FIELD EXPERIMENT HISTORY

Title: **Plant Density and Hybrid Influence on Corn Grain Performance**

Experiment: 02PD **Trial ID:** 3665 **Year:** 2013

Personnel: J.G. Lauer, K.D. Kohn, and T.H Diallo

Location: Arlington, WI **County:** Columbia

Supported By: HATCH

Site Information

Field: ARS407 **Previous Crop:** Soybean **Soil Type:** Plano Silt Loam

Soil Test: **Date:** 10/01/13 **pH:** 6.7 **OM (%)** 3.8 **P (ppm)** 68 **K (ppm)** 244

Plot Management

Tillage Operations: Disk Field Cultivator

		Analysis:	Rate lbs/A:	Date:
Fertilizer:	**Preplant :**	46-0-0	150 lbs/A	N/A
	Starter :	10-34-0	3.0 gal/A	5 /1 /13
	Post plant :	28-0-0	50 lbs/A	6 /19/13
	Manure:	N/A	N/A	N/A

Herbicide: Dual II Mag 28 oz/A
Hornet 4.0 oz/A

Insecticide: Force 3G 4.4 lbs/A

Irrigation: None **Hybrid:** Pioneer P0193AM

Planting Date: 5/1/13 **Planting Depth:** 1.5" **Row Width:** 30"

Target Plant Density: See Factors **Planting Method:** Almaco Precision Planter

Harvest Date: 10/18/13 **Harvest Method:** New Holland 707

Experimental Design

Design: RCB **Replications:** 3

Plot Size Seeded: 10' x 25' **Experiment Size:** 0.15A

Harvest Plot Size: 2.5' x 23' **Harvest Plant Density:** 33317

Factors/Treatments:

Target Plant Density:

1) 18000
2) 22000
3) 26000
4) 30000
5) 34000
6) 38000
7) 42000
8) 46000

Results: Tables 1302-01.

Table: 1302-01. Plant Density and Hybrid Influence on Corn Grain. Arlington, WI - 2013.

Target	Density					Test	Lodged			Return
density	V5	Harvest	Ears	Yield	Moisture	weight	Total	Stalk	Root	$4.04
plants/A	plants/A	plants/A	ears/A	bu/A	%	lbs/bu	%	%	%	$/A
18000	24116	22727	23863	234	27.7	49	0	0	0	836
22000	25505	28914	30050	241	28.1	49	0	0	0	857
26000	30808	30050	30303	262	28.8	49	0	0	0	927
30000	35732	33333	34343	274	27.1	50	0	0	0	982
34000	37121	34343	34469	288	25.7	50	0	0	0	1039
38000	42297	35353	35479	279	25.5	51	0	0	0	1008
42000	44949	38636	39015	281	24.6	51	0	0	0	1018
46000	47600	43181	43055	285	25.9	51	0	0	0	1025
Mean	36016	33317	33822	268	26.7	50	0	0	0	961
Probability(%)										
Plant Density (D)	0.0	0.0	0.1	0.0	29.1	1.1	47.1	-	47.1	0.0
LSD (0.10)										
Plant Density (D)	3196	4978	5162	17	NS	1	NS	-	NS	66

FIELD EXPERIMENT HISTORY

Title: **Plant Density and Hybrid Influence on Corn Silage Performance**

Experiment: 02Plant Density **Trial ID:** 5767 **Year:** 2013

Personnel: J.G. Lauer, K.D. Kohn, and T.H Diallo

Location: Arlington, WI **County:** Columbia

Supported By: HATCH

Site Information

Field: ARS407 **Previous Crop:** Soybean **Soil Type:** Plano Silt Loam

Soil Test: **Date:** 10/01/13 **pH:** 6.7 **OM (%)** 3.8 **P (ppm)** 68 **K (ppm)** 244

Plot Management

Tillage Operations: Disk Field Cultivator

		Analysis:	Rate lbs/A:	Date:
Fertilizer:	**Preplant :**	46-0-0	150 lbs/A	N/A
	Starter :	10-34-0	3.0 gal/A	5 /1 /13
	Post plant :	28-0-0	50 lbs/A	6 /19/13
	Manure:	N/A	N/A	N/A

Herbicide: Dual II Mag 28 oz/A
Hornet 4.0 oz/A

Insecticide: Force 3G 4.4 lbs/A

Irrigation: None

Hybrid: Pioneer P0193AM

Planting Date: 5/1/13 **Planting Depth:** 1.5" **Row Width:** 30"

Target Plant Density: See Factors **Planting Method:** Almaco Precision Planter

Harvest Date: 10/18/13 **Harvest Method:** New Holland 707

Experimental Design

Design: RCB **Replications:** 3

Plot Size Seeded: 10' x 25' **Experiment Size:** 0.15A

Harvest Plot Size: 2.5' x 23' **Harvest Plant Density:** 33499

Factors/Treatments:

Target Plant Density:

1) 18000
2) 22000
3) 26000
4) 30000
5) 34000
6) 38000
7) 42000
8) 46000

Results: Tables 1302-02.

