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

Prepared by Greg W. Roth, James A. Breining, Alan R. Cook, and Jessica A. Williamson (Department of Plant Science).

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							
Site:		Landisville, PA - Field YS					
Cooperator		Landisville SEARC					
Planting Date		May 3, 2018					
Soil Type		Hagerstown silt loam, 0 to 3 percent slopes					
Herbicides	pre-	1qt-Credit 41 + 1qt - Atrazine + 4oz - Callisto + 1.5pt - Dual Magnum					
	post-	3oz - Status on 6/18					
Previous Crop		Soybeans					
Tillage		None					
Starter Fertilizer		10.5 gal - 10-34-0					
Insecticide		None					
Manure		None					
Fertilizer		180 units 32% UAN on 6/10					
Harvest Date		August 27, 2018					

## Field Summary:

The trials at Landisville were very consistent this year. Planting occurred in early May and emergence was very good. Fertility levels and weed control were also very good. Despite the persistent rain from mid-July through harvest, yield levels were very good.

Weather Summary:	May 3-August 27					
Month	Precip.	GDD				
May	5.15	442				
June	4.82	585				
July	9.73	743				
August	11.79	638				
Seasonal Total	31.49	2408				

Precip. Data:	http://www.theweathercollector.com/?gclid=Cj0KCQjw6fvdBRCbARIsABGZ-
	http://climatesmartfarming.org/tools/csf-growing-degree-day-calculator/

## Penn State/PDMP Corn Silage Hybrid Testing Program 2018 BMR (114-115) day RM silage hybrids in Landisville PA



Notes: SEE BACKGROUND TAB

Cooperator: Landisville Research Station



			Dry	Yield									NDFD		uNDF		
			Matter	Tons/	CP	NDF	Lignin	Starch	Ash	Fat <sup>2</sup>	NEL	30hr	120hr	240hr	240hr	Pop.	Relative
Brand	Hybrid	Traits*	%**	Acre***	%	%	%	%	%	%	Mcal/lb	%NDF	%NDF	%NDF	%NDF	plants/ac	Maturit
BMR Silage Hybrids																	
Mycogen	BMR14B96	34	30.8	15.1	9.2	36.5	1.7	32.7	2.9	2.8	0.80	72.6	83.5	87.0	13.0	33,167	114
Mycogen	BMR15B15	34	30.3	18.2	8.7	41.2	1.9	29.5	2.9	2.4	0.77	69.7	80.0	83.4	16.6	34,000	115
		Overall Mean	30.5	16.7	9.0	38.9	1.8	31.1	2.9	2.6	0.78	71.2	81.7	85.2	14.8	33,583	
		LSD(0.1)	13.0	6.7	0.8	19.2	0.6	23.4	0.9	1.5	0.11	1.9	7.8	8.0	8.0	2,433	
		CV%	17.8	16.9	3.6	20.7	14.8	31.5	12.4	23.6	5.65	1.1	4.0	3.9	22.7	3	

<sup>\*</sup> See tab " Trait Key" for individual trait designation.

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

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

<sup>\*\*\*</sup> 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,

<sup>&</sup>lt;sup>1</sup> - NS = Not Significant , <sup>2</sup> - Fat = Total Fatty Acids

