

Corn Silage Tests in Tennessee

2013

Fred L. Allen, Coordinator, Agronomic Crop Variety Testing & Demonstrations

Virginia R. Sykes, Research Associate, Agronomic Crop Variety Testing & Demonstrations

**Agronomic Crop Variety Testing and Demonstrations
Department of Plant Sciences
Institute of Agriculture
University of Tennessee
Knoxville**

•Telephone: (865)974-8821 • FAX: (865)974-1947 •email: allenf@utk.edu

Variety test results are posted on UT's website at:

<http://varietytrials.tennessee.edu/>
and
www.utcrops.com

Acknowledgments

This research was funded by the Tennessee Agricultural Experiment Station and UT Extension with partial funding from participating companies.

We gratefully acknowledge the assistance of the following individuals in conducting these experiments:

Department of Plant Sciences

Dr. Dennis West, Professor and Grains Breeder

David Kincer, Research Associate

Eifion Hughes, Graduate Research Assistant

Matthew Bobbitt, Graduate Research Assistant

Victoria Knapp, Graduate Research Assistant

Ali DeSantis, Graduate Research Assistant

Lauren Nixon, Graduate Research Assistant

AgResearch and Education Centers:

East Tennessee, Knoxville

Dr. Robert Simpson, Center Director

Mr. B.J. DeLozier, Farm Manager

Mr. Derick Hopkins, Farm Crew Leader

Plateau, Crossville

Mr. Walt Hitch, Superintendent

Mr. Greg Blaylock, Light Farm Equipment Operator

Mr. Sam Simmons, Light Farm Equipment Operator

Highland Rim, Springfield

Dr. Barry Sims, Superintendent

Mr. Brad S. Fisher, Research Associate

Middle Tennessee, Spring Hill

Dr. Kevin Thompson, Superintendent

Mr. Roy Thompson, Research Associate

County Standard Corn Silage Tests

County

Washington

Producer

David Saylor (Savland Dairy Farm)

Agent

John Hamrick

Table of Contents

Experimental Procedures _____	3
Interpretation of Data _____	4
AgResearch and Education Center Information _____	4
2013 Corn Hybrid Silage Yield _____	5
2013 Corn Hybrid Silage Agronomic Data _____	6
2013 Corn Hybrid Silage Quality Data _____	7
2 Year Corn Hybrid Silage Data _____	9
3 Year Corn Hybrid Silage Data _____	11
County Standard Tests _____	13
Corn Hybrid Characteristics _____	15
Seed Company Contact Information _____	16

CORN SILAGE YIELD TESTS

2013

Experimental Procedures

AgResearch and Education Center Tests: Fourteen corn hybrids were evaluated for silage yield and quality in 2013. The tests were conducted at the East Tennessee (Knoxville), Plateau (Crossville), Highland Rim (Springfield), and Middle Tennessee (Spring Hill), AgResearch and Education Centers (REC). The plots at all locations consisted of two rows, planted 30 inches apart, 30 feet in length and were 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 by commercial silage harvesters. A sub-sample from each plot of approximately 3 lbs was taken for analysis. Fresh weight and dried weight were recorded on each sample for determination of moisture at harvest. The samples were then ground and analyzed for nutritional content. Silage quality analyses were provided by Cumberland Valley Analytical Services, Inc., Hagerstown, MD. Predictions for milk production per ton and milk production per acre were calculated using the University of Wisconsin Milk2006 program.

County Standard Tests: The County Standard Corn Silage Test was conducted in Washington county in Tennessee with the same 14 hybrids included in the REC tests. Each hybrid was evaluated in a large strip-plot. Plots were planted, sprayed, fertilized, and harvested with the equipment used in the cooperating producer's farming operation. The harvested length was measured for each variety and appropriate harvested area adjustments were made to determine the yield per acre.

Growing Season: The 2013 growing season was characterized by a cool, wet spring which delayed planting and mandated replanting in some flood-prone areas. By mid-May, planting was around two weeks behind the five-year average. Wet conditions throughout the summer were favorable for growth with eighty-seven percent of the crop rated good to excellent in August through early September when the majority of corn silage was harvested.

Interpretation of Data:

The tables on the following pages have been prepared with the entries listed in order of performance, the highest-yielding entry being listed first. At the bottom of the tables, **LSD** values stand for **Least Significant Difference**. The mean yields of any two varieties being compared must differ by at least the amount shown to be considered different in yielding ability at the 5% level of probability of significance. For example, given that the LSD for a test is 1.3 tons/a and the mean yield of Hybrid A was 9.3 tons/a and the mean yield of Hybrid B was 8.2 tons/a, then the two hybrids are not statistically different in yield because the difference of 1.1 tons/a is less than the minimum of 1.3 tons/a required for them to be significant. Similarly, if the average yield of Hybrid C was 10.6 tons/a then it is significantly higher yielding than both Hybrid B ($10.6 - 8.2 = 2.4$ tons/a > LSD of 1.3) and Hybrid A ($10.6 - 9.3 = 1.3$ tons/a = LSD of 1.3).

