

FIELD EXPERIMENT HISTORY

Title: The Response of Bt-CRW Hybrids to Nitrogen Rate
Experiment: 12NxBt-CR **Trial ID** 3299 **Year** 2009
Personnel: J. G. Lauer, K. D. Kohn and T. H. Diallo
Location: Arlington, WI **County:** Columbia
Supported By: Wisconsin Fertilizer Council

Site Information

Field: ARS28NW **Previous Crop:** Corn **Soil Type:** Plano Silt Loam
Soil Test: **Date:** 5/21/09 **pH:** 6.9 **OM (%) :** 3.2 **P (ppm) :** 33 **K (ppm) :** 163

Plot Management

Tillage Operations: Chisel Plow Soil Finisher

Fertilizer: **Preplant Analysis:** N/A **Rate lbs/A:** N/A **Date:** N/A
 Starter Analysis: N/A **Rate lbs/A:** N/A **Date:** N/A
 Post plant Analysis 28-0-0 **Rate lbs/A:** See Factors **Date:** 6 /4 /09
 Manure: N/A **Rate lbs/A:** N/A **Date:** N/A

Herbicide: Dual II Mag 1.5 pt/A **Insecticide:** Force 3G 4.4 lbs/A
 2-4,D 0.5 pt/A
 Accent 0.67 oz/A
 Laudis 3.0 oz/A

Irrigation: None

Planting Date: 5/12/09 **Planting Depth:** 1.5" **Row Width** 30"

Target Plant Density: 34000 plants per acre **Planting Method:** Kinze Plot Planter

Harvest Date: 11/3/09 **Harvest Method:** Massey Ferguson 8XP-Soils

Experimental Design

Design: RCB **Replications:** 4
Plot Size Seeded: 10' x 30' **Experiment Size:** 1.44 Acre
Harvest Plot Size: 5' x 26' **Harvest Plant Density:** 28953 plants per acre

Factors/Treatments:

Nitrogen rate (lbs N/A)

1- 0
 2- 40
 3- 80
 4- 120
 5- 160
 6- 200

Hybrids

1- Bt-CR1: Pioneer 35F44
 2- Isoline1: Pioneer 35F37
 3- Bt-CR2: Dekalb DKC52-59
 4- Isoline2: Dekalb DKC52-62
 5- Standart Bt-CB: NK Brand N58-D1
 6- Standart nontransgenic: Pioneer 35F38
 7- Bt-CR : Dekalb DKC55-24(VT3)
 8- Bt-CR (Mon863) 2: Dairyland ST400

Results: Table C-49.

Table C- 49. The Response of Bt-CRW Hybrids to Nitrogen Rates.
Arlington, WI - 2009.