Agrisure GT	Table Key # Conv.	Trait Family Product Conventional	<b>Bt protein(s)</b> None	Marketed for control of:  None	Resistance to a Bt protein in the trait package has developed in :	Herbicide tolerant?	
1	RR2	Roundup Ready 2				GT	
2   Agrisure GT/CR/LL/3010A							
3   Agrisure 3000 GT, 3011A						GT	
### Agrisure Viptera 3111			•	ECB SWCB		GT LL	
4 Agrisure Viptera 3110	3	Agrisure 3000 GT, 3011A	Cry1Ab, mCry3A		RW	GT LL	
5   Agrisure Viptera 3112   Cry1Ab, mCry3A, Vip3A   SWCB TAW WBC   FAW WBC   FAW WBC   TO   FAW WBC	4	Agrisure Viptera 3110	Cry1Ab, Vip3A			GT LL	
Agrisure 3122 F.Z Refuge	5	Agrisure Viptera 3111	Cry1Ab, mCry3A, Vip3A		RW	GT LL	
Agrisure 3122 E	6	Agrisure 3120 E-Z Refuge	Cry1Ab, Cry1F	BCW ECB FAW SB SWCB	FAW WBC		
S   Z, Refuge	7	Agrisure 3122 E-Z Refuge		BCW ECB FAW SB SWCB	FAW WBC RW	REFER TO BAG	
Agrisure Duracade 5122   E.   Cry1Ab, Cry1F, mCry3A,   BCW ECB FAW SB SWCB   FAW WBC RW   EZ1-C	8	•	Cry1Ab, Cry1F, Vip3A			FOR SPECIFIC LETTER CODE:	
Agrisure Duracade 5222 E. Z. Refuge   E. Z. Refuge   E. Z. Refuge   E. Cry3.1Ab, Cry1F, YiB3A, mCry3A, SWC8 TAW WBC   RW		Agrisure Duracade 5122 E-			FAW WBC RW	EZ0=GT ONLY EZ1= GT LL	
Herculex   (HX1)	10	Agrisure Duracade 5222 E-	Cry1Ab, Cry1F, Vip3A, mCry3A,		RW	0	
Herculex I (HXI)		Z Refuge					
12							
13   Herculex Xtra (HXX)		' '		BCW ECB FAW SB SWCB	-	LL RR2 (most)	
14   TRISect (CHR)	13	Herculex Xtra (HXX)	Cry1F, Cry34/35Ab1	BCW ECB FAW SB SWCB	FAW SWCB WBC RW	KKZ (IIIOSt)	
15			Optim	um			
16	14	TRIsect (CHR)	Cry1F, mCry3A	BCW ECB FAW SB SWCB	FAW SWCB WBC RW	LL RR2	
17	15	Intrasect (YHR)	Cry1F, Cry1Ab	BCW ECB FAW SB SWCB	FAW WBC	LL RR2	
17	16	Intrasect TRIsect (CYHR)	Cry1Ab, Cry1F, mCry3A	BCW ECB FAW SB SWCB	FAW WBC RW	LL RR2	
19	17	Leptra (VYHR)	Cry1F, Cry1Ab, Vip3A			LL RR2	
19	18	Intrasect Xtra (YXR)	Cry1F, Cry1Ab, Cry34/35Ab1	BCW ECB FAW SB SWCB	FAW WBC RW	LL RR2	
20	19	Intrasect Xtreme (CYXR)		BCW ECB FAW SB SWCB	FAW WBC RW	LL RR2	
21	20	AcreMax (AM)	•	BCW ECB FAW SB SWCB	FAW WBC	LL RR2	
AcreMax1 (AM1)   Cry1F, Cry34/35Ab1   BCW ECB FAW SB SWCB   FAW SWCB WBC RW   LL R	21	AcreMax CRW (AMRW)	Cry34/35Ab1		RW	LL RR2	
AcreMax Leptra (AML)  Cry1Ab, Cry1F, Vip3A  AcreMax TRisect (AMT)  Cry1F, Cry1Ab, mCry3A  BCW ECB FAW SB SWCB  TAW WBC CEW  AcreMax TRisect (AMT)  Cry1F, Cry1Ab, mCry3A  BCW ECB FAW SB SWCB  FAW WBC RW  LL R  Cry1F, Cry1Ab, mCry3A  BCW ECB FAW SB SWCB  FAW WBC RW  LL R  Cry1F, Cry1Ab, mCry3A  Cry34/35Ab1  BCW ECB FAW SB SWCB  FAW WBC RW  LL R  Cry1F, Cry1Ab, mCry3A  Cry34/35Ab1  BCW ECB FAW SB SWCB  FAW WBC RW  LL R  BCW ECB FAW SB SWCB  FAW WBC RW  LL R  