

FIELD EXPERIMENT HISTORY

Title: Date of Planting and Hybrid Influence on Corn Forage and Corn Grain Yield
Experiment: 03 Date of Planting **Trial ID:** 2239 **Year:** 2001
Personnel: J.G. Lauer, P. J. Flannery, and K. D. Kohn
Location: Arlington, WI **County:** Columbia
Supported By: HATCH

Site Information

Field: ARS379 **Previous Crop:** Soybean **Soil Type:** Plano Silt Loam
Soil Test: **Date:** 6 /1 /99 **pH** 6.5 **OM (%)** 2.2 **P (ppm)** 52 **K (ppm)** 193

Plot Management

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

	<u>Analysis:</u>	<u>Rate lbs/A:</u>	<u>Date:</u>
Fertilizer:			
Preplant :	46-0-0	325	N/A
Starter :	6-24-24	150	Each DOP
Post plant :	N/A	N/A	N/A
Manure:	N/A	None	

Herbicide: Harness 1.5 pt/A **Insecticide:**
Permit 0.66 oz/A **Hybrid:** See Factors

Irrigation: none

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

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

Harvest Date: S: 10/1 & 10/11 **Harvest Method:** S:New Holland Plot Chopper
G: 10/25 G:Kincaid Plot Combine

Experimental Design

Design: RCB split plot

Replications: 3

Plot Size Seeded: 25' x 20'

Experiment Size: 0.24 A

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

Harvest Plant Density: S:30000 plants per acre
G:29900

Factors/Treatments:

Date of Planting:

April 18, May 1,
May 15, June 1,
& June 15

Hybrids:

Cargill 4111
Midwest 7711

Results: Table C-25 and C-26.

Table C-25. Planting Date And Hybrid Influence On Corn Grain And Silage Performance

Arlington, WI - 2001.

Planting Date	Hybrid	Grain										
		Yield	Moisture	Test wt	Grower return	Lodged	Harvest pop	Harvest ear pop	Seeds planted	Plants emerged	Flag Leaf height	50% Silk date
		bu/A	%	lbs/bu	\$/A	%	plants/A	ears/A	seeds/A	plants/A	inches	doy
	Cargill 4111	198	21.3	54	407	3	29515	30043	47520	41785	105	211
	Midwest 7711	197	29.5	51	383	2	30202	30360	47520	41230	106	212
April 18		239	21.8	55	489	2	29172	29964	47520	37455	102	202
May 1		223	23.2	54	450	5	30624	30624	47520	43659	103	204
May 15		196	26.7	52	386	4	29832	29964	47520	43313	107	212
June 1		132	29.9	50	256	0	30096	30624	47520	43428	111	217
June 14		-	-	-	-	0	29568	29832	47520	39683	105	224
April 18	Cargill 4111	228	19.2	57	475	5	28248	29832	47520	37554	101	200
April 18	Midwest 7711	250	24.4	53	502	0	30096	30096	47520	37356	102	204
May 1	Cargill 4111	216	19.4	56	449	4	30624	30624	47520	43263	100	203
May 1	Midwest 7711	229	26.9	52	451	7	30624	30624	47520	44055	105	204
May 15	Cargill 4111	195	21.6	54	399	5	29304	29568	47520	43725	108	211
May 15	Midwest 7711	197	31.7	50	373	3	30360	30360	47520	42900	106	212
June 1	Cargill 4111	153	24.9	51	306	1	30096	30888	47520	44286	110	216
June 1	Midwest 7711	112	35.0	49	206	0	30096	30360	47520	42570	113	218
June 14	Cargill 4111	-	-	-	-	0	29304	29304	47520	40095	107	224
June 14	Midwest 7711	-	-	-	-	0	29832	30360	47520	39270	103	224
	Mean	197	25.4	53	395	2	29858	30202	47520	41507	106	212
Probability(%)												
Date of Planting (D)		1.9	0.0	0.0	1.0	66.9	42.5	55.5	-	0.0	6.5	0.0
Hybrid (H)		88.7	0.0	0.0	7.0	42.0	7.3	42.0	-	34.3	60.8	0.0
D x H		4.1	0.0	0.7	2.3	16.5	43.0	69.8	-	70.1	26.2	0.1
LSD (0.10)												
Date of Planting (D)		45	0.3	0.5	86	NS	NS	NS	-	1479	5	0
Hybrid (H)		NS	0.3	0.3	19	NS	620	NS	-	NS	NS	0
D x H		25	0.8	0.7	43	NS	NS	NS	-	NS	NS	1
CV(%)												
		8	2	1	7	109	3	3	-	4	3	0

continued

Table C-25. Planting Date And Hybrid Influence On Corn Grain And Silage Performance