Table: 1302-02. Plant Density and Hybrid Influence on Silage Preformance.

Arlington, WI - 2013.

	Whole Plant																	
Target	Density			Dry Matter		Kernel	Plant	KMR	SMR	VMR	Crude	*in vitro*					Milk per	
density	V5	Harvest	Ears	Yield	Moisture	milk	height	0-5	0-5	0-10	protein	ADF	NDF	Digest	NDFD	Starch	Ton	Acre
plants/A	plants/A	plants/A	ears/A	T/A	%	%	inches				%	%	%	%	%	%	lbs/T	lbs/A
18000	19034	18371	21591	8.4	62.9	44	106	2.2	3.0	5.2	7.8	23.8	43.8	84.2	64.0	34.6	3476	29293
22000	23863	24053	25189	9.6	65.9	45	109	2.3	3.1	5.4	8.1	24.3	44.2	83.8	63.4	32.9	3452	32985
26000	27841	26704	28219	11.3	63.0	45	113	2.3	2.5	4.8	7.6	23.8	42.8	84.1	62.8	35.3	3478	39231
30000	32481	32386	33901	11.9	59.8	49	111	2.4	2.1	4.5	7.3	22.6	41.5	85.7	65.7	37.5	3583	42836
34000	37594	34848	35606	11.1	61.4	46	114	2.3	2.1	4.4	7.4	25.6	45.7	83.0	62.9	33.9	3398	37580
38000	39867	40151	41477	10.6	62.9	48	113	2.4	1.9	4.3	7.0	23.5	42.7	84.5	63.6	37.3	3504	37079
42000	44602	43939	44507	11.0	63.9	43	111	2.1	1.8	3.9	7.2	24.7	43.5	83.4	61.9	36.6	3436	37708
46000	48768	47537	48863	12.6	55.6	43	113	2.1	1.4	3.5	7.2	25.9	45.5	82.4	61.3	34.3	3366	42249
Mean	34256	33499	34919	10.8	61.9	45	111	2.3	2.2	4.5	7.4	24.3	43.7	83.9	63.2	35.3	3462	37370
Probability(%)																		
Plant Density (D)	0.0	0.0	0.0	9.8	43.3	40.1	15.1	40.1	0.0	0.0	1.1	17.9	24.3	22.9	15.9	24.5	23.7	10.5
LSD (0.10)																		
Plant Density (D)	2084	1744	1941	2.2	NS	NS	NS	NS	0	0	0	NS	NS	NS	NS	NS	NS	NS

FIELD EXPERIMENT HISTORY

Title: **Plant Density and Hybrid Influence on Corn Grain Performance**

Experiment: 02PD **Trial ID:** 5743 **Year:** 2013

Personnel: J.G. Lauer, K.D. Kohn, and T.H Diallo

Location: Coleman, WI **County:** Marinette

Supported By: HATCH

Site Information

Field: **Previous Crop:** Corn **Soil Type:** Oconto Silt Loam

Soil Test: **Date:** 10/01/13 **pH:** 7.6 **OM (%)** 2.9 **P (ppm)** 54 **K (ppm)** 202

Plot Management

Tillage Operations: Chisel Plow Field Cultivator

		Analysis:	Rate lbs/A:	Date:
Fertilizer:	**Preplant :**	46-0-0 11-52-0 21-0-0-24s	200 lbs/A 25 lbs/A 75 lbs/A	N/A
	Starter :	10-34-0	3.0 gal/A	5 /15/13
	Post plant :	N/A	N/A	N/A
	Manure:	N/A	N/A	N/A

Herbicide: Lumax 3.0 qts/A **Insecticide:** Force 3G 4.4 lbs/A

Irrigation: None **Hybrid:** Pioneer P8906HR

Planting Date: 5/15/13 **Planting Depth:** 1.5" **Row Width:** 30"

Target Plant Density: See Factors **Planting Method:** Almaco Precision Planter

Harvest Date: 11/7/13 **Harvest Method:** Massey 8XP

Experimental Design

Design: RCB **Replications:** 4

Plot Size Seeded: 10' x 25' **Experiment Size:** 0.15A

Harvest Plot Size: 5' x 23' **Harvest Plant Density:** 30460

Factors/Treatments:

Target Plant Density:

1) 18000
2) 22000
3) 26000
4) 30000
5) 34000
6) 38000
7) 42000
8) 46000

Results: Tables 1302-03.