BCW ECB FAW SB SWCB  FAW WBC RW  LL R  RW  RR  27 YieldGard CB (YGCB)  Cry1Ab, Cry3Bb1  Cry1Ab, Cry3Bb1  Cry1Ab, Cry3Bb1  Cry1Ab, Cry3Bb1  Cry1Ab, Cry3Bb1  Cry1Ab, Cry3Bb1  ECB SWCB  RW  RR  29 YieldGard VT Triple  Cry1Ab, Cry3Bb1  CEW ECB FAW SB SWCB  CEW ECB FAW SB  SWCB TAW WBC  CEW WBC RW  LL R  SMCB TAW WBC  CEW WBC RW  LL R  CRY1A.105, Cry2Ab2, Cry1F,  Cry3A/35Ab1  SWCB  SWCB FAW SB SWCB  CEW WBC RW  LL R  CEW ECB FAW SB SWCB  CEW WBC RW  LL R  CEW ECB FAW SB SWCB  CEW WBC RW  LL R  CEW ECB FAW SB SWCB  CEW WBC RW  LL R  CEW ECB FAW SB SWCB  CEW WBC RW  LL R  CEW ECB FAW SB SWCB  CEW WBC RW  LL R  CEW ECB FAW SB SWCB  CEW WBC RW  LL R  CEW ECB FAW SB SWCB  CEW WBC RW  LL R  CEW ECB FAW SB SWCB  CEW WBC RW  LL R  CEW ECB FAW SB SWCB  CEW WBC RW  LL R  CEW ECB FAW SB SWCB  CEW WBC RW  LL R  CEW ECB FAW SB SWCB  CEW WBC RW  LL R  CEW ECB FAW SB SWCB  CEW WBC RW  LL R  CEW ECB FAW SB SWCB  CEW WBC RW  LL R  CEW ECB FAW SB SWCB  CEW WBC RW  LL R  CEW ECB FAW SB SWCB  CEW WBC RW  LL R  CEW ECB FAW SB SWCB  CEW WBC RW  CEW ECB FAW SB SWCB  CEW	22	AcreMax1 (AM1)		BCW ECB FAW SB SWCB	FAW SWCB WBC RW	LL RR2	
24 AcreMax TRIsect (AMT)	23	AcreMax Leptra (AML)				LL RR2	
25 AcreMax Xtra (AMX)	24	AcreMax TRIsect (AMT)	Crv1E, Crv1Ab, mCrv3A		FAW WBC RW	LL RR2	
Cry1F, Cry1Ab, mCry3A, Cry34/35Ab1   BCW ECB FAW SB SWCB   FAW WBC RW   LL R					+	LL RR2	
YieldGard CB (YGCB)   Cry1Ab   ECB SWCB   FAW WBC RW   LL R		rioi entian rioi a (riinni)		Bev Leb 1700 3B 3Web			
Yieldgard/Genuity27YieldGard CB (YGCB)Cry1AbECB SWCBRR28YieldGard VT RootwormCry38b1RWRR29YieldGard VT TripleCry1Ab, Cry3Bb1ECB SWCBRWRR30Genuity VT Double PRO (or as RIB complete)Cry1A.105, Cry2Ab2CEW ECB FAW SB SWCBCEWRR31Genuity VT Triple PRO (or as RIB complete)Cry1A.105, Cry2Ab2, Cry3Bb1CEW ECB FAW SB SWCBCEW RWRR32Genuity SmartStax RIB CompleteCry1A.105, Cry2Ab2, Cry1F, Cry3Bb1, Cry34/35Ab1BCW CEW ECB FAW SB SWCBRWLL R33Trecepta (or RIB complete)Cry1A.105, Cry2Ab2, Vip3ABCW CEW ECB FAW SB SWCBRR34Smartstax (or as Refuge Advanced)Cry1A.105, Cry2Ab2, Cry1F, Cry3Bb1, Cry34/35Ab1BCW CEW ECB FAW SB SWCBRR35Powercore (or Refuge Advanced)Cry1A.105, Cry2Ab2, Cry1F, Cry3B, Cry34/35Ab1BCW ECB FAW SB SWCBCEW WBC RWLL R36QROME (Q)Cry1A.05, Cry2Ab2, Cry1F, Cry3B, Cry34/35Ab1BCW ECB FAW SB SWCBCEW WBC RWLL R36QROME (Q)Cry1A.05, Cry3A/35Ab1BCW ECB FAW SB SWCBFAW WBC RWLL R36QROME (Q)Cry1A.05, Cry3A/35Ab1BCW ECB FAW SB SWCBFAW WBC RWLL R4CEW = Elack cutwormSB = stalk borerGT = glyphosate tolerantLL = Liberty Link, glufosinate tolerant4CEW = Corn earwormSWCB = southern corn borerLL = Liberty Link, glufosinate tolerant4 <td< td=""><td>26</td><td>AcreMax Xtreme (AMXT)</td><td>, , , , , ,</td><td>BCW ECB FAW SB SWCB</td><td>FAW WBC RW</td><td>LL RR2</td></td<>	26	AcreMax Xtreme (AMXT)	, , , , , ,	BCW ECB FAW SB SWCB	FAW WBC RW	LL RR2	
