

# **Corn Silage Tests in Tennessee**

## **2018**

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## CORN SILAGE YIELD TESTS

**2018**

### Experimental Procedures

**AgResearch and Education Center (REC) Tests:** Thirteen corn hybrids were evaluated for silage yield and quality in 2018. The tests were conducted at the East Tennessee (Knoxville), Highland Rim (Springfield), Middle Tennessee (Spring Hill), and Plateau (Crossville) RECs. The plots at all locations consisted of two rows, planted 30 inches apart, 30 feet in length, and replicated three times. Yields presented were adjusted to both dry weight and 65% moisture. The plant populations, as well as the planting and harvesting dates, are given in Table 1. Plots were harvested using commercial silage harvesters. A sub-sample of approximately 3 lbs was taken from each plot for analysis. Fresh weight and dried weight were recorded on each sample for determination of moisture at harvest. Dried samples were then ground and analyzed for nutritional content. Silage quality analyses were provided by the UT Beef and Forage Center using the 2017 unfermented corn silage calibration model developed by the NIRS Consortium (Hillsboro, WI). Predictions for milk production per ton and milk production per acre were calculated using the University of Wisconsin Milk2006 program.

**Growing Season:** Trials were planted at the end of April to early/mid May. Throughout the state, cold temperatures and persistent rainfall early in the season delaying planting one to two weeks. Statewide corn planting was on par with five year average by mid-May with 86% of corn planted in Tennessee. By mid-August, 68% of the crop rated good to excellent, with rates increasing by mid-September to 73% of the crop rated good to excellent.

### Interpretation of Data:

The tables on the following pages have been prepared with the entries listed in order of yield performance, the highest-yielding entry being listed first. Mean separation was performed using the **Fisher’s Protected LSD (Least Significant Difference) test**. The mean trait value of any two entries being compared must differ by at least the LSD amount shown to be considered different at the 5% level of probability of significance. To simplify interpretation, **Mean Separation Letters** have been listed next to each entry for traits analyzed across locations. Hybrids that have any letter in common are not significantly different in yield at the 5% level of probability based on the LSD test. Hybrids with performance not significantly different from the top performing hybrid will have an “a” included in the list of mean separation letters next to that entry.

### Results

**Table 1. Location information from University of Tennessee Institute of Agriculture (UTIA) AgResearch and Education Centers (REC) where corn silage variety tests were conducted in 2018.**

Location	AgResearch and Education Center	Planting Date	Harvest Date	Plant Population	Soil Type
Knoxville	East Tennessee	04/27/18	08/15/18	33166	Shady Loam
Crossville	Plateau	05/18/18	09/05/18	33253	Lily Loam
Spring Hill	Middle Tennessee	05/01/18	08/03/18	30149	Maury Silt Loam
Springfield	Highland Rim	04/20/18	08/03/18	30909	Dickson Silt Loam

**Table 2-a. Mean yield and agronomic traits across locations of 13 corn hybrids evaluated for silage in small plot replicated trials at four REC locations in Tennessee during 2018. Analysis included hybrid performance over a 1 yr (2018), 2 yr (2017-2018) and 3 yr (2016-2018) period.**

