

FIELD EXPERIMENT HISTORY

Title: Date of Planting and Hybrid Influence on Corn Forage and Corn Grain Yield
Experiment: 03DOP **Trial ID:** 3177 **Year:** 2008
Personnel: J.G. Lauer, K.D. Kohn, T.H. Diallo, Greg Roth (Penn State), Mark Zarnstorff (NCIS)
Location: Arlington, WI **County:** Columbia
Supported By: NCIS

Site Information

Field: ARS392 **Previous Crop:** Soybean **Soil Type:** Plano Silt Loam
Soil Test: **Date:** 10/1 /08 **pH:** 6.4 **OM (%)** 3.3 **P (ppm)** 38 **K (ppm)** 102

Plot Management

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

	<u>Analysis:</u>	<u>Rate lbs/A:</u>	<u>Date:</u>
Fertilizer:			
Preplant :	46-0-0	325	4 /18/08
Starter :	10-34-0	3 gal	Each DOP
Post plant :	N/A	N/A	N/A
Manure:	N/A	N/A	N/A
Herbicide:	Outlook 20 oz/A Hornet 4.0 oz/A	Insecticide: Force 3G 4.4 lb/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: Almaco Precision Planter	
Harvest Date: S: 9/9, 9/19 & 10/1 G: 10/31		Harvest Method: S:New Holland 707 G:Massey Ferguson 8XP	

Experimental Design

Design: RCB split plot **Replications:** 4
Plot Size Seeded: 25' x 20' - 4/24, 5/15 & 6/15 DOPs
 25' x 40' - 5/1 & 6/2 DOPs **Experiment Size:** 1.3 Acre
Harvest Plot Size: S: 22' x 2.5'
 G: 22' x 5' **Harvest Plant Density:** S: 28898 plants per acre
 G: 29341

Factors/Treatments:

<u>Date of Planting:</u>	<u>Hybrids:</u>	<u>Silage Harvest Timing:</u>
April 24, May 01, May 15, June 02 & June 15	NK Brand N58-D1 Pioneer 37R71	25% Milk - 9/9 50% Milk - 9/19 75% Milk - 10/1

Results: Tables C-28 , C-29 and C-30.

Table C- 29. Planting Date and Hybrid Influence on Corn Grain and Silage Performance.
Arlington, WI - 2008.

