

FIELD EXPERIMENT HISTORY

Title: Date of Planting and Hybrid Influence on Corn Forage and Corn Grain Yield
Experiment: 03DOP **Trial ID** 3295 **Year:** 2009
Personnel: J.G. Lauer, K.D. Kohn and T.H. Diallo
Location: Arlington, WI **County:** Columbia
Supported By: HATCH

Site Information

Field: ARS372 **Previous Crop:** Soybean **Soil Type:** Plano Silt Loam
Soil Test: **Date:** 10/1 /09 **pH** 6.2 **OM (%)** 2.8 **P (ppm)** 13 **K (ppm)** 85

Plot Management

Tillage Operations: Fall Chisel Plow Field Cultivator

	<u>Analysis:</u>	<u>Rate lbs/A:</u>	<u>Date:</u>
Fertilizer:			
Preplant :	46-0-0	325	4 /9 /09
Starter :	9-23-30	150	See Factors
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: 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: 9/24 - 4/10 & 5/4 DOP S: 10/5 - 5/18, 6/1 & 6/15 DOP G: 11/7/09		Harvest Method: S: New Holland 707 G: Massey Ferguson 8XP	

Experimental Design

Design: RCB split plot **Replications:** 4
Plot Size Seeded: 30' x 20' **Experiment Size:** 1.1 Acre
Harvest Plot Size: S: 25' x 2.5'
G: 25' x 5' **Harvest Plant Density:** S: 31781 plants per acre
G: 30178

Factors/Treatments:

<u>Date of Planting:</u>	<u>Hybrids:</u>
April 10	Jung 7426VT3
May 04	Mycogen F2F449
May 18	Pioneer 35F40
June 01	
June 15	

Results: Tables C-27 , C-28 and C-29.

**Table C- 27. Planting Date and Hybrid Influence on Corn Grain and Silage Performance.
Arlington, WI - 2009.**

Planting date	Hybrid	Grain														
		Test			Lodged			Grower	Harvest		Grain Composition			Ethanol		
		Yield bu/A	Moisture %	weight lbs/bu	Total %	Stalk %	Root %	return \$/A	plants/A	ears/A	Oil %	Starch %	Protein %	per bu gallons	per A gallons	
April 10		244	21.9	56	3	2	1	859	29098	30361	3.2	60.0	7.1	2.92	712	
May 04		249	23.0	55	7	5	3	871	29882	30884	3.4	59.4	7.2	2.90	724	
May 18		228	27.0	52	4	3	1	780	30492	31363	3.5	59.1	7.3	2.88	658	
June 01		209	31.5	51	14	14	0	693	29882	30448	3.6	59.3	7.7	2.84	593	
June 15		131	40.6	42	6	2	4	412	31537	32104	3.8	58.9	9.1	2.78	366	
	Jung 7426VT3	227	27.9	51	6	5	1	779	30597	31555	3.4	59.4	7.5	2.87	655	
	Pioneer 35F40	197	29.7	51	8	6	2	666	29760	30509	3.6	59.3	7.8	2.86	566	
April 10	Jung 7426VT3	265	20.0	55	3	1	2	939	29011	30318	3.2	60.0	7.1	2.91	769	
April 10	Pioneer 35F40	224	23.7	56	4	4	0	779	29185	30405	3.3	59.9	7.1	2.93	656	
May 04	Jung 7426VT3	270	20.6	54	6	3	3	957	29795	30840	3.3	59.4	7.1	2.91	788	
May 04	Pioneer 35F40	228	25.4	55	9	6	3	785	29969	30928	3.5	59.5	7.2	2.89	660	
May 18	Jung 7426VT3	253	25.3	51	2	2	0	870	31015	32409	3.3	59.0	7.2	2.89	730	
May 18	Pioneer 35F40	204	28.7	52	6	3	3	689	29969	30318	3.7	59.2	7.3	2.87	586	
June 01	Jung 7426VT3	205	32.0	51	14	14	0	682	30666	31363	3.4	59.2	7.7	2.85	586	
June 01	Pioneer 35F40	212	31.1	51	13	13	0	705	29098	29534	3.8	59.4	7.7	2.83	600	
June 15	Jung 7426VT3	144	41.5	41	5	4	1	449	32496	32844	3.6	59.5	8.3	2.81	405	
June 15	Pioneer 35F40	118	39.7	42	7	1	6	374	30579	31363	3.9	58.3	9.8	2.76	327	
Mean		212	28.8	51	7	5	2	723	30178	31032	3.5	59.3	7.6	2.86	611	
Probability(%)																
Date of Planting (D)		0.0	0.0	0.0	25.6	5.2	45.8	0.0	7.4	25.6	0.1	0.5	0.0	0.0	0.0	
Hybrid (H)		0.0	0.5	36.7	46.7	73.7	40.6	0.0	10.5	6.3	0.0	26.8	0.4	1.5	0.0	
D x H		5.2	0.6	99.6	97.5	93.4	53.8	2.3	53.9	53.1	0.9	2.6	0.3	2.1	6.3	
LSD (0.10)																
Date of Planting (D)		22	1.6	2	NS	7	NS	73	1364	NS	0	0	0.3	0.02	62	
Hybrid (H)		10	1.0	NS	NS	NS	NS	35	NS	913	0	NS	0.2	0.01	29	
D x H		26	2.2	NS	NS	NS	NS	89	NS	NS	0	1	0.4	0.03	75	