Hybrid	Herbicide Pkg <sup>†</sup>	Insect Pkg. <sup>†</sup>	Avg. Yield Dry Weight (tons/acre)			Avg. Yield 65% Moisture (tons/acre)			Milk/ton <sup>§</sup> (lbs/ton)			Milk/acre <sup>§</sup> (lbs/acre)		
			1 yr <sup>‡</sup>	2 yr	3 yr	1 yr	2 yr	3 yr	1 yr	2 yr	3 yr	1 yr	2 yr	3 yr
Croplan S5900VT2P***	RR	VT2P	8.8 a	8.9 a	8.8 a	25 a	26 a	25 a	2840 a-c	2933 d	2922 b	25056 a	26182 a	25844 a
TN Exp TN1803W	CONV	CONV	8.3 a			24 a			2480 d			20692 a	a	
Augusta A7768***	GT,LL	VIP3110	8.2 a	8.5 ab	8.4 ab	24 a	24 ab	24 ab	3003 a	3065 a-c	3035 a	24632 a	26137 a	25301 a
Terral 25BHR26	RR2,LL	YGCB,HX1	8.0 a	8.2 b	8.1 b	23 a	23 b	23 b	2936 a-c	3107 ab	3093 a	23511 a	25526 a	24230 a
Masters Choice MCT6552	RR,LL	VIP3110	8.0 a			23 a			2790 c			22487 a	a	
Croplan S5700VT2P	RR	VT2P	8.0 a			23 a			2778 c			22270 a	a	
Taylor Seed Farms 8890VT2P	RR	VT2P	7.9 a			23 a			3001 a			23713 a	a	
Masters Choice MCT6653**	RR,LL	3000GT	7.8 a	8.2 b		22 a	23 b		2810 bc	2952 d		22043 a	24309 a	
Croplan 5678SS**	RR,LL	VT2P	7.7 a	8.0 b		22 a	23 b		2836 bc	2949 d		21853 a	23749 a	
Masters Choice MCT6733	RR,LL	3000GT	7.7 a	8.0 b		22 a	23 b		2796 c	2962 cd		21539 a	23746 a	
Terral 28BHR18	RR2,LL	YGCB,HX1	7.6 a			22 a			2862 a-c			22744 a	a	
Terral 25BHR89	RR2,LL	YGCB,HX1	7.6 a	8.2 b		22 a	23 b		2863 a-c	3014 b-d		21750 a	25353 a	
Masters Choice MCT6363	RR,LL	3000GT	7.4 a	7.4 c		21 a	21 c		2960 ab	3122 a		23455 a	23825 a	
Average			7.9	8.2	8.5	23	23	24	2843	3013	3017	22750	24853	25125
Standard Error			0.4	0.5	0.4	1	1	1	98	137	83	1229	1886	1760
L.S.D. <sub>.05</sub>			N.S.	0.5	0.5	N.S.	2	1	164	105	101	N.S.	N.S.	N.S.
C.V.			14	11	12	14	11	12	7	6	6	18	15	17
Plots per entry (reps x locs.)			12	24	36	12	24	36	12	24	36	12	24	36

**Table 2-a, cont.**

Hybrid	Herbicide Pkg <sup>†</sup>	Insect Pkg. <sup>†</sup>	Moisture at Harvest (%)			Plant Height (inches)			Ear Height (inches)			Lodging <sup>  </sup> (%)		
			1 yr	2 yr	3 yr	1 yr	2 yr	3 yr	1 yr	2 yr	3 yr	1 yr	2 yr	3 yr
Croplan S5900VT2P***	RR	VT2P	59 a-c	64 a	64 a	116 c-e	118 c	115 a	51 cd	50 b	49 a	0.0 c	0.0 a	0.0 b
TN Exp TN1803W	CONV	CONV	61 a			133 a			69 a			2.0 a		
Augusta A7768***	GT,LL	VIP3110	60 a-c	64 ab	63 a	119 bc	122 ab	118 a	49 d-f	46 c	45 c	0.5 b	0.4 a	0.3 a
Terral 25BHR26	RR2,LL	YGCB,HX1	59 a-c	64 ab	63 a	115 c-e	117 c	114 a	52 cd	49 b	47 b	0.0 c	0.0 a	0.0 b
Masters Choice MCT6552	RR,LL	VIP3110	55 e			112 ef			45 f			0.1 bc		
Croplan S5700VT2P	RR	VT2P	61 a			117 cd			53 bc			0.0 bc		
Taylor Seed Farms 8890VT2P	RR	VT2P	61 ab			113 de			50 c-e			0.1 bc		
Masters Choice MCT6653**	RR,LL	3000GT	58 c-e	62 b-d		122 b	125 a		56 b	53 a		0.2 bc	0.1 a	
Croplan 5678SS**	RR,LL	VT2P	58 b-d	62 a-d		105 g	108 e		46 f	43 d		0.1 bc	0.1 a	
Masters Choice MCT6733	RR,LL	3000GT	57 de	61 d		117 cd	119 bc		47 ef	44 d		0.1 bc	0.0 a	
Terral 28BHR18	RR2,LL	YGCB,HX1	59 b-d			115 c-e			52 b-d			0.1 bc		
Terral 25BHR89	RR2,LL	YGCB,HX1	60 a-c	62 cd		114 c-e	119 bc		51 cd	50 b		0.0 c	0.1 a	
Masters Choice MCT6363	RR,LL	3000GT	58 c-e	63 a-c		108 fg	112 d		47 ef	45 cd		0.0 c	0.0 a	
Average			59	63	63	116	117	116	51	48	47	0.2	0.1	0.1
Standard Error			3	4	3	3	3	3	3	3	3	0.1	0.03	0.03
L.S.D. <sub>.05</sub>			2	2	N.S.	5	3	N.S.	4	3	2	-	N.S.	-
C.V.			5	4	4	5	5	5	8	8	7	188	198	211
Plots per entry (reps x locs.)			12	24	36	12	24	36	12	24	36	12	24	36