Planting date	Hybrid	Grain																					
		Yield	Moisture	Test weight	Lodged			Grower	Harvest	Silking	Plant	Early	Kernel Milk			Black	Grain Composition			Ethanol		MPCI	
		bu/A	%	lbs/bu	%	%	%	\$/A	plants/A	date	height	doy	75%	50%	25%	layer	Oil	Starch	Protein	per bu	per A	yield	Moisture
	NK Brand N58-D1	187	28.8	53.2	7	2	5	611	28978	215	103	257	268	274	-	-	3.4	61.2	7.9	2.85	534	156	22.9
	Pioneer 37R71	201	23.3	54.9	12	1	11	671	29704	211	97	247	258	265	272	281	3.7	60.4	8.2	2.81	565	162	20.7
April 24		214	20.1	57.0	2	2	0	725	26499	204	99	241	252	259	266	277	3.6	60.6	8.1	2.84	608		
May 01		220	19.7	57.5	4	4	0	746	27173	204	98	242	255	261	268	278	3.5	60.8	8.0	2.84	624	180	18.7
May 15		226	20.7	56.5	2	1	1	764	31581	208	100	245	256	263	270	279	3.4	61.0	8.3	2.84	643		
June 02		179	28.8	52.2	2	1	1	578	28936	218	100	260	269	277	283	292	3.4	60.9	7.8	2.84	510	137	24.9
June 15		130	40.7	47.0	40	1	39	392	32514	230	105	271	283	290	-	-	3.6	60.7	8.2	2.81	364		
April 24	NK Brand N58-D1	227	21.7	56.2	2	2	0	761	27069	205	104	243	255	263	270	278	3.4	61.0	7.9	2.86	647		
April 24	Pioneer 37R71	202	18.6	57.7	1	1	0	690	25929	203	93	239	249	255	261	275	3.8	60.2	8.3	2.82	568		
May 01	NK Brand N58-D1	227	21.4	57.0	5	4	0	764	27692	206	102	244	259	264	273	282	3.3	61.4	7.6	2.88	654	185	19.7
May 01	Pioneer 37R71	212	18.0	58.1	3	3	0	728	26655	202	94	240	251	257	263	273	3.8	60.2	8.3	2.80	595	175	17.8
May 15	NK Brand N58-D1	226	22.3	55.4	2	1	2	754	31114	211	103	250	261	269	275	284	3.3	61.6	8.1	2.87	647		
May 15	Pioneer 37R71	227	19.0	57.6	1	1	0	774	32048	206	97	241	250	257	264	274	3.6	60.5	8.5	2.81	639		
June 02	NK Brand N58-D1	156	31.0	51.6	3	2	1	496	27381	219	100	266	276	281	287	299	3.3	61.1	7.7	2.85	446	127	26.1
June 02	Pioneer 37R71	202	26.7	52.8	1	0	0	659	30492	216	99	254	263	273	280	286	3.6	60.7	7.9	2.83	573	148	23.6
June 15	NK Brand N58-D1	98	47.4	45.9	25	2	23	280	31633	232	106	280	288	296	-	-	3.5	61.0	8.3	2.82	276.4		
June 15	Pioneer 37R71	162	34.1	48.1	55	0	55	504	33396	227	104	263	277	285	291	299	3.6	60.5	8.1	2.80	452		
Mean		194	26.0	54.0	10	2	8	641	29341	213	100	252	263	270	273	283	3.5	60.8	8.1	2.83	550	159	21.8
Probability(%)																							
Date of Planting (D)		0.0	0.0	0.0	1.2	14.0	1.2	0.0	0.0	0.0	3.1	0.0	0.0	0.0	0.0	0.0	11.2	17.4	49.4	16.1	0.0	1.0	1.3
Hybrid (H)		0.2	0.0	0.0	4.2	16.4	0.8	0.0	10.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	14.2	0.0	1.3	42.0	0.2
D x H		0.0	0.0	54.2	0.1	82.9	0.0	0.0	2.6	27.3	6.2	0.0	27.4	48.2	10.3	15.3	23.6	21.7	54.3	25.8	0.0	4.2	46.2
LSD (0.10)																							
Date of Planting (D)		17	2.7	2.0	19	NS	19	56	1810	2	4	2	3	3	5	5	NS	NS	NS	NS	49	17	2.7
Hybrid (H)		7	0.7	0.5	4	NS	3	23	NS	1	2	1	2	2	-	-	0.1	0	NS	0.02	19	NS	0.8
D x H		19	2.7	NS	18	NS	18	64	2077	NS	5	2	NS	NS	NS	NS	NS	NS	NS	NS	56	17	NS

continued

**Table C-30. Planting Date and Hybrid Influence on Corn Leaf Development.
Arlington, WI - 2008.**

Date of planting	Hybrid	Observation date day of year	Leaf Development			Plant height inches
			Leaf collars no./plant	Hail adjusters method no./plant	Total leaves no./plant	
		156	2.4	3.5	4.9	4.8
		171	5.4	7.6	9.0	19.0
		182	5.1	8.1	9.6	20.8
		197	9.4	11.7	13.2	46.9
		212	15.7	16.8	17.3	91.1
		224	17.3	17.5	17.7	97.3
	NK Brand N58-D1		10.1	11.9	12.8	51.5
	Pioneer 37R71		9.9	11.5	12.6	52.5
	NK Brand N58-D1	156	2.4	3.6	4.7	4.2
	NK Brand N58-D1	171	6.1	8.3	9.3	21.3
	NK Brand N58-D1	182	5.0	8.0	9.3	19.7
	NK Brand N58-D1	197	9.2	11.6	13.2	43.9
	NK Brand N58-D1	212	15.8	17.1	17.7	90.2
	NK Brand N58-D1	224	17.6	18.0	18.3	98.6
	Pioneer 37R71	156	2.4	3.5	5.1	5.3
	Pioneer 37R71	171	4.8	6.9	8.7	16.8
	Pioneer 37R71	182	5.2	8.3	9.9	21.9
	Pioneer 37R71	197	9.7	11.9	13.2	49.9
	Pioneer 37R71	212	15.7	16.5	17.0	92.0
	Pioneer 37R71	224	16.9	16.9	17.2	96.1
April 24			10.5	12.2	13.1	54.0
May 01			10.6	12.3	13.3	53.9
May 15			10.1	11.6	12.6	52.8
June 02			10.7	12.4	13.4	57.2
June 15			7.7	9.6	10.8	40.0
April 24		156	2.9	4.2	5.4	5.3
April 24		171	5.3	7.7	9.1	17.3
April 24		182	6.6	10.6	12.4	32.4
April 24		197	11.8	14.0	15.3	65.2
April 24		212	18.6	18.6	18.6	104.8
April 24		224	17.9	17.9	17.9	98.9
May 01		156	3.0	4.1	5.6	5.2
May 01		171	5.1	7.6	9.1	17.1
May 01		182	6.8	10.9	12.6	33.1
May 01		197	12.3	14.2	15.7	65.8
May 01		212	18.6	18.6	18.6	104.3
May 01		224	18.2	18.2	18.2	98.0

