Corn Hybrid and Sweet Sorghum Silage Tests in Tennessee

2007

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

Richard Johnson, Research Associate, Agronomic Crop Variety Testing & Demonstrations

Jason Wight, Graduate Research Assistant, UT Department of Plant Sciences

Jennifer Noe, Graduate Research Assistant, UT Department of Plant Sciences

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

•Telephone: (865)974-8821 • FAX: (865)974-8850 •email: allenf@utk.edu

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

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

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Dr. John Hodges, Superintendent
Mr. Bobby McKee, Sr. Farm Crew Leader
Mr. Lee Ellis, Research Assistant

Plateau
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. William Pitt, Research Associate
Mr. Brad S. Fisher, Research Associate

Middle Tennessee, Spring Hill
Dr. Dennis Onks, Superintendent
Mr. Frank Musgrave, Research Associate

Greeneville
Mr. Robert Ellis, Superintendent
Mr. Charles Click, Research Associate

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CORN & SWEET SORGHUM SILAGE YIELD TESTS

2007

Experimental Procedures

Research and Education Center Tests: Twenty-eight corn hybrids varieties were evaluated for silage yield and quality in 2007. The test was conducted at the East Tennessee (Knoxville), Highland Rim (Springfield), Middle Tennessee (Spring Hill), and Greeneville Research and Education Centers (REC). Five **sweet sorghum** varieties were evaluated for silage yield and quality at the East Tennessee REC. The plot size at all locations consisted of two rows 30 ft. 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 by commercial silage harvesters. A sub-sample from each plot of approximately 4 lbs was taken for analysis. Fresh weight and dried weight was recorded on each sample for determination of moisture at harvest. The samples were then ground and analyzed for nutrient content. Silage quality analyses were provided by the Cumberland Valley Analytical Services, Inc., Hagerstown, MD. Milk per ton and milk per acre calculations were performed using the University of Wisconsin Milk2000 program.

Blount County Strip Trial: A seed industry strip trial was planted in Blount County, Tennessee during the 2007 season. The harvest and feed quality analysis of this trial was supervised and conducted by the University of Tennessee Variety Testing and Demonstration Program personnel along with the cooperating producer and seed company representatives present at harvest. Plots were planted, sprayed, fertilized, and harvested with the equipment used in the cooperating producer's farming operation. The strips were trimmed on the ends so that the lengths were the same for each variety, or if the lengths were different then the harvested length was measured for each variety and appropriate harvested area adjustments were made to determine the yield per acre.

Growing Season: Record setting heat and drought conditions prevailed throughout most of the growing season in Middle and East Tennessee where the tests were conducted. The location that suffered the greatest reduction in yield in 2007 compared to 2006 was the Plateau REC. The average silage yield across hybrids at PREC was 4.4 t/a in 2007 compared to an average of 7.2 t/a in 2006.

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 Research and Education Centers where the corn silage variety tests were conducted in 2007.

Research and Education Center	Location	Planting Date	Harvest Date	Plant Population
East Tennessee	Knoxville	April 23, 2007	August 14, 2007	32,981
Greenville	Greeneville	May 10, 2007	August 17, 2007	24,103
Plateau	Crossville	May 2, 2007	August 21, 2007	30,202
Middle Tennessee	Spring Hill	April 27, 2007	August 15, 2007	23,522
Highland Rim	Springfield	April 23, 2007	August 10, 2007	28,169

Table 2. Mean yields † of 28 corn hybrids evaluated for silage at five locations in Tennessee during 2007.