<sup>†</sup> For a full description of abbreviated biotech traits, see table 6.

<sup>‡</sup> Hybrids that have any MS letter in common, within a column, are not significantly different at the 5% level of probability using a least significant difference (LSD) mean separation test.

<sup>§</sup> Based on University of Wisconsin Milk2006 software program.

<sup>||</sup> Lodging data was transformed due to non-normality. Least square means were back-transformed for ease of interpretation, therefore mean separation letters but no LSD value are given.

**Table 2-b. Mean dry weight yield and feed quality characteristics across locations of 13 corn hybrids evaluated for silage in small plot replicated trials at four REC locations in Tennessee during 2018. Analysis included hybrid performance across a 1 yr (2018), 2 yr (2017-2018) and 3 yr (2016-2018) period.**

Hybrid	Herbicide Pkg <sup>†</sup>	Insect Pkg. <sup>†</sup>	Avg. Yield Dry Weight (tons/acre)			Crude Protein <sup>‡</sup> (% dm)			Neutral Detergent Fiber <sup>‡</sup> (% dm)			30 hr In Vitro Neutral Detergent Fiber Digestibility <sup>‡</sup> (% of NDF)		
			1 yr <sup>‡</sup>	2 yr	3 yr	1 yr	2 yr	3 yr	1 yr	2 yr	3 yr	1 yr	2 yr	3 yr
Croplan S5900VT2P***	RR	VT2P	8.8 a	8.9 a	8.8 a	7.0 b-d	7.3 b	7.3 b	46.1 b-d	50.3 ab	50.6 a	44.7 a	51.4 bc	51.2 a
TN Exp TN1803W	CONV	CONV	8.3 a			6.2 e			56.1 a			44.1 a		
Augusta A7768***	GT,LL	VIP3110	8.2 a	8.5 ab	8.4 ab	7.0 bc	7.1 bc	7.1 b	44.2 cd	48.1 b-d	48.7 a	46.3 a	52.0 ab	51.6 a
Terral 25BHR26	RR2,LL	YGCB,HX1	8.0 a	8.2 b	8.1 b	7.6 a	7.8 a	7.8 a	45.9 b-d	47.4 cd	47.5 a	47.6 a	53.7 a	53.2 a
Masters Choice MCT6552	RR,LL	VIP3110	8.0 a			6.5 c-e			45.0 b-d			44.3 a		
Croplan S5700VT2P	RR	VT2P	8.0 a			6.5 de			48.1 bc			44.5 a		
Taylor Seed Farms 8890VT2P	RR	VT2P	7.9 a			6.9 b-d			44.6 cd			46.4 a		
Masters Choice MCT6653**	RR,LL	3000GT	7.8 a	8.2 b		6.9 b-d	7.1 bc		49.6 b	52.4 a		47.7 a	53.3 a	
Croplan 5678SS**	RR,LL	VT2P	7.7 a	8.0 b		7.1 b	7.2 bc		46.1 b-d	49.0 bc		44.4 a	50.0 c	
Masters Choice MCT6733	RR,LL	3000GT	7.7 a	8.0 b		6.5 c-e	6.8 c		48.0 bc	49.9 a-c		45.6 a	52.1 ab	
Terral 28BHR18	RR2,LL	YGCB,HX1	7.6 a			7.0 b-d			47.7 b-d			46.1 a		
Terral 25BHR89	RR2,LL	YGCB,HX1	7.6 a	8.2 b		6.9 b-d	7.0 bc		47.1 b-d	48.6 b-d		44.5 a	52.3 ab	
Masters Choice MCT6363	RR,LL	3000GT	7.4 a	7.4 c		6.6 b-e	6.8 c		43.3 d	46.2 d		46.7 a	52.7 ab	
Average			7.9	8.2	8.5	6.8	7.1	7.4	47.1	49.0	48.9	45.6	52.2	52.0
Standard Error			0.4	0.5	0.4	0.5	0.4	0.3	3.4	2.8	2.5	2.0	6.1	3.7
L.S.D. <sub>.05</sub>			N.S.	0.5	0.5	0.5	0.4	0.3	4.7	2.7	N.S.	N.S.	2.0	N.S.
C.V.			14	11	12	10	9	7	12	10	9	8	7	6
Plots per entry (reps x locs.)			12	24	36	12	24	36	12	24	36	12	24	36

