	NS

AGI*: Adjusted Gross Income.

FIELD EXPERIMENT HISTORY

Title: Crop Rotation Response to Nrate
Experiment: 09ACOSW **Trial ID:** 6527 **Year:** 2021
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,O,W :0-17.7-37	354	4 /2 /21
Starter :	C: 9-23-30	195	4/27/21
Post plant :	C: 34-0-0	See rates	5/25/21
	W: 34-0-0	30	4/2/2021
	A:0-6.8-39.1-2.9S-0.4B	400	6/10, 8/9/21
Manure:	N/A	N/A	N/A

Herbicide: C: Powermax 21 oz/a 5/13/21
 Resicore 1.25 qt/ac 5/13/21
 Halex GT 3.6 pt/a 6/11/21
 A: Raptor 5 oz/a 6/10/21
 S: Warrant Ult 55 oz/a 6/3/21
 powermax 32 oz/a 6/3/21
 Select Max 9 oz/a 7/2/21
 Sequence 3 pt/a 7/2/21

Planting Depth: C:1.5" **Hybrid:** C:LC5319SSX
Row Width: C:30" S:15" S: P24A80X
 O/A/W: 7.5" W:Pioneer 25r74
 A: Croplan Rebound 6.0
 O: Antigo

Planting Date: C: 4/27/21 W: 10/14/20
 S: 5/14/21 A: 4/6/21
 O: 4/6/21 **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:11/1/21 S: 10/19/21
 O: 7/27/21 W: 7/27/21
 A: 6/1; 7/2. 8/3; 9/2/21 **Fungicide:** N/A

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

Experimental Design

Design: RCB split-split-plot **Replications:** 2
Plot Size Seeded: MP: 30' x 70' **Experiment Size:** 2.7 A
Harvest Plot Size: 5' x 25'

Factors/Treatments:

Rotation	Corn N-rate (lbs/A)
1) CC	1) 0
2) CSCOA-2C	2) 50
3) CSCOA-10	3) 100
4) CSCOA-1A	4) 200
5) CSCOA-1C	
6) CSCOA-1S	
7) CCCAA-3C	
8) CCCAA-1A	
9) CCCAA-1C	
10) CCCAA-2A	
11) CCCAA-2C	
12) CCOAA-10	
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	

Results: Tables 2109-17 to 2109-21

**Table:2109-17. Corn, Soybean, Wheat, Oats and Alfalfa Rotation - Corn
Lancaster, WI - 2021.**

Rotation	Nitrogen rate N lb/A	Yield bu/A	Moisture %	Test weight lbs/bu	AGI \$5.22/bu \$/A
CC-C		146	17.6	58.8	720
CCCMM-C1		239	17.6	60.0	1182
CCCMM-C2		181	17.5	58.6	896
CCCMM-C3		172	17.9	59.1	850
CCOMM-C1		237	17.6	59.7	1175
CCOMM-C2		190	18.1	58.9	939
CSb-C		206	17.8	59.2	1017
CSbCOM-C1		237	17.8	59.8	1172
CSbCOM-C2		219	17.7	59.5	1083
CSbW-C		186	17.2	58.5	919
	0	152	16.9	58.1	753
	50	198	17.5	59.3	979
	100	219	17.9	59.6	1082
	200	237	18.4	59.8	1168
CC-C	0	82	16.9	58.3	409
CC-C	50	129	17.7	58.7	638
CC-C	100	159	18.1	59.6	786
CC-C	200	211	17.9	58.7	1045
CCCMM-C1	0	213	17.3	59.6	1053
CCCMM-C1	50	238	17.5	60.1	1179
CCCMM-C1	100	254	17.7	60.1	1256
CCCMM-C1	200	251	18.1	60.1	1239
CCCMM-C2	0	128	15.5	55.6	636
CCCMM-C2	50	155	17.7	59.2	765
CCCMM-C2	100	214	18.3	59.6	1055
CCCMM-C2	200	229	18.7	59.8	1128
CCCMM-C3	0	108	17.6	58.6	537
CCCMM-C3	50	190	18.0	59.3	937
CCCMM-C3	100	182	17.7	58.9	899
CCCMM-C3	200	208	18.5	59.7	1026
CCOMM-C1	0	209	17.0	59.1	1037
CCOMM-C1	50	241	17.8	59.8	1194
CCOMM-C1	100	251	17.6	60.0	1245
CCOMM-C1	200	248	18.3	59.9	1224

continue

Table:2109-17. Corn, Soybean, Wheat, Oats and Alfalfa Rotation - Corn

(continued)

Lancaster, WI - 2021

Rotation	Nitrogen rate N lb/A	Yield bu/A	Moisture %	Test weight lbs/bu	AGI \$5.22/bu \$/A
CCOMM-C2	0	132	17.2	57.1	656
CCOMM-C2	50	189	17.7	59.3	936
CCOMM-C2	100	209	18.2	59.2	1034
CCOMM-C2	200	230	19.4	60.2	1130
CS-C	0	158	17.0	58.1	781
CS-C	50	201	17.4	58.9	995
CS-C	100	232	18.3	59.9	1143
CS-C	200	233	18.6	59.9	1149
CSCOM-C1	0	211	17.1	59.3	1045
CSCOM-C1	50	241	17.7	60.0	1191
CSCOM-C1	100	250	18.1	60.0	1234
CSCOM-C1	200	247	18.3	59.9	1218
CSCOM-C2	0	165	16.9	58.3	821
CSCOM-C2	50	216	17.5	59.6	1072
CSCOM-C2	100	241	17.7	60.0	1190
CSCOM-C2	200	253	18.5	60.1	1247
CSW-C	0	111	16.7	57.3	549
CSW-C	50	178	16.4	57.9	883
CSW-C	100	197	17.8	59.2	974
CSW-C	200	257	18.1	59.4	1270
Mean		201	17.7	59.2	995
Probability(%)					
Rotation (R)		0.0	90.7	2.7	0.0
Nitrogen (N)		0.0	0.0	0.0	0.0
R x N		2.1	74.6	18.4	1.8
LSD (0.10)					
Rotation (R)		19	NS	0.7	97
Nitrogen (N)		9	0.4	0.4	45
R x N		31	NS	NS	153