Also, the **coefficient of variation (C.V.)** values are shown at the bottom of each table. This value is a measure of the error variability found within each experiment. It is the percentage that the square root of error variance is of the overall test mean yield at that location. For example, a C.V. of 10% indicates that the size of the error variation is about 10% of the size of the test mean. Similarly, a C.V. of 30% indicates that the size of the error variation is nearly one-third as large as the test mean. A goal in conducting each yield test is to keep the C.V. as low as possible, preferably below 20 percent.

Table 1. Location information from AgResearch and Education Centers where the corn silage variety tests were conducted in 2013.

AgResearch and Education Center	Location	Planting Date	Harvest Date	Plant Population	Soil Type
East Tennessee	Knoxville	04/22/13	08/27/13	29,911	Sequatchie Silt Loam
Plateau	Crossville	06/04/13	09/12/13	34,869	Lilly Silt Loam
Middle Tennessee	Spring Hill	05/02/13	09/05/13	30,340	Maury Silt Loam
Highland Rim	Springfield	04/17/13	08/23/13	29,317	Dickson Silt Loam

Table 2. Mean yields † of 14 corn hybrids evaluated for silage at four locations in Tennessee during 2013.

Brand	Hybrid §	Dry Weight	65% Moisture	Dry Weight Yield			
		Avg. Yield ± Std Err. (n=4)	Avg. Yield ± Std Err. (n=4)	Knoxville	Crossville	Spring Hill	Springfield
-----tons/a-----							
Augusta	A6866 (RR/LL/CB/RW)	9.6 ± 0.4	27.5 ± 1.0	10.5	6.9	10.8	10.4
Mycogen	TMF2L825	9.6 ± 0.4	27.3 ± 1.0	11.8	7.2	9.7	9.5
Caverndale	CF 1026 GT	9.4 ± 0.4	27.0 ± 1.1	11.8	7.2	9.8	9.0
Croplan	9009 RH	9.4 ± 0.3	26.9 ± 0.9	13.4	6.3	9.0	9.1
Croplan	7927 VT3P	9.4 ± 0.4	26.7 ± 1.0	12.1	7.1	7.8	10.5
Mycogen	TMF2H918 (RR/LL/HX)	9.3 ± 0.3	26.6 ± 0.9	12.0	7.3	9.6	8.5
Croplan	8221VT3P	9.1 ± 0.3	26.0 ± 0.9	10.8	7.0	9.1	9.5
Augusta	A6665 (RR/YGCB/RW)	9.0 ± 0.4	25.7 ± 1.0	9.5	7.7	8.8	10.0
Caverndale	CF 908 3000GT (GT/LL/BT/RW)	8.9 ± 0.3	25.4 ± 0.9	10.5	7.6	8.3	9.1
Croplan	6906 AS 3000GT (RR/LL/YGCB/RW)	8.8 ± 0.4	25.2 ± 1.0	10.8	7.1	8.5	8.9
Augusta	A6767GT3000 (LL/CB/RW)	8.7 ± 0.4	24.9 ± 1.1	10.8	6.6	8.1	9.4
Augusta	A5262 (RR/LL/CB/RW)	8.7 ± 0.4	24.8 ± 1.0	11.0	7.2	8.7	7.9
Augusta	A5565 (RR/YGCB/RW)	8.6 ± 0.4	24.6 ± 1.3	10.6	7.0	7.6	9.3
Augusta	A5465 (RR/LL/CB)	8.4 ± 0.4	24.1 ± 1.1	9.5	7.2	7.9	9.1
Avg. (tons/a)		9.1	25.9	11.1	7.1	8.8	9.3
L.S.D._{.05} (tons/a)		1.0	2.8	2.5	1.4	2.0	2.2
C.V. (%)		12.5	12.5	12.8	11.2	11.7	12.8

† all silage yields are adjusted to dry weight basis unless otherwise indicated.

§ If a trait appears inside parenthesis i.e. (RR/CB), then it is not part of the hybrid name.

CL = contains a gene for tolerance to Imidazolinone class herbicides

LL = contains a gene for tolerance to glufosinate

RR, RR2, R, GT, R2 = contains a gene for tolerance to glyphosate

VT3, TS = contains genes for corn borer, rootworm, and glyphosate resistance

VT3P = contains genes for corn borer, rootworm, earworm, armyworm and glyphosate resistance

YG, YGCB, Bt, HX, CB = contains a *Bacillus thuringiensis* gene for insect resistance

YGRW, RW, CRW = contains a gene for rootworm resistance

Table 3. Mean yields † and agronomic characteristics of 14 corn hybrids evaluated for silage at four locations in Tennessee during 2013.