Table: 1302-03. Plant Density and Hybrid Influence on Corn Grain. Coleman, WI - 2013.

Target	Density					Test	Lodged			Return
density	V5	Harvest	Ears	Yield	Moisture	weight	Total	Stalk	Root	$4.04
plants/A	plants/A	plants/A	ears/A	bu/A	%	lbs/bu	%	%	%	$/A
18000	20075	18182	21212	155	25.2	51	1	1	0	560
22000	23737	21717	22727	169	25.1	52	0	0	0	612
26000	24873	25757	25757	184	24.6	53	1	1	0	669
30000	27399	26641	27146	184	24.5	52	0	0	0	669
34000	32070	31691	32449	210	23.2	53	0	0	0	767
38000	34280	33901	34280	196	21.9	53	1	0	1	722
42000	42802	43371	43560	207	22.2	53	7	7	0	762
46000	44191	42424	42676	229	21.9	54	3	3	0	844
Mean	31179	30460	31226	192	23.6	53	2	2	0	701
Probability(%)										
Plant Density (D)	0.0	0.0	0.0	0.4	0.3	1.0	44.0	43.9	25.8	0.3
LSD (0.10)										
Plant Density (D)	2358	2902	3350	24	1	1	NS	NS	NS	90

FIELD EXPERIMENT HISTORY

Title: **Plant Density and Hybrid Influence on Corn Grain Performance**

Experiment: 02PD **Trial ID:** 5745 **Year:** 2013

Personnel: J.G. Lauer, K.D. Kohn, and T.H Diallo

Location: Fond du Lac, WI **County:** Fond du Lac

Supported By: HATCH

Site Information

Field: **Previous Crop:** Soybean **Soil Type:** Virgil Silt Loam

Soil Test: **Date:** 10/01/13 **pH:** 7.0 **OM (%)** 3.4 **P (ppm)** 23 **K (ppm)** 88

Plot Management

Tillage Operations: Chisel Plow Field Cultivator

		Analysis:	Rate lbs/A:	Date:
Fertilizer:	**Preplant :**	46-0-0	150 lbs/A	N/A
	Starter :	10-34-0	3.0 gal/A	5 /20/13
	Post plant :	46-0-0	88 lbs/A	7 /3 /13
	Manure:	N/A	N/A	N/A

Herbicide: Lumax 3.0 qts/A **Insecticide:** None

Irrigation: None **Hybrid:** Pioneer P0193AM

Planting Date: 5/20/13 **Planting Depth:** 1.5" **Row Width:** 30"

Target Plant Density: See Factors **Planting Method:** Almaco Precision Planter

Harvest Date: 10/23/13 **Harvest Method:** Massey 8XP

Experimental Design

Design: RCB **Replications:** 3

Plot Size Seeded: 10' x 25' **Experiment Size:** 0.15A

Harvest Plot Size: 5' x 23' **Harvest Plant Density:** 34177

Factors/Treatments:

Target Plant Density:

1) 18000
2) 22000
3) 26000
4) 30000
5) 34000
6) 38000
7) 42000
8) 46000

Results: Tables 1302-04.

Table: 1302-04. Plant Density and Hybrid Influence on Corn Grain. Fond du Lac, WI - 2013.

Target	Density					Test	Lodged			Return
density	V5	Harvest	Ears	Yield	Moisture	weight	Total	Stalk	Root	$4.04
plants/A	plants/A	plants/A	ears/A	bu/A	%	lbs/bu	%	%	%	$/A
18000	26894	22348	-	199	26.5	50	0	0	0	716
22000	26010	24116	-	191	27.3	50	0	0	0	685
26000	28914	27146	-	205	26.5	50	0	0	0	739
30000	33838	32702	-	193	24.6	51	0	0	0	703
34000	37499	34722	-	211	25.8	50	0	0	0	762
38000	40506	40719	-	212	25.6	50	0	0	0	766
42000	44318	44318	-	215	23.5	51	0	0	0	783
46000	50757	47348	-	212	21.9	52	0	0	0	780
Mean	36092	34177	-	205	25.2	51	0	0	0	742
Probability(%)										
Plant Density (D)	0.0	0.0	-	69.9	10.5	14.7	51.5	51.5	-	66.1
LSD (0.10)										
Plant Density (D)	3315	2560	-	NS	NS	NS	NS	NS	-	112