Brand	Hybrid	Dry Weight Avg. Yield ± Std Err. (n=5)	65% Moisture Avg. Yield ± Std Err. (n=5)	Dry Weight Knoxville	Dry Weight Greeneville	Dry Weight Crossville	Dry Weight Spring Hill	Dry Weight Springfield
		tons/a						
Pioneer	33V16 (YGCB/RR2	6.9 ± 0.3	19.6 ± 0.8	8.9	7.5	5.3	5.2	7.4
Augusta	A5337 CB	6.8 ± 0.3	19.3 ± 0.9	9.5	7.1	3.8	5.9	7.4
Dyna Gro	58K40 (RR)	6.8 ± 0.3	19.3 ± 0.8	9.8	8.0	5.2	4.9	5.9
Augusta	A-06-04 HX	6.7 ± 0.3	19.2 ± 0.9	9.8	6.7	4.9	4.9	7.4
FFR	746 RR/Bt	6.6 ± 0.3	19.0 ± 0.9	8.6	7.7	5.2	5.3	6.4
FFR	755 HX (LL)	6.5 ± 0.3	18.7 ± 0.8	7.9	7.6	5.1	5.0	7.1
Augusta	A-06-02 HX	6.5 ± 0.3	18.7 ± 0.9	8.2	7.2	4.1	5.5	7.6
Augusta	A-06-06	6.5 ± 0.3	18.7 ± 0.9	9.8	6.8	3.7	5.8	6.5
DeKalb	DKC69-71 (RR2/YGCB)	6.4 ± 0.3	18.4 ± 0.9	8.6	9.4	5.1	4.2	4.8
FFR	787 RR2/Bt	6.3 ± 0.3	18.0 ± 0.8	8.5	6.9	3.5	6.3	6.2
FFR	886 RR2	6.3 ± 0.3	18.0 ± 0.9	7.4	8.2	4.4	5.4	6.0
Augusta	A5338 CB	6.2 ± 0.3	17.8 ± 0.9	8.1	6.5	4.9	5.2	6.4
DeKalb	DKC67-87 (RR2/YGCB)	6.2 ± 0.3	17.8 ± 0.8	8.6	7.2	4.6	4.6	6.2
Augusta	A-06-15	6.2 ± 0.3	17.7 ± 0.9	9.0	6.9	4.4	6.3	4.3
Croplan	9009 CL	6.2 ± 0.3	17.7 ± 0.8	9.0	6.9	3.6	5.0	6.4
Dyna Gro	57G48 (RR/YGRW)	6.1 ± 0.3	17.5 ± 1.0	8.2	7.1	4.2	5.0	6.0
Augusta	A5175 CB	6.1 ± 0.3	17.4 ± 0.8	8.1	6.2	4.3	5.3	6.6
Dyna-Gro	58P60 (RR/Bt)	6.1 ± 0.3	17.3 ± 0.8	9.5	6.2	4.0	6.1	4.5
Croplan	8950 RB	6.1 ± 0.3	17.3 ± 0.9	8.6	6.9	4.3	5.2	5.3
DeKalb	DKC69-43 (RR2)	6.0 ± 0.3	17.3 ± 0.8	9.0	6.0	4.4	4.6	6.3
Pioneer	31R87 (RR2)	5.9 ± 0.3	17.0 ± 0.8	8.3	6.8	4.8	4.4	5.4
Augusta	A-06-10 HX	5.9 ± 0.3	16.9 ± 0.9	8.3	7.1	4.5	4.9	4.9
Croplan	851 TS	5.9 ± 0.3	16.9 ± 0.9	7.1	6.4	5.1	6.1	5.0
DeKalb	DKC67-23 (RR2/YGCB)	5.9 ± 0.3	16.9 ± 0.9	8.2	6.5	4.2	4.8	5.9
Augusta	A-04-102 CB	5.9 ± 0.4	16.7 ± 1.0	7.4	7.5	4.7	4.9	4.8
Pioneer	31G71 (HX1/LL/RR2)	5.8 ± 0.3	16.6 ± 0.8	8.0	6.8	4.2	5.2	4.7
Croplan	8221 RB	5.6 ± 0.3	15.9 ± 0.9	8.0	6.5	3.9	4.7	4.7
FFR	842 RR2	5.4 ± 0.3	15.4 ± 0.8	8.4	7.0	3.2	4.9	3.3
Avg. (tons/a)		**6.1**	**17.6**	**8.5**	**7.1**	**4.4**	**5.2**	**5.9**
L.S.D.$_{.05}$ (tons/a)		**0.8**	**2.2**	**1.5**	**1.5**	**1.7**	**1.3**	**2.5**
C.V. (%)		**17.1**	**17.1**	**10.4**	**11.3**	**23.5**	**15.2**	**25.9**

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

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

YGRW = contians a gene for rootworm resistance

RR, RR2 = contains a gene for tolerance to glyphosate

LL = contains a gene for tolerance to glufosinate

CL = contains a gene for tolerance to Imidazolinone class herbicides

Table 3. Mean yields † and agronomic characteristics of 28 corn hybrids evaluated for silage at five locations in Tennessee during 2007.

Brand	Hybrid	Dry Weight Avg. Yield ± Std Err. (n=5)	65% Moisture Avg. Yield ± Std Err. (n=5)	Moisture at harvest (n=5)	Lodging (n=2)	Plant Height (n=5)	Ear Height (n=3)
		tons/a	tons/a	%	%	inches	inches
Pioneer	33V16 (YGCB/RR2	6.8 ± 0.3	19.6 ± 0.8	48.7	0	91	36
Augusta	A5337 CB	6.8 ± 0.3	19.3 ± 0.9	49.7	0	88	36
Dyna Gro	58K40 (RR)	6.8 ± 0.3	19.3 ± 0.8	53.1	0	92	41
Augusta	A-06-04 HX	6.7 ± 0.3	19.2 ± 0.9	50.8	0	88	38
FFR	746 RR/Bt	6.6 ± 0.3	18.9 ± 0.9	53.0	0	88	42
FFR	755 HX (LL)	6.5 ± 0.3	18.7 ± 0.9	53.1	0	94	40
Augusta	A-06-02 HX	6.5 ± 0.3	18.7 ± 0.8	53.5	0	94	39
Augusta	A-06-06	6.5 ± 0.3	18.6 ± 0.9	50.0	1	89	37
DeKalb	DKC69-71 (RR2/YGCB)	6.4 ± 0.3	18.4 ± 0.9	51.4	0	89	40
FFR	787 RR2/Bt	6.3 ± 0.3	17.9 ± 0.8	56.1	0	87	40
FFR	886 RR2	6.3 ± 0.3	17.9 ± 0.9	53.6	0	95	41
Augusta	A5338 CB	6.2 ± 0.3	17.8 ± 0.9	52.8	1	88	37
DeKalb	DKC67-87 (RR2/YGCB)	6.2 ± 0.3	17.8 ± 0.8	50.5	0	90	40
Augusta	A-06-15	6.2 ± 0.3	17.7 ± 0.9	53.8	0	91	43
Croplan	9009 CL	6.2 ± 0.3	17.7 ± 0.8	55.7	0	92	42
Dyna Gro	57G48 (RR/YGRW)	6.1 ± 0.3	17.5 ± 1.0	50.0	1	86	36
Augusta	A5175 CB	6.1 ± 0.3	17.4 ± 0.8	48.8	1	87	37
Dyna-Gro	58P60 (RR/Bt)	6.1 ± 0.3	17.4 ± 0.8	55.6	0	86	38
Croplan	8950 RB	6.1 ± 0.3	17.3 ± 0.9	52.1	0	92	40
DeKalb	DKC69-43 (RR2)	6.0 ± 0.3	17.3 ± 0.8	52.0	1	82	36
Pioneer	31R87 (RR2)	6.0 ± 0.3	17.0 ± 0.8	51.8	1	89	38
Augusta	A-06-10 HX	5.9 ± 0.3	17.0 ± 0.9	53.8	1	84	37
Croplan	851 TS	5.9 ± 0.3	16.9 ± 0.9	50.7	0	83	34
DeKalb	DKC67-23 (RR2/YGCB)	5.9 ± 0.3	16.8 ± 0.9	48.7	1	86	39
Augusta	A-04-102 CB	5.8 ± 0.3	16.6 ± 0.8	53.7	0	85	39
Pioneer	31G71 (HX1/LL/RR2)	5.7 ± 0.3	16.2 ± 1.0	48.0	0	89	37
Croplan	8221 RB	5.6 ± 0.3	15.9 ± 0.9	54.1	0	88	42
FFR	842 RR2	5.4 ± 0.3	15.3 ± 0.8	52.4	0	84	37
	Average	**6.1**	**17.5**	**52.1**	**0**	**88**	**39**