Brand	Hybrid §	Dry Weight	65% Moisture	Moisture at harvest	Lodging	Plant Height	Ear Height
		Avg. Yield ± Std Err. (n=4)	Avg. Yield ± Std Err. (n=4)				
		tons/a	tons/a	%	%	inches	inches
Augusta	A6866 (RR/LL/CB/RW)	9.6 ± 0.4	27.5 ± 1.0	54.9	0	112	38
Mycogen	TMF2L825	9.6 ± 0.4	27.3 ± 1.0	58.5	0	121	42
Caverndale	CF 1026 GT	9.4 ± 0.4	27.0 ± 1.1	59.5	1	119	44
Croplan	9009 RH	9.4 ± 0.3	26.9 ± 0.9	59.4	0	123	44
Croplan	7927 VT3P	9.4 ± 0.4	26.7 ± 1.0	59.4	0	119	43
Mycogen	TMF2H918 (RR/LL/HX)	9.3 ± 0.3	26.6 ± 0.9	60.7	0	122	45
Croplan	8221VT3P	9.1 ± 0.3	26.0 ± 0.9	57.1	0	115	45
Augusta	A6665 (RR/YGCB/RW)	9.0 ± 0.4	25.7 ± 1.0	55.2	0	111	36
Caverndale	CF 908 3000GT (GT/LL/BT/RW)	8.9 ± 0.3	25.4 ± 0.9	55.9	0	113	40
Croplan	6906 AS 3000GT (RR/LL/YGCB/RW)	8.8 ± 0.4	25.2 ± 1.0	55.3	0	117	39
Augusta	A6767GT3000 (LL/CB/RW)	8.7 ± 0.4	24.9 ± 1.1	54.2	0	117	39
Augusta	A5262 (RR/LL/CB/RW)	8.7 ± 0.4	24.8 ± 1.0	54.8	0	111	40
Augusta	A5565 (RR/YGCB/RW)	8.6 ± 0.4	24.6 ± 1.3	54.4	0	100	33
Augusta	A5465 (RR/LL/CB)	8.4 ± 0.4	24.1 ± 1.1	57.2	0	110	38
Average		9.1	25.9	56.9	0	115	40

† all silage yields are adjusted to dry weight basis unless otherwise indicated.

§ If a trait appears inside parenthesis i.e. (RR/CB), then it is not part of the hybrid name.

CL = contains a gene for tolerance to Imidazolinone class herbicides

LL = contains a gene for tolerance to glufosinate

RR, R, RR2, R2, GT = contains a gene for tolerance to glyphosate

VT3, TS = contains genes for corn borer, rootworm, and glyphosate resistance

VT3P = contains genes for corn borer, rootworm, earworm, armyworm and glyphosate resistance

YG, YGCB, CB, Bt, HX = contains a *Bacillus thuringiensis* gene for insect resistance

YGRW, RW = contains a gene for rootworm resistance

Table 4. Mean yields † and feed quality characteristics of 14 corn hybrids evaluated for silage at four locations in Tennessee during 2013.

Brand	Hybrid §	Dry Weight		Crude Protein (n=4)	30h IV NDF (n=4)	NDF (n=4)	NDFD (n=4)	Starch (n=4)	ADF (n=4)	TDN (n=4)	NEL (n=4)	Milk/ton [‡] (n=4)	Milk/acre [‡] (n=4)
		Avg. Yield ± Std Err. (n=4)	Moisture at Harvest (n=4)										
		tons/a	%	% dm	% dm	% of NDF	% dm	% dm	% dm	Mcals/lb	lbs/ton	lbs/acre	
Augusta	A6866 (RR/LL/CB/RW)	9.6 ± 0.4	54.9	6.3	39.8	55.5	38.2	23.9	73.7	0.77	2801	26971	
Mycogen	TMF2L825	9.6 ± 0.4	58.5	5.6	46.4	49.2	31.8	28.6	70.9	0.74	2714	25917	
Caverndale	CF 1026 GT	9.4 ± 0.4	59.5	5.8	47.5	48.2	30.2	29.5	69.7	0.73	2668	25187	
Croplan	9009 RH	9.4 ± 0.3	59.4	6.0	46.4	51.3	30.7	28.6	70.9	0.74	2805	26454	
Croplan	7927 VT3P	9.4 ± 0.4	59.4	6.0	39.8	50.9	37.6	24.1	73.7	0.77	2944	27527	
Mycogen	TMF2H918 (RR/LL/HX)	9.3 ± 0.3	60.7	6.3	45.3	53.3	30.5	27.9	71.1	0.74	2947	27436	
Croplan	8221VT3P	9.1 ± 0.3	57.1	6.0	41.8	49.8	36.4	25.3	73.0	0.76	2758	25074	
Augusta	A6665 (RR/YGCB/RW)	9.0 ± 0.4	55.2	5.9	39.4	52.9	38.3	24.1	73.6	0.77	2762	24827	
Caverndale	CF 908 3000GT (GT/LL/BT/RW)	8.9 ± 0.3	55.9	6.2	40.3	52.8	36.9	24.3	73.4	0.77	2779	24648	
Croplan	6906 AS 3000GT (RR/LL/YGCB/RW)	8.8 ± 0.4	55.3	6.5	40.3	53.9	37.7	24.3	73.1	0.76	2733	24129	
Augusta	A6767GT3000 (LL/CB/RW)	8.7 ± 0.4	54.2	5.9	41.2	52.2	36.5	25.3	72.7	0.76	2711	23617	
Augusta	A5262 (RR/LL/CB/RW)	8.7 ± 0.4	54.8	6.1	41.5	51.7	36.7	25.1	73.0	0.76	2693	23406	
Augusta	A5565 (RR/YGCB/RW)	8.6 ± 0.4	54.4	6.4	39.5	53.8	38.2	23.2	73.8	0.77	2803	24165	
Augusta	A5465 (RR/LL/CB)	8.4 ± 0.4	57.2	5.9	42.2	53.4	35.5	25.2	72.5	0.75	2797	23548	