*AGI: Adjusted Gross Income

**Table:2109-18. Corn, Soybean, Wheat, Oats and Alfalfa (Meadow) Rotation - Soybean
Lancaster, WI - 2021.**

Rotation	Nitrogen rate N lb/A	Yield bu/A	Moisture %	AGI \$11.93/bu \$/A
CS-S		53	9.9	785
CSCOM-S		57	9.8	792
CSW-S		57	9.6	805
	0	55	9.9	820
	50	55	9.8	814
	100	56	9.8	807
	200	56	9.6	736
			0.0	
CS-S	0	51	10.2	824
CS-S	50	50	10.0	812
CS-S	100	55	9.8	794
CS-S	200	54	9.7	712
CSCOM-S	0	57	9.8	789
CSCOM-S	50	56	9.8	779
CSCOM-S	100	57	10.0	816
CSCOM-S	200	56	9.6	783
CSW-S	0	58	9.8	846
CSW-S	50	59	9.6	852
CSW-S	100	55	9.7	810
CSW-S	200	57	9.4	713
			0.0	
Mean		56	9.8	794
<u>Probability(%)</u>				
Rotation (R)		81	28.5	81
Nitrogen (N)		11	51.1	11
R x N		67	74.5	67
<u>LSD (0.10)</u>				
Rotation (R)		NS	NS	NS
Nitrogen (N)		NS	NS	NS
R x N		NS	NS	NS

*AGI: Adjusted Gross Income

**Table:2109-19. Corn, Soybean, Wheat, Oats and Alfalfa (Meadow) Rotation - Wheat.
Lancaster, WI - 2021.**

Rotation	Nitrogen rate N lb/A	Yield bu/A	Moisture %	AGI \$7.06/bu \$/A
CSW-W	0	28	13.9	193
CSW-W	50	51	13.9	346
CSW-W	100	42	13.9	288
CSW-W	200	49	13.9	338
Mean		43	13.9	291
<u>Probability(%)</u>				
Nitrogen (N)		21.6	-	21.6
<u>LSD (0.10)</u>				
Nitrogen (N)		NS	-	NS

*AGI: Adjusted Gross Income

-- Average moisture for the trial: 13.9 %

**Table:2109-20. Corn, Soybean, Wheat, Oats and Alfalfa (Meadow)
Rotation - Oats. Lancaster, WI - 2021.**

Rotation	Nitrogen rate N lb/A	Yield bu/A	Moisture %	AGI \$2.00/bu \$/A
CCOAA-O		54	14.4	95
CSCOA-O		30	14.4	54
	0	30	14.4	54
	50	44	14.4	78
	100	41	14.4	72
	200	54	14.4	95
			0.0	
CCOAA-O	0	35	14.4	63
CCOAA-O	50	54	14.4	95
CCOAA-O	100	55	14.4	97
CCOAA-O	200	72	14.4	127
CSCOA-O	0	25	14.4	45
CSCOA-O	50	34	14.4	60
CSCOA-O	100	26	14.4	47
CSCOA-O	200	35	14.4	63
Mean		42	14.4	75
<u>Probability(%)</u>				
Rotation (R)		16	-	16
Nitrogen (N)		4	-	4
R x N		22	-	22
<u>LSD (0.10)</u>				
Rotation (R)		NS	-	NS
Nitrogen (N)		12	-	21
R x N		NS	-	NS

*AGI: Adjusted Gross Income

**Table:2109-21. Corn, Soybean, Wheat, Oats and Alfalfa (Meadow) Rotation - Alfalfa.
Lancaster, WI - 2021.**

Rotation	Nitrogen rate N lb/A	Harvest Date				Total T dm/A
		1-Jun T dm/A	2-Jul T dm/A	3-Aug T dm/A	2-Sep	
CCCMM-M1		1.1	1.6	-	-	2.6
CCCMM-M2		2.6	1.6	1.3	1.0	6.4
CCOMM-M1		2.0	1.5	1.2	1.0	5.8
CCOMM-M2		2.1	1.4	1.3	0.9	5.7
CSCOM-M		2.2	1.6	1.3	1.1	6.1
	0	2.0	1.6	1.3	1.0	5.5
	50	2.0	1.5	1.3	1.0	5.3
	100	2.0	1.5	1.3	1.0	5.3
	200	2.0	1.4	1.2	1.0	5.2
CCCMM-M1	0	1.1	1.6	-	-	2.7
CCCMM-M1	50	0.9	1.6	-	-	2.5
CCCMM-M1	100	1.2	1.6	-	-	2.8
CCCMM-M1	200	1.0	1.5	-	-	2.6
CCCMM-M2	0	2.6	1.7	1.3	1.0	6.6
CCCMM-M2	50	2.6	1.6	1.2	1.0	6.4
CCCMM-M2	100	2.5	1.5	1.3	1.0	6.4
CCCMM-M2	200	2.6	1.6	1.2	1.0	6.4
CCOMM-M1	0	2.1	1.5	1.2	1.1	5.9
CCOMM-M1	50	2.2	1.6	1.4	1.0	6.1
CCOMM-M1	100	1.9	1.4	1.2	1.1	5.6
CCOMM-M1	200	2.0	1.3	1.2	1.0	5.5
CCOMM-M2	0	2.2	1.5	1.3	0.9	5.9
CCOMM-M2	50	2.0	1.3	1.3	1.0	5.6
CCOMM-M2	100	2.1	1.5	1.3	1.0	5.8
CCOMM-M2	200	2.2	1.2	1.3	1.0	5.7
CSCOM-M	0	2.2	1.7	1.3	1.1	6.3
CSCOM-M	50	2.1	1.6	1.4	1.0	6.1
CSCOM-M	100	2.2	1.6	1.3	1.1	6.1
CSCOM-M	200	2.2	1.5	1.3	1.1	6.1
Mean		2.0	1.5	1.3	1.0	5.3
<u>Probability(%)</u>						
Rotation (R)		0.6	44.2	83.9	24.3	0.1
Nitrogen (N)		69.1	13.1	12.6	92.8	35.3
R x N		83.1	56.6	17.8	90.6	60.2
<u>LSD (0.10)</u>						
Rotation (R)		0.4	NS	NS	NS	0.7
Nitrogen (N)		NS	NS	NS	NS	NS
R x N		NS	NS	NS	NS	NS

- No harvest data

FIELD EXPERIMENT HISTORY

Title: Sweet Corn Leaf Area Reduction
Experiment: 16Sweet **Trial ID:** 6546 **Year:** 2021
Personnel: Joe Lauer, Thierno Diallo, Kent Kohn.
Location: Arlington, WI **County:** Columbia
Supported By: HATCH, National Crop Insurance Services.

