

FIELD EXPERIMENT HISTORY

Title: Plant Density and Hybrid Influence on Corn Grain and Silage Performance
Experiment: 02PD **Trial ID:** 6051 **Year:** 2016
Personnel: UW: Joe Lauer, Kent Kohn, Thierno Diallo, Randy Shaver
 Monsanto: Leo Brown, John Kennicker, Mike Weiss, Todd Vagts
 Dairyland Labs: Dave Taysom
Location: Arlington, WI **County:** Columbia
Supported By: Monsanto

Site Information

Field: ARS406 **Previous Crop:** Alfalfa **Soil Type:** Plano Silt Loam
Soil Test: **Date:** 10/1 /16 **pH:** 6.2 **OM (%)** 3.3 **P (ppm)** 26 **K (ppm)** 79

Plot Management

Tillage Operations: Disk Chisel Field Cultivator Cultivated

		<u>Analysis:</u>	<u>Rate lbs/A:</u>	<u>Date:</u>
Fertilizer:	Preplant :	N/A	N/A	N/A
	Starter :	10-34-0	200 lbs/A	5 /3 /16
	Post plant :	N/A	N/A	N/A
	Manure:	Dairy	10456 gal/A	N/A
Herbicide:	Hornet 4.0 oz/A Medal II 24 oz/A		Insecticide:	Force 3G 4.4 lbs/A
Irrigation:	None	Hybrid: See Factors		
Planting Date:	5/3/16	Planting Depth:	1.5"	Row Width: 30"
Target Plant Density:	See Factors	Planting Method: Almaco Precision Planter		
Harvest Date:	S: 9/6/16 G: 10/10/16	Harvest Method:		S: New Holland 707 G: Massey 8XP

Experimental Design

Design: RCB **Replications:** 3
Plot Size Seeded: 20' x 25' **Experiment Size:** 1.4 A
Harvest Plot Size: S: 2.5' x 23'
 G: 5' x 23' **Harvest Plant Density:** 33989

Factors/Treatments:

<u>Target Plant Density:</u>	<u>Hybrid:</u>	<u>Cutting height</u>
1) 20000	1) Mon 94	1) High-cut: 24-inches
2) 26000	2) Mon 97	2) Low-cut: 6-inches
3) 32000	3) Mon 98	
4) 38000	4) Mon 99	
5) 44000	5) Mon 105	
6) 50000	6) Mon 108	
	7) Mon 208	
	8) Mon 308	

Results: Tables 1602-01, 1602-02 & 1602-03.

**Table: 1602-01. Plant Density and Hybrid Influence on Corn Grain.
Arlington, WI - 2016.**

Hybrid	Target density	Density			Yield	Moisture	Test weight	Lodged			AGR
		V5	Harvest	Ears				Total	Stalk	Root	
	plants/A	plants/A	plants/A	ears/A	bu/A	%	lbs/bu	%	%	%	\$/A
Mon 94	26000	27020	27525	30050	251	20.1	52	0.0	0.0	0.0	784
Mon 94	32000	32954	31818	33585	265	20.1	52	0.0	0.0	0.0	827
Mon 94	38000	39141	38636	39141	269	20.0	52	1.3	1.3	0.0	838
Mon 94	44000	44318	45454	46717	275	20.1	53	0.0	0.0	0.0	857