† yields reported are dry weight basis unless otherwise indicated, feed analysis reported on an "dry weight" basis

§ If a trait appears inside parenthesis i.e. (RR/CB), then it is not part of the hybrid name.

Bt, YG, YGCB, CB, HX = contains a *Bacillus thuringiensis* gene for insect resistance

CL = contains a gene for tolerance to Imidazolinone class herbicides

LL = contains a gene for tolerance to glufosinate

RR, RR2 = contains a gene for tolerance to glyphosate

VT3, TS = contains genes for corn borer, rootworm, and glyphosate resistance

VT3P = contains genes for corn borer, rootworm, earworm, armyworm and glyphosate resistance

YGRW, RW = contains a gene for rootworm resistance

NDF = Neutral Detergent Fiber

30h IV NDFD = Neutral Detergent Fiber Digestibility

ADF = Acid Detergent Fiber

TDN = Total Digestible Nutrients

NEL = Net Energy for Lactation

‡ based on University of Wisconsin Milk2006 software program.

Table 5. Mean yields † and feed quality characteristics of 14 corn hybrids evaluated for silage at four locations in Tennessee during 2013, sorted by brand.

Brand	Hybrid §	Dry Weight	Moisture at Harvest (n=4)	Crude Protein (n=4)	NDF (n=4)	30h IV	Starch (n=4)	ADF (n=4)	TDN (n=4)	NEL (n=4)	Milk/ton [‡] (n=4)	Milk/acre [‡] (n=4)
		Avg. Yield ± Std Err. (n=4)				NDFD (n=4)						
		tons/a	%	% dm	% dm	% of NDF	% dm	% dm	% dm	Mcal/lb	lbs/ton	lbs/acre
Augusta	A6866 (RR/LL/CB/RW)	9.6 ± 0.4	54.9	6.3	39.8	55.5	38.2	23.9	73.7	0.77	2801	26971
Augusta	A6665 (RR/YGCB/RW)	9.0 ± 0.4	55.2	5.9	39.4	52.9	38.3	24.1	73.6	0.77	2762	24827
Augusta	A6767GT3000 (LL/CB/RW)	8.7 ± 0.4	54.2	5.9	41.2	52.2	36.5	25.3	72.7	0.76	2711	23617
Augusta	A5262 (RR/LL/CB/RW)	8.7 ± 0.4	54.8	6.1	41.5	51.7	36.7	25.1	73.0	0.76	2693	23406
Augusta	A5565 (RR/YGCB/RW)	8.6 ± 0.4	54.4	6.4	39.5	53.8	38.2	23.2	73.8	0.77	2803	24165
Augusta	A5465 (RR/LL/CB)	8.4 ± 0.4	57.2	5.9	42.2	53.4	35.5	25.2	72.5	0.75	2797	23548
Caverndale	CF 1026 GT	9.4 ± 0.4	59.5	5.8	47.5	48.2	30.2	29.5	69.7	0.73	2668	25187
Caverndale	CF 908 3000GT (GT/LL/BT/RW)	8.9 ± 0.3	55.9	6.2	40.3	52.8	36.9	24.3	73.4	0.77	2779	24648
Croplan	7927 VT3P	9.4 ± 0.4	59.4	6.0	39.8	50.9	37.6	24.1	73.7	0.77	2944	27527
Croplan	9009 RH	9.4 ± 0.3	59.4	6.0	46.4	51.3	30.7	28.6	70.9	0.74	2805	26454
Croplan	8221VT3P	9.1 ± 0.3	57.1	6.0	41.8	49.8	36.4	25.3	73.0	0.76	2758	25074
Croplan	6906 AS 3000GT (RR/LL/YGCB/RW)	8.8 ± 0.4	55.3	6.5	40.3	53.9	37.7	24.3	73.1	0.76	2733	24129
Mycogen	TMF2L825	9.6 ± 0.4	58.5	5.6	46.4	49.2	31.8	28.6	70.9	0.74	2714	25917
Mycogen	TMF2H918 (RR/LL/HX)	9.3 ± 0.3	60.7	6.3	45.3	53.3	30.5	27.9	71.1	0.74	2947	27436

† yields reported are dry weight basis unless otherwise indicated, feed analysis reported on an "dry weight" basis

§ If a trait appears inside parenthesis i.e. (RR/CB), then it is not part of the hybrid name.