Site Information

Field: ARS 375 **Previous Crop:** Soybean **Soil Type:** Plano Silt Loam
Soil Test: **Date:** 11/12/19 **pH** 6.3 **OM (%)** 2.9 **P (ppm)** 25 **K (ppm)** 144

Plot Management

Tillage Operations: Field Cultivator

	<u>Analysis:</u>	<u>Rate lbs/A:</u>	<u>Date:</u>
Fertilizer: Preplant :	32-0-0	32 gal	5 /17/21
Starter :	N/A	N/A	N/A
Post plant :	N/A	N/A	N/A
Manure:	N/A	N/A	N/A

Herbicide: Mesotrione 4SC @ 7 oz/acre 5/18/21 **Insecticide:** N/A
 Moccasin II Plus @ 24 oz/acre 5/18/21 **Hybrid:** Syngenta - Overland
 Accent Q @ .9 oz/acre 6/16/2021

Irrigation: N/A **Planting Depth:** 1.5" **Row Width:** 30"
Planting Date: 5/17/21 **Planting Method:** JD1700 w RTK
Harvest Date: 8/23/2021 **Harvest Method:** Hand Harvest

Experimental Design

Design: RCB 5 x 4 Factorial **Replications:** 4
Plot Size Seeded: 10' x 25' **Experiment Size:** 0.5 A
Harvest Plot Size: 5' x 17.5'

Factors/Treatments:

Percent leaf area reduction @ stages:

- 1 - 0% Control 1
- 2 - 0% Control 2
- 3 - 0% Control 3
- 4 - 100% reduction @ V5
- 5 - 25% reduction @ V8
- 6 - 50% reduction @ V8
- 7 - 75% reduction @ V8
- 8 - 100% reduction @ V8
- 9 - 25% reduction @ V13
- 10 - 50% reduction @ V13
- 11 - 75% reduction @ V13
- 12 - 100% reduction @ V13
- 13 - 25% reduction @ Tassel
- 14 - 50% reduction @ Tassel
- 15 - 75% reduction @ Tassel
- 16 - 100% reduction @ Tassel
- 17 - 25% reduction @ Blister
- 18 - 50% reduction @ Blister
- 19 - 75% reduction @ Blister
- 20 - 100% reduction @ Blister

Results: Table 2116-01

Table:2116-01. Influence of Sweet Corn Leaf Area Reduction on Yield.
Arlington, WI - 2021

Thin time	Reduction percent	Main	Secondary	Total	5-ear	5-ear	Cut	Fresh	Dry	Average		Harvest	Tiller
		Unhusked	Unhusked	Unhusked	Unhusked	Husked	grain	grain	grain	Leaf/plant	Ear/plant	density	propensity
		ear yield	ear yield	yield	yield	yield	moisture	yield	yield	no.	no.	plants/A	0 - 6
	%	T/A	T/A	T/A	T/A	T/A	%	T/A	T/A				
Control 1	0	8.1	0.8	8.8	10.9	9.4	76.0	6.3	1.5	-	1.0	25500	2
Control 2	0	8.6	0.3	8.9	10.0	8.7	76.3	5.7	1.3	-	1.0	24000	1
Control 3	0	8.9	0.4	9.3	10.2	9.0	76.0	5.9	1.4	-	1.0	24750	1
V5	100	8.6	0.9	9.5	10.5	8.9	76.2	5.8	1.4	7	1.0	26750	2
V8	25	8.9	0.1	9.0	9.7	8.5	76.0	5.8	1.4	11	1.0	24000	2
V8	50	7.8	0.4	8.2	10.1	8.8	75.7	5.9	1.4	11	0.9	25000	2
V8	75	7.7	0.7	8.4	10.1	8.8	76.0	5.9	1.4	10	1.0	24750	1
V8	100	7.9	0.1	8.0	9.0	7.9	76.1	5.2	1.3	11	1.0	23250	1
V13	25	8.1	0.5	8.6	9.9	8.5	76.2	5.7	1.3	14	1.0	23750	1
V13	50	6.2	0.6	6.9	8.2	7.0	76.6	4.6	1.1	13	1.0	19750	2
V13	75	5.8	1.4	7.2	9.2	8.0	75.9	5.3	1.3	14	1.0	23250	1
V13	100	0.6	1.9	2.5	2.5	2.2	75.2	1.4	0.4	14	0.6	23000	1
Tassel	25	7.2	0.7	7.9	9.5	8.3	76.6	5.4	1.3	13	1.0	22750	1
Tassel	50	7.4	0.5	7.9	9.4	8.3	76.1	5.6	1.3	13	1.0	22250	2
Tassel	75	7.1	0.9	7.9	9.4	8.3	75.6	5.6	1.4	13	1.0	24750	2
Tassel	100	0.4	2.0	2.4	2.1	1.7	75.2	1.2	0.6	13	0.5	25500	1
Blister	25	7.8	0.6	8.5	9.7	8.3	75.5	5.4	1.3	13	1.0	24250	1
Blister	50	8.5	0.2	8.8	9.7	8.5	75.6	5.7	1.4	12	1.0	24000	2
Blister	75	7.9	0.3	8.2	8.2	7.1	75.8	4.7	1.1	12	1.2	21250	1
Blister	100	5.5	1.2	6.7	8.2	7.1	78.3	4.5	1.0	12	1.0	24750	0
Mean		6.9	0.7	7.7	8.8	7.7	76.1	5.1	1.2	12	1.0	23863	1
Probability(%)													
Reduction time (T)		0.0	0.4	0.0	0.0	0.0	75.4	0.0	0.0	0.0	0.0	36.3	7.5
Reduction percent (P)		0.0	0.0	0.0	0.0	0.0	56.7	0.0	0.0	22.7	0.0	59.2	1.1
T x P		0.0	4.5	0.0	0.0	0.0	0.0	0.0	0.1	85.5	0.0	30.2	90.8
LSD (0.10)													
Reduction time (T)		0.9	0.5	0.8	1.0	0.8	NS	0.6	0.1	0	0.1	NS	0.8
Reduction percent (P)		0.7	0.3	0.6	0.7	0.6	NS	0.4	0.1	NS	0.1	NS	1
T x P		1.4	0.7	1.3	1.4	1.3	0.9	0.9	0.2	NS	0.1	NS	NS

FIELD EXPERIMENT HISTORY

Title: Tillage in Corn and Soybean Production Systems
Experiment: 17Tillage **Trial ID:** 6545 **Year:** 2021
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		<u>Analysis:</u>	<u>Product Rate lbs/A:</u>	<u>Date:</u>
Fertilizer:	Preplant :	N/A	N/A	N/A
	Starter :	N/A	N/A	N/A
	Post plant :	32-0-0	CC:593	6/07/21
	Manure:	N/A	CS: 500	6/07/21
			N/A	N/A
Herbicide:	Moccasin II @ 24 oz/A 4/27/21		Hybrid/Variety:	C: Dekalb DKC54-64SSRIB S: Asgrow AG20X9
	Durango DMA @ 36 oz/A 4/27/21			
	Durango DMA @ 36 oz/A 4/27/21 6/15/21			
Irrigation:	NO		Row Width:	30"
Planting Date:	C: 5/11/21		Planting Depth:	C: 1.5"
	S: 5/18/21			S: 1"
Planting Method:	JD1700 w RTK		Harvest Method:	C: MF 8XP plot combine
Target Plant Density:	35000 Plants/Acre			S: Almaco plot combine
			Harvest Date:	C: 10/13/21
				S: 10/20/21

Notes:

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:

<u>Rotation</u>	<u>Tillage:</u>	<u>Density:</u>
1) CC	1) Rotational tillage: NT since 2016.	1) S1 - 35000 ppa
2) CS	2) T1: Fall Strip-Till, Knife 9in Full berm.	2) S2 - 45000 ppa
	3) T2: Fall Strip-Till, Knife 9in no berm.	
	4) T3: Fall Strip-Till, Knife 6in Full berm.	
	5) T4: Fall Strip-Till, Knife 6in no berm.	
	6) NT: Spring 1-13-wave coulter with trash whippers on planter.	