27YieldGard CB (YGCB)Cry1AbECB SWCBRR28YieldGard VT RootwormCry3Bb1RWRR29YieldGard VT TripleCry1Ab, Cry3Bb1ECB SWCBRWRR30Genuity VT Double PRO (or as RIB complete)Cry1A.105, Cry2Ab2CEW ECB FAW SB SWCBCEWRR31Genuity VT Triple PRO (or as RIB complete)Cry1A.105, Cry2Ab2, Cry3Bb1CEW ECB FAW SB SWCBCEW RWRR32Genuity SmartStax RIB CompleteCry1A.105, Cry2Ab2, Cry1F, Cry3Bb1, Cry34/35Ab1BCW CEW ECB FAW SB SWCBRWLL R33Trecepta (or RIB complete)Cry1A.105, Cry2Ab2, Vip3ABCW CEW ECB FAW SB SWCBRR34Smartstax (or as Refuge Advanced)Cry1A.105, Cry2Ab2, Cry1F, Cry3Bb1, Cry34/35Ab1BCW CEW ECB FAW SB SWCBCEW WBC RWLL R35Powercore (or Refuge Advanced)Cry1A.105, Cry2Ab2, Cry1FBCW ECB FAW SB SWCBCEW WBC RWLL R36QROME (Q)Cry1Ab, Cry1F, mCry3A, Cry34/35Ab1BCW ECB FAW SB SWCBCEW WBC RWLL R36QROME (Q)Cry1Ab, Cry1F, mCry3A, Cry34/35Ab1BCW ECB FAW SB SWCBFAW WBC RWLL R36QROME (Q)Cry1Ab, Cry1F, mCry3A, Cry34/35Ab1BCW ECB FAW SB SWCBFAW WBC RWLL R36DEW = black cutwormSB = stalk borerGT = glyphosate tolerantLL = Liberty Link, glufosinate tolerant4ECB = European corn borerTAW = true armywormRR2 = Roundup Ready 2, glyphosate tolerant				Genuity			
28YieldGard VT RootwormCry3Bb1RWRR29YieldGard VT TripleCry1Ab, Cry3Bb1ECB SWCBRWRR30Genuity VT Double PRO (or as RIB complete)Cry1A.105, Cry2Ab2CEW ECB FAW SB SWCBCEWRR31Genuity VT Triple PRO (or as RIB complete)Cry1A.105, Cry2Ab2, Cry3Bb1CEW ECB FAW SB SWCBCEW RWRR32Genuity SmartStax RIB CompleteCry1A.105, Cry2Ab2, Cry1F, Cry3Bb1, Cry34/35Ab1BCW CEW ECB FAW SB SWCB WBCRWLL R33Trecepta (or RIB complete)Cry1A.105, Cry2Ab2, Vip3ABCW CEW ECB FAW SB SWCB TAW WBCRR34Smartstax (or as Refuge Advanced)Cry1A.105, Cry2Ab2, Cry1F, Cry3Bb1, Cry34/35Ab1BCW CEW ECB FAW SB SWCBCEW WBC RWLL R35Powercore (or Refuge Advanced)Cry1A.105, Cry2Ab2, Cry1F Cry3Ab, Cry1F, mCry3A, Cry34/35Ab1BCW ECB FAW SB SWCB CEWCEW WBCLL R36QROME (Q)Cry1A.05, Cry2Ab2, Cry1F Cry3A/35Ab1BCW ECB FAW SB SWCB CEWCEW WBC RWLL R36QROME (Q)Cry1Ab, Cry1F, mCry3A, Cry34/35Ab1BCW ECB FAW SB SWCBFAW WBC RWLL R36QROME (Q)Cry1Ab, Cry1F, mCry3A, Cry34/35Ab1BCW ECB FAW SB SWCBFAW WBC RWLL RBCW = black cutwormSB = stalk borerGT = glyphosate tolerantLL = Liberty Link, glufosinate tolerantECB = European corn borerTAW = true armywormRR2 = Roundup Ready 2, glyphosate tolerant	27	YieldGard CB (YGCB)		•		RR2	