Bt, YG, YGCB, CB, HX = contains a *Bacillus thuringiensis* gene for insect resistance

CL = contains a gene for tolerance to Imidazolinone class herbicides

LL = contains a gene for tolerance to glufosinate

RR, RR2 = contains a gene for tolerance to glyphosate

VT3, TS = contains genes for corn borer, rootworm, and glyphosate resistance

VT3P = contains genes for corn borer, rootworm, earworm, armyworm and glyphosate resistance

YGRW, RW = contains a gene for rootworm resistance

NDF = Neutral Detergent Fiber

30h IV NDFD = Neutral Detergent Fiber Digestibility

ADF = Acid Detergent Fiber

TDN = Total Digestible Nutrients

NEL = Net Energy for Lactation

‡ based on University of Wisconsin Milk2006 software program.

Table 6. Mean yields † of three corn hybrids evaluated for silage in four environments for two years (2012-2013) in Tennessee.

Brand	Hybrid §	Dry Weight	65% Moisture	Dry Weight Yield -----			
		Avg. Yield ± Std Err. (n=8)	Avg. Yield ± Std Err. (n=8)	----- Knoxville	Crossville	Spring Hill	Springfield
		-----tons/a-----					
Croplan	9009 RH	9.6 ± 0.4	27.5 ± 1.0	11.4	6.2	6.7	7.7
Croplan	8221VT3P	9.6 ± 0.4	27.3 ± 1.0	9.6	6.3	6.4	6.6
Augusta	A6767GT3000 (LL/CB/RW)	9.4 ± 0.4	27.0 ± 1.1	8.9	6.1	6.2	7.0
Avg. (tons/a)		9.5	27.3	10.0	6.2	6.4	7.1
L.S.D._{.05} (tons/a)		0.8	2.4	1.7	1.7	1.3	2.2
C.V. (%)		14.5	14.5	10.9	16.0	13.0	19.1

Table 7. Mean yields † and agronomic characteristics of three corn hybrids evaluated for silage in four environments for two years (2012-2013) in Tennessee.

Brand	Hybrid §	Dry Weight	65% Moisture	Moisture	Lodging	Plant	Ear
		Avg. Yield ± Std Err. (n=8)	Avg. Yield ± Std Err. (n=8)	at harvest (n=8)	(n=8)	Height (n=8)	Height (n=6)
		tons/a	tons/a	%	%	inches	inches
Croplan	9009 RH	9.6 ± 0.4	27.5 ± 1.0	62.2	0	103	42
Croplan	8221VT3P	9.6 ± 0.4	27.3 ± 1.0	60.7	0	96	41
Augusta	A6767GT3000 (LL/CB/RW)	9.4 ± 0.4	27.0 ± 1.1	59.7	0	103	37

† all silage yields are adjusted to dry weight basis unless otherwise indicated.

§ If a trait appears inside parenthesis i.e. (RR/CB), then it is not part of the hybrid name.

CL = contains a gene for tolerance to Imidazolinone class herbicides

LL = contains a gene for tolerance to glufosinate

RR, R, RR2, R2, GT = contains a gene for tolerance to glyphosate

VT3, TS = contains genes for corn borer, rootworm, and glyphosate resistance

VT3P = contains genes for corn borer, rootworm, earworm, armyworm and glyphosate resistance

YG, YGCB, CB, Bt, HX = contains a *Bacillus thuringiensis* gene for insect resistance

YGRW, RW = contains a gene for rootworm resistance

Table 8. Mean yields † and feed quality characteristics of three corn hybrids evaluated for silage at four locations for 2 years (2012-2013) in Tennessee.

Brand	Hybrid §	Dry Weight		Crude Protein (n=8)	NDF (n=8)	30h IV NDFD (n=8)	Starch (n=8)	ADF (n=8)	TDN (n=8)	NEL (n=8)	Milk/ton [‡] (n=8)	Milk/acre [‡] (n=8)
		Avg. Yield ± Std Err. (n=8)	Moisture at Harvest (n=8)									
		tons/a	%	% dm	% dm	% of NDF	% dm	% dm	% dm	Mcal/lb	lbs/ton	lbs/acre
Croplan	9009 RH	9.6 ± 0.4	62.2	7.7	48.2	56.7	26.0	28.8	70.0	0.73	2960	24116
Croplan	8221VT3P	9.6 ± 0.4	60.7	7.7	44.6	55.3	29.7	26.6	71.6	0.75	2913	22607
Augusta	A6767GT3000 (LL/CB/RW)	9.4 ± 0.4	59.7	7.7	44.5	57.3	29.4	26.5	71.2	0.74	2927	21356

† yields reported are dry weight basis unless otherwise indicated, feed analysis reported on an "dry weight" basis

§ If a trait appears inside parenthesis i.e. (RR/CB), then it is not part of the hybrid name.