(continued) **Arlington, WI - 2001.**

Planting Date	Hybrid	Whole Plant												
		Dry Matter		Kernel milk	Harvest		Crude protien	In Vitro			Cell Wall Digest	Milk per		
		yield	Moisture		plants	ears		ADF	NDF	Digest		Starch	Ton	Acre
tons/A	%	%	plants/A	ears/A	%	%	%	%	%	lbs/T	lbs/A			
	Cargill 4111	8.5	61.5	46	30202	31152	7.6	24.0	46.7	74.7	45.7	26.5	2677	23101
	Midwest 7711	8.6	66.1	58	29726	30254	7.5	24.3	47.7	73.7	44.8	24.5	2546	22458
April 18		9.5	66.0	47	29832	30492	7.3	22.7	45.1	74.7	43.9	32.7	2767	26301
May 1		9.3	68.3	53	29568	29700	7.6	22.4	44.1	75.0	43.2	33.3	2772	25769
May 15		9.4	62.8	53	29832	30360	7.1	22.0	43.9	75.4	44.1	32.9	2818	26500
June 1		8.5	58.1	37	30756	31152	7.5	25.4	48.6	73.4	45.4	23.1	2607	22552
June 14		6.1	63.9	73	29832	31812	8.2	28.1	54.4	72.6	49.7	5.5	2092	12778
April 18	Cargill 4111	9.6	63.7	38	30624	31944	7.5	23.0	45.4	74.8	44.5	32.0	2783	26855
April 18	Midwest 7711	9.3	68.3	55	29040	29040	7.2	22.5	44.8	74.6	43.3	33.4	2752	25746
May 1	Cargill 4111	8.8	66.0	48	29304	29568	7.5	22.1	43.4	75.6	43.8	33.9	2820	24999
May 1	Midwest 7711	9.8	70.5	57	29832	29832	7.7	22.8	44.8	74.3	42.5	32.6	2724	26539
May 15	Cargill 4111	9.2	61.5	47	29568	30360	7.1	22.5	44.1	75.4	44.4	32.6	2822	25897
May 15	Midwest 7711	9.6	64.1	58	30096	30360	7.2	21.6	43.6	75.4	43.8	33.2	2814	27103
June 1	Cargill 4111	8.8	54.8	23	31152	31680	7.7	24.0	46.4	74.9	46.0	27.2	2780	24680
June 1	Midwest 7711	8.3	61.3	50	30360	30624	7.3	26.9	50.9	71.9	44.8	19.0	2435	20424
June 14	Cargill 4111	6.0	61.5	73	30360	32208	8.4	28.2	54.1	72.9	49.9	6.7	2179	13076
June 14	Midwest 7711	6.2	66.4	72	29304	31416	8.1	27.9	54.6	72.4	49.5	4.3	2004	12479
	Mean	8.6	63.8	52	29964	30703	7.5	24.1	47.2	74.2	45.2	25.5	2611	22780
Probability(%)														
Date of Planting (D)		1.2	0.0	0.0	27.2	27.5	1.7	0.1	0.1	7.5	0.0	0.0	0.1	0.7
Hybrid (H)		66.9	0.1	0.2	24.9	11.3	18.7	67.9	34.0	22.6	13.6	30.6	4.7	62.7
D x H		65.6	83.3	9.6	36.1	38.4	30.6	59.9	53.8	71.9	98.3	51.5	40.6	63.8
LSD (0.10)														
Date of Planting (D)		1.4	1.8	5	NS	NS	0.5	1.8	2.9	1.7	1.3	6.1	202	5270
Hybrid (H)		NS	1.9	5	NS	NS	NS	NS	NS	NS	NS	NS	105	NS
D x H		NS	NS	12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
CV(%)														
		10	5	15	4	5	3	9	6	3	3	19	6	15

