

FIELD EXPERIMENT HISTORY

Title: The Response of Bt-CRW Hybrids to Nitrogen Rate
Experiment: 12NxBt-CR **Trial ID:** 3382 **Year:** 2010
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:** 4/28/10 **pH:** 7.1 **OM (%) :** 3.5 **P (ppm) :** 91 **K (ppm) :** 146

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:** 6/7/10
 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
 Callisto
 Simazine 4L

Irrigation: None

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

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

Harvest Date: 10/19/10 **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: 34294 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: Renk RK670 YGCB
 6- Standart nontransgenic: Pioneer 35F38
 7- Bt-CR : Dekalb DKC55-24(VT3)
 8- Bt-CR (Mon863) 2: Dairyland ST4006

Results: Table C-58.

**Table C- 58. The Response of Bt-CRW Hybrids to Nitrogen Rates.
Arlington, WI - 2010.**

Hybrid	Nitrogen rate lbs/A	Grain										Whole Plant							
		Yield bu/A	Moisture %	Test weight bs/bu	Harvest population plants/A	Grower return \$/A	Grain Composition			Ethanol		Dry Matter yield tons/A	% of Dry Matter Yield			Chlorophyll Meter Reading			
							Oil %	Starch %	Protein %	per bu gallons	per A gallons		grain %	cob %	stover %	V8	V10	V14	VT
Dairyland ST4006		214	14.4	54	34521	961	2.7	66.3	7.1	2.97	636	9.6	52.5	5.3	42.2	48.5	48.8	48.4	54.9
DeKalb DKC52-59		208	12.8	53	34654	933	3.2	66.0	6.8	2.95	613	9.4	52.0	6.2	41.8	49.4	47.1	47.5	53.9
DeKalb DKC52-62		201	13.0	54	34848	904	3.2	66.2	6.7	2.96	592	9.3	51.0	6.1	42.9	49.8	47.7	47.3	53.1
Deka b DKC55-24 (VT3)		208	13.6	54	34763	934	3.8	65.8	6.6	2.93	609	9.8	50.2	6.5	43.3	50.8	47.7	48.4	56.2
Pioneer 35F37		197	16.3	56	33432	879	3.2	66.1	6.9	2.96	588	9.0	51.2	6.2	42.6	49.5	47.8	48.1	54.5
Pioneer 35F38		203	16.4	56	34267	909	3.2	66.1	6.8	2.97	604	9.3	51.3	6.0	42.7	49.7	47.6	48.5	55.7
Pioneer 35F44		205	16.6	56	34582	917	3.3	66.1	6.9	2.96	608	9.6	50.1	6.0	44.0	51.0	48.6	48.1	55.9
Renk RK670YGCB		200	13.1	54	33287	898	3.2	65.8	7.0	2.95	597	8.9	53.0	5.9	41.2	48.2	46.1	46.8	53.2
	0	137	14.9	54	34440	614	3.3	66.8	6.4	2.97	412	6.9	47.2	6.0	46.9	44.8	39.8	41.3	45.4
	40	179	14.7	54	34240	802	3.3	66.6	6.4	2.96	534	8.7	48.9	5.7	45.3	48.8	46.2	46.1	51.4
	80	211	14.6	55	34086	943	3.2	66.1	6.7	2.95	622	9.6	51.9	5.8	42.3	50.6	49.5	49.4	56.5
	120	229	14.5	55	34204	1027	3.2	65.9	7.0	2.96	677	10.2	53.0	6.2	40.8	51.0	50.0	50.1	57.6
	160	232	14.2	55	34340	1041	3.2	65.6	7.2	2.95	685	10.2	53.8	6.3	39.9	51.1	49.8	50.4	58.6