Mon 97	26000	24558	26515	27272	241	21.8	52	0.0	0.0	0.0	743
Mon 97	32000	30618	30303	31818	255	21.4	52	0.0	0.0	0.0	789
Mon 97	38000	37184	35606	36616	270	20.3	52	0.0	0.0	0.0	841
Mon 97	44000	43371	40656	40909	263	21.6	52	1.9	1.9	0.0	813
Mon 98	26000	22790	24495	26262	211	24.4	53	4.2	3.1	1.1	638
Mon 98	32000	28030	29293	30050	224	24.8	52	8.4	5.9	2.5	677
Mon 98	38000	33143	32070	32828	229	24.9	52	8.5	4.6	3.9	692
Mon 98	44000	40088	40151	40403	229	24.2	52	30.1	10.7	19.4	697
Mon 99	20000	19760	21464	23232	211	20.2	51	1.2	1.2	0.0	659
Mon 99	26000	25631	24495	26262	247	20.4	53	0.0	0.0	0.0	769
Mon 99	32000	31250	31818	33333	258	20.3	51	0.0	0.0	0.0	803
Mon 99	38000	38699	37878	39141	273	20.1	52	0.7	0.7	0.0	850
Mon 99	44000	43307	43686	44444	278	20.3	52	0.0	0.0	0.0	867
Mon 99	50000	48926	48989	48989	280	20.1	52	0.0	0.0	0.0	874
Mon 105	26000	23043	25252	27020	238	21.8	54	0.0	0.0	0.0	734
Mon 105	32000	28977	27272	28535	247	22.4	52	1.9	0.0	1.9	760
Mon 105	38000	33585	33585	35606	264	22.8	53	0.0	0.0	0.0	808
Mon 105	44000	39962	36868	38888	266	22.7	53	0.7	0.7	0.0	815
Mon 108	20000	19381	19444	22474	239	26.0	52	0.0	0.0	0.0	717
Mon 108	26000	25631	26515	28787	255	25.2	52	0.0	0.0	0.0	771
Mon 108	32000	31881	29798	31818	291	24.2	52	1.6	0.0	1.6	884
Mon 108	38000	38383	38636	40403	290	24.4	53	5.7	0.6	5.1	879
Mon 108	44000	43371	42424	41414	300	24.3	52	12.4	1.8	10.6	911
Mon 108	50000	49936	48989	49494	297	23.8	52	14.6	4.7	9.9	905
Mon 208	26000	25252	25505	28030	242	25.8	52	2.9	2.9	0.0	726
Mon 208	32000	31818	32070	33838	250	26.0	52	7.8	5.5	2.3	749
Mon 208	38000	37626	34343	35606	247	25.4	52	7.3	7.3	0.0	743
Mon 208	44000	44065	42424	42929	253	26.1	52	10.8	6.6	4.2	759
Mon 308	26000	24305	23737	27777	240	26.7	52	2.1	2.1	0.0	717
Mon 308	32000	30050	30303	34848	277	25.3	52	2.3	2.3	0.0	835
Mon 308	38000	36805	35858	38131	299	25.2	53	2.0	1.4	0.7	903
Mon 308	44000	42613	37878	40909	298	25.2	52	0.7	0.0	0.7	898
Mean		33819	33382	34932	259	23.0	52	3.6	1.8	1.8	793
Probability(%)											
Plant Density x Hybrid		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0
LSD (0.10)											
Plant Density x Hybrid		1290	2427	2604	13	0.9	2	6.8	3.4	6.5	40