**Table C-26. Planting Date And Hybrid Influence On Corn Leaf Development
Arlington, WI - 2001.**

Date of Planting	Hybrid	Observation	Leaf Development			Plant height
		Day of year	Leaf collars	Hail adjusters method	Total leaves	
day of year		day of year	no./plant	no./plant	no./plant	inches
		136	2.0	2.1	3.6	3.4
		144	2.8	3.6	4.6	4.7
		151	2.5	3.2	4.7	5.0
		159	3.1	4.0	5.6	5.9
		169	4.4	6.4	7.5	12.1
		184	7.0	9.0	10.7	30.8
		197	11.1	12.5	14.4	59.2
		212	17.0	17.3	17.9	97.0
		225	18.5	18.5	18.5	108.0
	Cargill 4111		8.5	9.7	10.9	42.5
	Midwest 7711		8.4	9.5	10.8	40.5
	Cargill 4111	136	2.0	2.2	3.7	3.5
	Cargill 4111	144	2.8	3.6	4.6	4.7
	Cargill 4111	151	2.5	3.1	4.8	4.9
	Cargill 4111	159	3.1	4.0	5.7	5.8
	Cargill 4111	169	4.5	6.5	7.6	12.7
	Cargill 4111	184	7.2	9.3	10.9	32.5
	Cargill 4111	197	11.3	12.7	14.5	61.4
	Cargill 4111	212	17.1	17.4	18.0	99.4
	Cargill 4111	255	18.3	18.3	18.3	107.2
	Midwest 7711	136	2.0	2.0	3.5	3.3
	Midwest 7711	144	2.8	3.6	4.6	4.7
	Midwest 7711	151	2.6	3.3	4.7	5.1
	Midwest 7711	159	3.2	4.0	5.6	5.9
	Midwest 7711	169	4.4	6.3	7.4	11.6
	Midwest 7711	184	6.9	8.7	10.5	29.1
	Midwest 7711	197	10.9	12.2	14.2	57.0
	Midwest 7711	212	16.9	17.2	17.8	94.7
	Midwest 7711	225	18.7	18.7	18.7	108.8
108			7.9	9.1	10.4	35.3
121			7.8	9.1	10.2	37.0
135			7.2	8.2	9.6	34.4
152			10.2	11.1	12.3	57.4
165			10.6	11.5	12.9	52.6
108		136	2.0	2.1	3.6	3.4
108		144	3.5	4.2	5.2	5.6
108		151	3.6	4.7	6.3	7.2
108		159	4.3	5.3	7.1	8.4
108		169	6.2	9.0	10.3	19.5
108		184	10.2	12.9	14.7	50.5
108		197	14.9	16.0	17.1	84.7
108		212	18.9	18.9	18.9	102.8
108		225	-	-	-	-

continued

Table C-26. Planting Date And Hybrid Influence On Corn Leaf Development

(continued) **Arlington, WI - 2001.**

Date of Planting	Hybrid	Observation	Leaf Development			Plant height
		Day of year	Leaf collars	Hail adjusters method	Total leaves	
day of year		day of year	no./plant	no./plant	no./plant	inches
121		136	-	-	-	-
121		144	2.0	3.0	4.0	3.8
121		151	3.0	3.7	4.9	4.8
121		159	3.3	4.3	5.9	6.1
121		169	5.4	7.8	8.9	15.6
121		184	9.0	11.3	13.0	46.8
121		197	13.6	15.3	16.3	77.3
121		212	18.5	18.5	18.5	104.5
121		225	-	-	-	-
135		136	-	-	-	-
135		144	-	-	-	-
135		151	1.0	1.3	3.0	3.0
135		159	1.8	2.4	3.9	3.1
135		169	4.1	5.7	6.8	8.4
135		184	6.8	8.8	11.0	28.7
135		197	10.8	12.7	14.6	57.9
135		212	18.4	18.4	18.4	105.7
135		225	-	-	-	-
152		136	-	-	-	-
152		144	-	-	-	-
152		151	-	-	-	-
152		159	-	-	-	-
152		169	2.1	3.1	4.1	5.1
152		184	5.6	7.3	8.8	20.4
152		197	9.1	10.5	13.1	48.8
152		212	16.0	16.3	17.4	101.3
152		225	18.3	18.3	18.3	111.4
165		136	-	-	-	-
165		144	-	-	-	-
165		151	-	-	-	-
165		159	-	-	-	-
165		169	-	-	-	-
165		184	3.6	4.6	5.9	7.6
165		197	7.2	8.0	10.8	27.3
165		212	13.1	14.6	16.3	70.9
165		225	18.8	18.8	18.8	104.6
108	Cargill 4111		8.0	9.3	10.6	36.3
108	Midwest 7711		7.9	9.0	10.2	34.2
121	Cargill 4111		7.8	9.1	10.2	38.4
121	Midwest 7711		7.9	9.1	10.2	35.6
135	Cargill 4111		7.2	8.3	9.6	34.2
135	Midwest 7711		7.1	8.1	9.6	34.7