FIELD EXPERIMENT HISTORY

Title: **Plant Density and Hybrid Influence on Corn Grain Performance**

Experiment: 02PD **Trial ID:** 5741 **Year:** 2013

Personnel: J.G. Lauer, K.D. Kohn, and T.H Diallo

Location: Galesville, WI **County:** Trempeleau

Supported By: HATCH

Site Information

Field: **Previous Crop:** Soybean **Soil Type:** Downs Silt Loam

Soil Test: **Date:** 10/01/13 **pH:** 6.4 **OM (%)** 3.7 **P (ppm)** 41 **K (ppm)** 173

Plot Management

Tillage Operations: Chisel Plow Field Cultivator

		Analysis:	Rate lbs/A:	Date:
Fertilizer:	**Preplant :**	46-0-0	150 lbs/A	N/A
	Starter :	10-34-0	3.0 gal/A	5 /8 /13
	Post plant :	N/A	N/A	N/A
	Manure:	N/A	N/A	N/A

Herbicide: Harness 3.0 oz/A
Callisto 3.0 oz/A

Insecticide: None

Irrigation: None

Hybrid: Pioneer P0193AM

Planting Date: 5/8/13 **Planting Depth:** 1.5" **Row Width:** 30"

Target Plant Density: See Factors **Planting Method:** Almaco Precision Planter

Harvest Date: 10/14/13 **Harvest Method:** Massey 8XP

Experimental Design

Design: RCB **Replications:** 3

Plot Size Seeded: 10' x 25' **Experiment Size:** 0.15A

Harvest Plot Size: 5' x 23' **Harvest Plant Density:** 33222

Factors/Treatments:

Target Plant Density:

1) 18000
2) 22000
3) 26000
4) 30000
5) 34000
6) 38000
7) 42000
8) 46000

Results: Tables 1302-05.

Table: 1302-05. Plant Density and Hybrid Influence on Corn Grain. Galesville, WI - 2013.

Target	Density					Test	Lodged			Return
density	V5	Harvest	Ears	Yield	Moisture	weight	Total	Stalk	Root	$4.04
plants/A	plants/A	plants/A	ears/A	bu/A	%	lbs/bu	%	%	%	$/A
18000	19697	19192	22979	198	22.6	51	0	0	0	725
22000	23611	23106	24242	225	23.8	51	1	0	1	819
26000	28282	27399	27777	240	23.2	51	0	0	0	877
30000	30681	31439	32702	249	22.5	51	0	0	0	913
34000	36742	36237	36868	261	23.2	52	0	0	0	953
38000	40403	38383	38510	258	23.5	52	0	0	0	940
42000	44318	42297	42802	258	23.7	52	0	0	0	940
46000	49999	47727	47727	265	23.9	52	0	0	0	967
Mean	34217	33222	34201	244	23.3	52	0	0	0	892
Probability(%)										
Plant Density (D)	0.0	0.0	0.0	0.0	3.5	0.7	47.1	-	47.1	0.0
LSD (0.10)										
Plant Density (D)	1962	1762	1653	8	1	1	NS	-	NS	28

FIELD EXPERIMENT HISTORY

Title: **Plant Density and Hybrid Influence on Corn Grain Performance**

Experiment: 02PD **Trial ID:** 5744 **Year:** 2013

Personnel: J.G. Lauer, K.D. Kohn, and T.H Diallo

Location: Janesville, WI **County:** Rock

Supported By: HATCH

Site Information

Field: **Previous Crop:** Soybean **Soil Type:** Plano Silt Loam

Soil Test: **Date:** 10/01/13 **pH:** 6.9 **OM (%)** 3.5 **P (ppm)** 48 **K (ppm)** 154

Plot Management

Tillage Operations: Chisel Field Cultivator

		Analysis:	Rate lbs/A:	Date:
Fertilizer:	**Preplant :**	N/A	N/A	N/A
	Starter :	5/1/13	10-34-13	5 /1 /13
	Post plant :	N/A	N/A	N/A
	Manure:	N/A	N/A	N/A

Herbicide: Lumax 3.0 qt/A
Status 7.0oz/A

Insecticide: None

Irrigation: None

Hybrid: Pioneer P0193AM

Planting Date: 5/1/13 **Planting Depth:** 1.5" **Row Width:** 30"

Target Plant Density: See Factors **Planting Method:** Almaco Precision Planter

Harvest Date: 10/21/13 **Harvest Method:** Massey 8XP

Experimental Design

Design: RCB **Replications:** 3

Plot Size Seeded: 10' x 25' **Experiment Size:** 0.15A

Harvest Plot Size: 5' x 23' **Harvest Plant Density:** 33364

Factors/Treatments:

Target Plant Density:

1) 18000
2) 22000
3) 26000
4) 30000
5) 34000
6) 38000
7) 42000
8) 46000

Results: Tables 1302-06.