Hybrid	Nitrogen rate lbs/A	Grain										Whole Plant				Chlorophyll Meter Reading			
		Yield bu/A	Moisture %	Test weight lbs/bu	Harvest population plants/A	Grower return \$/A	Grain Composition			Ethanol		Dry Matter yield tons/A	% of Dry Matter Yield			V8	V10	V14	VT
							Oil %	Starch %	Protein %	per A gallons	per bu gallons		grain %	cob %	stover %				
	0	114	35.5	47	28913	368	3.7	60.7	6.5	2.85	330	6.0	45.0	7.4	47.6	41.6	40.9	34.3	40.0
	40	151	33.9	47	29285	494	3.7	60.9	6.3	2.86	432	7.7	46.6	7.4	45.9	45.9	48.3	38.7	46.2
	80	185	32.8	47	28849	608	3.7	60.7	6.5	2.86	530	8.8	49.6	7.7	42.7	48.7	52.4	44.3	53.3
	120	198	32.8	48	28967	653	3.6	60.6	6.8	2.86	567	9.3	50.7	7.7	41.6	48.7	53.7	45.5	54.9
	160	202	32.2	47	28784	668	3.6	60.3	7.0	2.86	578	9.3	51.5	7.8	40.6	49.6	54.4	46.3	57.9
	200	207	32.8	48	28922	681	3.5	60.2	7.2	2.86	591	9.3	52.3	8.0	39.7	49.3	54.3	46.7	58.7
Dairyland ST4006		179	35.1	48	29464	583	3.2	60.7	7.1	2.87	515	8.5	49.9	6.9	43.2	46.5	51.4	43.4	52.2
DeKalb DKC52-59		185	31.3	46	29899	615	3.4	60.6	6.4	2.86	531	8.8	49.4	7.4	43.2	46.8	49.4	40.3	49.7
DeKalb DKC52-62		180	31.0	47	27310	600	3.5	60.6	6.4	2.87	518	8.2	51.2	7.5	41.2	48.4	49.8	40.9	50.6
Dekalb DKC55-24 (VT3)		179	32.7	48	30093	590	4.0	60.2	6.4	2.86	511	8.6	49.0	7.8	43.2	47.1	51.4	41.6	52.9
NK Brand N58-D1		166	36.5	47	29960	536	3.5	60.9	7.0	2.84	471	8.4	46.3	8.9	44.8	47.9	52.6	46.6	54.8
Pioneer 35F37		176	33.0	47	28347	580	3.8	60.5	6.8	2.86	510	8.3	49.7	7.8	42.5	47.6	50.0	42.5	52.3
Pioneer 35F38		175	32.7	48	29222	578	3.7	60.7	6.7	2.86	501	8.3	49.6	7.7	42.7	45.9	49.7	41.7	50.0
Pioneer 35F44		168	34.3	48	27334	547	3.8	60.1	6.8	2.86	479	8.0	49.2	7.3	43.4	48.4	51.1	44.0	52.1
Dairyland ST4006	0	123	38.3	48	28750	391	3.3	61.2	7.1	2.86	352	6.0	48.1	6.8	45.1	40.5	43.4	37.3	41.0
Dairyland ST4006	40	159	35.5	48	29548	516	3.4	61.1	6.8	2.85	466	8.1	46.7	6.7	46.7	45.1	48.0	37.9	46.3
Dairyland ST4006	80	190	33.2	47	30347	624	3.3	60.5	7.1	2.87	546	9.2	49.1	6.8	44.0	48.3	52.0	44.6	53.7
Dairyland ST4006	120	206	34.9	48	28387	671	3.2	60.6	7.1	2.87	592	9.6	51.9	6.8	41.3	48.7	55.0	47.2	56.8