Bt, YG, YGCB, CB, HX = contains a *Bacillus thuringiensis* gene for insect resistance

CL = contains a gene for tolerance to Imidazolinone class herbicides

LL = contains a gene for tolerance to glufosinate

RR, RR2 = contains a gene for tolerance to glyphosate

VT3, TS = contains genes for corn borer, rootworm, and glyphosate resistance

VT3P = contains genes for corn borer, rootworm, earworm, armyworm and glyphosate resistance

YGRW, RW = contains a gene for rootworm resistance

NDF = Neutral Detergent Fiber

30h IV NDFD = Neutral Detergent Fiber Digestibility

ADF = Acid Detergent Fiber

TDN = Total Digestible Nutrients

NEL = Net Energy for Lactation

‡ based on University of Wisconsin Milk2006 software program.

Table 9. Mean yields † of two corn hybrids evaluated for silage in four environments for three years (2011-2013) in Tennessee.

Brand	Hybrid §	Dry Weight	65% Moisture	----- Dry Weight Yield -----			
		Avg. Yield ± Std Err. (n=12)	Avg. Yield ± Std Err. (n=12)	Knoxville	Crossville	Spring Hill	Springfield
		-----tons/a-----					
Croplan	9009 RH	7.8 ± 0.2	22.3 ± 0.6	11.4	5.8	6.1	7.9
Croplan	8221VT3P	7.3 ± 0.2	20.8 ± 0.6	10.0	6.0	6.1	7.0
Avg. (tons/a)		7.6	21.6	10.7	5.9	6.1	7.4
L.S.D._{.05} (tons/a)		1.0	2.8	1.6	2.3	1.2	2.4
C.V. (%)		16.8	16.8	10.6	23.0	13.2	19.9

Table 10. Mean yields † and agronomic characteristics of two corn hybrids evaluated for silage in four environments for three years (2011-2013) in Tennessee.

Brand	Hybrid §	Dry Weight	65% Moisture	Moisture at harvest (n=12)	Lodging (n=12)	Plant Height (n=12)	Ear Height (n=9)
		Avg. Yield ± Std Err. (n=12)	Avg. Yield ± Std Err. (n=12)				
		tons/a	tons/a	%	%	inches	inches
Croplan	9009 RH	7.8 ± 0.2	22.3 ± 0.6	60.3	0	106	42
Croplan	8221VT3P	7.3 ± 0.2	20.8 ± 0.6	58.9	0	100	42

† all silage yields are adjusted to dry weight basis unless otherwise indicated.

§ If a trait appears inside parenthesis i.e. (RR/CB), then it is not part of the hybrid name.

CL = contains a gene for tolerance to Imidazolinone class herbicides

LL = contains a gene for tolerance to glufosinate

RR, R, RR2, R2, GT = contains a gene for tolerance to glyphosate

VT3, TS = contains genes for corn borer, rootworm, and glyphosate resistance

VT3P = contains genes for corn borer, rootworm, earworm, armyworm and glyphosate resistance

YG, YGCB, CB, Bt, HX = contains a *Bacillus thuringiensis* gene for insect resistance

YGRW, RW = contains a gene for rootworm resistance

Table 11. Mean yields † and feed quality characteristics of two corn hybrids evaluated for silage at four locations for three years (2011-2013) in Tennessee.

Brand	Hybrid §	Dry Weight	Moisture at Harvest (n=12)	Crude Protein (n=12)	NDF (n=12)	30h IV	Starch (n=12)	ADF (n=12)	TDN (n=12)	NEL (n=12)	Milk/ton‡ (n=12)	Milk/acre‡ (n=12)
		Avg. Yield ± Std Err. (n=12)				NDFD (n=12)						
		tons/a	%	% dm	% dm	% of NDF	% dm	% dm	% dm	Mcals/lb	lbs/ton	lbs/acre
Croplan	9009 RH	7.8 ± 0.2	39.7	7.7	46.9	56.4	27.8	28.1	70.6	0.74	2952	23320
Croplan	8221VT3P	7.3 ± 0.2	41.1	7.7	43.6	55.0	31.6	26.0	71.9	0.75	2894	22162

† yields reported are dry weight basis unless otherwise indicated, feed analysis reported on an "dry weight" basis

§ If a trait appears inside parenthesis i.e. (RR/CB), then it is not part of the hybrid name.

Bt, YG, YGCB, CB, HX = contains a *Bacillus thuringiensis* gene for insect resistance

CL = contains a gene for tolerance to Imidazolinone class herbicides

LL = contains a gene for tolerance to glufosinate

RR, RR2 = contains a gene for tolerance to glyphosate

VT3, TS = contains genes for corn borer, rootworm, and glyphosate resistance

VT3P = contains genes for corn borer, rootworm, earworm, armyworm and glyphosate resistance

YGRW, RW = contains a gene for rootworm resistance

NDF = Neutral Detergent Fiber

30h IV NDFD = Neutral Detergent Fiber Digestibility

ADF = Acid Detergent Fiber

TDN = Total Digestible Nutrients

NEL = Net Energy for Lactation

‡ based on University of Wisconsin Milk2006 software program.