Results: Tables 2117-01 & 2117-02

**Table:2117- 01 .Tillage in Corn and Soybean Production Systems - Corn
Arlington, WI - 2021.**

Rotation	Tillage	Fungicide	Yield bu/A	Moisture %	Test weight lbs/bu	Lodged			Harvest density plants/A	AGI \$5.22/bu \$/A
						Total %	Stalk %	Root %		
CC			183	30.3	50.6	6.5	4.1	2.4	37188	856
CS			184	26.3	49.6	5.4	4.8	0.6	37813	878
	NT		184	28.1	50.0	5.8	4.8	1.1	36563	871
	RT		166	29.6	49.7	2.8	2.6	0.2	36813	780
	T1		180	28.1	49.6	7.2	4.1	3.1	38625	854
	T2		193	27.5	50.4	5.2	3.4	1.9	36688	918
	T3		194	28.7	50.6	7.1	6.6	0.5	37688	918
	T4		182	28.0	50.3	7.4	5.0	2.4	38625	861
		35000	183	28.0	50.2	5.2	4.0	1.2	33563	868
		45000	183	28.7	50.0	6.7	4.8	1.9	41438	865
CC	NT		176	30.1	50.3	6.1	4.0	2.2	37250	825
CC	RT		164	32.0	50.5	1.8	1.4	0.4	35750	764
CC	T1		185	29.5	50.2	9.1	4.8	4.3	36625	873
CC	T2		196	29.5	50.9	5.9	2.2	3.7	37125	924
CC	T3		196	30.6	50.7	6.2	5.3	1.0	37625	920
CC	T4		177	30.3	50.9	9.7	6.7	3.0	38750	831
CS	NT		192	26.1	49.8	5.5	5.5	0.0	35875	916
CS	RT		167	27.1	48.9	3.8	3.8	0.0	37875	795
CS	T1		175	26.8	48.9	5.3	3.4	1.9	40625	835
CS	T2		190	25.6	49.9	4.5	4.5	0.0	36250	911
CS	T3		192	26.8	50.4	8.0	8.0	0.0	37750	916
CS	T4		186	25.6	49.7	5.2	3.4	1.8	38500	892
CC		35000	186	29.9	50.7	5.9	3.9	2.0	33458	873
CC		45000	179	30.8	50.4	7.1	4.2	2.9	40917	840
CS		35000	181	26.1	49.6	4.5	4.1	0.3	33667	864
CS		45000	187	26.6	49.6	6.3	5.4	0.9	41958	891
	NT	35000	185	27.8	50.2	5.8	5.1	0.7	32750	879
	NT	45000	182	28.4	49.8	5.9	4.5	1.5	40375	862
	RT	35000	168	29.0	49.6	4.3	3.9	0.4	33875	794
	RT	45000	163	30.2	49.8	1.3	1.3	0.0	39750	765
	T1	35000	174	27.6	49.5	3.6	2.2	1.4	35375	826
	T1	45000	187	28.7	49.6	10.9	6.1	4.8	41875	882
	T2	35000	197	27.7	50.6	2.0	0.4	1.6	31375	934
	T2	45000	190	27.4	50.2	8.4	6.3	2.1	42000	902
	T3	35000	195	28.4	50.8	6.4	6.1	0.4	33625	924
	T3	45000	193	29.0	50.3	7.7	7.1	0.6	41750	912
	T4	35000	180	27.5	50.2	9.0	6.6	2.5	34375	853
	T4	45000	184	28.4	50.4	5.9	3.5	2.3	42875	870
CC	NT	35000	180	29.6	50.6	6.9	5.5	1.4	33500	845
CC	NT	45000	172	30.6	49.9	5.3	2.4	2.9	41000	806
CC	RT	35000	175	31.1	50.3	2.1	1.4	0.7	33000	817
CC	RT	45000	153	33.0	50.7	1.4	1.4	0.0	38500	711

continue

Table:2117- 01 .Tillage in Corn and Soybean Production Systems - Corn(continued) **Arlington, WI - 2021.**

Rotation	Tillage	Fungicide	Yield bu/A	Moisture %	Test weight lbs/bu	Lodged			Harvest density plants/A	AGI \$5.22/bu \$/A
						Total %	Root %	Stalk %		
CC	T1	35000	184	29.1	50.6	2.2	1.5	0.7	33500	866
CC	T1	45000	187	29.8	49.9	16.0	8.2	7.8	39750	879
CC	T2	35000	200	29.8	51.2	4.0	0.8	3.2	32000	941
CC	T2	45000	193	29.2	50.7	7.8	3.5	4.3	42250	908
CC	T3	35000	196	30.3	50.9	6.4	5.7	0.7	33750	920
CC	T3	45000	197	30.9	50.5	6.0	4.8	1.2	41500	920
CC	T4	35000	180	29.6	50.8	13.4	8.5	4.9	35000	848
CC	T4	45000	174	31.0	51.0	5.9	4.8	1.1	42500	815
CS	NT	35000	191	26.0	49.9	4.6	4.6	0.0	32000	914
CS	NT	45000	192	26.3	49.7	6.5	6.5	0.0	39750	918
CS	RT	35000	162	26.8	48.9	6.4	6.4	0.0	34750	771
CS	RT	45000	172	27.5	48.8	1.2	1.2	0.0	41000	819
CS	T1	35000	164	26.1	48.5	4.9	2.8	2.1	37250	786
CS	T1	45000	186	27.5	49.4	5.7	4.0	1.7	44000	885
CS	T2	35000	193	25.5	50.0	0.0	0.0	0.0	30750	927
CS	T2	45000	187	25.6	49.8	9.1	9.1	0.0	41750	896
CS	T3	35000	195	26.5	50.7	6.4	6.4	0.0	33500	928
CS	T3	45000	190	27.0	50.1	9.5	9.5	0.0	42000	905
CS	T4	35000	179	25.5	49.6	4.6	4.6	0.0	33750	858
CS	T4	45000	193	25.7	49.8	5.9	2.3	3.6	43250	925
Mean			183	28.3	50.1	5.9	4.4	1.5	37500	867
Probability(%)										
Rotation (R)			90.1	3.0	5.9	66.6	75.1	10.4	37.5	64.3
Tillage (T)			1.6	1.3	3.4	36.4	43.1	9.2	16.8	1.2
Density (D)			97.0	0.5	41.7	27.2	49.5	17.5	0.0	88.5
R x T			60.0	38.4	33.6	65.5	57.4	69.8	11.9	56.1
R X D			13.7	46.0	40.3	82.9	66.8	71.1	43.0	13.2
T x D			76.1	50.7	64.6	13.1	17.0	38.9	15.8	77.6
R x T x D			81.1	70.3	60.4	23.3	50.6	1.4	99.8	80.0
LSD(0.10)										
Rotation (R)			NS	2.4	1	NS	NS	NS	NS	NS
Tillage (T)			14	0.9	1	NS	NS	2	NS	65
Density (D)			NS	0	NS	NS	NS	NS	882	NS
R x T			NS	NS	NS	NS	NS	NS	NS	NS
R X D			NS	NS	NS	NS	NS	NS	NS	NS
T x D			NS	NS	NS	NS	NS	NS	NS	NS
R x T x D			NS	NS	NS	NS	NS	3	NS	NS