continued

Table C- 27. Planting Date and Hybrid Influence on Corn Grain and Silage Performance.

(continued)

Arlington, WI - 2009.

Planting date	Hybrid	Whole Plant															
		Dry Matter		Kernel milk	KMR 0-5	SMR 0-5	VMR 0-10	Harvest		Crude		In Vitro			Milk per		
		yield tons/A	moisture %					plants/A	ears/A	protein %	ADF %	NDF %	Digest %	NDFD %	Starch %	Ton lbs/T	Acre lbs/A
April 10		9.8	62.2	49.4	2.5	1.7	4.2	31189	31973	6.3	21.9	43.6	79.2	52.4	29.4	3076	30049
May 04		9.7	62.1	51.3	2.6	2.0	4.5	31973	32409	6.3	20.7	41.3	81.3	54.7	31.5	3203	31093
May 18		8.5	63.8	61.9	3.1	1.6	4.7	31886	32322	6.5	21.1	42.0	80.8	54.0	30.7	3171	26964
June 01		8.1	69.0	76.9	3.8	2.6	6.5	31973	33280	7.0	22.9	44.2	80.1	55.0	27.6	3123	25219
June 15		6.8	74.5	88.8	4.4	3.7	8.1	31886	32583	7.7	26.3	49.5	79.2	58.0	19.9	2909	19681
	Mycogen F2F449	7.8	68.2	64.5	3.2	2.7	5.9	31956	32234	7.2	22.2	44.8	81.5	58.7	25.2	3106	24149
	Pioneer 35F40	9.4	64.4	66.8	3.3	1.9	5.3	31607	32792	6.4	22.9	43.5	78.7	50.9	30.4	3087	29054
April 10	Mycogen F2F449	8.6	65.2	47.5	2.4	2.1	4.4	32060	32409	6.8	21.6	44.1	81.1	57.2	26.7	3126	27010
April 10	Pioneer 35F40	10.9	59.3	51.3	2.6	1.4	4.0	30318	31537	5.8	22.3	43.1	77.3	47.6	32.1	3026	33088
May 04	Mycogen F2F449	8.7	64.7	47.5	2.4	2.5	4.8	31363	31363	6.8	20.6	42.3	82.3	58.0	28.1	3183	27569
May 04	Pioneer 35F40	10.7	59.5	55.0	2.8	1.5	4.3	32583	33454	5.7	20.8	40.3	80.4	51.3	34.9	3224	34616
May 18	Mycogen F2F449	7.6	66.3	62.5	3.1	2.2	5.3	31712	32060	6.9	21.2	43.6	81.9	58.5	27.0	3167	23977
May 18	Pioneer 35F40	9.4	61.4	61.3	3.1	1.0	4.0	32060	32583	6.1	21.1	40.5	79.6	49.6	34.5	3174	29951
June 01	Mycogen F2F449	7.6	70.2	77.5	3.9	2.9	6.8	32583	33106	7.3	23.1	45.5	80.5	57.4	25.1	3094	23321
June 01	Pioneer 35F40	8.6	67.9	76.3	3.8	2.3	6.1	31363	33454	6.7	22.6	43.0	79.6	52.6	30.1	3152	27117
June 15	Mycogen F2F449	6.4	74.8	87.5	4.4	3.8	8.2	32060	32234	8.0	24.7	48.4	81.8	62.5	19.3	2960	18866
June 15	Pioneer 35F40	7.2	74.1	90.0	4.5	3.5	8.0	31712	32931	7.5	27.9	50.6	76.5	53.5	20.5	2858	20497
Mean		8.6	66.3	65.6	3.3	2.3	5.6	31781	32513	6.8	22.6	44.1	80.1	54.8	27.8	3096	26601
Probability(%)																	
Date of Planting (D)		0.0	0.0	0.0	0.0	0.0	0.0	45.6	28.8	0.0	0.0	0.0	13.8	1.2	0.0	0.8	0.0
Hybrid (H)		0.0	0.0	38.3	38.3	0.0	0.5	26.7	14.3	0.0	4.2	1.8	0.0	0.0	0.0	54.0	0.0
D x H		9.9	0.1	78.2	78.2	20.4	48.9	4.9	20.0	2.3	1.8	2.9	9.2	34.3	2.5	34.4	21.0
LSD (0.10)																	
Date of Planting (D)		0.5	1.6	7.0	0.4	0.5	0.7	NS	NS	0.4	1.6	2.3	NS	2.3	2.6	122	2530
Hybrid (H)		0.3	0.6	NS	NS	0.2	0.3	NS	NS	0.1	0.6	0.9	0.9	1.4	1.0	NS	1325
D x H		0.7	1.8	NS	NS	NS	NS	1186	NS	0.4	1.7	2.6	2.1	NS	2.9	NS	NS