Table 12. Yields † of 14 corn hybrids evaluated for silage in one County Standard Test in Washington County, Tennessee during 2013.

Brand	Hybrid §	Dry Weight	65% Moisture	Moisture
		Avg. Yield (n=1)	Avg. Yield (n=1)	at harvest (n=1)
		-----tons/a-----		%
Augusta	A6866 (RR/LL/CB/RW)	3.9	11.2	67.8
Augusta	A6665 (RR/YGCB/RW)	3.6	10.3	66.4
Croplan	6906 AS 3000GT (RR/LL/YGCB/RW)	3.6	10.3	65.8
Caverndale	CF 908 3000GT (GT/LL/BT/RW)	3.5	10.0	65.3
Mycogen	TMF2L825	3.5	9.9	69.4
Augusta	A6767GT3000 (LL/CB/RW)	3.4	9.8	65.5
Augusta	A5465 (RR/LL/CB)	3.4	9.7	65.9
Croplan	7927 VT3P	3.2	9.2	67.8
Augusta	A5262 (RR/LL/CB/RW)	3.2	9.1	68.8
Croplan	8221VT3P	3.2	9.1	69.7
Croplan	9009 RH	3.1	8.9	69.2
Augusta	A5565 (RR/YGCB/RW)	3.1	8.8	69.3
Caverndale	CF 1026 GT	3.0	8.7	68.2
Mycogen	TMF2H918 (RR/LL/HX)	2.4	6.9	71.9
Avg. (tons/a)		3.3	9.4	67.9

† all silage yields are adjusted to dry weight basis unless otherwise indicated.

§ If a trait appears inside parenthesis i.e. (RR/CB), then it is not part of the hybrid name.

CL = contains a gene for tolerance to Imidazolinone class herbicides

LL = contains a gene for tolerance to glufosinate

RR, R, RR2, R2, GT = contains a gene for tolerance to glyphosate

VT3, TS = contains genes for corn borer, rootworm, and glyphosate resistance

VT3P = contains genes for corn borer, rootworm, earworm, armyworm and glyphosate resistance

YG, YGCB, CB, Bt, HX = contains a *Bacillus thuringiensis* gene for insect resistance

YGRW, CRW, RW = contains a gene for rootworm resistance

Washington County: Savland Dairy Farm (David Saylor)

Planted: 5-28-13

Harvested: 8-31-13

Population: 28,000

30 inch row spacing

Table 13. Yields † and feed quality characteristics of 14 corn hybrids evaluated for silage in one County Standard Test in Washington County, Tennessee during 2013.

Brand	Hybrid §	Dry Weight	Moisture	Crude	30h IV			ADF	TDN	NEL	Milk/ton‡	Milk/acre‡
		Yield (n=1)	at Harvest (n=1)	Protein (n=1)	NDF (n=1)	NDFD (n=1)	Starch (n=1)					
		tons/a	%	% dm	% dm	% of NDF	% dm	% dm	% dm	Mcal/lb	lbs/ton	lbs/acre
Augusta	A6866 (RR/LL/CB/RW)	3.9	67.8	8.5	41.7	58.9	30.5	2.8	72.5	0.76	3591	14020
Augusta	A6665 (RR/YGCB/RW)	3.6	66.4	9.5	43.7	55.1	28.9	3.4	70.8	0.74	3338	12082
Croplan	6906 AS 3000GT (RR/LL/YGCB/RW)	3.6	65.8	8.5	38.9	59.4	32.2	2.9	73.2	0.76	3470	12467
Caverndale	CF 908 3000GT (GT/LL/BT/RW)	3.5	65.3	8.8	39.1	56.3	34.2	3.3	72.8	0.76	3459	12127
Mycogen	TMF2L825	3.5	69.4	8.0	46.6	48.6	27.4	2.6	69.8	0.73	3181	11031
Augusta	A6767GT3000 (LL/CB/RW)	3.4	65.5	7.3	41.3	55.4	33.7	2.6	72.6	0.76	3425	11728
Augusta	A5465 (RR/LL/CB)	3.4	65.9	7.8	41.8	54.1	32.7	2.6	72.2	0.75	3404	11545
Croplan	7927 VT3P	3.2	67.8	8.2	43.4	58.1	28.5	2.2	72.1	0.75	3466	11207
Augusta	A5262 (RR/LL/CB/RW)	3.2	68.8	7.8	42.8	52.5	32.3	2.7	71.8	0.75	3409	10892
Croplan	8221VT3P	3.2	69.7	7.8	41.7	50.4	29.7	2.8	71.5	0.74	3243	10317
Croplan	9009 RH	3.1	69.2	8.5	44.9	54.8	25.2	3.1	70.1	0.73	3203	9975
Augusta	A5565 (RR/YGCB/RW)	3.1	69.3	8.2	46.2	54.3	24.4	2.8	69.6	0.72	3154	9756
Caverndale	CF 1026 GT	3.0	68.2	8.6	43.6	49.8	29.0	3.2	70.4	0.73	3272	9935
Mycogen	TMF2H918 (RR/LL/HX)	2.4	71.9	8.3	47.8	49.8	23.3	3.4	68.5	0.71	3051	7403