Table: 1302-06. Plant Density and Hybrid Influence on Corn Grain. Janesville, WI - 2013.

Target	Density					Test	Lodged			Return
density	V5	Harvest	Ears	Yield	Moisture	weight	Total	Stalk	Root	$4.04
plants/A	plants/A	plants/A	ears/A	bu/A	%	lbs/bu	%	%	%	$/A
18000	-	18560	-	206	17.8	54	0	0	0	774
22000	-	23485	-	231	17.8	54	1	0	1	871
26000	-	27651	-	248	17.5	55	1	1	0	936
30000	-	31818	-	256	17.6	56	1	1	0	963
34000	-	35101	-	267	17.3	55	3	3	0	1009
38000	-	39772	-	272	17.4	56	1	1	0	1025
42000	-	43939	-	280	17.7	56	3	3	0	1054
46000	-	46590	-	264	16.9	56	3	3	0	998
	-	33364	-	253	17.5	55	2	2	0	954
Probability(%)										
Plant Density (D)	-	0.0	-	0.0	35.2	0.1	25.3	15.5	47.1	0.0
LSD (0.10)										
Plant Density (D)	-	2285	-	16	NS	1	NS	NS	NS	56

FIELD EXPERIMENT HISTORY

Title: **Plant Density and Hybrid Influence on Corn Grain Performance**

Experiment: 02PD **Trial ID:** 5742 **Year:** 2013

Personnel: J.G. Lauer, K.D. Kohn, and T.H Diallo

Location: Seymour, WI **County:** Outagamie

Supported By: HATCH

Site Information

Field: **Previous Crop:** Soybean **Soil Type:** Onaway Silt Loam

Soil Test: **Date:** 10/01/13 **pH:** 7.5 **OM (%)** 2.7 **P (ppm)** 41 **K (ppm)** 132

Plot Management

Tillage Operations: Chisel Plow Field Cultivator Cultivated

		Analysis:	Rate lbs/A:	Date:
Fertilizer:	**Preplant :**	46-0-0	150 lbs/A	N/A
	Starter :	10-34-0	3.0 gal/A	5 /15/13
	Post plant :	46-0-0	55 lbs/A	6 /26/13
	Manure:	N/A	N/A	N/A

Herbicide: Harness Xtra 1.7 qt/A
Callisto 3.0 oz/A

Insecticide: None

Irrigation: None **Hybrid:** Pioneer P8906HR

Planting Date: 5/15/13 **Planting Depth:** 1.5" **Row Width:** 30"

Target Plant Density: See Factors **Planting Method:** Almaco Precision Planter

Harvest Date: 11/12/13 **Harvest Method:** Massey 8XP

Experimental Design

Design: RCB **Replications:** 3

Plot Size Seeded: 10' x 25' **Experiment Size:** 0.15A

Harvest Plot Size: 5' x 23' **Harvest Plant Density:** 32212

Factors/Treatments:

Target Plant Density:

1) 18000
2) 22000
3) 26000
4) 30000
5) 34000
6) 38000
7) 42000
8) 46000

Results: Tables 1302-07.

Table: 1302-07. Plant Density and Hybrid Influence on Corn Grain. Seymour, WI - 2013.

Target	Density					Test	Lodged			Return
density	V5	Harvest	Ears	Yield	Moisture	weight	Total	Stalk	Root	$4.04
plants/A	plants/A	plants/A	ears/A	bu/A	%	lbs/bu	%	%	%	$/A
18000	22979	18560	20328	167	21.2	54	0	0	0	618
22000	24368	21969	22096	184	21.2	55	0	0	0	681
26000	28409	27651	27904	217	20.7	55	0	0	0	805
30000	30429	29545	29798	201	20.4	56	0	0	0	745
34000	36363	35858	35858	229	20.4	56	0	0	0	851
38000	38510	37121	37247	225	20.4	56	0	0	0	835
42000	43055	42045	42045	204	20.3	56	0	0	0	758
46000	47222	42424	42424	222	20.0	56	1	1	0	827
Mean	33917	31897	32212	206	20.6	56	0	0	0	765
Probability(%)										
Plant Density (D)	0.0	0.0	0.0	0.3	1.0	0.3	15.0	15.0	-	0.3
LSD (0.10)										
Plant Density (D)	2004	1769	1700	23	1	1	NS	NS	-	85