**Table C-29. Planting Date and Hybrid Influence on Corn Leaf Development.
Arlington, WI - 2009.**

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
		152	2.4	3.7	4.7	4.1
		169	4.6	5.8	6.9	10.9
		181	6.9	9.3	10.3	26.3
		196	10.6	13.2	14.1	50.1
		211	16.0	17.2	17.7	78.2
		227	19.2	19.2	19.3	93.2
	Jung 7426VT3		11.2	12.6	13.3	49.3
	Mycogen F2F449		10.4	11.9	12.6	46.3
	Pioneer 35F40		10.8	12.3	13.0	49.5
	Jung 7426VT3	152	2.5	3.9	5.0	4.3
	Jung 7426VT3	169	4.8	5.9	6.9	12.0
	Jung 7426VT3	181	7.4	9.8	10.8	28.3
	Jung 7426VT3	196	11.2	13.6	14.5	51.9
	Jung 7426VT3	211	16.3	17.4	17.9	77.9
	Jung 7426VT3	227	19.6	19.6	19.8	93.7
	Mycogen F2F449	152	2.1	3.3	4.3	3.9
	Mycogen F2F449	169	4.4	5.6	6.6	11.0
	Mycogen F2F449	181	6.5	8.8	9.8	24.5
	Mycogen F2F449	196	10.0	12.7	13.7	47.7
	Mycogen F2F449	211	15.6	16.8	17.3	75.2
	Mycogen F2F449	227	18.6	18.6	18.8	87.5
	Pioneer 35F40	152	2.4	3.8	4.8	4.0
	Pioneer 35F40	169	4.6	6.0	7.0	9.9
	Pioneer 35F40	181	6.8	9.2	10.2	26.0
	Pioneer 35F40	196	10.7	13.3	14.3	50.7
	Pioneer 35F40	211	16.3	17.5	18.0	81.6
	Pioneer 35F40	227	19.4	19.4	19.4	98.5
April 10			12.5	13.8	14.5	54.8
May 04			11.4	12.7	13.4	52.6
May 18			10.3	11.7	12.5	45.0
June 01			9.9	11.5	12.3	44.3
June 15			9.1	10.9	11.8	42.4
April 10		152	3.6	5.0	6.1	4.8
April 10		169	6.5	8.1	9.1	16.4
April 10		181	10.1	13.6	14.6	46.3
April 10		196	14.6	16.2	17.0	70.7
April 10		211	20.1	20.1	20.1	95.3
April 10		227	20.1	20.1	20.1	95.3