Table: 1602-02. Cutting Height, Plant Density and Hybrid Influence on Silage Performance.

Arlington WI - 2016.

(page 1 of 3)

Hybrid	Target density plants/A	Cutting height inches	Whole Plant											Milk per	
			Density			Dry Matter	Moist	Crude			<i>in vitro</i>			Ton	Acre
			V5 plants/A	Harvest plants/A	Ears ears/A	Yield T/A	%	%	%	%	%	%	%	%	lbs/T
Mon 94	26000		26894	27777	31313	9.3	66.1	7.8	21.9	35.2	85.5	58.8	40.6	3579	33291
Mon 94	32000		32575	32702	35606	10.1	66.1	7.4	23.3	36.9	84.8	58.8	40.1	3528	35560
Mon 94	38000		39015	38762	40151	11.0	65.6	7.3	23.1	36.2	85.1	59.0	40.7	3553	38908
Mon 94	44000		45201	44570	45959	10.8	65.1	7.3	23.4	37.0	85.4	60.6	40.3	3564	38517
Mon 97	26000		24368	25883	27904	9.9	65.9	7.8	23.3	36.8	84.7	58.6	39.7	3524	34970
Mon 97	32000		30934	31565	33712	10.0	65.6	7.4	23.2	36.9	85.1	59.9	40.5	3546	35576
Mon 97	38000		36742	36363	38510	10.4	66.2	7.7	21.6	34.5	85.8	58.7	42.9	3601	37555
Mon 97	44000		42802	42297	42929	10.6	66.5	7.5	24.2	37.8	84.7	59.6	38.8	3515	37464
Mon 98	26000		22853	25757	28787	9.6	68.7	8.1	23.2	36.4	85.3	59.6	38.2	3557	34174
Mon 98	32000		28156	30555	31691	9.3	69.2	7.8	22.1	35.2	85.5	59.0	40.8	3583	33358
Mon 98	38000		33459	31691	34217	10.0	68.8	7.5	24.3	38.7	84.7	60.3	36.6	3503	35098
Mon 98	44000		38762	40151	40782	10.4	66.4	7.8	25.2	39.6	83.5	58.3	34.8	3429	35753
Mon 99	20000		19949	22222	23990	8.8	64.4	8.1	21.7	35.0	85.2	57.8	39.8	3563	31258
Mon 99	26000		26262	25883	29166	9.2	64.8	7.8	23.3	37.4	84.1	57.5	38.0	3480	32159
Mon 99	32000		31313	32070	34469	10.4	63.5	7.3	22.4	35.4	85.3	58.6	42.2	3572	37027
Mon 99	38000		37878	37373	38762	10.9	62.8	7.4	22.5	36.0	85.6	60.1	41.3	3584	39086
Mon 99	44000		43560	43686	45959	11.7	61.9	7.5	21.4	34.2	85.9	58.8	43.4	3614	42306
Mon 99	50000		47979	47600	47979	11.4	63.2	7.2	21.0	33.0	86.8	59.9	45.2	3666	41826
Mon 105	26000		24747	26136	27146	9.3	68.0	8.2	23.6	37.8	84.3	58.4	35.6	3468	32433
Mon 105	32000		28030	29040	31944	10.6	64.9	7.7	22.4	36.0	85.5	59.8	39.9	3575	37930
Mon 105	38000		33712	33964	37626	10.7	65.4	7.7	20.3	32.7	86.2	57.9	44.6	3633	38976
Mon 105	44000		39393	38131	39898	10.6	67.0	7.5	23.4	37.3	84.7	59.0	40.2	3518	37305
Mon 108	20000		19192	19949	22348	9.7	67.7	8.0	20.8	33.4	85.5	56.7	41.8	3593	35008
Mon 108	26000		25126	26515	29924	10.2	67.4	7.7	20.6	32.8	85.9	56.8	43.0	3609	36884
Mon 108	32000		31691	32828	36111	10.8	65.4	7.0	23.2	37.6	85.0	60.1	39.8	3538	38080
Mon 108	38000		37499	39141	41287	11.4	65.1	7.2	22.2	36.0	85.5	59.7	41.4	3578	40915
Mon 108	44000		43181	42676	42802	11.1	64.9	6.6	23.2	36.7	84.1	56.6	41.1	3494	38738
Mon 108	50000		51009	49621	48863	12.3	64.7	6.8	21.1	33.4	85.7	57.0	44.8	3608	44082
Mon 208	26000		25126	26767	30176	10.3	67.9	8.6	24.7	39.8	83.3	57.8	35.3	3411	34929
Mon 208	32000		31818	32702	34217	10.4	68.6	8.2	24.1	38.0	84.0	57.8	38.1	3470	36161
Mon 208	38000		37373	36363	38383	10.1	70.0	8.6	25.9	40.3	82.8	57.3	34.4	3380	34010
Mon 208	44000		43939	43307	44318	10.6	68.7	8.3	24.9	39.0	83.5	57.6	35.8	3431	36344
Mon 308	26000		23863	26262	32575	9.5	67.0	7.9	22.0	36.2	84.5	57.1	38.5	3512	33209
Mon 308	32000		29798	30681	36868	10.1	66.7	7.5	22.3	36.1	84.9	58.2	39.6	3539	35555
Mon 308	38000		36237	35984	38131	10.9	67.5	7.9	22.4	36.5	85.4	60.1	39.8	3563	38788
Mon 308	44000		41919	39646	42045	10.2	68.5	7.4	21.7	34.8	85.7	59.0	42.1	3598	36555
		6	33592	33382	34932	10.8	68.2	7.6	24.4	38.4	83.8	57.8	37.8	3455	37320
		24	33761	34764	37654	9.9	64.4	7.7	21.1	34.2	86.2	59.5	42.1	3627	36002