29YieldGard VT TripleCry1Ab, Cry3Bb1ECB SWCBRWRR30Genuity VT Double PRO (or as RIB complete)Cry1A.105, Cry2Ab2CEW ECB FAW SB SWCBCEWRR31Genuity VT Triple PRO (or as RIB complete)Cry1A.105, Cry2Ab2, Cry3Bb1CEW ECB FAW SB SWCBCEW RWRR32Genuity SmartStax RIB CompleteCry1A.105, Cry2Ab2, Cry1F, Cry3Bb1, Cry34/35Ab1BCW CEW ECB FAW SB SWCBRWLL R33Trecepta (or RIB complete)Cry1A.105, Cry2Ab2, Vip3ABCW CEW ECB FAW SB SWCBRR34Smartstax (or as Refuge Advanced)Cry1A.105, Cry2Ab2, Cry1F, Cry3Bb1, Cry34/35Ab1BCW CEW ECB FAW SB SWCBCEW WBC RWLL R35Powercore (or Refuge Advanced)Cry1A.105, Cry2Ab2, Cry1F CEWBCW ECB FAW SB SWCBCEW WBC RWLL R36QROME (Q)Cry1Ab, Cry1F, mCry3A, Cry34/35Ab1BCW ECB FAW SB SWCBFAW WBC RWLL R36QROME (Q)Cry1Ab, Cry1F, mCry3A, Cry34/35Ab1BCW ECB FAW SB SWCBFAW WBC RWLL R36BCW = black cutwormSB = stalk borerGT = glyphosate tolerantLL = Liberty Link, glufosinate tolerantCEW = corn earwormSWCB = southern corn borerLL = Liberty Link, glufosinate tolerantECB = European corn borerTAW = true armywormRR2 = Roundup Ready 2, glyphosate tolerant		` '	-		RW	RR2	
Genuity VT Double PRO (or as RIB complete)  Genuity VT Triple PRO (or as RIB complete)  Cry1A.105, Cry2Ab2, Cry3Bb1  Genuity VT Triple PRO (or as RIB complete)  Cry1A.105, Cry2Ab2, Cry3Bb1  Genuity SmartStax RIB Complete  Cry1A.105, Cry2Ab2, Cry1F, Cry3Bb1, Cry34/35Ab1  Trecepta (or RIB complete)  Cry1A.105, Cry2Ab2, Cry1F, Cry3Bb1, Cry34/35Ab1  SWCB WBC  RR  BCW CEW ECB FAW SB SWCB WBC  RR  LL R  SWCB TAW WBC  SWCB TAW WBC  SWCB TAW SB CEW WBC RW  LL R  Cry1A.105, Cry2Ab2, Cry1F, Cry3Bb1, Cry34/35Ab1  SWCB TAW SB SWCB SWCB SWCB TAW SB SWCB			· · · · · · · · · · · · · · · · · · ·	ECB SWCB		RR2	
Genuity VT Triple PRO (or as RIB complete)  Genuity SmartStax RIB Complete  Genuity SmartStax RIB Complete  Cry1A.105, Cry2Ab2, Cry1F, RIB Complete  Cry3Ab1, Cry34/35Ab1  Trecepta (or RIB complete)  Smartstax (or as Refuge Advanced)  Powercore (or Refuge Advanced)  GROME (Q)  Cry1A.105, Cry2Ab2, Cry1F  Cry3Ab1, Cry3Ab1  CEW ECB FAW SB SWCB  BCW CEW ECB FAW SB SWCB  SWCB TAW WBC  CEW WBC RW  LL R  BCW CEW ECB FAW SB SWCB TAW WBC  CEW WBC RW  LL R  BCW CEW ECB FAW SB SWCB SWCB SWCB SWCB SWCB SWCB SWCB SW	30	-			CEW	RR2	
Genuity SmartStax RIB Complete Cry1A.105, Cry2Ab2, Cry1F, Cry3Bb1, Cry34/35Ab1 SWCB WBC  Trecepta (or RIB complete) Cry1A.105, Cry2Ab2, Vip3A  SWCB TAW WBC  SmartStax (or as Refuge Advanced) Cry1A.105, Cry2Ab2, Cry1F, Cry3Bb1, Cry34/35Ab1  SWCB TAW WBC  Cry1A.105, Cry2Ab2, Cry1F, Cry3Bb1, Cry34/35Ab1  SWCB SWCB TAW WBC  CEW WBC RW  LL R  BCW CEW ECB FAW SB SWCB CEW WBC RW  LL R  SWCB SWCB SWCB SWCB SWCB CEW WBC RW  LL R  CEW WBC LL R  GEW ECB FAW SB SWCB CEW WBC LL R  GEW  SB SWCB SWCB SWCB SWCB CEW WBC C	31	Genuity VT Triple PRO (or as	Cry1A.105, Cry2Ab2, Cry3Bb1	CEW ECB FAW SB SWCB	CEW RW	RR2	