	200	239	14.4	55	34458	1073	3.2	65.2	7.4	2.95	706	10.6	53.6	6.2	40.2	51.2	50.6	50.2	58.6
Dairyland ST4006	0	157	14.8	54	34485	706	2.7	67.1	6.7	2.99	471	7.6	49.0	5.2	45.8	43.8	42.8	43.3	48.3
Dairyland ST4006	40	183	14.5	54	34267	823	2.8	66.3	6.8	2.97	544	8.7	50.1	5.3	44.6	46.8	47.7	45.5	51.5
Dairyland ST4006	80	214	14.8	54	34775	960	2.7	66.5	6.9	2.97	635	9.7	52.1	5.3	42.6	50.1	49.0	48.4	55.8
Dairyland ST4006	120	239	14.4	55	34340	1071	2.6	66.3	7.2	2.97	709	10.8	52.2	5.2	42.6	50.2	51.8	50.8	57.2
Dairyland ST4006	160	243	13.9	54	34630	1090	2.6	66.0	7.4	2.96	719	10.3	55.8	5.5	38.6	50.0	50.1	51.5	57.4
Dairyland ST4006	200	248	14.2	54	34630	1115	2.7	65.6	7.5	2.97	738	10.6	55.6	5.5	38.9	49.9	51.5	51.1	59.2
DeKalb DKC52-59	0	154	13.2	53	34703	693	3.2	66.1	6.4	2.96	458	7.4	49.4	6.2	44.5	43.4	39.3	41.6	45.1
DeKalb DKC52-59	40	192	13.0	53	34775	861	3.3	66.7	6.3	2.95	566	9.0	50.5	6.1	43.3	49.4	46.1	45.0	49.8
DeKalb DKC52-59	80	207	12.4	53	34630	928	3.2	66.2	6.7	2.95	609	9.5	51.6	5.8	42.6	51.4	49.3	47.0	56.3
DeKalb DKC52-59	120	233	13.1	53	34122	1044	3.1	66.1	6.8	2.95	685	10.4	52.8	6.2	41.0	49.7	48.6	50.7	57.1
DeKalb DKC52-59	160	228	12.5	53	34848	1022	3.1	65.6	7.1	2.95	672	10.2	53.0	6.4	40.6	50.7	49.0	50.5	58.8
DeKalb DKC52-59	200	233	12.4	54	34848	1048	3.2	65.3	7.2	2.95	688	10.1	54.4	6.8	38.8	51.4	50.3	50.2	56.6
DeKalb DKC52-62	0	137	13.4	53	34993	614	3.5	67.3	6.1	2.97	389	7.0	46.2	5.9	47.9	44.0	40.6	40.3	42.1
DeKalb DKC52-62	40	182	13.2	53	34848	815	3.3	67.2	6.2	2.96	537	8.9	48.4	5.7	45.9	48.7	44.4	44.2	49.2
DeKalb DKC52-62	80	218	13.3	54	34703	977	3.1	66.3	6.5	2.96	643	10.0	51.8	6.1	42.1	51.2	50.5	49.1	55.6
DeKalb DKC52-62	120	214	12.8	54	34412	963	3.2	65.8	7.0	2.96	635	9.6	53.0	6.1	40.9	52.3	49.9	49.0	57.0
DeKalb DKC52-62	160	228	12.6	54	34848	1024	3.1	65.4	7.1	2.95	673	10.0	53.9	6.6	39.5	51.8	49.9	50.5	57.4
DeKalb DKC52-62	200	230	12.9	54	35284	1030	3.1	65.4	7.2	2.94	674	10.2	53.0	6.2	40.8	50.8	50.8	51.0	57.4
Deka b DKC55-24 (VT3)	0	144	13.5	53	34848	644	3.9	67.0	6.1	2.94	422	7.1	47.3	6.9	45.8	45.6	38.0	39.5	45.8
Deka b DKC55-24 (VT3)	40	183	13.6	53	34775	821	3.9	66.4	6.2	2.92	534	9.0	48.3	6.4	45.3	49.5	45.5	47.2	52.1
Deka b DKC55-24 (VT3)	80	225	13.7	54	34630	1008	3.8	65.1	6.6	2.91	654	10.5	50.6	6.4	42.9	51.0	50.3	51.8	57.7
Deka b DKC55-24 (VT3)	120	235	13.5	56	34630	1056	3.8	65.8	6.6	2.93	689	10.9	51.1	6.6	42.3	52.3	50.6	51.4	59.4
Deka b DKC55-24 (VT3)	160	231	13.4	54	34848	1037	3.9	65.4	7.0	2.93	675	10.4	52.6	6.2	41.2	53.4	50.6	50.7	60.6
Deka b DKC55-24 (VT3)	200	231	13.8	55	34848	1037	3.6	65.2	7.1	2.94	678	10.7	51.1	6.4	42.4	53.2	51.0	50.0	61.4