**Table:2117- 02 .Tillage, Rotation and Planting Density
in Corn and Soybean - Soybean . Arlington, WI - 2021**

Tillage treatment	Yield bu/A	Moisture %	*AGI \$11.93/bu \$/A
NT	55	9.8	644
RT	52	9.9	610
T1	57	9.9	672
T2	59	9.8	692
T3	61	9.8	717
T4	60	9.9	704
Mean	58	9.8	673
Probability(%)			
Tillage (T)	2.1	45.1	2.1
LSD(0.10)			
Tillage (T)	5	NS	55

*AGI - Adjusted Gross Income

FIELD EXPERIMENT HISTORY

Title: Multi-factor effects for continuous and rotated corn
Experiment: 19Systems **Trial ID:** 6544 **Year:** 2021
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 /08/21
Manure:	N/A	N/A	N/A

Herbicide: Moccasin II Plus @ 24 oz/acre 4/27/21
Durango DMA @ 36 oz/acre 4/27/21
Durango DMA @ 36 oz/acre 6/09/21

Irrigation: None

Planting Date: C: 5/14/21
S:5/18/21

Target Plant Density: See Factors

Harvest Date: C: 10/26/21
S: 10/20/21

Notes:

Insecticide: N/A
Hybrid: 1) RR:Pioneer P0306Q
2) SS DKC51-98SSRIB
3) Soybean: Asgrow AG20X9

Planting Depth: 1.5"
Row Width: 30"
Planting Method: JD1700 w RTK
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:	Nitrogen Rate:	Fungicide:
1) No-Till	1)- 160 lbs/A	1) - UTC
2) Conventional	2) - 210 lbs/A	2) - Headline

Rotation:	Plant Density:	Genotype:
1) - CC	1-35000 Plants/A	1- RR:Pioneer P0306Q
2) - CS	2-45000 Plants/A	2- SS DKC51-98SSRIB

Results: Table 2119-01

**Table: 2119-01 . Multi-factor effects on continuous and rotated corn.
Arlington, WI - 2021.**

Tillage	Rotation	Genotype	Plant Density plants/A	N rate lbs/A	Fungicide	Grain yield bu/A	Grain moisture %	Test weight lbs	Total %	Lodged Stalk %	Root %	Harvest density plants/A	*AGI \$5.22/bu \$
					Headline	214	21.7	55.7	0.9	0.8	0.1	38558	1040
					UTC	212	22.3	55.5	1.4	1.3	0.2	37030	1030
			160			211	22.1	55.6	0.3	0.2	0.1	37093	1023
			160		Headline	214	21.6	55.8	0.5	0.3	0.2	38125	1043
			160		UTC	207	22.5	55.5	0.0	0.0	0.0	36061	1004
			210			215	22.0	55.5	2.1	1.9	0.2	38495	1046
			210		Headline	213	21.9	55.6	1.2	1.2	0.0	38991	1037
			210		UTC	217	22.1	55.5	2.9	2.6	0.3	38000	1055
			35000			208	22.1	55.3	1.4	1.3	0.1	34383	1009
			35000		Headline	208	21.9	55.2	0.9	0.7	0.1	34643	1014
			35000		UTC	207	22.4	55.4	1.8	1.8	0.0	34123	1004
			35000	160		206	22.1	55.5	0.4	0.2	0.2	34248	1000
			35000	210		209	22.1	55.1	2.3	2.4	0.0	34518	1017
			45000			218	21.9	55.9	1.0	0.8	0.2	41205	1061
			45000		Headline	219	21.6	56.1	0.9	0.8	0.1	42473	1066
			45000		UTC	218	22.3	55.6	1.1	0.7	0.3	39938	1056
			45000	160		215	22.0	55.7	0.1	0.1	0.0	39938	1047
			45000	210		221	21.9	56.0	1.8	1.4	0.4	42473	1076
		P0306Q				220	23.4	54.9	0.6	0.6	0.0	39175	1065
		P0306Q			Headline	219	22.9	55.2	0.6	0.6	0.0	39415	1059
		P0306Q			UTC	222	23.9	54.6	0.6	0.6	0.0	38936	1071
		P0306Q		160		218	23.3	54.9	0.3	0.3	0.0	38436	1055
		P0306Q		210		223	23.6	54.9	0.9	0.9	0.0	39915	1076
		P0306Q	35000			216	23.4	54.7	0.5	0.5	0.0	35413	1045
		P0306Q	45000			225	23.4	55.1	0.7	0.7	0.0	42938	1086
		DKC51-98SSRIB				205	20.7	56.3	1.7	1.4	0.3	36413	1004
		DKC51-98SSRIB			Headline	209	20.6	56.1	1.1	0.9	0.2	37701	1021
		DKC51-98SSRIB			UTC	202	20.7	56.4	2.3	2.0	0.3	35125	988
		DKC51-98SSRIB		160		203	20.9	56.3	0.2	0.0	0.2	35750	992
		DKC51-98SSRIB		210		208	20.4	56.2	3.2	2.8	0.4	37076	1017
		DKC51-98SSRIB	35000			199	20.8	55.9	2.2	2.0	0.2	33353	973
		DKC51-98SSRIB	45000			212	20.5	56.7	1.2	0.8	0.4	39473	1036
	CC					195	22.4	55.6	1.5	1.3	0.2	37738	944
	CC				Headline	194	22.2	55.5	0.5	0.5	0.0	38603	944
	CC				UTC	195	22.6	55.6	2.4	2.1	0.3	36873	945
	CC			160		193	22.4	55.7	0.0	0.0	0.0	37123	936
	CC			210		197	22.4	55.4	3.0	2.7	0.3	38353	953
	CC		35000			191	22.5	55.4	2.2	2.2	0.0	34288	926
	CC		45000			198	22.3	55.7	0.8	0.5	0.3	41188	963
	CC	P0306Q				205	23.9	54.4	0.2	0.2	0.0	38998	986
	CC	DKC51-98SSRIB				185	20.9	56.7	2.8	2.5	0.3	36478	902

continue

Table: 2119-01 . Multi-factor effects on continuous and rotated corn.(continued) **Arlington, WI - 2021.**