**Table 2-b, cont.**

Hybrid	Herbicide Pkg <sup>†</sup>	Insect Pkg. <sup>†</sup>	Starch <sup>‡</sup> (% dm)			Acid Detergent Fiber <sup>‡</sup> (% dm)			Total Digestible Nutrients <sup>‡</sup> (% dm)			Net Energy for Lactation <sup>‡</sup> (Mcal/lb)		
			1 yr	2 yr	3 yr	1 yr	2 yr	3 yr	1 yr	2 yr	3 yr	1 yr	2 yr	3 yr
Croplan S5900VT2P***	RR	VT2P	26.5 a-c	22.2 cd	22.7 a	26.3 bc	29.4 ab	28.9 a	65.6 a-c	67.5 c	67.7 b	0.63 a-c	0.64 c	0.66 b
TN Exp TN1803W	CONV	CONV	20.0 d			34.0 a			60.9 d			0.58 d		
Augusta A7768***	GT,LL	VIP3110	28.9 a-c	25.2 bc	25.2 a	25.1 c	27.6 b-d	27.5 a	67.8 a	69.1 ab	69.1 ab	0.66 a	0.66 ab	0.68 a
Terral 25BHR26	RR2,LL	YGCB,HX1	26.3 a-c	25.7 ab	26.2 a	26.7 bc	27.3 cd	26.7 a	67.3 ab	70.0 a	70.2 a	0.64 a-c	0.67 ab	0.69 a
Masters Choice MCT6552	RR,LL	VIP3110	30.5 ab			25.8 bc			64.9 c			0.62 bc		
Croplan S5700VT2P	RR	VT2P	24.3 cd			27.4 bc			64.7 c			0.62 c		
Taylor Seed Farms 8890VT2P	RR	VT2P	28.5 a-c			25.9 bc			67.9 a			0.65 a		
Masters Choice MCT6653**	RR,LL	3000GT	24.2 cd	22.1 d		29.2 b	30.8 a		65.6 a-c	68.0 bc		0.62 c	0.64 c	
Croplan 5678SS**	RR,LL	VT2P	27.2 a-c	25.4 b		26.4 bc	28.4 b-d		65.3 bc	67.3 c		0.63 a-c	0.65 c	
Masters Choice MCT6733	RR,LL	3000GT	26.2 a-c	24.9 b-d		27.8 bc	28.9 a-c		65.1 bc	67.9 bc		0.62 c	0.65 c	
Terral 28BHR18	RR2,LL	YGCB,HX1	25.4 bc			27.6 bc			66.1 a-c			0.63 a-c		
Terral 25BHR89	RR2,LL	YGCB,HX1	26.0 a-c	25.6 b		27.3 bc	28.0 b-d		66.0 a-c	68.6 a-c		0.64 a-c	0.65 bc	
Masters Choice MCT6363	RR,LL	3000GT	30.8 a	28.7 a		24.9 c	26.8 d		67.4 ab	69.9 a		0.65 ab	0.67 a	
Average			26.5	25.0	24.7	27.3	28.4	27.7	65.7	68.5	69.0	0.63	0.65	0.67
Standard Error			4.0	2.6	2.6	2.4	1.8	1.5	1.2	2.3	1.3	0.02	0.02	0.02
L.S.D. <sub>.05</sub>			5.1	3.1	N.S.	3.4	1.9	N.S.	2.3	1.5	1.4	0.02	0.02	0.02
C.V.			24	22	23	16	12	13	4	4	4	5	4	4.00
Plots per entry (reps x locs.)			12	24	36	12	24	36	12	24	36	12	24	36