continued

Table: 1602-02. Cutting Height, Plant Density and Hybrid Influence on Silage Performance.

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Arlington WI - 2016.**(page 2 of 3)**

Hybrid	Target density plants/A	Cutting height inches	Whole Plant												
			Density			Dry Matter Yield	Moist %	Crude			<i>in vitro</i>			Milk per	
			V5 plants/A	Harvest plants/A	Ears ears/A			protein %	ADF %	NDF %	Digest %	NDFD %	Starch %	Ton lbs/T	Acre lbs/A
Mon 94	26000	6	26010	27525	30050	9.5	69.3	7.6	23.5	37.0	84.5	57.9	38.1	3505	33441
Mon 94	26000	24	27777	28030	32575	9.1	62.9	8.0	20.2	33.5	86.5	59.8	43.1	3652	33140
Mon 94	32000	6	32575	31818	33585	10.8	67.2	7.3	23.5	36.7	85.0	59.0	40.9	3541	38202
Mon 94	32000	24	32575	33585	37626	9.4	65.1	7.5	23.1	37.1	84.6	58.6	39.3	3515	32918
Mon 94	38000	6	38636	38636	39141	11.2	67.7	7.3	24.5	37.6	84.5	58.7	39.4	3504	39407
Mon 94	38000	24	39393	38888	41161	10.7	63.5	7.4	21.8	34.8	85.8	59.2	42.0	3603	38408
Mon 94	44000	6	45959	45454	46717	11.1	67.6	7.2	26.4	41.3	83.6	60.4	36.0	3424	38123
Mon 94	44000	24	44444	43686	45201	10.5	62.7	7.5	20.4	32.6	87.2	60.9	44.5	3704	38912
Mon 97	26000	6	25000	26515	27272	10.7	67.8	7.7	24.6	38.3	83.9	57.9	38.5	3461	36851
Mon 97	26000	24	23737	25252	28535	9.2	64.0	7.9	21.9	35.4	85.6	59.3	40.8	3586	33089
Mon 97	32000	6	30808	30303	31818	10.2	67.5	7.4	25.5	40.3	83.2	58.4	36.6	3407	34712
Mon 97	32000	24	31060	32828	35606	9.9	63.7	7.4	20.9	33.6	87.1	61.4	44.4	3685	36441
Mon 97	38000	6	36363	35606	36616	10.5	69.9	7.9	22.7	35.6	85.1	58.0	42.0	3550	37112
Mon 97	38000	24	37121	37121	40403	10.4	62.4	7.6	20.4	33.3	86.5	59.4	43.9	3652	37997
Mon 97	44000	6	42424	40656	40909	10.7	69.4	7.4	26.8	41.2	83.0	58.7	35.7	3391	36459
Mon 97	44000	24	43181	43939	44949	10.6	63.5	7.7	21.7	34.4	86.4	60.4	41.9	3640	38468
Mon 98	26000	6	22979	24495	26262	10.1	71.0	8.2	24.6	37.9	84.3	58.6	36.9	3490	35236
Mon 98	26000	24	22727	27020	31313	9.1	66.5	8.0	21.9	34.9	86.2	60.6	39.6	3624	33113
Mon 98	32000	6	28787	29293	30050	9.9	70.3	7.8	21.8	34.4	85.6	58.1	41.7	3592	35484
Mon 98	32000	24	27525	31818	33333	8.7	68.1	7.8	22.4	36.1	85.5	59.9	39.9	3574	31232
Mon 98	38000	6	33080	32070	32828	10.6	70.0	7.5	25.5	40.3	83.9	60.2	35.1	3449	36637
Mon 98	38000	24	33838	31313	35606	9.4	67.7	7.5	23.1	37.2	85.4	60.5	38.2	3558	33559
Mon 98	44000	6	37373	40151	40403	11.5	67.3	7.8	27.0	41.8	81.9	56.8	32.7	3322	38195
Mon 98	44000	24	40151	40151	41161	9.4	65.6	7.7	23.4	37.3	85.0	59.9	37.0	3536	33311
Mon 99	20000	6	19697	21464	23232	9.2	66.8	7.7	23.9	38.1	83.6	57.0	36.8	3447	31853
Mon 99	20000	24	20202	22979	24747	8.3	61.9	8.4	19.5	31.9	86.8	58.7	42.8	3679	30663
Mon 99	26000	6	26767	24495	26262	9.0	68.1	7.9	26.2	41.9	82.1	57.2	32.7	3330	30095
Mon 99	26000	24	25757	27272	32070	9.4	61.4	7.7	20.3	33.0	86.0	57.7	43.2	3629	34223
Mon 99	32000	6	31818	31818	33333	10.5	65.8	7.2	24.4	37.8	83.7	56.9	40.1	3460	36412
Mon 99	32000	24	30808	32323	35606	10.2	61.2	7.4	20.4	32.9	86.9	60.3	44.4	3684	37642
Mon 99	38000	6	37626	37878	39141	10.8	66.2	7.7	23.9	37.6	84.4	58.3	39.7	3495	37790
Mon 99	38000	24	38131	36868	38383	11.0	59.4	7.2	21.1	34.4	86.9	62.0	42.9	3674	40382
Mon 99	44000	6	43939	43686	44444	12.1	64.4	7.5	22.6	35.8	85.0	57.7	42.4	3544	42999
Mon 99	44000	24	43181	43686	47474	11.3	59.4	7.5	20.2	32.6	86.9	59.8	44.5	3683	41613
Mon 99	50000	6	48484	48989	48989	11.1	66.1	7.1	23.2	36.1	85.1	58.9	42.1	3555	39416
Mon 99	50000	24	47474	46211	46969	11.7	60.2	7.3	18.7	29.8	88.4	60.9	48.4	3778	44237
Mon 105	26000	6	26010	25252	27020	10.0	68.7	7.8	24.9	39.7	83.3	57.9	33.3	3376	33695
Mon 105	26000	24	23485	27020	27272	8.7	67.3	8.6	22.3	35.8	85.3	59.0	37.8	3560	31171
Mon 105	32000	6	26515	27272	28535	11.8	65.3	7.9	24.9	39.8	83.6	58.7	36.1	3434	40631
Mon 105	32000	24	29545	30808	35353	9.5	64.5	7.6	19.9	32.3	87.4	61.0	43.7	3716	35230

continued

Table: 1602-03. Plant Density and Hybrid Influence on Silage Performance.
Arlington, WI - 2016.

