

# 2019 *Penn State/PDMP Corn Silage Hybrid Performance Trial Results*

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Produced in cooperation with the Professional Dairy Managers of Pennsylvania (PDMP).

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## Production Details: Penn State/PDMP Corn Silage Hybrid Evaluation Trials

<b>Site:</b>	Chester Co., PA					
<b>Cooperator</b>	Wal-Moore Holsteins					
<b>Planting Date</b>	5/18/2019					
<b>Soil Type</b>	GgB Glenelg silt loam 3-8% slopes					
<b>Herbicides</b>	<b>pre-</b>	50 unit 30%	1.6 qts Bicep	3.5 floz Mesotrione	1.3 floz Lamcap	1 pt Helmquat
	<b>post-</b>	1 qt Atrazine	.75 floz Impact	.3 oz Primero	2.5 oz Status	1pt Peptoil
<b>Previous Crop</b>	Silage					
<b>Tillage</b>	None					
<b>Starter Fertilizer</b>	10 gal 10-34-0					
<b>Insecticide</b>	Force 3G					
<b>Manure</b>	25 T/ac semi-solid manure					
<b>Fertilizer</b>	200 lbs Nitrogen					
<b>Harvest Date</b>	8/26/2019					

<b>Field Summary:</b>	Excellent weed control. Disease and insect pressure were low. Tall plants and big ears. Stand establishment and fertility were excellent. Rainfall was adequate during pollination time.
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<b>Weather Summary:</b>		
<b>Month</b>	<b>Precip.</b>	<b>GDD</b>
May 18th-June 1st	1.33	269
June 1st -July 1st	7.94	617
July-August 1st	6.03	862
August 1st- August 26th	2.75	632
<b>Seasonal Total</b>	<b>18.05</b>	<b>2380</b>

<b>Precip. Data:</b>	<a href="https://www.accuweather.com/">https://www.accuweather.com/</a>
<b>GDD data:</b>	<a href="http://climatesmartfarming.org/tools/csf-growing-degree-day-calculator/">http://climatesmartfarming.org/tools/csf-growing-degree-day-calculator/</a>

**Penn State/PDMP Corn Silage Hybrid Testing Program 2019**  
**(Early-Medium) maturity (99-110) day RM silage hybrids in Chester, PA**



**Chester County location**

Notes: SEE BACKGROUND TAB

Cooperator: Walmoore Holsteins, Inc.