Codes:

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

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

YGRW = contians a gene for rootworm resistance

RR, RR2 = contains a gene for tolerance to glyphosate

LL = contains a gene for tolerance to glufosinate

CL = contains a gene for tolerance to Imidazolinone class herbicides

Table 4. Mean yields † and feed quality characteristics of 28 corn hybrids evaluated for silage at five locations in Tennessee during 2007.

Brand	Hybrid	Dry Weight Avg. Yield ± Std Err. (n=5)	Moisture at Harvest (n=5)	Crude Protein (n=5)	NDF (n=5)	NDF 48h IV Digest (n=5)	Starch (n=5)	ADF (n=5)	TDN (n=5)	NEL (n=5)	Milk/ton (n=5)	Milk/acre (n=5)
		tons/a	%	% dm	% dm	% of NDF	% dm	% dm	% dm	Mcals/lb	lbs/ton	lbs/acre
Pioneer	33V16 (YGCB/RR2	6.8 ± 0.3	48.7	7.7	44.3	69.1	31.6	25.5	74.2	0.77	3842	26395
Augusta	A5337 CB	6.8 ± 0.3	49.7	7.8	39.5	67.4	35.7	23.3	74.5	0.78	3849	26018
Dyna Gro	58K40 (RR)	6.8 ± 0.3	53.1	8.2	42.3	67.4	32.6	24.9	74.0	0.77	3816	25799
Augusta	A-06-04 HX	6.7 ± 0.3	50.8	8.1	42.0	68.4	33.0	24.6	74.5	0.77	3856	25987
FFR	746 RR/Bt	6.6 ± 0.3	53.0	8.1	43.6	65.1	31.5	25.8	72.5	0.75	3689	24532
FFR	755 HX (LL)	6.5 ± 0.3	53.1	8.1	44.2	67.2	30.0	26.2	73.5	0.76	3774	24647
Augusta	A-06-02 HX	6.5 ± 0.3	53.5	7.8	40.5	67.2	34.9	23.7	74.1	0.77	3816	24881
Augusta	A-06-06	6.5 ± 0.3	50.0	7.8	45.7	66.5	29.5	26.5	72.7	0.75	3709	24220
DeKalb	DKC69-71 (RR2/YGCB)	6.4 ± 0.3	51.4	8.0	44.9	68.7	30.5	25.6	73.7	0.77	3801	24438
FFR	787 RR2/Bt	6.3 ± 0.3	56.1	8.0	46.3	69.0	28.0	27.0	74.5	0.78	3861	24364
FFR	886 RR2	6.3 ± 0.3	53.6	7.9	45.4	69.3	29.6	26.7	74.2	0.77	3839	24109
Augusta	A5338 CB	6.2 ± 0.3	52.8	8.1	41.2	68.1	33.6	24.2	74.2	0.77	3835	23928
DeKalb	DKC67-87 (RR2/YGCB)	6.2 ± 0.3	50.5	8.1	38.7	67.4	36.3	22.4	74.8	0.78	3870	24108
Augusta	A-06-15	6.2 ± 0.3	53.8	8.4	46.3	69.3	28.6	27.0	74.2	0.77	3840	23772
Croplan	9009 CL	6.2 ± 0.3	55.7	8.2	46.6	69.6	27.8	27.2	74.6	0.78	3876	23953
Dyna Gro	57G48 (RR/YGRW)	6.1 ± 0.3	50.0	8.0	40.5	68.0	34.4	23.9	74.4	0.77	3847	23505
Augusta	A5175 CB	6.1 ± 0.3	48.8	8.3	41.6	70.9	33.0	24.2	76.3	0.80	4008	24411
Dyna-Gro	58P60 (RR/Bt)	6.1 ± 0.3	55.6	8.2	40.7	66.9	34.4	23.7	74.1	0.77	3818	23099
Croplan	8950 RB	6.1 ± 0.3	52.1	8.0	42.3	69.4	32.7	24.4	74.6	0.78	3871	23458
DeKalb	DKC69-43 (RR2)	6.0 ± 0.3	52.0	8.3	40.4	69.4	34.5	22.9	75.1	0.78	3907	23601
Pioneer	31R87 (RR2)	6.0 ± 0.3	51.8	7.5	42.1	66.8	33.5	24.9	73.5	0.76	3773	22410
Augusta	A-06-10 HX	5.9 ± 0.3	53.8	8.4	39.0	69.1	35.7	23.0	75.4	0.78	3926	23281
Croplan	851 TS	5.9 ± 0.3	50.7	8.6	40.2	68.7	34.5	23.3	75.4	0.79	3926	23240
DeKalb	DKC67-23 (RR2/YGCB)	5.9 ± 0.3	48.7	8.0	39.8	66.0	35.3	23.3	74.1	0.77	3807	22463
Augusta	A-04-102 CB	5.8 ± 0.3	53.7	7.9	41.0	70.3	34.7	23.4	75.3	0.78	3931	23034
Pioneer	31G71 (HX1/LL/RR2)	5.7 ± 0.3	48.0	8.3	42.2	68.2	32.4	24.6	74.6	0.78	3863	22364
Croplan	8221 RB	5.6 ± 0.3	54.1	8.1	42.4	65.5	32.7	25.1	73.5	0.76	3760	20906
FFR	842 RR2	5.4 ± 0.3	52.4	8.4	45.4	69.5	29.7	25.7	73.7	0.77	3808	20487