\* Hybrids marked with an asterisk were in the top performing "A" group for yield within two (\*\*) or three (\*\*\*) consecutive years of the previous three year evaluation period.

† For a full description of abbreviated biotech traits, see table 6.

‡ Hybrids that have any MS letter in common, within a column, are not significantly different at the 5% level of probability using a least significant difference (LSD) mean separation test.

¶ Quality values were calculated on a 100% dry matter (DM) basis

**Table 3. Mean dry weight yields across and by location of 13 corn hybrids evaluated for silage in replicated small plot trials at four REC locations in Tennessee during 2018. Analysis included hybrid performance across a 1 yr (2018), 2 yr (2017-2018) and 3 yr (2016-2018) period.**

Hybrid	Herbicide Pkg. <sup>†</sup>	Insect Pkg. <sup>†</sup>	Avg. Yield Dry Weight (tons/acre)			Knoxville (tons/acre)			Crossville (tons/acre)			Spring Hill (tons/acre)			Springfield (tons/acre)		
			1 yr <sup>‡</sup>	2 yr	3 yr	1 yr	2 yr	3 yr	1 yr	2 yr	3 yr	1 yr	2 yr	3 yr	1 yr	2 yr	3 yr
Croplan S5900VT2P***	RR	VT2P	8.8 a	8.9 a	8.8 a	9.2	9.0	8.8	9.1	9.3	9.8	9.1	9.8	8.7	8.0	7.6	7.6
TN Exp TN1803W	CONV		8.3 a			8.7			7.6			9.7		7.3			
Augusta A7768***	GT,LL	VIP3110	8.2 a	8.5 ab	8.4 ab	7.3	7.9	7.8	7.9	8.5	8.7	9.6	10.2	9.4	8.1	7.3	7.3
Terral 25BHR26	RR2,LL	YGCB,HX1	8.0 a	8.2 b	8.1 b	8.7	8.3	7.9	7.5	8.1	9.0	8.3	9.5	8.4	7.5	6.8	6.8
Masters Choice MCT6552	RR,LL	VIP3110	8.0 a			9.3			6.7			7.5		8.4			
Croplan S5700VT2P	RR	VT2P	8.0 a			8.2			8.0			8.5		7.3			
Taylor Seed Farms 8890VT2P	RR	VT2P	7.9 a			8.1			7.3			8.9		7.3			
Masters Choice MCT6653**	RR,LL	3000GT	7.8 a	8.2 b		7.4	7.9		8.1	8.4		7.6	8.8		8.1	7.6	
Croplan 5678SS**	RR,LL	VT2P	7.7 a	8.0 b		8.3	8.3		6.9	7.5		8.0	9.2		7.6	7.1	
Masters Choice MCT6733	RR,LL	3000GT	7.7 a	8.0 b		7.7	8.3		7.0	7.6		8.1	8.6		7.9	7.5	
Terral 28BHR18	RR2,LL	YGCB,HX1	7.6 a			7.4			6.9			8.7		7.5			
Terral 25BHR89	RR2,LL	YGCB,HX1	7.6 a	8.2 b		6.7	8.1		8.1	8.0		7.4	9.9		8.1	6.7	
Masters Choice MCT6363	RR,LL	3000GT	7.4 a	7.4 c		8.0	7.7		7.3	7.5		7.1	8.0		7.1	6.2	
<b>Average</b>			7.9	8.2	8.5	8.1	8.2	8.2	7.6	8.1	9.2	8.4	9.3	8.8	7.7	7.1	7.2
<b>Standard Error</b>			0.3	0.5	0.4	0.8	0.4	0.4	0.6	0.6	0.7	0.7	1.0	1.2	0.5	0.7	0.7
<b>L.S.D.<sub>.05</sub></b>			N.S.	0.53	0.50	N.S.	N.S.	N.S.	N.S.	1.10	N.S.	1.48	1.10	N.S.	N.S.	0.90	N.S.
<b>C.V.</b>			14	11	12	17	13	15	14	11	10	14	10	11	10	10	8
<b>Plots per entry (reps x locs.)</b>			12	24	36	3	6	9	3	6	9	3	6	9	3	6	9