continued

Table C-26. Planting Date And Hybrid Influence On Corn Leaf Development(continued) **Arlington, WI - 2001.**

Date of Planting	Hybrid	Observation	Leaf Development			Plant height
		Day of year	Leaf collars	Hail adjusters method	Total leaves	
day of year		day of year	no./plant	no./plant	no./plant	inches
152	Cargill 4111		10.3	11.2	12.5	58.7
152	Midwest 7711		10.1	10.9	12.2	56.1
165	Cargill 4111		10.8	11.6	13.0	54.6
165	Midwest 7711		10.5	11.4	12.9	50.6
108	Cargill 4111	136	2.0	2.2	3.7	3.5
108	Cargill 4111	144	3.5	4.2	5.2	5.5
108	Cargill 4111	151	3.7	4.7	6.5	7.0
108	Cargill 4111	159	4.2	5.3	7.3	8.2
108	Cargill 4111	169	6.5	9.5	10.7	21.2
108	Cargill 4111	184	10.2	13.2	15.0	52.7
108	Cargill 4111	197	15.2	16.3	17.3	88.0
108	Cargill 4111	212	19.0	19.0	19.0	104.5
108	Cargill 4111	225	-	-	-	-
108	Midwest 7711	136	2.0	2.0	3.5	3.3
108	Midwest 7711	144	3.5	4.2	5.2	5.8
108	Midwest 7711	151	3.5	4.7	6.0	7.3
108	Midwest 7711	159	4.5	5.3	6.8	8.5
108	Midwest 7711	169	5.8	8.5	9.8	17.8
108	Midwest 7711	184	10.2	12.7	14.3	48.3
108	Midwest 7711	197	14.7	15.7	16.8	81.3
108	Midwest 7711	212	18.8	18.8	18.8	101.2
108	Midwest 7711	225	-	-	-	-
121	Cargill 4111	136	-	-	-	-
121	Cargill 4111	144	2.0	3.0	4.0	3.9
121	Cargill 4111	151	3.0	3.7	5.0	4.8
121	Cargill 4111	159	3.3	4.3	5.8	6.0
121	Cargill 4111	169	5.3	8.2	9.2	16.5
121	Cargill 4111	184	9.2	11.5	13.2	52.8
121	Cargill 4111	197	13.7	15.2	16.3	81.0
121	Cargill 4111	212	18.0	18.0	18.0	103.7
121	Cargill 4111	225	-	-	-	-
121	Midwest 7711	136	-	-	-	-
121	Midwest 7711	144	2.0	3.0	4.0	3.6
121	Midwest 7711	151	3.0	3.7	4.8	4.7
121	Midwest 7711	159	3.2	4.2	6.0	6.2
121	Midwest 7711	169	5.5	7.5	8.7	14.8
121	Midwest 7711	184	8.8	11.0	12.8	40.8
121	Midwest 7711	197	13.5	15.3	16.3	73.7
121	Midwest 7711	212	19.0	19.0	19.0	105.3
121	Midwest 7711	225	-	-	-	-