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

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

YGRW, RW = contains a gene for rootworm resistance

RR, RR2 = contains a gene for tolerance to glyphosate

LL = contains a gene for tolerance to glufosinate

CL = contains a gene for tolerance to Imidazolinone class herbicides

NDF = Neutral Detergent Fiber

ADF = Acid Detergent Fiber

TDN = Total Digestable Nutrients

NEL = Net Energy for Lactation

Table 5. Mean yields † and feed quality characteristics of 28 corn hybrids evaluated for silage at five locations in Tennessee during 2007, sorted by brand.

Brand	Hybrid	Dry Weight Avg. Yield ± Std Err. (n=5)	Moisture at Harvest (n=5)	Crude Protein (n=5)	NDF (n=5)	NDF 48h IV Digest (n=5)	Starch (n=5)	ADF (n=5)	TDN (n=5)	NEL (n=5)	Milk/ton (n=5)	Milk/acre (n=5)
		tons/a	%	% dm	% dm	% of NDF	% dm	% dm	% dm	Mcals/lb	lbs/ton	lbs/acre
Augusta	A5337 CB	6.8 ± 0.3	49.7	7.8	39.5	67.4	35.7	23.3	74.5	0.78	3849	26018
Augusta	A-06-04 HX	6.7 ± 0.3	50.8	8.1	42.0	68.4	33.0	24.6	74.5	0.77	3856	25987
Augusta	A-06-06	6.5 ± 0.3	50.0	7.8	45.7	66.5	29.5	26.5	72.7	0.75	3709	24220
Augusta	A-06-02 HX	6.5 ± 0.3	53.5	7.8	40.5	67.2	34.9	23.7	74.1	0.77	3816	24881
Augusta	A5338 CB	6.2 ± 0.3	52.8	8.1	41.2	68.1	33.6	24.2	74.2	0.77	3835	23928
Augusta	A-06-15	6.2 ± 0.3	53.8	8.4	46.3	69.3	28.6	27.0	74.2	0.77	3840	23772
Augusta	A5175 CB	6.1 ± 0.3	48.8	8.3	41.6	70.9	33.0	24.2	76.3	0.80	4008	24411
Augusta	A-06-10 HX	5.9 ± 0.3	53.8	8.4	39.0	69.1	35.7	23.0	75.4	0.78	3926	23281
Augusta	A-04-102 CB	5.8 ± 0.3	53.7	7.9	41.0	70.3	34.7	23.4	75.3	0.78	3931	23034
Croplan	9009 CL	6.2 ± 0.3	55.7	8.2	46.6	69.6	27.8	27.2	74.6	0.78	3876	23953
Croplan	8950 RB	6.1 ± 0.3	52.1	8.0	42.3	69.4	32.7	24.4	74.6	0.78	3871	23458
Croplan	851 TS	5.9 ± 0.3	50.7	8.6	40.2	68.7	34.5	23.3	75.4	0.79	3926	23240
Croplan	8221 RB	5.6 ± 0.3	54.1	8.1	42.4	65.5	32.7	25.1	73.5	0.76	3760	20906
DeKalb	DKC69-71 (RR2/YGCB)	6.4 ± 0.3	51.4	8.0	44.9	68.7	30.5	25.6	73.7	0.77	3801	24438
DeKalb	DKC67-87 (RR2/YGCB)	6.2 ± 0.3	50.5	8.1	38.7	67.4	36.3	22.4	74.8	0.78	3870	24108
DeKalb	DKC69-43 (RR2)	6.0 ± 0.3	52.0	8.3	40.4	69.4	34.5	22.9	75.1	0.78	3907	23601
DeKalb	DKC67-23 (RR2/YGCB)	5.9 ± 0.3	48.7	8.0	39.8	66.0	35.3	23.3	74.1	0.77	3807	22463
Dyna Gro	58K40 (RR)	6.8 ± 0.3	53.1	8.2	42.3	67.4	32.6	24.9	74.0	0.77	3816	25799
Dyna Gro	57G48 (RR/YGRW)	6.1 ± 0.3	50.0	8.0	40.5	68.0	34.4	23.9	74.4	0.77	3847	23505
Dyna-Gro	58P60 (RR/Bt)	6.1 ± 0.3	55.6	8.2	40.7	66.9	34.4	23.7	74.1	0.77	3818	23099
FFR	746 RR/Bt	6.6 ± 0.3	53.0	8.1	43.6	65.1	31.5	25.8	72.5	0.75	3689	24532
FFR	755 HX (LL)	6.5 ± 0.3	53.1	8.1	44.2	67.2	30.0	26.2	73.5	0.76	3774	24647
FFR	886 RR2	6.3 ± 0.3	53.6	7.9	45.4	69.3	29.6	26.7	74.2	0.77	3839	24109
FFR	787 RR2/Bt	6.3 ± 0.3	56.1	8.0	46.3	69.0	28.0	27.0	74.5	0.78	3861	24364
FFR	842 RR2	5.4 ± 0.3	52.4	8.4	45.4	69.5	29.7	25.7	73.7	0.77	3808	20487
Pioneer	33V16 (YGCB/RR2	6.8 ± 0.3	48.7	7.7	44.3	69.1	31.6	25.5	74.2	0.77	3842	26395
Pioneer	31R87 (RR2)	6.0 ± 0.3	51.8	7.5	42.1	66.8	33.5	24.9	73.5	0.76	3773	22410
Pioneer	31G71 (HX1/LL/RR2)	5.7 ± 0.3	48.0	8.3	42.2	68.2	32.4	24.6	74.6	0.78	3863	22364