Hybrid	Target density plants/A	Plant height inches	Silk day of year	Kernel milk %	KMR 0-5	SMR 0-5	VMR 0-10
Mon 94	26000	120	197	43	2.2	1.0	3.2
Mon 94	32000	119	198	35	1.8	0.5	2.3
Mon 94	38000	122	198	43	2.2	0.7	2.8
Mon 94	44000	121	200	38	1.9	0.8	2.7
Mon 97	26000	116	196	48	2.4	1.2	3.6
Mon 97	32000	118	196	55	2.8	1.1	3.9
Mon 97	38000	118	195	43	2.2	0.8	3.0
Mon 97	44000	116	195	30	1.5	0.8	2.3
Mon 98	26000	125	201	52	2.6	1.8	4.4
Mon 98	32000	124	201	57	2.8	1.6	4.4
Mon 98	38000	121	202	55	2.8	1.4	4.1
Mon 98	44000	123	202	52	2.6	1.3	3.9
Mon 99	20000	111	195	48	2.4	1.4	3.9
Mon 99	26000	116	196	52	2.6	1.1	3.7
Mon 99	32000	117	196	43	2.2	1.0	3.2
Mon 99	38000	116	195	45	2.3	1.2	3.4
Mon 99	44000	115	196	42	2.1	0.9	3.0
Mon 99	50000	119	197	45	2.3	0.8	3.1
Mon 105	26000	120	201	58	2.9	1.9	4.8
Mon 105	32000	118	200	55	2.8	1.7	4.5
Mon 105	38000	116	201	57	2.8	1.5	4.4
Mon 105	44000	116	202	53	2.7	1.1	3.8
Mon 108	20000	119	200	50	2.5	2.7	5.2
Mon 108	26000	120	199	53	2.7	1.5	4.2
Mon 108	32000	119	199	52	2.6	1.8	4.4
Mon 108	38000	119	199	43	2.2	1.7	3.9
Mon 108	44000	118	199	43	2.2	1.4	3.6
Mon 108	50000	120	200	40	2.0	1.0	3.0
Mon 208	26000	124	201	52	2.6	1.9	4.5
Mon 208	32000	128	201	55	2.8	1.7	4.5
Mon 208	38000	127	202	53	2.7	1.5	4.2
Mon 208	44000	124	201	50	2.5	1.3	3.8
Mon 308	26000	120	199	63	3.2	3.1	6.2
Mon 308	32000	121	198	63	3.2	1.8	5.0
Mon 308	38000	116	199	58	2.9	1.7	4.7
Mon 308	44000	115	200	55	2.8	1.8	4.6
Mean		119	199	49	2.5	1.4	3.9
Probability(%)							
Plant Density x Hybrid		0.0	0.3	5.2	5.2	0.0	0.0
LSD (0.10)							
Plant Density x Hybrid		4.4	0.8	6.9	0.3	0.5	0.8

FIELD EXPERIMENT HISTORY

Title: Plant Density and Hybrid Influence on Corn Grain and Silage Performance
Experiment: 02PD **Trial ID:** 6066 **Year:** 2016
Personnel: UW: Joe Lauer, Kent Kohn, Thierno Diallo, Randy Shaver
 Monsanto: Leo Brown, John Kennicker, Mike Weiss, Todd Vagts
 Dairyland Labs: Dave Taysom
Location: Marshfield, WI **County:** Wood
Supported By: Monsanto

Site Information

Field: **Previous Crop:** Soybean **Soil Type:** Withee Silt Loam
Soil Test: **Date:** 10/1 /16 **pH:** 6.3 **OM (%)** 3.0 **P (ppm)** 37 **K (ppm)** 114

Plot Management

Tillage Operations: Field Cultivator Cultivated

		<u>Analysis:</u>	<u>Rate lbs/A:</u>	<u>Date:</u>
Fertilizer:	Preplant :	N/A	N/A	N/A
	Starter :	10-34-0	200 lbs/A	5 /5 /16
	Post plant :	N/A	N/A	N/A
	Manure:	N/A	None	N/A
Herbicide:	Roundup 32 oz/A Parallel 1.7 pt/A Hornet WDG 3.0 oz/A		Insecticide:	Force 3G 4.4 lbs/A
Irrigation:	None		Hybrid:	See Factors
Planting Date:	5/5/16	Planting Depth:	1.5"	Row Width: 30"
Target Plant Density:	See Factors		Planting Method:	Almaco Precision Planter
Harvest Date:	9/20/16		Harvest Method:	New Holland 707

Experimental Design

Design: RCB **Replications:** 3
Plot Size Seeded: 10' X 25' **Experiment Size:** 0.35 A
Harvest Plot Size: 2.5' x 23' **Harvest Plant Density:** 31186

Factors/Treatments:

<u>Target Plant Density:</u>	<u>Hybrid:</u>
1) 20000	1) Mon 94
2) 26000	2) Mon 97
3) 32000	3) Mon 98
4) 38000	4) Mon 99
5) 44000	
6) 50000	

Results: Tables 1602-04.

Table: 1602-04. Plant Density and Hybrid Influence on Silage Performance.
Marshfield, WI - 2016.