Trecepta (or RIB complete)  Cry1A.105, Cry2Ab2,Vip3A  Cry1A.105, Cry2Ab2,Vip3A  SwCB TAW WBC   Others  Cry1A.105, Cry2Ab2, Cry1F,  SwCB SWCB FAW SB SWCB TAW WBC  Cry1A.105, Cry2Ab2, Cry1F,  Cry3Bb1, Cry34/35Ab1  SWCB  CEW WBC RW  LL R  Cry1A.105, Cry2Ab2, Cry1F,  Cry3Bb1, Cry34/35Ab1  BCW ECB FAW SB SWCB CEW WBC LL R  Cry1A.105, Cry2Ab2, Cry1F Advanced)  Cry1A.105, Cry2Ab2, Cry1F BCW ECB FAW SB SWCB CEW WBC LL R  Cry1Ab, Cry1F, mCry3A, Cry34/35Ab1  BCW ECB FAW SB SWCB FAW WBC RW  LL R  CEW = black cutworm SB = stalk borer 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	32	Genuity SmartStax			RW	LL RR2	
Others       34     Smartstax (or as Refuge Advanced)     Cry1A.105, Cry2Ab2, Cry1F, Cry34/35Ab1     BCW CEW ECB FAW SB SWCB     CEW WBC RW     LL R       35     Powercore (or Refuge Advanced)     Cry1A.105, Cry2Ab2, Cry1F CEW     BCW ECB FAW SB SWCB CEW     CEW WBC     LL R       36     QROME (Q)     Cry1Ab, Cry1F, mCry3A, Cry34/35Ab1     BCW ECB FAW SB SWCB FAW WBC RW     LL R       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	33	·		BCW CEW ECB FAW SB		RR2	
Smartstax (or as Refuge Advanced)			Othe				
Powercore (or Refuge Advanced)  Cry1A.105, Cry2Ab2, Cry1F  BCW ECB FAW SB SWCB CEW WBC  LL R  ROW ECB FAW SB SWCB CEW WBC  LL R  ROW ECB FAW SB SWCB CEW WBC  LL R  BCW ECB FAW SB SWCB FAW WBC RW  LL R  Cry34/35Ab1  BCW ECB FAW SB SWCB FAW WBC RW  LL R  GT = glyphosate tolerant  CEW = corn earworm  SWCB = southern corn borer  ECB = European corn borer  TAW = true armyworm  RR2 = Roundup Ready 2, glyphosate tolerant	34		Cry1A.105, Cry2Ab2, Cry1F,	BCW CEW ECB FAW SB	CEW WBC RW	LL RR2	
QROME (Q)  Cry1Ab, Cry1F, mCry3A, Cry34/35Ab1  BCW ECB FAW SB SWCB FAW WBC RW  LL R  GT = glyphosate tolerant  CEW = corn earworm SWCB = southern corn borer ECB = European corn borer TAW = true armyworm RR2 = Roundup Ready 2, glyphosate tolerant	35	Powercore (or Refuge		BCW ECB FAW SB SWCB	CEW WBC	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	36	·			FAW WBC RW	LL RR2	
CEW = corn earworm SWCB = southern corn borer ECB = European corn borer TAW = true armyworm RR2 = Roundup Ready 2, glyphosate tolerant		PCW - black outres		GT = glyphosoto tolerant			
ECB = European corn borer TAW = true armyworm RR2 = Roundup Ready 2, glyphosate tolerant					lamant		
				, ,			
FAW = Tall armyworm   WBC = western bean cutworm		·	•	KKZ = Koundup Ready 2, glyph	osate tolerant		
RW = corn rootworm		•	wbc = western bean cutworm				