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

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

YGRW, RW = contains a gene for rootworm resistance

RR, RR2 = contains a gene for tolerance to glyphosate

LL = contains a gene for tolerance to glufosinate

CL = contains a gene for tolerance to Imidazolinone class herbicides

NDF = Neutral Detergent Fiber

ADF = Acid Detergent Fiber

TDN = Total Digestable Nutrients

NEL = Net Energy for Lactation

Table 6. Mean yields † of nine corn hybrids evaluated in five environments for two years (2006 - 2007) in Tennessee.

Brand	Hybrid	Dry Weight Avg. Yield ± Std Err. (n=10)	65% Moisture Avg. Yield ± Std Err. (n=10)	Dry Weight Knoxville	Dry Weight Greeneville	Dry Weight Crossville	Dry Weight Spring Hill	Dry Weight Springfield
		tons/a						
Dyna Gro	58K40 (RR)	6.9 ± 0.2	19.6 ± 0.6	9.6	8.1	6.4	5.2	5.0
FFR	746 RR/Bt	6.8 ± 0.2	19.5 ± 0.6	9.0	7.7	7.5	5.0	5.0
DeKalb	DKC69-71 (RR2/YGCB)	6.6 ± 0.2	18.8 ± 0.6	8.8	8.8	6.5	4.4	4.2
FFR	755 HX (LL)	6.5 ± 0.2	18.7 ± 0.6	9.5	7.3	6.0	5.5	4.3
Dyna Gro	57G48 (RR/YGRW)	6.5 ± 0.2	18.5 ± 0.7	8.4	7.3	6.0	5.0	5.6
FFR	886 RR2	6.4 ± 0.2	18.4 ± 0.6	8.3	7.9	6.0	5.1	4.9
Pioneer	31R87 (RR2)	6.3 ± 0.2	18.1 ± 0.6	8.5	7.8	6.0	4.7	4.6
DeKalb	DKC67-23 (RR2/YGCB)	6.2 ± 0.2	17.8 ± 0.6	8.5	7.3	5.3	5.3	4.6
FFR	842 RR2	6.0 ± 0.2	17.1 ± 0.6	9.1	8.0	5.1	4.6	3.2
Avg. (tons/a)		**6.5**	**18.5**	**8.8**	**7.8**	**6.1**	**5.0**	**4.6**
L.S.D.$_{.05}$ (tons/a)		**0.7**	**2.1**	**1.3**	**1.5**	**2.1**	**1.0**	**2.1**
C.V. (%)		**16.7**	**16.7**	**8.9**	**11.9**	**24.1**	**12.9**	**27.9**

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

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

YGRW, RW = contains a gene for rootworm resistance

RR, RR2 = contains a gene for tolerance to glyphosate

LL = contains a gene for tolerance to glufosinate

CL = contains a gene for tolerance to Imidazolinone class herbicides

Table 7. Mean yields † and agronomic characteristics of nine corn hybrids evaluated for silage in five environments for two years (2006-2007) in Tennessee.