Hybrid	Target density plants/A	Whole Plant																	
		Density			Dry Matter		Kernel		KMR SMR VMR			Crude			<i>in vitro</i>			Milk per	
		V5 plants/A	Harvest plants/A	Ears ears/A	Yield T/A	Moist %	milk %	0-5	0-5	0-10	protein %	ADF %	NDF %	Digest %	NDFD %	Starch %	Ton lbs/T	Acre lbs/A	
Mon 94	26000	27272	27020	29040	8.2	65	57	2.8	1.6	4.4	6.1	19.6	36.8	84.3	57.4	33.1	3275	27072	
Mon 94	32000	33585	34343	34848	10.7	63	58	2.9	1.7	4.6	6.2	19.5	36.3	83.9	55.7	32.6	3181	34154	
Mon 94	38000	40909	40656	37626	10.0	63	63	3.2	2.1	5.3	6.0	18.5	35.3	85.2	58.1	34.6	3332	33456	
Mon 94	44000	27020	27777	27020	8.8	63	63	3.2	1.4	4.6	5.7	19.0	36.5	84.2	56.9	33.6	3258	28847	
Mon 97	26000	32575	32323	32070	8.9	63	54	2.7	1.2	3.8	5.7	20.0	36.8	83.9	56.3	33.8	3271	29184	
Mon 97	32000	32070	30050	30303	9.1	63	60	3.0	1.6	4.6	6.2	20.2	37.0	83.3	54.9	33.9	3303	30044	
Mon 97	38000	33585	32575	32828	9.6	62	60	3.0	1.1	4.1	5.4	18.7	35.4	84.8	57.1	35.8	3366	32501	
Mon 97	44000	36616	35858	35353	9.4	64	53	2.7	1.6	4.3	6.0	21.0	37.8	82.9	55.1	32.1	3177	29829	
Mon 98	26000	26010	25757	23737	8.0	68	63	3.2	2.3	5.5	6.1	20.8	39.0	83.1	56.7	28.9	3024	24215	
Mon 98	32000	31060	31818	30808	9.5	65	65	3.3	2.5	5.7	6.3	21.1	39.3	83.1	57.0	30.1	3153	29965	
Mon 98	38000	32828	30050	29040	8.6	66	72	3.6	2.3	5.9	5.9	20.4	38.4	84.3	59.2	30.1	3127	27016	
Mon 98	44000	30555	30050	29798	7.8	69	67	3.3	2.4	5.7	5.8	22.0	40.7	83.0	58.2	27.4	2995	23396	
Mon 99	20000	22727	21969	21717	8.2	62	58	2.9	2.0	5.0	6.7	19.1	36.8	84.9	59.0	31.9	3252	26651	
Mon 99	26000	28030	27272	26767	8.8	60	55	2.8	2.2	4.9	6.3	17.9	35.7	85.3	58.8	35.0	3414	29891	
Mon 99	32000	31060	30808	30808	8.9	64	38	1.9	1.7	3.6	5.9	19.7	37.1	83.9	56.8	33.3	3268	29346	
Mon 99	38000	31818	29040	29293	8.1	63	51	2.6	1.7	3.7	6.1	19.6	37.2	83.7	56.3	34.0	3336	26983	
Mon 99	44000	40151	41161	35101	10.7	64	53	2.7	1.4	4.1	6.1	20.0	37.4	83.5	55.9	32.5	3222	34453	
Mon 99	50000	32575	32828	31818	9.3	63	45	2.3	1.4	3.6	5.8	19.6	37.7	83.6	56.6	32.8	3243	30461	
Mean		31691	31186	30443	9.0	64	58	2.9	1.8	4.6	6.0	19.8	37.3	83.9	57.0	32.5	3233	29304	
Probability(%)																			
Plant Density x Hybrid		0.0	0.0	0.0	0.0	0.0	1.3	1.3	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
LSD (0.10)																			
Plant Density x Hybrid		6697	6929	6139	1.6	3	14	0.7	0.8	1.0	0.8	2.6	3.3	2.5	3.4	3.8	237	6188	

FIELD EXPERIMENT HISTORY

Title: Plant Density and Hybrid Influence on Corn Grain and Silage Performance
Experiment: 02PD **Trial ID:** 6065 **Year:** 2016
Personnel: UW: Joe Lauer, Kent Kohn, Thierno Diallo, Randy Shaver
 Monsanto: Leo Brown, John Kennicker, Mike Weiss, Todd Vagts
 Dairyland Labs: Dave Taysom
Location: Montfort, WI **County:** Grant
Supported By: Monsanto

Site Information

Field: **Previous Crop:** Soybean **Soil Type:** Dodgeville Silt Loam
Soil Test: **Date:** 10/1 /16 **pH:** 5.8 **OM (%)** 4.2 **P (ppm)** 52 **K (ppm)** 153

Plot Management

Tillage Operations: Chisel plow Soil Finisher

	<u>Analysis:</u>	<u>Rate lbs/A:</u>	<u>Date:</u>
Fertilizer: Preplant :	46-0-0	250 lbs/A	N/A
Starter :	10-34-0	200 lbs/A	5 /5 /16
Post plant :	32-0-0	20 gal/A	N/A
Manure:	N/A	None	N/A

Herbicide: Acuron 1.75 pt/A **Insecticide:** Force 3G 4.4 lbs/A
Irrigation: None **Hybrid:** See Factors
Planting Date: 5/5/16 **Planting Depth:** 1.5" **Row Width:** 30"
Target Plant Density: See Factors **Planting Method:** Almaco Precision Planter
Harvest Date: 9/12/16 **Harvest Method:** New Holland 707

Experimental Design

Design: RCB **Replications:** 3
Plot Size Seeded: 10' X 25' **Experiment Size:** 0.35 A
Harvest Plot Size: 2.5' x 23' **Harvest Plant Density:** 34687

Factors/Treatments:

<u>Target Plant Density:</u>	<u>Hybrid:</u>
1) 20000	1) Mon 105
2) 26000	2) Mon 108
3) 32000	3) Mon 208
4) 38000	4) Mon 308
5) 44000	
6) 50000	