continued

Table C-29. Planting Date and Hybrid Influence on Corn Leaf Development.(continued) **Arlington, WI - 2009.**

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 04		152	2.2	3.5	4.5	4.2
May 04		169	5.4	6.7	7.7	14.7
May 04		181	9.0	12.0	13.0	37.6
May 04		196	12.3	14.7	15.6	67.1
May 04		211	19.6	19.7	19.7	96.0
May 04		227	19.6	19.7	19.7	96.0
May 18		152	1.0	2.0	3.0	3.0
May 18		169	4.0	5.2	6.2	8.1
May 18		181	7.0	9.4	10.4	23.7
May 18		196	11.1	14.0	15.0	51.1
May 18		211	16.7	17.6	18.0	81.0
May 18		227	19.4	19.4	19.4	89.8
June 01		152	-	-	-	-
June 01		169	2.4	3.4	4.4	4.6
June 01		181	5.3	7.4	8.4	16.0
June 01		196	8.8	11.8	12.8	39.0
June 01		211	13.9	15.5	16.4	69.2
June 01		227	19.3	19.3	19.3	92.4
June 15		152	-	-	-	-
June 15		169	4.0	5.0	6.5	7.1
June 15		181	3.0	4.0	5.0	7.6
June 15		196	6.2	9.2	10.2	22.6
June 15		211	10.0	13.3	14.3	49.6
June 15		227	17.6	17.6	18.1	92.6
April 10	Jung 7426VT3		13.0	14.3	15.0	56.2
April 10	Mycogen F2F449		12.1	13.4	14.0	52.5
April 10	Pioneer 35F40		12.4	13.8	14.5	55.7
May 04	Jung 7426VT3		12.1	13.4	14.0	55.4
May 04	Mycogen F2F449		10.7	12.1	12.8	49.3
May 04	Pioneer 35F40		11.3	12.7	13.4	53.1
May 18	Jung 7426VT3		10.3	11.6	12.3	44.4
May 18	Mycogen F2F449		10.1	11.5	12.2	43.2
May 18	Pioneer 35F40		10.6	12.1	12.8	47.5
June 01	Jung 7426VT3		10.1	11.6	12.4	44.5
June 01	Mycogen F2F449		9.8	11.3	12.1	42.9
June 01	Pioneer 35F40		10.0	11.5	12.3	45.4
June 15	Jung 7426VT3		9.5	11.3	12.3	42.8
June 15	Mycogen F2F449		8.7	10.5	11.4	40.9
June 15	Pioneer 35F40		9.0	10.8	11.6	43.4

continued

Table C-29. Planting Date and Hybrid Influence on Corn Leaf Development.(continued) **Arlington, WI - 2009.**