Tillage Rotation	Genotype	Plant	N	Fungicide	Grain	Grain	Test	Lodged			Harvest	*AGI
		Density	rate		yield	moisture	weight	Total	Stalk	Root	density	\$5.22/bu
		plants/A	lbs/A		bu/A	%	lbs	%	%	%	plants/A	\$
	CS				231	21.7	55.6	0.8	0.7	0.1	37850	1125
	CS			Headline	233	21.3	55.9	1.2	1.0	0.2	38513	1136
	CS			UTC	229	22.0	55.3	0.5	0.5	0.0	37188	1115
	CS		160		228	21.8	55.5	0.5	0.3	0.2	37063	1111
	CS		210		234	21.6	55.7	1.2	1.1	0.0	38638	1139
	CS	35000			224	21.7	55.2	0.5	0.4	0.1	34478	1091
	CS	45000			238	21.6	56.1	1.1	1.1	0.1	41223	1159
	CS			P0306Q	236	22.9	55.4	1.0	1.1	0.0	39353	1144
	CS			DKC51-98SSRIB	226	20.4	55.9	0.6	0.4	0.2	36348	1106
CT					213	21.7	56.0	1.6	1.5	0.1	37582	1035
CT				Headline	215	21.3	56.3	1.3	1.0	0.3	38274	1047
CT				UTC	211	22.0	55.7	1.9	1.9	0.0	36890	1024
CT			160		210	21.8	56.0	0.3	0.1	0.2	37515	1021
CT			210		216	21.5	56.0	2.9	2.8	0.1	37649	1050
CT		35000			210	21.7	55.5	2.0	1.8	0.2	34077	1024
CT		45000			215	21.7	56.4	1.2	1.1	0.1	41087	1047
CT				P0306Q	218	23.3	55.6	0.6	0.6	0.0	38515	1056
CT				DKC51-98SSRIB	207	20.1	56.4	2.6	2.4	0.3	36649	1015
CT	CC				196	21.9	56.2	2.1	2.1	0.0	37452	951
CT	CS				230	21.4	55.8	1.1	0.8	0.3	37712	1120
NT					213	22.4	55.2	0.7	0.6	0.1	38006	1034
NT				Headline	213	22.2	55.1	0.4	0.5	-0.1	38841	1033
NT				UTC	214	22.6	55.3	1.0	0.7	0.3	37171	1036
NT			160		211	22.3	55.3	0.2	0.2	0.0	36671	1026
NT			210		215	22.5	55.1	1.2	0.9	0.3	39341	1043
NT		35000			205	22.6	55.0	0.7	0.7	0.0	34689	993
NT		45000			221	22.2	55.3	0.7	0.4	0.3	41324	1075
NT				P0306Q	223	23.5	54.2	0.6	0.7	0.0	39836	1075
NT				DKC51-98SSRIB	204	21.3	56.2	0.8	0.5	0.3	36176	993
NT	CC				227	28.6	54.1	2.5	2.1	0.3	37127	938
NT	CS				226	30.7	52.9	4.8	2.8	1.9	37858	1131
Mean					231	28.6	53.8	6.6	3.5	3.1	36826	1035

continue

Table: 2119-01 . Multi-factor effects on continuous and rotated corn.
(continued) **Arlington, WI - 2021.**

Tillage Rotation	Genotype	Plant	N	Fungicide	Grain	Grain	Test	Lodged			Harvest	*AGI
		Density	rate		yield	moisture	weight	Total	Stalk	Root	density	\$5.22/bu
		plants/A	lbs/A		bu/A	%	lbs	%	%	%	plants/A	\$
<u>Probability(%)</u>												
	Fungicide				65.6	9.8	61.7	34.8	38.9	75.2	0.5	54.4
	Genotype				0.0	0.0	0.0	8.7	19.8	11.6	0.0	0.1
	Genotype*Fungicide				16.1	19.2	19.6	38.4	38.6	95.3	5.0	19.6
	Genotype*NRate				97.7	30.3	90.6	5.6	8.0	49.8	88.4	89.7
	Genotype*PD				56.0	69.1	59.8	36.2	28.3	60.2	18.5	52.6
	NRate				19.0	83.4	84.7	0.5	0.6	66.5	0.9	18.5
	NRate*Fungicide				11.8	34.0	84.4	9.2	17.1	23.3	31.1	10.3
	PD				0.4	63.9	11.6	52.6	41.3	54.8	0.0	0.4
	PD*Fungicide				100.0	81.2	36.6	53.2	35.0	30.3	5.9	98.1
	PD*NRate				73.6	74.5	32.4	77.7	43.9	9.9	3.5	72.1
	Rotation				0.0	3.9	85.2	29.4	32.9	75.8	82.9	0.0
	Rotation*Fungicide				55.9	64.0	31.4	3.7	9.0	13.7	70.1	53.5
	Rotation*Genotype				17.7	36.3	2.2	1.9	1.8	95.9	64.5	18.8
	Rotation*NRate				77.6	72.9	44.8	7.2	13.7	23.4	74.2	75.2
	Rotation*PD				36.6	86.9	45.5	11.4	5.8	30.0	88.4	36.6
	Tillage				91.2	4.4	3.6	12.9	13.1	92.1	40.5	94.5
	Tillage*Fungicide				46.5	67.1	24.1	94.7	56.8	8.9	78.3	44.4
	Tillage*Genotype				27.7	17.7	12.1	13.5	11.7	85.2	8.8	23.1
	Tillage*NRate				75.7	44.8	82.9	20.5	11.5	31.1	1.7	71.1
	Tillage*PD				10.2	62.5	43.5	51.6	75.4	24.0	72.0	9.4
	Tillage*Rotation				51.8	47.0	21.7	55.2	27.1	9.1	77.6	49.0
<u>LSD(0.10)</u>												
	Fungicide				NS	1	NS	NS	NS	NS	864	NS
	Genotype				6	0.6	0.6	1	NS	NS	865	29
	Genotype*Fungicide				NS	NS	NS	NS	NS	NS	1228	NS
	Genotype*NRate				NS	NS	NS	1	1	NS	NS	NS
	Genotype*PD				NS	NS	NS	NS	NS	NS	NS	NS
	NRate				NS	NS	NS	1	1	NS	864	NS
	NRate*Fungicide				NS	NS	NS	1	NS	NS	NS	41
	PD				6	NS	NS	NS	NS	NS	870	29
	PD*Fungicide				NS	NS	NS	NS	NS	NS	1229	NS
	PD*NRate				NS	NS	NS	NS	NS	0	1229	NS
	Rotation				6	0.6	NS	NS	NS	NS	NS	29
	Rotation*Fungicide				NS	NS	NS	1	1	NS	NS	NS
	Rotation*Genotype				NS	NS	1	1.5	1	NS	NS	NS
	Rotation*NRate				NS	NS	NS	1	NS	NS	NS	NS
	Rotation*PD				NS	NS	NS	NS	1	NS	NS	NS
	Tillage				NS	0.6	1	NS	1	NS	NS	NS
	Tillage*Fungicide				NS	NS	NS	NS	NS	0	1213	NS
	Tillage*Genotype				NS	NS	NS	NS	NS	NS	1215	NS
	Tillage*NRate				NS	NS	NS	NS	NS	NS	1213	NS
	Tillage*PD				NS	NS	NS	NS	NS	NS	NS	40
	Tillage*Rotation				NS	NS	NS	NS	NS	0.4	NS	NS