† yields reported are dry weight basis unless otherwise indicated, feed analysis reported on an "dry weight" basis

§ If a trait appears inside parenthesis i.e. (RR/CB), then it is not part of the hybrid name.

Bt, YG, YGCB, CB, HX = contains a *Bacillus thuringiensis* gene for insect resistance

CL = contains a gene for tolerance to Imidazolinone class herbicides

LL = contains a gene for tolerance to glufosinate

RR, RR2 = contains a gene for tolerance to glyphosate

VT3, TS = contains genes for corn borer, rootworm, and glyphosate resistance

VT3P = contains genes for corn borer, rootworm, earworm, armyworm and glyphosate resistance

YGRW, RW = contains a gene for rootworm resistance

NDF = Neutral Detergent Fiber

30h IV NDFD = Neutral Detergent Fiber Digestibility

ADF = Acid Detergent Fiber

TDN = Total Digestable Nutrients

NEL = Net Energy for Lactation

‡ based on University of Wisconsin Milk2006 software program.

Table 14. Characteristics, as described by the seed company, of corn silage hybrids evaluated in yield tests in Tennessee during 2013.†

Brand	Hybrid §	Grain		Herbicide		Released or	
		Color	Maturity	Tolerance	BT Gene	Experimental	Seed Treatment
Augusta	A5262 (RR/LL/CB/RW)	Y	112	RR,LL	CB,RW	R	
Augusta	A5465 (RR/LL/CB)	Y	115	RR,LL	CB	R	
Augusta	A5565 (RR/YGCB/RW)	Y	115	RR	YGCB,RW	R	
Augusta	A6665 (RR/YGCB/RW)	Y	115	RR	YGCB,RW	R	
Augusta	A6767GT3000 (LL/CB/RW)	Y	117	GT/LL	CB/RW	R	Cruiser Extreme
Augusta	A6866 (RR/LL/CB/RW)	Y	116	RR/LL	CB,RW	R	
Caverndale	CF 1026 GT	Y	120	GT		R	Acceleron
Caverndale	CF 908 3000GT (GT/LL/BT/RW)	Y	118	GT/LL	BT,RW	R	Poncho 250, Trilex, Metayxl
Croplan	6906 AS 3000GT (RR/LL/YGCB/RW)	Y	114	RR/LL	YGCB, RW	R	Acceleron
Croplan	7927 VT3P	Y	117	RR	YGCB, RW	R	Acceleron
Croplan	8221VT3P	Y	118	RR	YGCB/RW	R	Acceleron
Croplan	9009 RH	Y	124	RR/LL	YGCB	R	Acceleron
Mycogen	TMF2H918 (RR/LL/HX)	Y	123	RR/LL	HX1	R	Cruiser Maxx Corn 250
Mycogen	TMF2L825	Y	117	RR/LL	Herculex 1	R	Cruiser Maxx Corn 250

§ If a trait appears inside parenthesis i.e. (RR/CB), then it is not part of the hybrid name.

Bt, YG, YGCB, CB, HX = contains a *Bacillus thuringiensis* gene for insect resistance

CL = contains a gene for tolerance to Imidazolinone class herbicides

LL = contains a gene for tolerance to glufosinate

RR, RR2 = contains a gene for tolerance to glyphosate

VT3, TS = contains genes for corn borer, rootworm, and glyphosate resistance

VT3P = contains genes for corn borer, rootworm, earworm, armyworm and glyphosate resistance

YGRW, RW = contains a gene for rootworm resistance

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

Table 15. Contact information for corn hybrid seed companies evaluated in yield tests in Tennessee during 2013.

Company	Contact	Phone	Email	Web site	Address
Augusta Seed Corporation	Matt Rawley	540-255-5902	augustaseed@aol.com		473 Tisdale Farm Ln, Stanton, VA 24401
Caverndale Farms Brand Seed	Barry Welty	859-236-2150	bwelty@kywimax.com		Johnson City Chemical and Foothills Co-op and Trammel Creek Farm Supply
Croplan Genetics	Jesse Witt	256-221-5932	JBWitt@landolakes.com	www.croplangenetics.com	Consolidated Ag Products (Agrilience) and Tennessee Farmers Co-op Locations
Mycogen Seeds	Rich Bennek	919-449-5056	tkeen@dow.com		300 Pine Tree Rd., Selma, NC 27576