continued

Table C-30. Planting Date and Hybrid Influence on Corn Leaf Development.(continued) **Arlington, WI - 2008.**

Date of planting	Hybrid	Observation date	Leaf Development			Plant height
			Leaf collars	Hail adjusters method	Total leaves	
		day of year	no./plant	no./plant	no./plant	inches
May 15		156	1.4	2.4	3.6	3.7
May 15		171	5.9	7.4	8.8	22.7
May 15		182	5.9	9.4	10.9	22.7
May 15		197	10.7	13.2	14.8	55.3
May 15		212	17.6	17.8	18.1	105.6
May 15		224	18.0	18.0	18.0	100.9
June 02		156	-	-	-	-
June 02		171	-	-	-	-
June 02		182	3.9	6.3	7.6	10.4
June 02		197	7.3	9.9	11.6	31.2
June 02		212	14.1	15.8	16.8	86.1
June 02		224	17.6	17.8	17.8	101.1
June 15		156	-	-	-	-
June 15		171	-	-	-	-
June 15		182	2.1	3.3	4.4	5.3
June 15		197	5.1	7.4	8.4	16.9
June 15		212	9.8	13.3	14.5	54.8
June 15		224	14.6	15.5	16.7	87.7
April 24	NK Brand N58-D1		10.5	12.1	13.1	54.6
April 24	Pioneer 37R71		10.5	12.2	13.2	53.4
May 01	NK Brand N58-D1		10.9	12.6	13.6	54.9
May 01	Pioneer 37R71		10.4	11.9	13.0	52.9
May 15	NK Brand N58-D1		10.2	11.7	12.6	52.2
May 15	Pioneer 37R71		10.0	11.4	12.5	53.4
June 02	NK Brand N58-D1		10.7	12.5	13.5	53.7
June 02	Pioneer 37R71		10.8	12.3	13.4	60.7
June 15	NK Brand N58-D1		7.7	10.1	11.0	38.3
June 15	Pioneer 37R71		7.7	9.2	10.6	41.7
April 24	NK Brand N58-D1	156	2.9	4.3	5.1	4.4
April 24	NK Brand N58-D1	171	5.3	7.6	8.6	16.0
April 24	NK Brand N58-D1	182	6.4	10.1	12.3	31.0
April 24	NK Brand N58-D1	197	11.4	13.8	15.4	62.0
April 24	NK Brand N58-D1	212	18.6	18.6	18.6	109.9
April 24	NK Brand N58-D1	224	18.5	18.5	18.6	104.4
April 24	Pioneer 37R71	156	2.9	4.1	5.8	6.2
April 24	Pioneer 37R71	171	5.4	7.8	9.5	18.5
April 24	Pioneer 37R71	182	6.8	11.1	12.6	33.9
April 24	Pioneer 37R71	197	12.3	14.3	15.3	68.4
April 24	Pioneer 37R71	212	18.6	18.6	18.6	99.8
April 24	Pioneer 37R71	224	17.3	17.3	17.3	93.5

continued

Table C-30. Planting Date and Hybrid Influence on Corn Leaf Development.(continued) **Arlington, WI - 2008.**