FIELD EXPERIMENT HISTORY

Title: Multi-factor effects for continuous corn
Experiment: 19Systems **Trial ID:** 6543 **Year:** 2021
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 :	32-0-0	See factors	6/08/21
Manure:	N/A	N/A	N/A

Herbicide: Moccasin II Plus @ 24 oz/acre 4/27/21
Durango DMA @ 36 oz/acre 4/27/21
Durango DMA @ 36 oz/acre 6/09/21

Insecticide: N/A
Hybrid: 1) RR:Pioneer P0306Q
2) SS:DKC51-98SSRIB

Irrigation: None

Planting Date: C: 5/14/21

Planting Depth: 1.5"

Row Width: 30"

Target Plant Density: See Factors

Harvest Date: C: 10/26/21

Planting Method: JD1700 w RTK

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:

<u>Tillage:</u>	<u>Nitrogen Rate:</u>	<u>Fungicide:</u>
1) No-Till	1)- 160 lbs/A	1) - UTC
2) Conventional	2) - 210 lbs/A	2) - Headline

Micro Nutrients:

1) - UTC
2) - Quatro

Plant Density:

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

Genotype:

1- RR:Pioneer P0306Q
2- SS DKC51-98SSRIB

Results: Table 2119-02

**Table: 1921-02 . Multi-factor effects on continuous corn.
Arlington, WI - 2021**

Tillage	Genotype	Plant Density plants/A	N rate lbs/A	Micro Mix	Fungicide	Grain yield bu/A	Grain moisture %	Test weight lbs	Lodged			Harvest density plants/A	AGI \$5.22/bu \$	
									Total %	Stalk %	Root %			
						Headline	197	23.0	54.2	1.3	1.2	0.1	37734	952
						UTC	197	24.0	54.3	1.1	1.1	0.0	36880	951
						Quatro	194	23.7	53.3	1.7	1.7	0.1	37589	938
						Quatro Headline	195	22.9	53.2	1.9	1.7	0.2	38109	942
						Quatro UTC	194	24.6	53.5	1.6	1.6	-0.1	37068	934
						UTC	200	23.2	55.1	0.7	0.7	0.0	37026	966
						UTC Headline	199	23.0	55.1	0.8	0.8	0.0	37359	963
						UTC UTC	201	23.4	55.0	0.6	0.6	0.0	36693	969
			160				191	23.8	54.8	1.5	1.5	0.0	38026	920
			160			Headline	189	24.0	55.2	0.7	0.7	0.0	38484	910
			160			UTC	193	23.5	54.5	2.3	2.3	0.0	37568	931
			160	Quatro			187	24.1	54.5	2.2	2.2	0.0	38250	902
			160	UTC			194	23.4	55.2	0.8	0.8	0.0	37802	939
			210				203	23.2	53.6	1.0	0.9	0.1	36589	983
			210			Headline	205	22.0	53.1	2.0	1.8	0.2	36984	995
			210			UTC	202	24.4	54.0	-0.1	0.0	-0.1	36193	972
			210	Quatro			202	23.3	52.2	1.3	1.1	0.1	36927	974
			210	UTC			205	23.1	54.9	0.6	0.6	0.0	36250	993
		35000					197	23.7	54.8	0.9	0.9	0.0	33401	950
		35000				Headline	194	23.6	55.5	0.9	0.9	0.0	33609	936
		35000				UTC	200	23.7	54.1	0.8	0.8	0.0	33193	965
		35000		Quatro			196	24.0	54.7	1.5	1.5	0.0	33500	946
		35000		UTC			198	23.3	54.9	0.2	0.2	0.0	33302	954
		35000	160				189	23.6	54.6	1.0	1.0	0.0	33677	913
		35000	210				205	23.7	55.1	0.8	0.8	0.0	33125	988
		45000					197	23.3	53.6	1.6	1.5	0.1	41214	953
		45000				Headline	200	22.4	52.8	1.8	1.6	0.2	41859	969
		45000				UTC	195	24.2	54.4	1.4	1.5	-0.1	40568	938
		45000		Quatro			192	23.5	52.0	1.9	1.8	0.1	41677	929
		45000		UTC			202	23.1	55.2	1.2	1.2	0.0	40750	977
		45000	160				192	23.9	55.1	2.0	2.0	0.0	42375	928
		45000	210				202	22.7	52.1	1.2	1.0	0.1	40052	979
	P0306Q						205	24.8	52.1	0.4	0.4	0.0	38526	987
	P0306Q					Headline	208	23.8	51.0	0.7	0.7	0.0	38609	1003
	P0306Q					UTC	203	25.8	53.3	0.1	0.1	0.0	38443	970
	P0306Q			Quatro			205	24.9	50.2	0.5	0.5	0.0	38500	985
	P0306Q			UTC			206	24.8	54.0	0.2	0.2	0.0	38552	988
	P0306Q		160				200	25.4	53.8	0.7	0.7	0.0	39052	959
	P0306Q		210				211	24.3	50.5	0.0	0.0	0.0	38000	1014
	P0306Q	35000					209	25.2	53.8	0.2	0.2	0.0	35052	1001
	P0306Q	45000					202	24.5	50.4	0.5	0.5	0.0	42000	972

conitnue

Table: 1921-02 . Multi-factor effects on continuous corn.

