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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Penn State College of Agricultural Sciences research, extension, and resident education programs are funded in part by Pennsylvania counties, the Commonwealth of Pennsylvania, and the U.S. Department of Agriculture.

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

Site:		Rock Springs, PA	
Cooperator		Rock Springs Agronomy Research Farm	
Planting Date		5/9/2019	
Soil Type		Hagerstown	
Herbicides	**pre-**	Lexar@ 3qts/ac	Durango @ 1.25 qts/ac
	post-	Glyphosate 2 qts/ac	
Previous Crop		Soybeans	
Tillage		None	
Starter Fertilizer		10.5 gal - 10-34-0	
Insecticide		None	
Manure		None	
Fertilizer		300 # lbs. per acre of 0-0-60 and 300#/ac Urea treated w agrotain	
Harvest Date		9/9/2019	

Field Summary:	The preplant nitrogen application had diminished by grain fill time. Yields were a little lower than desired. Fertility and rainfall were adequate this year.

Weather Summary:

Month	Precip.	GDD
May 9th-June 1st	3.71	275
June 1st-July 1st	2.84	473
July 1st-August 1st	2.65	723
August 1st-September 9th	4.47	720
Seasonal Total	**13.67**	**2191**

Precip. Data:	https://www.accuweather.com/
GDD data:	http://climatesmartfarming.org/tools/csf-growing-degree-day-calculator/

Penn State/PDMP Corn Silage Hybrid Testing Program 2019

Early maturity (85-103 day RM) silage hybrids in Central PA

Centre County location

Notes: SEE BACKGROUND TAB

Cooperator: PSU Agronomy Farm

PennState Extension & College of Agricultural Sciences — PDMP Professional Dairy Managers of Pennsylvania