Brand	Variety	Dry Weight Avg. Yield ± Std Err. (n=10)	65% Moisture Avg. Yield ± Std Err. (n=10)	Moisture at harvest (n=10)	Lodging (n=4)	Plant Height (n=10)	Ear Height (n=6)
		tons/a	tons/a	%	%	inches	inches
Dyna Gro	58K40 (RR)	6.9 ± 0.2	19.6 ± 0.6	60.4	0	94	42
FFR	746 RR/Bt	6.8 ± 0.2	19.5 ± 0.6	60.4	1	90	42
DeKalb	DKC69-71 (RR2/YGCB)	6.6 ± 0.2	18.8 ± 0.6	59.9	1	92	41
FFR	755 HX (LL)	6.5 ± 0.2	18.7 ± 0.6	59.4	2	94	40
Dyna Gro	57G48 (RR/YGRW)	6.5 ± 0.2	18.5 ± 0.7	58.3	0	90	37
FFR	886 RR2	6.4 ± 0.2	18.4 ± 0.6	60.8	2	95	41
Pioneer	31R87 (RR2)	6.3 ± 0.2	18.1 ± 0.6	59.1	1	92	40
DeKalb	DKC67-23 (RR2/YGCB)	6.2 ± 0.2	17.8 ± 0.6	57.0	1	90	40
FFR	842 RR2	6.0 ± 0.2	17.1 ± 0.6	59.9	1	87	39

Table 8. Mean yields † and feed quality characteristics of nine corn hybrids evaluated for silage at five locations for 2 years (2006-2007) in Tennessee.

Brand	Hybrid	Dry Weight Avg. Yield ± Std Err. (n=10)	Moisture at Harvest (n=10)	Crude Protein (n=9)	NDF (n=9)	NDF 48h IV Digest (n=9)	Starch (n=9)	ADF (n=9)	TDN (n=9)	NEL (n=9)	Milk/ton (n=9)	Milk/acre (n=9)
		tons/a	%	% dm	% dm	% of NDF	% dm	% dm	% dm	Mcals/lb	lbs/ton	lbs/acre
Dyna Gro	58K40 (RR)	6.9 ± 0.2	60.4	8.1	46.2	65.9	26.9	27.0	72.0	0.75	3659	25118
FFR	746 RR/Bt	6.8 ± 0.2	60.4	8.2	45.7	64.4	27.0	26.7	71.4	0.74	3600	24567
DeKalb	DKC69-71 (RR2/YGCB)	6.6 ± 0.2	59.9	8.0	48.3	66.8	24.5	27.4	71.1	0.74	3600	23555
FFR	755 HX (LL)	6.5 ± 0.2	59.4	7.8	47.0	64.9	26.4	27.0	71.7	0.74	3624	23646
Dyna Gro	57G48 (RR/YGRW)	6.5 ± 0.2	58.3	8.0	44.0	67.1	29.1	25.6	73.3	0.76	3759	24233
FFR	886 RR2	6.4 ± 0.2	60.8	8.0	48.4	66.3	24.4	28.3	71.1	0.74	3594	23091
Pioneer	31R87 (RR2)	6.3 ± 0.2	59.1	7.5	45.9	65.2	28.2	26.8	72.3	0.75	3673	23153
DeKalb	DKC67-23 (RR2/YGCB)	6.2 ± 0.2	57.0	8.0	42.5	65.2	31.0	24.5	73.6	0.77	3766	23373
FFR	842 RR2	6.0 ± 0.2	59.9	8.5	46.3	68.1	26.4	26.0	73.0	0.76	3747	22385

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

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

RR, RR2 = contains a gene for tolerance to glyphosate LL = contains a gene for tolerance to glufosinate CL = contains a gene for tolerance to Imidazolinone class herbicides

NDF = Neutral Detergent Fiber ADF = Acid Detergent Fiber TDN = Total Digestable Nutrients NEL = Net Energy for Lactation

Table 9. Mean yields † of six corn hybrids evaluated in four environments for three years (2005-2007) in Tennessee.

Brand	Hybrid	Dry Weight Avg. Yield ± Std Err. (n=12)	65% Moisture Avg. Yield ± Std Err. (n=12)	Dry Weight Knoxville	Dry Weight Greeneville	Dry Weight Crossville	Dry Weight Springfield
		tons/a	tons/a	tons/a	tons/a	tons/a	tons/a
Dyna Gro	58K40 (RR)	7.7 ± 0.2	22.0 ± 0.6	10.4	7.4	7.4	5.6
DeKalb	DKC69-71 (RR2/YGCB)	7.5 ± 0.2	21.6 ± 0.6	9.5	8.0	7.5	5.1
FFR	746 RR/Bt	7.4 ± 0.2	21.2 ± 0.6	9.2	7.1	7.9	5.3
FFR	886 RR2	7.1 ± 0.2	20.3 ± 0.6	8.8	7.7	6.7	5.3
FFR	755 HX (LL)	7.1 ± 0.2	20.3 ± 0.6	9.7	6.9	7.1	4.8
Pioneer	31R87 (RR2)	6.9 ± 0.2	19.8 ± 0.6	9.0	7.2	6.7	4.8
Avg. (tons/a)		**7.3**	**20.9**	**9.4**	**7.4**	**7.2**	**5.2**
L.S.D.$_{.05}$ (tons/a)		**0.8**	**2.3**	**1.3**	**1.5**	**1.9**	**1.8**
C.V. (%)		**15.7**	**15.7**	**9.3**	**13.2**	**19.2**	**23.9**

† all silage yields are adjusted to Dry Weight basis.

Table 10. Mean yields † and agronomic characteristics of six corn hybrids evaluated for silage in four environments for three years (2005-2007) in Tennessee.