\* Hybrids marked with an asterisk were in the top performing "A" group for yield within two (\*\*) or three (\*\*\*) consecutive years of the previous three year evaluation period.

† For a full description of abbreviated biotech traits, see table 6.

‡ Hybrids that have any MS letter in common, within a column, are not significantly different at the 5% level of probability using a least significant difference (LSD) mean separation test.

**Table 4. Characteristics, as described by the seed company, of corn silage hybrids evaluated in yield tests in Tennessee during 2018†.**

Hybrid‡	Grain Color	Maturity	Herbicide Tolerance	Insect Tolerance	Refuge in a Bag	Released or Experimental	Seed Treatment
Augusta A7768	Y	118	GT,LL	VIP3110	N	R	Cruiser Maxx 250
Croplan 5678SS	Y	116	RR,LL	VT2P	Y	R	
Croplan S5700VT2P	Y	116	RR	VT2P	Y	R	
Croplan S5900VT2P	Y	119	RR	VT2P	Y	R	
Masters Choice MCT6363	Y	113	RR,LL	3000GT	N	R	C250
Masters Choice MCT6552	Y	115	RR,LL	VIP3110	N	R	250
Masters Choice MCT6653	Y	116	RR,LL	3000GT	N	R	C250
Masters Choice MCT6733	Y	117	RR,LL	3000GT	N	R	C250
Taylor Seed Farms 8890VT2P	Y	116	RR	VT2P	Y	R	ACC 250
Terral 25BHR26	Y	115	RR2,LL	YGCB,HX1	N	R	Poncho1250+Votivo+Raxil
Terral 25BHR89	Y	115	RR2,LL	YGCB,HX1	N	R	Poncho1250+Votivo+Raxil
Terral 28BHR18	Y	118	RR2,LL	YGCB,HX1	N	R	Poncho1250+Votivo+Raxil
TN Exp TN1803W	W	FULL			N	E	

† Information on this table provided by the respective seed companies.

‡ For a full description of abbreviated biotech traits, see table 6.