Brand	Hybrid	Traits*	Dry Matter %**	Yield				Starch		Ash %DM	Fat <sup>3</sup> %DM	NEL Mcal/lb	NDFD				uNDF %DM	Pop. plants/ac	Relative Maturity	
				Tons/Acre***	CP %DM	NDF %DM	Lignin %DM	NIR %DM	IVSD <sup>2</sup> %Starch				12hr <sup>4</sup> %NDF <sub>DM</sub>	30hr <sup>5</sup>	120hr	240hr				
<b>Early (99-104) day RM Silage Hybrids</b>																				
Mid-Atlantic Seeds, Inc.	MA8017		31	40.2	20.4	6.7	32.6	2.5	43.9	55.9	2.8	2.5	0.79	33.3	56.9	68.9	71.9	9.8	32,833	101
Mid-Atlantic Seeds, Inc.	MA7002HD	RR2	36.6	22.8	8.1	35.9	2.7	36.3	58.0	2.7	2.6	0.79	36.5	56.4	65.0	67.8	11.6	31,333	100	
Local Seeds	LC0297 SXRIB		34	34.5	22.2	7.3	33.7	2.5	42.1	59.8	2.9	2.7	0.79	34.8	54.8	68.4	71.3	9.7	33,833	102
Seed Consultants, Inc.	EX-SC 105YHR		21	33.8	20.8	7.6	33.2	2.5	41.0	56.6	2.8	2.5	0.79	34.4	59.6	68.8	71.7	10.1	33,333	104
<b>99-104 day means</b>			<b>36.3</b>	<b>21.6</b>	<b>7.4</b>	<b>33.9</b>	<b>2.6</b>	<b>40.8</b>	<b>57.6</b>	<b>2.8</b>	<b>2.6</b>	<b>0.79</b>	<b>34.8</b>	<b>56.9</b>	<b>67.8</b>	<b>70.7</b>	<b>10.3</b>	<b>32,833</b>		
<b>Mid (105-110) day RM Silage Hybrids</b>																				
LG Seeds	LG5525VT2RIB		31	37.9	19.6	6.5	34.5	2.6	42.1	54.5	2.7	2.8	0.79	31.6	57.8	68.4	71.3	9.9	32,167	105
Local Seeds	LC0657 SXRIB		34	36.7	20.0	7.4	34.6	2.8	41.3	61.2	2.7	2.5	0.78	31.1	55.9	64.1	66.9	11.5	34,000	106
Agri-Gold	A636-56STXRIB		34	36.7	19.3	7.2	33.3	2.5	41.6	54.9	2.8	2.6	0.79	32.4	56.0	68.0	70.9	9.7	33,667	106
Agri-Gold	A639-41STXRIB		34	35.4	20.6	7.5	31.8	2.4	42.4	57.4	2.6	2.6	0.80	32.8	55.8	66.1	68.9	9.9	34,000	109
Mid-Atlantic Seeds, Inc.	MA8074		31	34.6	21.2	7.2	34.6	2.5	41.2	58.8	2.7	2.5	0.79	32.8	56.1	67.4	70.3	10.3	33,667	107
Prairie Hybrids	5787	Conv.	34.5	21.1	7.0	31.1	2.3	44.1	55.2	2.9	2.7	0.80	33.6	57.6	69.2	72.2	8.7	34,000	108	
Seed Consultants, Inc.	EX-SC 110YHR		21	34.2	24.2	7.9	33.9	2.5	39.1	53.2	2.9	2.7	0.79	31.0	57.7	67.1	70.0	10.2	33,857	108
Masters Choice	MCT5790	Conv.	33.9	19.2	8.0	34.4	2.6	38.2	56.2	2.6	2.7	0.79	31.1	54.8	64.3	67.1	11.4	33,167	107	
Seed Consultants, Inc.	SCS 1069YHR		16	33.4	22.4	7.6	32.8	2.3	41.6	59.8	2.6	2.6	0.80	33.2	57.1	69.5	72.4	9.1	32,833	106
Pioneer	P0789AMXT		27	33.4	22.4	7.5	36.5	2.8	36.9	56.1	2.8	2.5	0.78	33.5	56.9	66.2	69.1	11.3	33,500	107
Agri-Gold	A640-77STXRIB		34	33.1	22.3	7.4	33.7	2.5	37.2	50.8	2.7	2.7	0.79	33.1	56.6	65.4	68.1	10.8	34,000	110