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
April 10	Jung 7426VT3	152	3.9	5.1	6.4	5.5
April 10	Jung 7426VT3	169	7.1	8.5	9.5	19.2
April 10	Jung 7426VT3	181	10.9	14.8	15.8	49.3
April 10	Jung 7426VT3	196	15.6	16.9	17.5	73.0
April 10	Jung 7426VT3	211	20.4	20.4	20.4	95.3
April 10	Jung 7426VT3	227	20.4	20.4	20.4	95.3
April 10	Mycogen F2F449	152	3.4	4.8	5.8	4.7
April 10	Mycogen F2F449	169	6.5	8.1	9.1	17.2
April 10	Mycogen F2F449	181	9.8	12.6	13.6	43.3
April 10	Mycogen F2F449	196	13.3	15.3	16.3	67.6
April 10	Mycogen F2F449	211	19.8	19.8	19.8	91.0
April 10	Mycogen F2F449	227	19.8	19.8	19.8	91.0
April 10	Pioneer 35F40	152	3.5	5.1	6.1	4.2
April 10	Pioneer 35F40	169	5.9	7.6	8.6	12.8
April 10	Pioneer 35F40	181	9.8	13.4	14.4	46.4
April 10	Pioneer 35F40	196	14.9	16.4	17.4	71.4
April 10	Pioneer 35F40	211	20.3	20.3	20.3	99.6
April 10	Pioneer 35F40	227	20.3	20.3	20.3	99.6
May 04	Jung 7426VT3	152	2.4	4.0	5.0	4.1
May 04	Jung 7426VT3	169	6.3	7.3	8.3	17.5
May 04	Jung 7426VT3	181	9.8	12.8	13.8	40.9
May 04	Jung 7426VT3	196	13.6	15.6	16.4	72.0
May 04	Jung 7426VT3	211	20.3	20.3	20.3	98.9
May 04	Jung 7426VT3	227	20.3	20.3	20.3	98.9
May 04	Mycogen F2F449	152	1.8	2.9	3.9	3.9
May 04	Mycogen F2F449	169	5.0	6.1	7.1	13.8
May 04	Mycogen F2F449	181	8.4	11.4	12.4	34.0
May 04	Mycogen F2F449	196	11.5	14.1	15.1	62.4
May 04	Mycogen F2F449	211	18.8	19.0	19.0	90.9
May 04	Mycogen F2F449	227	18.8	19.0	19.0	90.9
May 04	Pioneer 35F40	152	2.4	3.8	4.8	4.6
May 04	Pioneer 35F40	169	5.0	6.8	7.8	12.8
May 04	Pioneer 35F40	181	9.0	11.8	12.8	38.0
May 04	Pioneer 35F40	196	11.9	14.4	15.4	66.9
May 04	Pioneer 35F40	211	19.8	19.8	19.8	98.1
May 04	Pioneer 35F40	227	19.8	19.8	19.8	98.1
May 18	Jung 7426VT3	152	1.0	2.0	3.0	3.0
May 18	Jung 7426VT3	169	3.5	4.5	5.5	6.7
May 18	Jung 7426VT3	181	7.3	9.6	10.6	25.3
May 18	Jung 7426VT3	196	11.4	14.1	15.1	51.8
May 18	Jung 7426VT3	211	16.5	17.4	17.8	79.0
May 18	Jung 7426VT3	227	19.8	19.8	19.8	90.3

continued

Table C-29. Planting Date and Hybrid Influence on Corn Leaf Development.(continued) **Arlington, WI - 2009.**