continued

Table C- 58. The Response of Bt-CRW Hybrids to Nitrogen Rates.

(continued) **Arlington, WI - 2010.**

Hybrid	Nitrogen rate lbs/A	Grain										Whole Plant							
		Yield bu/A	Moisture %	Test weight bs/bu	Harvest population plants/A	Grower return \$/A	Grain Composition			Ethanol		Dry Matter yield tons/A	% of Dry Matter Yield			Chlorophyll Meter Reading			
							Oil %	Starch %	Protein %	per bu gallons	per A gallons		grain %	cob %	stover %	V8 - SPAD	V10	V14	VT
Pioneer 35F37	0	105	16.8	54	34049	466	3.4	66.8	6.3	2.95	351	5.3	46.7	6.3	47.0	44.7	37.6	43.0	42.6
Pioneer 35F37	40	172	16.4	56	32888	768	3.4	66.9	6.5	2.98	512	8.5	47.7	5.4	46.9	49.9	47.8	46.9	52.6
Pioneer 35F37	80	205	16.3	56	32452	917	3.1	66.0	6.7	2.95	605	9.1	53.4	6.3	40.3	50.6	50.6	49.9	56.4
Pioneer 35F37	120	228	16.2	56	33541	1021	3.1	66.2	7.0	2.97	677	10.1	53.4	6.5	40.1	50.5	50.6	49.5	58.5
Pioneer 35F37	160	229	15.6	56	33469	1028	3.0	65.7	7.2	2.95	676	10.2	53.1	6.6	40.3	51.1	50.0	50.3	58.9
Pioneer 35F37	200	240	16.3	56	34195	1075	3.3	64.8	7.5	2.94	707	10.7	53.0	6.1	41.0	49.8	50.3	49.1	57.9
Pioneer 35F38	0	136	17.3	56	34412	606	3.4	66.7	6.5	2.97	405	7.0	45.9	5.6	48.5	45.8	40.4	40.2	46.7
Pioneer 35F38	40	170	17.2	56	34412	757	3.3	66.6	6.6	2.98	506	8.0	50.1	5.8	44.1	48.8	46.4	47.6	54.0
Pioneer 35F38	80	197	16.5	56	34049	880	3.2	66.2	6.5	2.97	586	9.2	50.9	5.7	43.3	49.2	48.1	52.1	57.1
Pioneer 35F38	120	226	16.1	57	33686	1013	3.2	66.3	6.9	2.97	672	10.1	52.8	6.3	40.9	51.4	50.7	50.4	57.7
Pioneer 35F38	160	239	15.8	57	34558	1071	3.1	65.9	7.2	2.97	711	10.5	53.9	6.1	40.0	50.9	50.2	50.1	59.4
Pioneer 35F38	200	251	15.5	56	34485	1125	3.0	65.2	7.4	2.96	742	10.9	54.4	6.4	39.2	52.1	50.1	50.7	59.3
Pioneer 35F44	0	123	16.5	56	34848	549	3.5	66.8	6.6	2.97	365	7.2	40.4	5.7	53.8	46.5	40.7	43.4	48.7
Pioneer 35F44	40	171	16.8	56	34703	765	3.4	66.6	6.5	2.97	510	8.7	46.7	5.5	47.9	49.9	47.2	46.4	52.0
Pioneer 35F44	80	214	16.6	57	34703	957	3.3	66.3	6.9	2.98	637	9.8	51.6	5.9	42.5	52.1	50.1	50.1	58.3
Pioneer 35F44	120	233	16.6	56	34703	1042	3.4	65.7	7.0	2.95	687	10.2	54.3	6.1	39.6	52.4	50.8	49.9	57.9
Pioneer 35F44	160	239	16.4	56	34485	1066	3.2	65.9	7.2	2.96	706	10.4	54.2	6.4	39.4	52.0	51.5	49.5	59.1
Pioneer 35F44	200	252	16.8	57	34049	1126	3.2	65.1	7.4	2.95	745	11.2	53.3	6.3	40.4	52.9	51.2	49.6	59.5
Renk RK670YGCB	0	142	13.4	53	33178	636	3.2	66.6	6.5	2.97	437	6.4	52.4	5.9	41.6	44.7	39.4	38.8	44.0
Renk RK670YGCB	40	181	12.6	53	33251	810	3.2	66.4	6.5	2.94	565	8.6	49.6	5.7	44.7	47.4	44.8	45.9	49.9
Renk RK670YGCB	80	205	13.1	54	32743	920	3.2	66.1	7.0	2.95	603	9.1	53.4	4.6	41.9	49.0	48.2	46.8	54.6
Renk RK670YGCB	120	223	13.3	54	34195	1003	3.1	65.2	7.3	2.95	658	9.7	54.5	6.4	39.1	49.1	47.4	49.5	56.3
Renk RK670YGCB	160	220	13.3	54	33033	988	3.2	65.3	7.5	2.93	646	9.6	54.1	6.4	39.4	49.2	47.3	49.9	56.9
Renk RK670YGCB	200	230	13.0	54	33323	1031	3.2	65.1	7.6	2.93	673	10.1	53.7	6.2	40.1	49.6	49.3	49.8	57.5
		205	14.5	55	34294	917	3.2	66.1	6.9	2.96	606	9.4	51.4	6.0	42.6	49.6	47.7	47.9	54.7
Probability(%)																			
Nitrogen Rate (N)		0.0	0.0	0.0	39.7	0.0	0.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Hybrid (H)		0.1	0.0	0.0	0.0	0.0	0.0	5.7	0.0	0.0	0.3	0.0	0.0	0.0	0.5	0.0	0.0	43.9	0.0
N x H		0.3	15.4	6.1	75.3	0.3	6.6	47.9	34.7	78.4	1.2	7.2	0.3	32.6	0.3	75.8	26.3	92.7	30.9
LSD(0.10)																			
Nitrogen Rate (N)		6	0.2	0	NS	25	0.1	0.3	0.1	0.00	17	0.3	0.9	0.2	1.0	0.7	0.8	1.3	0.9
Hybrid (H)		7	0.3	0	384	29	0.1	0.3	0.1	0.00	20	0.3	1.1	0.3	1.2	0.8	0.9	NS	1.0
N x H		16	NS	1	NS	71	0.2	NS	NS	NS	48	0.8	2.6	NS	2.9	NS	NS	NS	NS