Local Seeds	LC0877 VT2PRIB		31	33	21.6	7.5	36.1	2.6	38.5	59.7	3.0	2.5	0.78	31.1	55.0	67.5	70.4	10.8	32,833	108
Pioneer	P0843AM		21	33	22.3	7.8	35.0	2.4	38.6	59.8	3.0	2.5	0.78	33.0	57.0	69.7	72.7	9.6	34,000	108
LG Seeds	LG5590VT2RIB		31	32.8	23.8	7.1	36.7	2.7	37.3	59.7	2.7	2.5	0.78	31.8	55.3	66.2	69.1	11.4	33,167	109
Mycogen	TMF2H708		34	32.8	21.5	7.3	37.8	2.8	36.0	54.8	2.6	2.2	0.77	32.1	54.6	66.9	69.8	11.5	33,500	109
Channel	210-98STXRIB		34	32.5	20.2	7.3	37.9	2.7	36.7	55.3	2.5	2.4	0.78	31.7	55.2	67.3	70.2	11.3	33,000	110
Agri-Gold	A638-74VT2RIB		31	32.4	22.6	7.6	38.7	3.0	35.2	57.1	3.0	2.4	0.77	30.7	55.3	65.0	67.7	12.5	33,333	108
Agri-Gold	A636-11VT2RO		31	32.2	22.0	7.6	37.4	2.8	36.6	59.6	2.7	2.4	0.77	34.1	58.8	65.6	68.4	11.8	34,000	106
Pioneer	P1089AMXT		27	31.7	21.0	7.8	34.9	2.5	36.8	56.6	3.0	2.4	0.78	33.4	56.8	68.0	70.9	10.3	33,667	110
Blue River Organic Seed	62G22	Conv.	31.5	22.1	7.4	35.1	2.6	38.6	57.4	2.6	2.9	0.79	31.1	55.4	64.2	66.9	11.6	34,000	110	
Seed Consultants, Inc.	SCS 1087YHR		16	31.3	23.7	7.6	35.2	2.4	37.4	61.4	2.8	2.3	0.79	36.6	56.0	70.6	73.6	9.4	32,667	108
Mid-Atlantic Seeds, Inc.	MA7084HD	RR2	31.3	20.8	8.1	38.4	2.9	31.7	56.3	3.0	2.4	0.76	31.3	55.6	65.0	67.8	12.4	33,167	108	
Mycogen	2098Q		36	31.3	22.8	7.6	34.7	2.4	37.4	57.9	3.0	2.2	0.78	32.5	57.9	69.1	72.1	9.8	33,167	110
Agri-Gold	A639-70STX		34	31.1	20.7	7.8	35.4	2.5	38.6	61.6	2.8	2.5	0.79	34.6	57.3	68.1	71.0	10.4	33,167	109
Channel	209-15STXRIB		34	30.8	22.4	8.3	35.0	2.5	37.8	61.0	3.0	2.6	0.79	31.9	57.5	68.0	70.9	10.2	33,000	109
<b>105-110 day means</b>			<b>33.3</b>	<b>21.6</b>	<b>7.5</b>	<b>35.2</b>	<b>2.6</b>	<b>38.5</b>	<b>57.5</b>	<b>2.8</b>	<b>2.5</b>	<b>0.78</b>	<b>32.5</b>	<b>56.4</b>	<b>67.1</b>	<b>69.9</b>	<b>10.6</b>	<b>33,421</b>		
<b>Overall Mean</b>			<b>33.7</b>	<b>21.6</b>	<b>7.5</b>	<b>35.0</b>	<b>2.6</b>	<b>38.8</b>	<b>57.5</b>	<b>2.8</b>	<b>2.5</b>	<b>0.8</b>	<b>32.8</b>	<b>56.5</b>	<b>67.2</b>	<b>70.0</b>	<b>10.6</b>			
<b>LSD(0.1)</b>			<b>2.3</b>	<b>NS<sup>1</sup></b>	<b>0.4</b>	<b>2.3</b>	<b>0.3</b>	<b>3.0</b>	<b>3.9</b>	<b>0.3</b>	<b>0.2</b>	<b>0.0</b>	<b>3.0</b>	<b>2.4</b>	<b>3.2</b>	<b>3.3</b>	<b>1.6</b>			
<b>CV%</b>			<b>5.1</b>	<b>9.4</b>	<b>3.5</b>	<b>4.9</b>	<b>7.6</b>	<b>5.6</b>	<b>4.9</b>	<b>6.6</b>	<b>5.5</b>	<b>1.6</b>	<b>6.7</b>	<b>3.2</b>	<b>3.5</b>	<b>3.5</b>	<b>11.3</b>			