Brand	Hybrid	Traits*	Dry Matter %**	Yield Tons/ Acre***	CP %DM	NDF %DM	Lignin %DM	Starch NIR %DM	Starch IVSD[2] %Starch	Ash %DM	Fat[3] %DM	NEL Mcal/lb	NDFD 12hr[4] %NDF DM	NDFD 30hr[5] %NDF DM	NDFD 120hr %NDF DM	NDFD 240hr %NDF DM	uNDF 240 %DM	Pop. plants/ac	Relative Maturity
Very Early (85-94 day) RM Silage Hybrids																			
Masters Choice	MCT3891	1	42.3	15.0	7.2	36.4	2.7	40.3	56.2	2.5	2.7	0.78	28.9	55.4	63.8	66.5	12.2	30,517	88
Hubner	H6038RCSS	34	41.8	15.8	6.7	32.7	2.5	44.1	51.6	2.6	2.9	0.80	28.4	57.1	64.7	67.4	10.7	34,000	89
Pioneer	P9377AMXT	27	41.2	16.6	6.2	36.3	2.7	41.3	60.9	2.4	2.5	0.78	29.2	55.1	64.2	67.0	12.0	32,667	93
LG Seeds	LG44C27VT2RIB	31	41	20.8	6.2	36.1	2.6	42.0	56.7	2.4	2.6	0.78	25.2	53.8	65.9	68.8	11.3	34,000	94
Local Seeds	AV4994 AM	21	40.1	17.7	6.4	33.8	2.5	43.6	53.2	2.5	2.8	0.79	29.8	58.3	66.8	69.6	10.3	32,500	94
Growmark FS	FS 4095X RIB	34	39.9	17.7	6.4	34.8	2.6	42.0	57.8	2.5	2.6	0.79	25.2	54.5	64.5	67.3	11.4	33,167	90
Local Seeds	LC9278 SSXRIB	34	39	16.8	6.7	35.3	2.6	42.0	57.2	2.5	2.9	0.79	25.4	55.6	65.5	68.3	11.2	33,333	92
Channel	192-98STXRIB	34	37.8	18.0	7.3	35.1	2.8	40.8	53.1	2.6	2.9	0.79	25.3	52.8	61.9	64.5	12.5	34,000	92
	85-94 day means		**40.4**	**17.3**	**6.6**	**35.1**	**2.6**	**42.0**	**55.8**	**2.5**	**2.7**	**0.79**	**27.2**	**55.3**	**64.7**	**67.4**	**11.5**	**33,023**	
Early (95-103 day) RM Silage Hybrids																			
Local Seeds	LC9888 VT2PRIB	31	40.8	17.7	6.3	33.8	2.6	44.0	57.8	2.4	2.9	0.79	29.1	55.6	63.8	66.5	11.3	33,167	98
Masters Choice	MCT4572	4	40.1	18.5	6.7	34.1	2.5	42.4	53.9	2.3	2.7	0.79	30.7	54.5	65.0	67.8	11.1	32,500	95
Channel	199-11STXRIB	34	40	20.3	6.3	33.7	2.5	43.4	51.6	2.5	2.9	0.80	26.5	54.8	65.8	68.6	10.6	33,333	99
Local Seeds	ZS9796 3220EZ	8	39.6	18.7	6.6	32.8	2.6	43.5	57.7	2.5	2.9	0.80	28.3	53.0	62.4	65.1	11.5	34,000	97
Dekalb	DKC47-55RIB	31	39.5	17.3	6.3	37.0	2.7	39.7	57.7	2.3	2.6	0.78	29.8	55.3	65.6	68.4	11.7	33,000	97
Chemgro Seeds	5909RSX	34	39.5	19.3	6.0	37.0	2.8	40.1	59.9	2.2	2.6	0.78	27.8	53.8	63.2	65.9	12.6	32,833	99
Mycogen	TMF2Q419	34	39.4	18.3	6.3	38.2	2.7	40.2	56.5	2.6	2.7	0.77	30.6	54.1	66.7	69.5	11.8	33,333	96
Hubner	H6124RCSS	34	39.1	16.5	6.5	35.6	2.7	40.7	59.0	2.5	2.7	0.78	29.2	58.0	64.4	67.2	11.7	33,500	96
Dekalb	DKC45-07RIB	34	39	17.1	7.4	32.6	2.4	43.4	59.0	2.8	2.8	0.80	29.9	56.1	66.9	69.8	9.9	32,833	95
Seed Consultants, Inc.	SCS 978AMXT	27	39	15.6	6.4	34.4	2.4	41.7	55.0	2.6	2.7	0.79	30.7	57.4	67.2	70.0	10.3	33,500	97
Hubner	H6172RCSS	34	39	17.7	6.7	37.4	2.7	38.9	52.6	2.5	2.4	0.77	29.1	55.6	65.8	68.6	11.8	32,333	98
LG Seeds	LG51C48VT2PRO	31	38.2	19.8	6.3	35.1	2.4	41.0	57.4	2.3	2.7	0.80	29.8	57.0	67.6	70.5	10.3	34,000	101
Seedway LLC	SW4000 GENSS (RIB)	34	37.6	19.0	6.5	36.8	2.7	39.1	54.4	2.5	2.7	0.78	28.3	56.6	65.0	67.8	11.9	34,000	98
Pioneer	P9998AMXT	27	37.5	15.9	6.0	34.6	2.6	42.0	61.8	2.5	2.7	0.79	30.4	56.4	64.9	67.7	11.2	33,167	99
Growmark FS	FS 5090X RIB	34	37.5	17.3	6.4	35.2	2.6	40.3	57.3	2.7	2.7	0.78	27.9	57.1	65.3	68.1	11.2	33,333	100
Agri-Gold	A632-07STX	34	36.9	18.6	6.3	37.0	2.7	38.3	57.5	2.5	2.6	0.78	29.1	55.1	65.0	67.8	11.9	34,000	102
Agri-Gold	A6267STXRIB	34	36.4	19.9	6.2	35.3	2.7	40.3	54.0	2.6	2.6	0.79	29.4	54.5	64.1	66.8	11.7	34,000	102
Blue River Organic Seed	48G35	Conv.	35.9	17.2	6.4	37.0	2.6	38.3	62.6	2.8	2.7	0.78	29.3	56.8	67.0	69.8	11.2	33,167	102
Dekalb	DKC53-27RIB	34	35.4	17.1	6.4	36.0	2.5	38.0	61.1	2.6	2.5	0.79	31.2	57.1	65.7	68.6	11.3	33,500	103
Mycogen	TMF01R87	34	35.2	18.3	6.3	41.8	2.9	33.6	62.0	2.4	2.5	0.76	28.8	54.6	65.3	68.1	13.4	33,333	101
Pioneer	P0242AMXT	27	34.9	16.6	6.3	35.4	2.5	39.9	60.2	2.7	2.4	0.78	30.1	56.7	66.9	69.8	10.7	30,833	102
Seed Consultants, Inc.	SCS 1018YHR	16	34.4	18.0	6.1	36.4	2.3	39.2	59.8	2.6	2.5	0.79	32.3	61.2	70.0	73.0	9.9	34,000	101
Seed Consultants, Inc.	EX-SC 105YHR	21	34	18.7	6.5	35.5	2.3	38.7	62.7	2.8	2.5	0.79	30.9	58.9	69.5	72.5	9.7	33,333	104
	95-103 day means		**37.8**	**18.0**	**6.4**	**35.8**	**2.6**	**40.3**	**57.9**	**2.5**	**2.7**	**0.79**	**29.5**	**56.1**	**65.8**	**68.6**	**11.2**	**33,261**	
	Overall Mean		**38.5**	**17.8**	**6.5**	**35.6**	**2.6**	**40.7**	**57.4**	**2.5**	**2.7**	**0.79**	**28.9**	**55.9**	**65.5**	**68.3**	**11.3**		
	LSD(0.1)		**2.2**	**1.9**	**0.6**	**2.8**	**0.3**	**3.5**	**3.6**	**0.2**	**0.2**	**NS[1]**	**2.8**	**2.8**	**2.3**	**2.4**	**1.6**		
	CV%		**4.3**	**7.6**	**7.0**	**5.8**	**7.7**	**6.4**	**4.6**	**6.5**	**5.9**	**1.69**	**7.0**	**3.6**	**2.6**	**2.6**	**10.4**		

* 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.

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

[4]-NDFD12hr was analyzed via wet chemistry, [5]-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
		Agrisure			
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: EZ0=GT ONLY EZ1= 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	
		Herculex			
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	
		Optimum			
15	TRIsect (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 TRIsect (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 TRIsect (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
		Yieldgard/Genuity			
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
		Others			
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
	BCW = black cutworm	**SB** = stalk borer	**GT** = glyphosate tolerant		
	CEW = corn earworm	**SWCB** = southern corn borer	**LL** = Liberty Link, glufosinate tolerant		
	ECB = European corn borer	**TAW** = true armyworm	**RR2** = Roundup Ready 2, glyphosate tolerant		
	FAW = fall armyworm	**WBC** = western bean cutworm			
	RW = corn rootworm				

Source: https://www.texasinsects.org/bt-corn-trait-table.html