(continued)

Arlington, WI - 2021

Tillage	Genotype	Plant	N	Micro Mix	Fungicide	Grain	Grain	Test	Lodged			Harvest	AGI
		Density	rate			yield	moisture	weight	Total	Stalk	Root	density	\$5.22/bu
		plants/A	lbs/A			bu/A	%	lbs	%	%	%	plants/A	\$
	DKC51-98SSRIB					189	22.1	56.3	2.1	2.0	0.1	36089	917
	DKC51-98SSRIB				Headline	186	22.1	57.3	2.0	1.8	0.2	36859	901
	DKC51-98SSRIB				UTC	192	22.1	55.2	2.1	2.2	-0.1	35318	933
	DKC51-98SSRIB				Quatro	184	22.6	56.4	2.9	2.8	0.1	36677	891
	DKC51-98SSRIB				UTC	194	21.6	56.1	1.2	1.2	0.0	35500	943
	DKC51-98SSRIB		160			181	22.1	55.9	2.2	2.2	0.0	37000	882
	DKC51-98SSRIB		210			196	22.1	56.6	1.9	1.8	0.1	35177	953
	DKC51-98SSRIB	35000				185	22.1	55.8	1.5	1.5	0.0	31750	900
	DKC51-98SSRIB	45000				192	22.1	56.8	2.6	2.5	0.1	40427	934
CT						199	22.7	53.7	1.5	1.5	0.0	37547	963
CT					Headline	202	21.6	53.1	1.3	1.4	-0.1	37469	982
CT					UTC	196	23.9	54.4	1.7	1.7	0.0	37625	945
CT					Quatro	199	22.7	52.3	1.6	1.6	-0.1	37734	965
CT					UTC	198	22.7	55.1	1.4	1.4	0.0	37359	962
CT			160			192	23.0	55.0	1.5	1.5	0.0	38109	927
CT			210			206	22.4	52.5	1.4	1.5	-0.1	36984	1000
CT		35000				196	22.9	55.2	1.7	1.7	0.0	33984	950
CT		45000				201	22.5	52.2	1.3	1.3	-0.1	41109	977
CT	P0306Q					208	23.7	50.7	0.2	0.2	0.0	38109	1005
CT	DKC51-98SSRIB					189	21.7	56.8	2.8	2.9	-0.1	36984	922
NT						195	24.2	54.7	1.0	0.9	0.1	37068	940
NT					Headline	192	24.4	55.2	1.4	1.1	0.3	38000	923
NT					UTC	199	24.1	54.2	0.5	0.6	-0.1	36135	958
NT					Quatro	190	24.7	54.3	1.9	1.7	0.2	37443	911
NT					UTC	201	23.7	55.0	0.1	0.1	0.0	36693	970
NT			160			190	24.5	54.7	1.5	1.5	0.0	37943	914
NT			210			201	24.0	54.6	0.5	0.3	0.2	36193	967
NT		35000				198	24.4	54.4	0.1	0.1	0.0	32818	951
NT		45000				193	24.1	54.9	1.9	1.7	0.2	41318	930
NT	P0306Q					203	25.9	53.6	0.6	0.6	0.0	38943	969
NT	DKC51-98SSRIB					188	22.5	55.8	1.4	1.2	0.2	35193	912
Mean						197	23.5	54.2	1.2	1.2	0.0	37307	952

Probability(%)

Fungicide	90.9	20.5	94.5	73.0	87.8	24.6	33.3	96.9
Genotype	0.6	0.2	1.1	3.0	2.7	56.5	1.3	1.7
Genotype*Fungicide	29.2	23.2	15.3	61.1	45.6	26.8	45.5	24.2
Genotype*Micro	40.9	54.8	19.1	37.2	39.5	57.4	50.3	38.0
Genotype*NRate	71.5	45.1	19.6	78.8	85.4	57.4	67.3	76.3
Genotype*PD	23.8	65.5	16.0	59.6	64.3	57.4	34.9	26.1
Micro	33.3	51.5	24.9	18.1	18.5	56.5	53.0	30.1
Micro*Fungicide	87.3	41.7	89.6	89.3	95.0	26.8	83.7	81.1
NRate	3.1	47.8	38.8	47.4	38.7	56.5	11.9	2.8
NRate*Fungicide	53.4	8.2	60.0	2.2	2.4	26.8	94.5	41.2
NRate*Micro	73.6	75.4	52.3	62.0	52.8	57.4	90.0	73.6

continue

Table: 2119-02 . Multi-factor effects on continuous corn.

(continued)

Arlington, WI - 2020

Tillage	Genotype	Plant	N	Micro	Mix	Fungicide	Grain	Grain	Test	Lodged			Harvest	AGI
		Density	rate				yield	moisture	weight	Total	Stalk	Root	density	\$5.22/bu
		plants/A	lbs/A				bu/A	%	lbs	%	%	%	plants/A	\$
Mean							197	31.6	51.7	0.5	0.4	0.0	37531	589
<u>Probability(%)</u>														
PD							96.3	64.7	41.1	32.7	34.6	56.5	0.0	91.1
PD*Fungicide							33.7	29.3	34.1	84.5	99.8	26.8	63.3	28.4
PD*Micro							45.7	87.4	32.5	68.8	59.6	57.4	69.0	46.7
PD*NRate							58.3	40.4	25.4	66.3	57.1	57.4	33.8	65.9
Tillage							51.2	6.2	51.3	49.4	34.8	24.6	58.3	38.5
Tillage*Fungicide							26.3	11.4	45.2	42.5	58.4	10.3	27.6	20.2
Tillage*Genotype							70.3	37.8	21.3	22.9	14.2	26.8	16.2	63.6
Tillage*Micro							28.6	53.9	50.2	27.2	33.0	26.8	83.7	26.9
Tillage*NRate							70.7	97.9	43.3	53.9	39.2	26.8	73.2	69.8
Tillage*PD							39.0	95.5	26.0	14.9	17.8	26.8	45.5	39.0
<u>LSD(0.10)</u>														
Fungicide							NS	NS	NS	NS	NS	NS	NS	NS
Genotype							9	1.3	2.5	1	1	NS	1524	46
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	NS	NS	NS	NS	NS
Genotype*PD							NS	NS	NS	NS	NS	NS	NS	NS
Micro							NS	NS	NS	NS	NS	NS	NS	NS
Micro*Fungicide							NS	NS	NS	NS	NS	NS	NS	NS
NRate							9	NS	NS	NS	NS	NS	NS	46
NRate*Fungicide							NS	2	NS	2	2	NS	NS	NS
NRate*Micro							NS	NS	NS	NS	NS	NS	NS	NS
PD							NS	NS	NS	NS	NS	NS	1524	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	NS	NS	NS
Tillage							NS	1.3	NS	NS	NS	NS	NS	NS
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	NS	NS	NS	NS	NS
Tillage*PD							NS	NS	NS	NS	NS	NS	NS	NS

*AGI: Adjusted Gross Income

Printing for Spine of Book

2021 Annual Research Report – Lauer, Kohn, and Diallo