\* See tab " Trait Key" for individual trait designation.

\*\*Tables are sorted by dry matter. Avoid making comparisons with hybrids that differ significantly in dry matter.

\*\*\* Silage yields are expressed on a 35 percent DM basis; all other parameters are expressed on a dry matter basis. CP=crude protein, NDF= neutral detergent fiber,

NEL=net energy for lactation, and NDFD=neutral detergent fiber digestibility.

<sup>1</sup> - NS = Not Significant , <sup>2</sup> - IVSD = In Vitro Starch Digestibility 4 hr incubation (1 mm grind as a % of Starch) , <sup>3</sup> - Fat = Total Fatty Acids

<sup>4</sup>-NDFD12hr was analyzed via wet chemistry, <sup>5</sup>-NDFD30hr was also analyzed via wet chemistry.

Prepared by Jessica Williamson, Alan Cook, and James Breining (Department of Plant Science).

Table Key #	Trait Family Product	Bt protein(s)	Marketed for control of:	Resistance to a Bt protein in the trait package has developed in :	Herbicide tolerant?
Conv.	Conventional	None	None	---	No
RR2	Roundup Ready 2	None	None	---	GT
<b>Agrisure</b>					
1	Agrisure GT	None	None	---	GT
2	Agrisure 3010 & 3010A	Cry1Ab	ECB SWCB	---	GT LL
3	Agrisure 3000 GT, 3011A	Cry1Ab, mCry3A	ECB SWCB RW	RW	GT LL
4	Agrisure Viptera 3110	Cry1Ab, Vip3A	BCW CEW ECB FAW SB SWCB TAW WBC	---	GT LL
5	Agrisure Viptera 3111	Cry1Ab, mCry3A, Vip3A	BCW CEW ECB FAW SB SWCB TAW WBC RW	RW	GT LL
6	Agrisure 3120 E-Z Refuge	Cry1Ab, Cry1F	BCW ECB FAW SB SWCB	FAW WBC	REFER TO BAG FOR SPECIFIC LETTER CODE: E20=GT ONLY E21= GT LL
7	Agrisure 3122 E-Z Refuge	Cry1Ab,Cry1F, mCry3A, Cry34/35Ab1	BCW ECB FAW SB SWCB RW	FAW WBC RW	
8	Agrisure Viptera 3220 E-Z Refuge	Cry1Ab, Cry1F, Vip3A	BCW CEW ECB FAW SB SWCB TAW WBC	---	
9	Agrisure Viptera 3330 E-Z Refuge	CryAb, Vip3A, Cry1A.105+CryAb2	BCW CEW ECB FAW SB SWCB TAW WBC	---	
10	Agrisure Duracade 5122 E-Z Refuge	Cry1Ab, Cry1F, mCry3A, eCry3.1Ab	BCW ECB FAW SB SWCB RW	FAW WBC RW	
11	Agrisure Duracade 5222 E-Z Refuge	Cry1Ab, Cry1F, Vip3A, mCry3A, eCry3.1Ab	BCW CEW ECB FAW SB SWCB TAW WBC RW	RW	
<b>Herculex</b>					
12	Herculex 1 (HX1)	Cry1F	BCW ECB FAW SB SWCB	ECB FAW SWCB WBC	LL RR2 (most)
13	Herculex RW (HXRW)	Cry34/35Ab1	RW	RW	
14	Herculex XTRA (HXX)	Cry1F, Cry34/35Ab1	BCW ECB FAW SB SWCB RW	FAW SWCB WBC RW	
<b>Optimum</b>					