Dairyland ST4006	160	192	33.9	47	29911	629	3.2	60.6	7.3	2.87	552	8.7	52.4	7.2	40.4	47.6	55.0	45.3	56.7
Dairyland ST4006	200	204	34.7	48	29839	664	3.0	60.3	7.5	2.86	583	9.5	51.1	7.1	41.8	48.9	54.7	48.0	58.7
DeKalb DKC52-59	0	127	34.4	46	29911	416	3.7	60.4	6.5	2.84	376	6.8	44.4	7.5	48.1	41.8	39.8	31.7	37.5
DeKalb DKC52-59	40	155	32.6	45	29403	511	3.5	60.9	6.2	2.85	442	7.7	47.6	7.6	44.8	44.4	47.2	35.9	43.3
DeKalb DKC52-59	80	195	31.9	46	30129	646	3.3	60.9	6.0	2.88	563	9.2	50.3	7.1	42.7	48.4	51.0	41.7	52.7
DeKalb DKC52-59	120	198	30.8	46	30419	661	3.4	61.1	6.4	2.86	567	9.4	50.2	7.3	42.4	47.3	51.9	44.6	52.2
DeKalb DKC52-59	160	216	27.5	45	29693	733	3.5	59.8	6.8	2.87	619	10.2	50.6	7.2	42.2	50.6	53.3	45.0	55.5
DeKalb DKC52-59	200	216	30.5	46	29839	721	3.3	60.2	6.8	2.88	620	9.6	53.1	7.9	38.9	48.3	53.2	43.0	56.9
DeKalb DKC52-62	0	113	32.9	45	27588	372	3.5	61.1	5.9	2.88	326	5.9	45.3	7.2	47.5	41.7	38.8	31.4	36.9
DeKalb DKC52-62	40	151	30.9	46	26935	503	3.5	61.0	6.1	2.88	434	7.3	48.8	7.4	43.9	48.3	48.0	38.1	44.8
DeKalb DKC52-62	80	186	30.0	47	26572	622	3.6	60.6	6.2	2.88	536	8.4	52.6	7.8	39.6	49.4	51.4	43.2	51.6
DeKalb DKC52-62	120	205	31.6	47	27806	682	3.5	60.2	6.5	2.87	590	9.3	52.5	7.6	39.9	49.5	53.7	42.9	54.8
DeKalb DKC52-62	160	210	29.1	47	27370	708	3.5	60.4	6.7	2.86	602	9.4	53.2	7.5	39.3	50.9	53.5	43.4	57.8
DeKalb DKC52-62	200	215	31.7	47	27588	714	3.4	60.2	6.9	2.87	617	9.3	55.0	7.8	37.2	50.7	53.7	46.2	57.7
Dekalb DKC55-24 (VT3)	0	113	33.8	47	30129	370	4.0	59.6	6.1	2.86	324	6.0	44.4	7.8	47.8	40.0	39.3	32.7	38.0
Dekalb DKC55-24 (VT3)	40	154	34.1	48	30274	505	4.0	60.3	6.0	2.86	442	7.8	46.4	7.7	45.8	46.0	50.7	37.1	46.9
Dekalb DKC55-24 (VT3)	80	180	32.9	48	30202	594	4.1	60.8	6.0	2.86	515	8.6	49.5	7.7	42.9	47.9	54.7	42.9	55.6
Dekalb DKC55-24 (VT3)	120	204	32.1	48	30129	674	3.8	60.4	6.8	2.86	585	9.8	49.0	7.6	43.4	48.2	53.8	43.9	55.8
Dekalb DKC55-24 (VT3)	160	210	31.6	48	29984	698	4.0	60.1	6.7	2.85	600	9.5	52.5	8.1	39.4	50.7	54.9	46.2	60.7
Dekalb DKC55-24 (VT3)	200	210	31.7	48	29839	696	4.1	60.2	6.9	2.86	600	9.5	52.0	8.0	39.9	49.9	55.2	46.5	60.5