Results: Tables 1602-05

**Table: 1602-05. Plant Density and Hybrid Influence on Silage Performance.
Montfort, WI - 2016.**

Hybrid	Target density plants/A	Whole Plant																	
		Density			Dry Matter		Kernel milk	Plant height	KMR SMR VMR			Crude			<i>in vitro</i>			Milk per	
		V5 plants/A	Harvest plants/A	Ears ears/A	Yield T/A	Moist %			0-5	0-5	0-10	protein %	ADF %	NDF %	Digest %	NDFD %	Starch %	Ton lbs/T	Acre lbs/A
Mon 105	26000	22979	26010	29545	9.8	63	57	113	2.8	1.0	3.8	7.3	23.9	38.6	83.8	57.9	36.6	3449	33813
Mon 105	32000	27525	30050	32575	10.7	61	47	112	2.3	0.9	3.2	6.9	22.2	35.4	84.8	56.9	42.2	3535	37894
Mon 105	38000	35858	34090	36111	10.1	62	52	110	2.6	0.7	3.3	6.8	24.0	38.5	83.4	56.9	38.3	3433	34692
Mon 105	44000	37626	37878	39141	10.7	62	55	112	2.8	1.1	3.8	6.6	23.7	37.5	84.2	57.9	40.5	3486	37343
Mon 108	20000	18182	25000	30303	9.7	65	48	110	2.4	2.5	4.9	7.8	19.4	31.4	86.7	57.5	43.8	3674	35702
Mon 108	26000	26515	28535	33585	10.9	64	50	112	2.5	2.4	4.9	7.2	21.7	34.6	85.4	57.9	41.0	3579	39183
Mon 108	32000	30303	32196	36363	11.8	63	48	114	2.4	1.7	4.1	6.8	21.0	34.3	86.0	59.1	43.1	3616	42761
Mon 108	38000	37121	34848	39141	12.0	61	50	112	2.5	0.9	3.4	6.6	21.1	34.2	85.6	57.7	43.7	3595	43263
Mon 108	44000	45454	43686	44949	12.4	61	47	112	2.3	1.2	3.5	6.4	22.8	36.3	85.1	58.9	41.4	3548	44049
Mon 108	50000	49999	48737	50252	12.3	60	37	109	1.8	1.0	2.8	6.3	20.7	32.5	85.9	56.7	45.8	3628	44484
Mon 208	26000	25757	30303	34848	10.6	61	45	118	2.3	0.9	3.2	7.0	23.0	36.8	84.6	58.2	39.7	3516	37361
Mon 208	32000	30808	31818	34595	10.8	62	53	116	2.7	0.9	3.5	7.1	23.8	37.3	84.4	58.2	40.1	3500	37856
Mon 208	38000	36111	37878	39646	11.8	60	47	117	2.3	0.6	3.0	7.2	20.4	32.1	85.8	55.6	45.6	3618	42818
Mon 208	44000	42424	43181	45201	10.6	62	50	116	2.5	1.1	3.6	7.4	25.0	39.8	84.0	59.6	36.8	3451	36668
Mon 308	26000	26262	28282	34090	9.8	64	52	106	2.6	2.0	4.6	7.2	21.7	35.3	85.2	57.9	40.4	3559	34759
Mon 308	32000	31565	32828	35101	10.2	62	57	109	2.8	1.0	3.8	6.9	22.4	36.6	85.0	58.9	39.6	3540	36242
Mon 308	38000	34343	36111	37626	10.6	64	53	110	2.7	1.0	3.7	6.8	22.5	36.4	84.8	58.1	41.4	3530	37379
Mon 308	44000	39898	42929	44696	11.5	62	55	109	2.8	1.4	4.1	6.4	21.5	34.3	86.1	59.4	44.6	3622	41540
Mean		33263	34687	37654	10.9	62	50	112	2.5	1.2	3.7	6.9	22.3	35.6	85.0	58.0	41.4	3549	38767
Probability(%)																			
Plant Density x Hybrid		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LSD (0.10)																			
Plant Density x Hybrid		2916	4111	3594	0.9	2	8	3	0.4	0.5	0.7	0.4	3.2	5.1	2.2	2.0	6.0	166	4308

FIELD EXPERIMENT HISTORY

Title: Plant Density and Hybrid Influence on Corn Grain and Silage Performance
Experiment: 02PD **Trial ID:** 6150 **Year:** 2016
Personnel: UW: Joe Lauer, Kent Kohn, Thierno Diallo, Randy Shaver
 Monsanto: Leo Brown, John Kennicker, Mike Weiss, Todd Vagts
 Dairyland Labs: Dave Taysom
Location: Valders, WI **County:** Manitowoc
Supported By: Monsanto

Site Information

Field: **Previous Crop:** Corn **Soil Type:** Kewaunee Clay Loam
Soil Test: **Date:** 10/1 /16 **pH:** 7.1 **OM (%)** 2.8 **P (ppm)** 206 **K (ppm)** 104

Plot Management

Tillage Operations: Chisel plow Turbo-Till

	<u>Analysis:</u>	<u>Rate lbs/A:</u>	<u>Date:</u>
Fertilizer:	Preplant :	N/A	N/A
	Starter :	10-34-0	5 /9 /16
	Post plant :	28-0-0	N/A
	Manure:	Dairy	N/A
Herbicide:	Steadfast 1.0 oz/A Keystone 1.5 pt/A Callisto 3.0 oz/A Atrazine 0.25 lb/A	Insecticide:	Force 3G 4.4 lbs/A
Irrigation:	None	Hybrid:	See Factors
Planting Date:	5/9/16	Planting Depth:	1.5" Row Width: 30"
Target Plant Density:	See Factors	Planting Method:	Almaco Precision Planter
Harvest Date:	9/15/16	Harvest Method:	New Holland 707