**Table 5. Contact information for corn hybrid seed companies evaluated in silage tests in Tennessee during 2018.**

Company	Contact	Phone	Email	Web site
Augusta Seed Corporation	Matt Rawley	540-886-6055	<a href="mailto:matt.rawley@augustaseed.com">matt.rawley@augustaseed.com</a>	<a href="http://www.augustaseed.com">www.augustaseed.com</a>
Croplan by Winfield	Caleb Robertson	731-614-5234	<a href="mailto:clrobertson@landolakes.com">clrobertson@landolakes.com</a>	<a href="http://www.croplan.com">www.croplan.com</a>
Master's Choice	Kyle Vosburgh	866-444-1044	<a href="mailto:kyle@seedcorn.com">kyle@seedcorn.com</a>	<a href="http://seedcorn.com">seedcorn.com</a>
Taylor Seed Farms	Brad Taylor	785-595-3237	<a href="mailto:brad@taylorseedfarms.com">brad@taylorseedfarms.com</a>	<a href="http://taylorseedfarms.com">taylorseedfarms.com</a>
Terral Seed, Inc.	Marty Hale	318-341-8814	<a href="mailto:mhale@terralseed.com">mhale@terralseed.com</a>	<a href="http://www.terralseed.com">www.terralseed.com</a>
University of Tennessee	Dennis West	865-974-8826	<a href="mailto:dwest3@utk.edu">dwest3@utk.edu</a>	<a href="http://plantsciences.utk.edu">plantsciences.utk.edu</a>

**Table 6. Abbreviations used to identify biotech seed traits contained in corn silage hybrids evaluated in Tennessee in 2018.**

Abbreviation	Name	Characteristic
LL	Bayer CropScience LibertyLink®	Glufosinate herbicide tolerance. Event: T25
RR	Monsanto Roundup Ready® Corn	Glyphosate herbicide tolerance.
RR2	Monsanto Roundup Ready® Corn 2	Glyphosate herbicide tolerance. Event: NK603
GT	Syngenta Agrisure® GT	Glyphosate herbicide tolerance. Event: SYTGA21
3000GT	Syngenta Agrisure® 3000GT	Cry1Ab, Corn Borer protection. Modified Cry3A, Protection of Western, Northern and Mexican Corn Rootworm. Glufosinate herbicide tolerance. Glyphosate tolerance. Event: SYTGA21+Bt11+MIR604
HX1	DowAgrosciences Pioneer Hi-Bred Herculex® I	Cry1F, Western Bean Cutworm, Corn Borer, Black Cutworm and Fall Armyworm resistance. Glufosinate herbicide tolerance. Event: TC1507
SSX	Monsanto Genuity™ SmartStax™ DowAgrosciences SmartStax™	Cry1A.105, Cry2Ab2, Cry1F, Cry3Bb1, Cry34/35Ab1 Western, Northern, and Mexican Corn Rootworms, European and Southwestern Corn Borers, Sugarcane Borer, Southern Cornstalk Borer, Western Bean and Black Cutworms, Corn Earworm, Fall Armyworm protection. Glyphosate herbicide tolerance. Glyphosate herbicide tolerance. Event: Mon88017+Mon89034+TC1507+DAS59122-7
VIP3110	Agrisure Viptera™ 3110	Vip3A, Cry1Ab, European and Southwestern Corn Borers, Southern Cornstalk Borer, Fall and Beet Armyworm, Black and Western Bean Cutworm, Sugarcane Borer, Common Stalk borer and Dingy Cutworm protection Glyphosate tolerance. Event: MIR162+Bt11+GA21
VIP3111	Agrisure Viptera™ 3111A	Vip3A, Cry1Ab. Protection from European and Southwestern Corn Borers, Corn earworm, Southern cornstalk borer, Fall and Beet armyworm, Black and Western Bean Cutworm, Sugarcane borer, Western, Northern and Mexican corn rootworm, Common stalk borer and Dingy cutworm. Glyphosate tolerance. Contains Agrisure Artesian technology with multiple genes for season long drought protection. Event: MIR162+Bt11+GA21+MIR604
VT2P	Monsanto Genuity™ VT Double PRO™	Cry1A.105, Cry2Ab2, European and Southwestern Corn Borers, Sugarcane Borer, Southern Cornstalk Borer, Corn Earworm, and Fall Armyworm protection. Glyphosate herbicide tolerance. Event: Mon89034+NK603
YGCB	Monsanto YieldGard® Corn Borer	Cry1Ab, European and Southwestern Corn Borers, Sugarcane Borer and Southern Cornstalk Borer protection. Event: Mon810
RIB	Refuge in Bag	