Brand	Variety	Dry Weight Avg. Yield ± Std Err. (n=12)	65% Moisture Avg. Yield ± Std Err. (n=12)	Moisture at harvest (n=12)	Lodging (n=3)	Plant Height (n=12)	Ear Height (n=7)
		tons/a	tons/a	%	%	inches	inches
Dyna Gro	58K40 (RR)	7.7 ± 0.2	22.0 ± 0.6	60.9	0	103	48
DeKalb	DKC69-71 (RR2/YGCB)	7.5 ± 0.2	21.6 ± 0.6	60.7	0	100	46
FFR	746 RR/Bt	7.4 ± 0.2	21.2 ± 0.6	61.5	1	99	48
FFR	886 RR2	7.1 ± 0.2	20.3 ± 0.6	63.0	0	104	47
FFR	755 HX (LL)	7.1 ± 0.2	20.3 ± 0.6	60.5	1	104	46
Pioneer	31R87 (RR2)	6.9 ± 0.2	19.8 ± 0.6	59.4	0	99	45

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

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

YGRW, RW = contains a gene for rootworm resistance

RR, RR2 = contains a gene for tolerance to glyphosate

LL = contains a gene for tolerance to glufosinate

CL = contains a gene for tolerance to Imidazolinone class herbicides

NDF = Neutral Detergent Fiber

ADF = Acid Detergent Fiber

TDN = Total Digestable Nutrients

NEL = Net Energy for Lactation

Table 11. Mean yields † and feed quality characteristics of six corn hybrids evaluated for silage at four locations for three years (2005-2007) in Tennessee.

Brand	Hybrid	Dry Weight Avg. Yield ± Std Err. (n=12)	Moisture at Harvest (n=12)	Crude Protein (n=11)	NDF (n=11)	NDF 48h IV Digest (n=11)	Starch (n=11)	ADF (n=11)	TDN (n=11)	NEL (n=11)	Milk/ton (n=11)	Milk/acre (n=11)
		tons/a	%	% dm	% dm	% of NDF	% dm	% dm	% dm	Mcals/lb	lbs/ton	lbs/acre
Dyna Gro	58K40 (RR)	7.7 ± 0.2	60.9	7.7	47.4	64.2	27.3	27.6	71.8	0.75	3637	27050
DeKalb	DKC69-71 (RR2/YGCB)	7.5 ± 0.2	60.7	7.6	49.6	64.7	25.2	28.2	70.8	0.74	3565	25558
FFR	746 RR/Bt	7.4 ± 0.2	61.5	7.8	45.0	62.6	29.9	26.0	71.8	0.74	3622	25744
FFR	886 RR2	7.1 ± 0.2	63.0	7.6	48.9	64.2	26.0	28.7	71.3	0.74	3601	24791
FFR	755 HX (LL)	7.1 ± 0.2	60.5	7.5	47.1	63.4	27.7	27.1	71.7	0.74	3623	25191
Pioneer	31R87 (RR2)	6.9 ± 0.2	59.4	7.2	47.2	64.2	28.3	27.6	72.3	0.75	3671	24471

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

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

YGRW, RW = contains a gene for rootworm resistance

RR, RR2 = contains a gene for tolerance to glyphosate

LL = contains a gene for tolerance to glufosinate

CL = contains a gene for tolerance to Imidazolinone class herbicides

NDF = Neutral Detergent Fiber

ADF = Acid Detergent Fiber

TDN = Total Digestable Nutrients

NEL = Net Energy for Lactation

Table 12. Mean yields †, feed quality characteristics, silk clipping, and kernel set of seven corn hybrids evaluated for silage in Blount County, Tennessee strip trial during 2007.

Brand	Hybrid	Dry Weight Avg. Yield ± Std Err.	65% Moisture Avg. Yield ± Std Err.	Moisture at Harvest	Crude Protein	NDF	NDF 48h IV Digest	Starch	ADF	TDN	NEL	Milk/ton	Milk/acre	Silk Clipping	Kernel Set
		tons/a	tons/a	%	% dm	% dm	% of NDF	% dm	% dm	% dm	Mcals/lb	lbs/ton	lbs/acre	Score	%
Wyffels	W8601 (RR2/YGPL)	4.9	14.0	78.0	10.9	48.8	65.3	17.7	28.8	70.0	0.73	3512	17210	5.0	88.1
Dekalb	DKC69-71 (RR2/YGCB)	4.7	13.5	78.9	10.9	55.6	69.1	8.8	32.4	67.9	0.70	3388	15922	3.5	21.3
FFR	886 RR2 (**SAMPLE LOST**)	4.3	12.4	78.9	.	.	.	.	.	.	.	.	.	4.0	22.7
FFR	746 RR/YGCB	4.2	11.9	80.3	12.0	51.3	66.2	11.1	30.1	66.6	0.69	3273	13748	5.0	59.2
Dekalb	DKC67-23 (RR2/YGCB)	4.1	11.8	78.5	10.4	51.0	62.7	14.6	30.1	67.0	0.69	3275	13429	4.0	77.0
FFR	842 RR2	4.1	11.8	79.9	10.6	52.9	66.3	12.0	30.8	67.4	0.70	3332	13661	5.0	29.2
Dekalb	DKC67-87 (RR2)	4.0	11.6	77.5	11.1	51.3	62.2	11.9	31.0	64.4	0.66	3082	12327	4.5	13.6
	Average	**4.3**	**12.4**	**78.9**	**11.0**	**51.8**	**65.3**	**12.7**	**30.5**	**67.2**	**0.69**	**3310**	**14383**	**4.4**	**44.4**

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

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

RR, RR2 = contains a gene for tolerance to glyphosate

CL = contains a gene for tolerance to Imidazolinone class herbicides

LL = contains a gene for tolerance to glufosinate

NDF = Neutral Detergent Fiber

ADF = Acid Detergent Fiber

TDN = Total Digestable Nutrients

NEL = Net Energy for Lactation

Silk Clipping = 1 to 5 scale; where 1 = no clipping by insects; 5 = 90+% of silks clipped by insects.