Experimental Design

Design: RCB **Replications:** 3
Plot Size Seeded: 10' X 25' **Experiment Size:** 0.35 A
Harvest Plot Size: 2.5' x 23' **Harvest Plant Density:** 33361

Factors/Treatments:

<u>Target Plant Density:</u>	<u>Hybrid:</u>
1) 20000	1) Mon 94
2) 26000	2) Mon 97
3) 32000	3) Mon 98
4) 38000	4) Mon 99
5) 44000	5) Mon 105
6) 50000	

Results: Tables 1602-06.

Table: 1602-06. Plant Density and Hybrid Influence on Silage Performance.
Valders, WI - 2016.

Hybrid	Target density plants/A	Whole Plant																	
		Density			Dry Matter		Kernel milk %	Plant height inches	KMR SMR VMR			Crude			<i>in vitro</i>			Milk per	
		V5 plants/A	Harvest plants/A	Ears ears/A	Yield T/A	Moist %			0-5	0-5	0-10	protein %	ADF %	NDF %	Digest %	NDFD %	Starch %	Ton lbs/T	Acre lbs/A
Mon 94	26000	24747	26515	31818	9.4	64	55	106	2.8	1.2	4.0	5.8	23.6	37.6	85.3	60.9	39.7	3583	33741
Mon 94	32000	32070	29545	33585	9.6	65	58	108	2.9	0.9	3.9	5.4	26.3	42.2	83.6	61.2	36.2	3456	33307
Mon 94	38000	38636	36111	39141	12.3	62	55	109	2.8	0.9	3.7	6.0	23.7	38.1	85.4	61.6	40.0	3585	44081
Mon 94	44000	44696	44191	46464	10.7	63	50	108	2.5	0.8	3.3	5.6	22.5	35.8	87.0	63.7	42.6	3697	39470
Mon 97	26000	23737	24747	29293	8.7	64	50	103	2.5	0.8	3.3	6.2	22.5	35.8	86.4	61.9	41.9	3656	31985
Mon 97	32000	30555	29798	32323	11.3	63	57	105	2.8	1.4	4.2	6.3	21.5	34.2	86.4	60.2	43.7	3669	41505
Mon 97	38000	34595	37121	40151	9.2	63	52	103	2.6	0.6	3.2	5.5	23.3	36.7	86.0	62.0	43.2	3630	33347
Mon 97	44000	41919	40656	43181	10.3	63	43	103	2.2	0.4	2.6	5.7	25.0	40.2	84.8	62.0	39.2	3533	36362
Mon 98	26000	25505	25505	31565	9.3	68	73	120	3.7	1.8	5.5	6.3	24.6	39.9	85.0	62.3	34.8	3548	32948
Mon 98	32000	30555	32070	34343	8.8	68	68	119	3.4	2.2	5.6	6.0	24.2	38.8	85.4	62.1	36.3	3577	31382
Mon 98	38000	35606	34595	36363	10.4	66	60	113	3.0	1.8	4.8	6.4	25.2	41.4	84.6	62.7	34.0	3514	36553
Mon 98	44000	42171	37878	38888	8.6	70	68	111	3.4	1.7	5.1	5.7	28.3	45.6	83.0	62.9	28.7	3384	29043
Mon 99	20000	18939	20454	29293	8.3	66	53	99	2.7	1.0	3.7	6.1	24.8	40.2	84.2	60.6	35.5	3492	29100
Mon 99	26000	25252	26010	30555	9.8	63	50	100	2.5	1.5	4.0	6.5	22.1	35.9	86.2	61.6	41.0	3644	35685
Mon 99	32000	30808	31565	33838	9.7	63	50	100	2.5	1.4	3.9	5.6	24.3	39.3	85.4	62.7	39.8	3579	34636
Mon 99	38000	39393	37373	40151	9.3	63	38	100	1.9	0.9	2.9	5.4	22.0	34.7	86.8	61.9	44.4	3695	34158
Mon 99	44000	43686	40403	42424	9.5	64	57	101	2.8	1.3	4.1	5.6	24.0	38.1	85.1	60.8	40.8	3569	34003
Mon 99	50000	48989	45959	46969	9.8	63	60	101	3.0	1.1	4.1	5.2	25.9	41.5	85.3	64.7	38.4	3557	34881
Means		33992	33361	36686	9.7	65	55	106	2.8	1.2	4.0	5.8	24.1	38.7	85.3	62.0	38.9	3576	34788
Probability(%)																			
Plant Density x Hybrid		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LSD (0.10)																			
Plant Density x Hybrid		1880	2260	2420	1.4	3	10	6	0.5	0.6	0.9	0.8	4.6	7.5	2.8	3.2	7.8	210	6250