15	TRIssect (CHR)	Cry1F, mCry3A	BCW ECB FAW SB SWCB RW	ECB FAW SWCB WBC RW	LL RR2
16	Intrasect (YHR)	Cry1F, Cry1Ab	BCW ECB FAW SB SWCB	FAW WBC	LL RR2
17	Intrasect TRIssect (CYHR)	Cry1Ab, Cry1F, mCry3A	BCW ECB FAW SB SWCB RW	FAW WBC RW	LL RR2
18	Leptra (VYHR)	Cry1F, Cry1Ab, Vip3A	BCW CEW ECB FAW SB SWCB TAW WBC	---	LL RR2
19	Intrasect Xtra (YXR)	Cry1F, Cry1Ab, Cry34/35Ab1	BCW ECB FAW SB SWCB RW	FAW WBC RW	LL RR2
20	Intrasect Xtreme (CYXR)	Cry1F, Cry1Ab, mCry3A, Cry34/35Ab1	BCW ECB FAW SB SWCB RW	FAW WBC RW	LL RR2
21	AcreMax (AM)	Cry1F, Cry1Ab	BCW ECB FAW SB SWCB	FAW WBC	LL RR2
22	AcreMax CRW (AMRW)	Cry34/35Ab1	RW	RW	LL RR2
23	AcreMax1 (AM1)	Cry1F, Cry34/35Ab1	BCW ECB FAW SB SWCB RW	FAW SWCB WBC RW	LL RR2
24	AcreMax Leptra (AML)	Cry1Ab, Cry1F, Vip3A	BCW ECB FAW SB SWCB TAW WBC CEW	---	LL RR2
25	AcreMax TRIssect (AMT)	Cry1F, Cry1Ab, mCry3A	BCW ECB FAW SB SWCB RW	FAW WBC RW	LL RR2
26	AcreMax Xtra (AMX)	Cry1F, Cry1Ab, Cry34/35Ab1	BCW ECB FAW SB SWCB RW	FAW WBC RW	LL RR2
27	AcreMax Xtreme (AMXT)	Cry1F, Cry1Ab, mCry3A, Cry34/35Ab1	BCW ECB FAW SB SWCB RW	FAW WBC RW	LL RR2
<b>Yieldgard/Genuity</b>					
28	YieldGard CB (YGCB)	Cry1Ab	ECB SWCB	---	RR2
29	YieldGard VT Rootworm (YGRW)	Cry3Bb1	RW	RW	RR2
30	YieldGard VT Triple	Cry1Ab, Cry3Bb1	ECB SWCB RW	RW	RR2
31	VT Double PRO VT Double PRO RIB complete	Cry1A.105, Cry2Ab2	CEW ECB FAW SB SWCB	CEW	RR2
32	VT Triple PRO VT Triple PRO RIB complete	Cry1A.105, Cry2Ab2, Cry3Bb1	CEW ECB FAW SB SWCB RW	CEW RW	RR2
33	Trecepta (or RIB complete)	Cry1A.105, Cry2Ab2,Vip3A	BCW CEW ECB FAW SB SWCB TAW WBC	---	RR2
<b>Others</b>					
34	Smartstax Smartstax Refuge Advanced Smartstax RIB Complete	Cry1A.105, Cry2Ab2, Cry1F, Cry3Bb1, Cry34/35Ab1	BCW CEW ECB FAW SB SWCB RW	CEW WBC RW	LL RR2
35	Powercore (or Refuge Advanced)	Cry1A.105, Cry2Ab2, Cry1F	BCW ECB FAW SB SWCB CEW	CEW WBC	LL RR2
36	QROME (Q)	Cry1Ab, Cry1F, mCry3A, Cry34/35Ab1	BCW ECB FAW SB SWCB	FAW WBC RW	LL RR2
	<b>BCW</b> = black cutworm	<b>SB</b> = stalk borer	<b>GT</b> = glyphosate tolerant		
	<b>CEW</b> = corn earworm	<b>SWCB</b> = southern corn borer	<b>LL</b> = Liberty Link, glufosinate tolerant		
	<b>ECB</b> = European corn borer	<b>TAW</b> = true armyworm	<b>RR2</b> = Roundup Ready 2, glyphosate tolerant		
	<b>FAW</b> = fall armyworm	<b>WBC</b> = western bean cutworm			
	<b>RW</b> = corn rootworm				