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 18	Mycogen F2F449	152	1.0	2.0	3.0	2.8
May 18	Mycogen F2F449	169	3.8	5.0	6.0	7.9
May 18	Mycogen F2F449	181	6.5	8.8	9.8	21.9
May 18	Mycogen F2F449	196	10.5	13.5	14.5	46.8
May 18	Mycogen F2F449	211	16.0	17.0	17.3	78.3
May 18	Mycogen F2F449	227	18.8	18.8	18.8	82.5
May 18	Pioneer 35F40	152	1.0	2.0	3.0	3.0
May 18	Pioneer 35F40	169	4.8	6.0	7.0	9.6
May 18	Pioneer 35F40	181	7.1	9.8	10.8	24.0
May 18	Pioneer 35F40	196	11.4	14.3	15.3	54.8
May 18	Pioneer 35F40	211	17.5	18.4	19.0	85.9
May 18	Pioneer 35F40	227	19.6	19.6	19.6	96.8
June 01	Jung 7426VT3	152	-	-	-	-
June 01	Jung 7426VT3	169	2.4	3.4	4.4	4.4
June 01	Jung 7426VT3	181	5.8	7.9	8.9	18.4
June 01	Jung 7426VT3	196	8.8	11.8	12.8	39.8
June 01	Jung 7426VT3	211	14.1	15.5	16.5	69.9
June 01	Jung 7426VT3	227	19.5	19.5	19.5	90.0
June 01	Mycogen F2F449	152	-	-	-	-
June 01	Mycogen F2F449	169	2.1	3.1	4.1	4.2
June 01	Mycogen F2F449	181	5.1	7.1	8.1	15.9
June 01	Mycogen F2F449	196	8.6	11.6	12.6	39.9
June 01	Mycogen F2F449	211	13.8	15.4	16.4	67.1
June 01	Mycogen F2F449	227	19.1	19.1	19.1	87.6
June 01	Pioneer 35F40	152	-	-	-	-
June 01	Pioneer 35F40	169	2.8	3.8	4.8	5.3
June 01	Pioneer 35F40	181	5.1	7.3	8.3	13.9
June 01	Pioneer 35F40	196	9.0	12.0	13.0	37.5
June 01	Pioneer 35F40	211	13.8	15.5	16.3	70.6
June 01	Pioneer 35F40	227	19.1	19.1	19.1	99.5
June 15	Jung 7426VT3	152	-	-	-	-
June 15	Jung 7426VT3	169	-	-	-	-
June 15	Jung 7426VT3	181	3.1	4.1	5.1	7.6
June 15	Jung 7426VT3	196	6.5	9.5	10.5	22.9
June 15	Jung 7426VT3	211	10.1	13.4	14.4	46.6
June 15	Jung 7426VT3	227	18.3	18.3	19.0	94.0
June 15	Mycogen F2F449	152	-	-	-	-
June 15	Mycogen F2F449	169	-	-	-	-
June 15	Mycogen F2F449	181	2.9	3.9	4.9	7.6
June 15	Mycogen F2F449	196	5.9	8.8	9.8	22.0
June 15	Mycogen F2F449	211	9.5	12.9	13.9	48.5
June 15	Mycogen F2F449	227	16.5	16.5	17.3	85.5

continued

Table C-29. Planting Date and Hybrid Influence on Corn Leaf Development.(continued) **Arlington, WI - 2009.**

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
June 15	Pioneer 35F40	152	-	-	-	-
June 15	Pioneer 35F40	169	-	-	-	-
June 15	Pioneer 35F40	181	2.9	3.9	4.9	7.1
June 15	Pioneer 35F40	196	6.3	9.3	10.3	23.0
June 15	Pioneer 35F40	211	10.3	13.6	14.6	53.8
June 15	Pioneer 35F40	227	18.0	18.0	18.1	98.4
Mean			10.8	12.2	13.0	48.4
Probability(%)						
Date of Planting (D)			0.0	0.0	0.0	0.0
Hybrid (H)			0.0	0.0	0.0	0.0
D x H			2.8	2.9	2.3	0.5
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			45.3	49.3	51.5	0.0
D x H x S			95.5	97.5	94.9	77.8
LSD(0.10)						
Date of Planting (D)			0.2	0.2	0.3	1.4
Hybrid (H)			1.9	1.8	1.7	10.5
D x H			4.3	4.0	3.8	23.6
Sample DOY (S)			2.7	2.5	2.4	14.9
D x S			6.1	5.6	5.3	33.4
H x S			NS	NS	NS	25.8
D x H x S			NS	NS	NS	NS

Addendum Table C-60. Planting Date Influence on Corn Stover Agronomic and Biofuel Measurements. Arlington, WI - 2009.†