Date of planting	Hybrid	Observation date	Leaf Development			Plant height
			Leaf collars	Hail adjusters method	Total leaves	
		day of year	no./plant	no./plant	no./plant	inches
May 01	NK Brand N58-D1	156	3.0	4.3	5.5	5.0
May 01	NK Brand N58-D1	171	5.1	7.9	9.1	15.8
May 01	NK Brand N58-D1	182	6.8	11.3	12.6	33.1
May 01	NK Brand N58-D1	197	12.1	14.1	16.1	64.0
May 01	NK Brand N58-D1	212	19.3	19.3	19.3	108.4
May 01	NK Brand N58-D1	224	19.1	19.1	19.1	103.0
May 01	Pioneer 37R71	156	3.0	4.0	5.6	5.4
May 01	Pioneer 37R71	171	5.0	7.4	9.1	18.4
May 01	Pioneer 37R71	182	6.8	10.5	12.6	33.1
May 01	Pioneer 37R71	197	12.4	14.3	15.3	67.6
May 01	Pioneer 37R71	212	18.0	18.0	18.0	100.1
May 01	Pioneer 37R71	224	17.3	17.3	17.3	93.0
May 15	NK Brand N58-D1	156	1.4	2.4	3.5	3.3
May 15	NK Brand N58-D1	171	7.9	9.3	10.1	32.0
May 15	NK Brand N58-D1	182	5.5	8.9	10.1	21.1
May 15	NK Brand N58-D1	197	10.1	12.8	14.5	49.9
May 15	NK Brand N58-D1	212	17.8	18.3	18.9	104.0
May 15	NK Brand N58-D1	224	18.6	18.6	18.6	103.1
May 15	Pioneer 37R71	156	1.3	2.3	3.8	4.3
May 15	Pioneer 37R71	171	4.0	5.5	7.5	13.4
May 15	Pioneer 37R71	182	6.4	10.0	11.8	24.3
May 15	Pioneer 37R71	197	11.3	13.6	15.0	60.6
May 15	Pioneer 37R71	212	17.4	17.4	17.4	107.1
May 15	Pioneer 37R71	224	17.4	17.4	17.4	98.6
June 02	NK Brand N58-D1	156	-	-	-	-
June 02	NK Brand N58-D1	171	-	-	-	-
June 02	NK Brand N58-D1	182	4.0	6.1	7.4	8.5
June 02	NK Brand N58-D1	197	7.3	9.9	11.4	27.6
June 02	NK Brand N58-D1	212	13.8	16.0	17.0	76.9
June 02	NK Brand N58-D1	224	17.8	18.0	18.1	101.6
June 02	Pioneer 37R71	156	-	-	-	-
June 02	Pioneer 37R71	171	-	-	-	-
June 02	Pioneer 37R71	182	3.9	6.4	7.8	12.3
June 02	Pioneer 37R71	197	7.4	10.0	11.9	34.8
June 02	Pioneer 37R71	212	14.4	15.5	16.5	95.3
June 02	Pioneer 37R71	224	17.5	17.5	17.5	100.5

continued

Table C-30. Planting Date and Hybrid Influence on Corn Leaf Development.
(continued) **Arlington, WI - 2008.**

Date of planting	Hybrid	Observation date day of year	Leaf Development			Plant height inches
			Leaf collars no./plant	Hail adjusters method no./plant	Total leaves no./plant	
June 15	NK Brand N58-D1	156	-	-	-	-
June 15	NK Brand N58-D1	171	-	-	-	-
June 15	NK Brand N58-D1	182	2.1	3.4	4.1	4.9
June 15	NK Brand N58-D1	197	5.0	7.6	8.4	15.9
June 15	NK Brand N58-D1	212	9.6	13.5	14.6	51.9
June 15	NK Brand N58-D1	224	14.0	15.8	16.9	80.6
June 15	Pioneer 37R71	156	-	-	-	-
June 15	Pioneer 37R71	171	-	-	-	-
June 15	Pioneer 37R71	182	2.0	3.3	4.6	5.8
June 15	Pioneer 37R71	197	5.1	7.1	8.5	18.0
June 15	Pioneer 37R71	212	10.0	13.1	14.4	57.6
June 15	Pioneer 37R71	224	15.3	15.3	16.5	94.8
Mean			10.0	11.7	12.7	52.0
Probability(%)						
Date of Planting (D)			0.0	0.0	0.0	0.0
Hybrid (H)			34.0	1.1	17.7	20.0
D x H			52.9	46.5	29.9	6.3
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			12.9	1.4	0.3	20.6
D x H x S			17.5	31.5	29.4	1.2
LSD(0.10)						
Date of Planting (D)			0.6	0.6	0.6	3.1
Hybrid (H)			NS	0.2	NS	NS
D x H			NS	NS	NS	3.7
Sample DOY (S)			0.5	0.4	0.4	2.9
D x S			1.0	0.9	0.9	6.4
H x S			NS	0.6	0.5	NS
D x H x S			NS	NS	NS	9.1
CV(%)						
			13	10	8	15