continued

Table C-26. Planting Date And Hybrid Influence On Corn Leaf Development

(continued) **Arlington, WI - 2001.**

Date of Planting	Hybrid	Observation	Leaf Development			Plant height
		Day of year	Leaf collars	Hail adjusters method	Total leaves	
day of year		day of year	no./plant	no./plant	no./plant	inches
135	Cargill 4111	136	-	-	-	-
135	Cargill 4111	144	-	-	-	-
135	Cargill 4111	151	0.8	1.0	2.8	2.8
135	Cargill 4111	159	1.7	2.3	3.8	3.2
135	Cargill 4111	169	4.0	5.3	6.7	7.3
135	Cargill 4111	184	7.0	9.2	11.0	27.3
135	Cargill 4111	197	11.0	13.3	14.8	58.3
135	Cargill 4111	212	18.7	18.7	18.7	106.3
135	Cargill 4111	225	-	-	-	-
135	Midwest 7711	136	-	-	-	-
135	Midwest 7711	144	-	-	-	-
135	Midwest 7711	151	1.2	1.7	3.2	3.2
135	Midwest 7711	159	1.8	2.5	4.0	3.0
135	Midwest 7711	169	4.2	6.0	7.0	9.4
135	Midwest 7711	184	6.7	8.5	11.0	30.0
135	Midwest 7711	197	10.7	12.0	14.3	57.5
135	Midwest 7711	212	18.2	18.2	18.2	105.0
135	Midwest 7711	225	-	-	-	-
152	Cargill 4111	136	-	-	-	-
152	Cargill 4111	144	-	-	-	-
152	Cargill 4111	151	-	-	-	-
152	Cargill 4111	159	-	-	-	-
152	Cargill 4111	169	2.0	3.0	4.0	5.8
152	Cargill 4111	184	5.7	7.7	9.2	22.2
152	Cargill 4111	197	9.3	10.7	13.3	52.0
152	Cargill 4111	212	16.5	16.8	17.8	104.2
152	Cargill 4111	225	18.0	18.0	18.0	109.5
152	Midwest 7711	136	-	-	-	-
152	Midwest 7711	144	-	-	-	-
152	Midwest 7711	151	-	-	-	-
152	Midwest 7711	159	-	-	-	-
152	Midwest 7711	169	2.2	3.2	4.2	4.4
152	Midwest 7711	184	5.5	7.0	8.5	18.7
152	Midwest 7711	197	8.8	10.3	12.8	45.7
152	Midwest 7711	212	15.5	15.7	17.0	98.3
152	Midwest 7711	225	18.5	18.5	18.5	113.3
165	Cargill 4111	136	-	-	-	-
165	Cargill 4111	144	-	-	-	-
165	Cargill 4111	151	-	-	-	-
165	Cargill 4111	159	-	-	-	-
165	Cargill 4111	169	-	-	-	-
165	Cargill 4111	184	3.8	4.8	6.0	7.6
165	Cargill 4111	197	7.3	8.2	10.8	27.7
165	Cargill 4111	212	13.2	14.7	16.3	78.2
165	Cargill 4111	225	18.7	18.7	18.7	104.8

continued

Table C-26. Determining Corn Hybrid Maturity - Comparison of Hybrids(continued) **Arlington, WI - 2001**

Date of Planting	Hybrid	Observation	Leaf Development			Plant height
		Day of year	Leaf collars	Hail adjusters method	Total leaves	
day of year		day of year	no./plant	no./plant	no./plant	inches
165	Midwest 7711	136	-	-	-	-
165	Midwest 7711	144	-	-	-	-
165	Midwest 7711	151	-	-	-	-
165	Midwest 7711	159	-	-	-	-
165	Midwest 7711	169	-	-	-	-
165	Midwest 7711	184	3.3	4.3	5.8	7.6
165	Midwest 7711	197	7.0	7.8	10.7	26.8
165	Midwest 7711	212	13.0	14.5	16.2	63.7
165	Midwest 7711	225	18.8	18.8	18.8	104.3
Mean			8.5	9.6	10.9	41.5
Probability(%)						
Date of Planting (D)			0.0	0.0	0.0	0.0
Hybrid (H)			40.6	9.6	18.9	0.2
D x H			63.3	64.7	15.8	4.1
Sample DOY (S)			0.0	0.0	0.0	0.0
D x S			0.0	0.0	0.0	0.0
H x S			41.6	5.2	56.2	0.4
D x H x S			30.7	1.0	37.6	0.1
LSD(0.10)						
Date of Planting (D)			0.4	0.5	0.4	1.6
Hybrid (H)			NS	0.1	NS	0.6
D x H			NS	NS	NS	1.4
Sample DOY (S)			0.2	0.2	0.2	1.3
D x S			0.2	0.5	0.5	2.9
H x S			NS	0.3	NS	1.8
D x H x S			NS	0.7	NS	4.1
CV(%)						
			5	5	5	7