Planting Date		Harvest		Yield																		
Target	Actual	Density	Moisture	Stover	TEP	TE	Etoh	CP	ADF	NDF	NDFD	ADL	Lignin	Glucan	Xylan	Cell	Hem					
		plants/ A	%	g/plant	T/A	G/T	G/A	g/L	-----%													
April 10	April 10	29200	51.8	119	3.8	96.5	386	4.7	4.8	51.5	81.1	50.7	4.1	10.8	35.6	20.2	45.1	29.6				
May 04	May 04	30000	55.0	121	4.0	97.7	391	4.6	5.2	51.0	80.2	52.9	3.9	10.9	35.8	20.3	44.4	29.4				
May 18	May 18	29900	59.5	86	2.8	94.5	379	4.3	5.7	50.6	78.7	51.9	3.9	10.8	34.9	19.6	44.0	28.5				
June 15	June 15	30800	59.2	102	3.4	95.0	379	4.3	5.7	50.0	78.7	49.5	3.9	11.5	35.2	19.3	43.9	28.6				
Mean		29900	56.4	107	3.5	96.0	384	4.5	5.3	50.8	79.7	51.2	4.0	11.0	35.4	19.9	44.3	29.0				
Probability (%)																						
Date of Planting (D)		74.3	20.9	0.9	0.3	2.3	3.3	10.0	45.6	58.4	44.3	6.8	62.8	46.8	17.7	7.6	67.7	13.3				
LSD (0.05)																						
Date of Planting (D)		NS	NS	19.2	0.5	2.2	9.1	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS				

† TEP, Theoretical ethanol potential; TE, Theoretical ethanol; Etoh, ethanol; CP, crude protein; ADF, acid detergent fiber; NDF; neutral detergent fiber; NDFD, neutral detergent fiber digestibility; ADL, acid detergent lignin; Cell, cellulose; Hem, hemicellulose

Addendum Table C-61. Planting Date and Plant Segment Influence on Corn Stover Agronomic and Biofuel Measurements. Arlington, WI - 2009.†

Planting Date		Plant Part	Harvest Density plants/ A	Moisture %	Yield					-----%-----									
Target	Actual				Stover g/plant	TEP T/A	TE G/T	EtoH G/A	CP	ADF	NDF	NDFD	ADL	Lignin	Glucan	Xylan	Cell	Hem	
April 15	April 10		29131	54.6	30.1	2.4	97.5	232	4.72	4.7	52.4	81.5	48.5	4.7	11.1	35.8	19.9	45.7	29.1
May 01	May 04		29939	57.5	30.1	2.5	97.7	241	4.67	5.0	51.8	80.5	50.8	4.4	11.3	36.1	20.0	45.1	29.0
May 15	May 18		29939	61.6	21.6	1.8	94.7	167	4.43	5.7	51.3	78.8	50.6	4.4	11.1	35.1	19.5	44.5	28.1
June 15	June 15		30545	61.3	25.4	2.1	94.8	200	4.47	5.5	50.8	79.1	48.0	4.4	11.7	35.2	19.2	44.5	28.2
		Ground		74.1	9.36	0.8	96.0	73	4.64	4.2	57.0	81.9	36.0	8.1	13.5	36.7	18.5	49.3	26.0
		Low		66.5	24.0	1.9	96.2	188	4.47	4.4	55.2	80.5	43.9	5.0	12.1	36.4	18.9	47.5	25.7
		Mid		56.8	27.1	2.2	94.8	209	4.77	6.6	49.3	79.2	56.8	3.1	11.0	35.0	19.5	43.2	29.5
		High		37.5	46.8	3.8	97.8	372	4.40	5.7	44.7	78.2	61.2	1.7	8.7	34.2	21.6	39.8	33.2
	April 10	Ground		71.3	10.1	0.8	95.6	76	4.70	3.7	57.9	83.5	33.9	8.4	13.3	36.6	18.3	49.6	26.0
	April 10	Low		63.6	26.2	2.1	98.0	202	4.48	3.8	56.1	81.9	42.1	5.3	12.1	37.0	19.5	48.1	26.5
	April 10	Mid		50.0	32.0	2.5	95.4	241	5.29	5.8	50.0	80.8	56.0	3.3	10.6	35.2	19.5	43.8	30.4
	April 10	High		33.4	52.3	4.1	101	418	4.39	5.5	45.8	79.7	61.8	1.7	8.7	34.2	22.1	41.3	33.5
	May 04	Ground		73.9	10.7	0.9	97.9	86	4.82	3.7	57.2	82.8	35.3	8.0	14.3	37.8	18.4	49.6	26.5
	May 04	Low		65.7	25.2	2.1	97.2	200	4.40	3.8	56.8	82.1	43.9	5.0	12.2	36.9	18.9	48.9	25.8
	May 04	Mid		52.7	33.4	2.7	96.5	264	5.08	7.0	47.8	78.4	60.8	2.7	10.4	35.3	20.1	41.6	30.7
	May 04	High		37.6	51.1	4.2	99.1	414	4.39	5.6	45.3	78.6	63.4	1.8	8.4	34.3	22.6	40.1	33.3
	May 18	Ground		74.8	7.6	0.6	96.8	60	4.44	5.5	56.7	79.3	38.6	8.1	12.9	36.5	19.0	48.9	26.0
	May 18	Low		69.0	21.8	1.8	93.9	167	4.56	5.3	54.0	79.1	44.8	4.7	11.7	35.2	18.7	46.5	25.3
	May 18	Mid		63.5	16.1	1.3	93.2	121	4.19	6.2	50.6	79.0	54.8	3.2	11.3	34.8	19.2	43.9	28.3
	May 18	High		38.9	40.7	3.3	95.1	317	4.53	5.9	43.8	77.6	64.0	1.6	8.4	33.9	21.2	38.8	33.0
	June 15	Ground		76.4	9.1	0.8	93.6	71	4.62	4.0	56.2	81.9	36.2	7.8	13.5	35.7	18.0	49.0	26.1
	June 15	Low		67.9	22.7	1.9	95.7	181	4.45	4.8	54.0	78.9	44.9	4.8	12.5	36.4	18.6	46.5	25.3