continued

Table C- 49. The Response of Bt-CRW Hybrids to Nitrogen Rates.

(continued) **Arlington, WI - 2009.**

Hybrid	Nitrogen rate lbs/A	Grain										Whole Plant				Chlorophyll Meter Reading			
		Yield bu/A	Moisture %	Test weight lbs/bu	Harvest population plants/A	Grower return \$/A	Grain Composition			Ethanol		Dry Matter yield tons/A	% of Dry Matter Yield			- SPAD units -			
							Oil %	Starch %	Protein %	per A gallons	per bu gallons		grain %	cob %	stover %	V8	V10	V14	VT
NK Brand N58-D1	0	102	41.4	47	29984	320	3.4	61.1	7.0	2.84	287	5.7	42.2	8.5	49.3	41.3	42.6	36.4	42.6
NK Brand N58-D1	40	147	35.9	47	30274	476	3.5	61.2	6.3	2.86	420	7.9	44.0	8.8	47.3	47.3	50.1	41.8	50.1
NK Brand N58-D1	80	184	35.4	48	30347	596	3.5	60.8	6.8	2.84	521	9.4	46.3	9.0	44.7	49.5	54.9	49.8	58.1
NK Brand N58-D1	120	191	35.6	48	29693	619	3.6	60.6	7.1	2.82	539	9.4	48.2	9.2	42.7	50.9	55.3	50.5	56.5
NK Brand N58-D1	160	189	35.4	47	29113	612	3.5	60.8	7.2	2.85	538	9.2	48.4	9.0	42.6	48.4	55.8	51.3	59.7
NK Brand N58-D1	200	183	35.5	48	30347	594	3.4	61.1	7.5	2.83	519	8.9	48.7	9.1	42.2	49.8	57.0	50.0	61.8
Pioneer 35F37	0	119	33.9	46	28314	389	3.9	60.5	6.6	2.85	370	6.0	46.5	7.5	46.0	42.3	40.6	35.5	43.5
Pioneer 35F37	40	148	33.0	46	28459	488	3.9	60.9	6.3	2.87	425	7.5	46.9	7.3	45.8	45.2	47.2	39.4	44.9
Pioneer 35F37	80	186	31.9	48	27370	616	3.9	60.7	6.5	2.87	542	8.8	50.3	7.8	41.9	51.2	52.5	44.2	54.1
Pioneer 35F37	120	197	32.3	48	28024	650	3.7	60.5	6.8	2.87	565	9.1	51.2	7.9	40.9	47.9	52.5	43.6	56.0
Pioneer 35F37	160	200	33.3	47	29602	657	3.8	60.5	6.9	2.85	571	9.4	50.5	8.0	41.5	50.9	54.6	46.4	57.9
Pioneer 35F37	200	208	33.8	48	28314	680	3.6	59.6	7.5	2.84	590	9.3	52.9	8.1	39.0	48.4	52.8	46.0	57.7
Pioneer 35F38	0	106	33.8	47	29258	345	3.8	61.2	6.5	2.86	302	5.7	44.2	7.0	48.8	41.8	40.7	32.9	37.9
Pioneer 35F38	40	144	34.3	47	30347	471	4.0	61.1	6.6	2.85	403	7.5	45.5	7.3	47.2	42.3	46.8	38.8	45.1
Pioneer 35F38	80	183	31.9	48	28967	606	3.8	60.7	6.4	2.86	523	8.6	50.2	8.0	41.9	46.8	50.0	42.9	48.3
Pioneer 35F38	120	190	32.4	48	28895	628	3.7	60.8	6.5	2.87	546	8.8	51.0	7.9	41.1	47.4	53.5	45.5	53.9
Pioneer 35F38	160	209	33.3	49	29040	687	3.6	60.1	6.9	2.87	600	9.4	52.8	8.0	39.1	48.1	53.5	44.0	56.8
Pioneer 35F38	200	219	30.3	48	28822	733	3.4	60.3	7.3	2.87	629	9.6	53.9	8.2	37.9	48.8	53.5	46.3	58.3
Pioneer 35F44	0	106	35.3	47	27370	342	4.1	60.2	6.6	2.84	300	5.5	45.0	6.9	48.1	43.7	42.3	36.4	42.7
Pioneer 35F44	40	148	34.9	47	29040	481	3.6	60.6	6.4	2.88	426	7.4	47.2	6.9	46.0	48.8	48.2	40.6	48.4
Pioneer 35F44	80	172	34.9	48	26862	559	4.0	60.3	6.6	2.85	491	8.4	48.4	7.3	44.3	48.4	53.1	44.9	52.4
Pioneer 35F44	120	194	32.9	48	28387	638	3.7	60.2	6.9	2.85	553	8.9	51.5	7.4	41.1	49.6	53.8	45.6	53.2
Pioneer 35F44	160	189	33.7	48	25555	620	3.7	59.8	7.3	2.85	540	8.6	51.9	7.7	40.4	49.7	54.8	49.0	57.8
Pioneer 35F44	200	197	33.9	48	26789	645	3.6	59.8	7.2	2.87	565	9.0	51.5	7.9	40.6	49.9	54.1	47.7	58.1
Mean		176	33.3	47	28953	579	3.6	60.5	6.7	2.86	505	8.4	49.3	7.7	43.0	47.3	50.7	42.6	51.8
Probability(%)																			
Nitrogen Rate (N)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.7	0.0	0.0	0.3	0.1	0.0	0.0	0.0
Hybrid (H)		0.0	0.0	0.0	77.3	0.0	0.0	0.0	0.0	66.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
N x H		66.6	11.2	11.8	55.1	54.7	31.8	13.0	76.8	52.2	47.1	94.6	93.6	6.3	90.9	48.5	70.4	65.0	27.9
LSD(0.10)																			
Nitrogen Rate (N)		7	1.0	0	665	22	0.1	0.3	0.2	0.01	20	0.4	1.2	0.2	1.3	1.1	0.9	1.2	1.4
Hybrid (H)		6	0.8	0	NS	19	0.1	0.2	0.1	NS	17	0.3	1.1	0.1	1.1	1.0	0.8	1.1	1.2
N x H		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.4	NS	NS	NS	NS	NS