continued

**Addendum Table C-61. Planting Date and Plant Segment Influence on Corn Stover Agronomic and Biofuel
(continued) Measurements. Arlington, WI - 2009.†**

Planting Date		Plant Part	Harvest Density plants/ A	Moisture %	Yield					CP	ADF	NDF	NDFD	ADL	Lignin	Glucan	Xylan	Cell	Hem
Target	Actual				Stover g/plant	TEP T/A	TE G/T	EtoH G/A	g/L										
	June 15	Mid		61.0	26.9	2.2	94.0	211	4.53	7.3	48.8	78.4	55.3	3.2	11.3	34.6	19.3	43.6	28.7
	June 15	High		39.8	42.9	3.6	96.1	343	4.30	5.9	44.1	77.1	55.5	1.6	9.4	34.3	20.8	39.0	32.9
Mean			29859	58.7	26.8	2.2	96.2	210	4.57	5.2	51.6	80.0	49.5	4.5	11.3	35.5	19.6	44.9	28.6
Probability (%)																			
Date of Planting (D)			74.3	22.9	0.9	0.4	6.0	0.2	65.0	39.2	56.8	38.4	13.5	34.5	58.7	20.4	7.9	61.5	21.2
Plant Part (PP)				0.0	0.0	0.0	1.4	0.0	50.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D x PP				20.2	5.7	9.3	31.0	2.8	87.7	18.1	37.3	6.9	1.9	39.6	85.4	13.5	23.9	6.4	22.7
LSD (0.05)																			
Date of Planting (D)			NS	NS	4.9	0.3	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Plant Part (PP)			0.00	2.7	3.3	0.3	1.7	0.5	NS	0.7	1.3	0.9	2.3	0.3	0.7	0.6	0.6	1.0	0.7
D x PP			0.00	NS	NS	NS	NS	NS	NS	NS	NS	NS	4.8	NS	NS	NS	NS	NS	NS

† TEP, Theoretical ethanol potential; TE, Theoretical ethanol; EtoH, ethanol; CP, crude protein; ADF, acid detergent fiber; NDF, neutral detergent fiber; NDFD, neutral detergent fiber digestibility; ADL, acid detergent lignin; Cell, cellulose; Hem, hemicellulose