Planted 4/9/07

Harvested 7/30/07

Table 13. Mean yields and feed quality characteristics of five sweet sorghum varieties evaluated for silage at Knoxville, Tennessee during 2007.

Brand	Hybrid	Dry Weight Avg. Yield ± Std Err.	65% Moisture Avg. Yield ± Std Err.	Lodging	Plant Height	Moisture at Harvest	Crude Protein	NDF	NDF 48h IV Digest	Starch	Sugar	ADF	TDN	NEL	Milk/ton	Milk/acre
		tons/a	tons/a	Score	inches	%	% dm	% dm	% of NDF	% dm	% dm	% dm	% dm	Mcals/lb	lbs/ton	lbs/acre
MS	Keller	20.6 ± 1.5	59.0 ± 4.2	2.8	140	67.1	7.1	48.4	42.2	17.5	10.0	29.7	54.9	0.56	2204	45465
MS	M81E	18.3 ± 1.5	52.4 ± 4.2	2.0	142	70.4	7.2	49.8	40.7	15.6	10.8	30.5	52.5	0.53	2017	36972
MS	Dale	14.3 ± 1.5	41.0 ± 4.2	2.7	145	72.7	8.3	48.7	45.8	17.5	9.0	29.6	58.4	0.60	2492	35713
VA	Della	11.9 ± 1.5	34.0 ± 4.2	3.7	139	74.0	7.4	52.5	44.4	11.2	10.2	32.9	51.7	0.52	1999	23728
MS	Theis	11.1 ± 1.5	31.9 ± 4.2	1.7	108	68.5	7.8	45.1	40.9	22.9	8.1	27.8	59.7	0.61	2537	28233
Avg. (tons/a)		**15.3**	**43.6**	**2.6**	**135**	**70.5**	**7.5**	**48.9**	**42.8**	**16.9**	**9.6**	**30.1**	**55.4**	**0.56**	**2250**	**34022**
L.S.D.$_{.05}$ (tons/a)		**4.8**	**13.5**													
C.V. (%)		**16.6**	**16.6**													

Lodging = 1 to 5 scale; where 1 = 95% of plants erect; 2.5 = ~50% of plants leaning at angle ≥ 45°; 5 = 95+% of plants leaning at an angle ≥ 45°.

NDF = Neutral Detergent Fiber

ADF = Acid Detergent Fiber

TDN = Total Digestable Nutrients

NEL = Net Energy for Lactation

Planted 5/8/07, seeding rate 87,600 / acre

Harvested 9/6/07

Table 14. Characteristics, as described by the seed company, of corn silage hybrids evaluated in yield tests in Tennessee during 2007.†

Brand	Hybrid	Grain Color	Maturity	Herbicide Tolerance	BT Gene	Released or Experimental	Comments from Companies
Augusta	A-04-102 CB	Y	119	---	YG	R	High yield, high test wgt, great health, stay green
Augusta	A-06-02 HX	Y	119	LL	Bt	R	High yield, great standability, tall
Augusta	A-06-04 HX	Y	109	LL	Bt	R	Excellent standability & health
Augusta	A-06-06	Y	112	---	---	R	High yield, excellent health/standability, LG Plant
Augusta	A-06-10 HX	Y	115	LL	Bt	R	Short, stress tolerant, grain quality, high yield, standability
Augusta	A-06-15	Y	119	---	---	R	---
Augusta	A5175 CB	Y	108	---	YG	R	Good yield environments, excellent health
Augusta	A5337 CB	Y	113	---	YG	R	High yeild environments, good stress/drought tolerance
Augusta	A5338 CB	Y	116	---	YG	R	High yeild environments, good stress/drought tolerance
Croplan	8221 RB	Y	118	RR	Bt	R	Dual purpose, excellent digestability
Croplan	851 TS	Y	118	RR	Bt+CRW	R	Avoid poor drained soils, silage > 30K/Ac, dual purpose
Croplan	8950 RB	Y	120	RR	Bt	R	Tall, heat/drought tolerant, excellent roots/stalks, avg staygreen
Croplan	9009 CL	Y	124	CL	---	R	Disease tolerant, high poplns, good drought tolerance, good silker
DeKalb	DKC67-23 (RR2/YGCB)	Y	117	RR2	YGCB	R	---
DeKalb	DKC67-87 (RR2/YGCB)	Y	117	RR2	YGCB	R	---
DeKalb	DKC69-43 (RR2)	Y	119	RR2	---	R	---
DeKalb	DKC69-71 (RR2/YGCB)	Y	119	RR2	YGCB	R	---
Dyna Gro	57G48 (RR/YGRW)	Y	113	RR2	CRW	R	Rootworm protected, drought tolerant
Dyna Gro	58K40 (RR)	Y	117	RR2	---	R	High tonnage, excellent stress tolerance
Dyna-Gro	58P60 (RR/Bt)	Y	120	RR2	YGCB	R	High tonnage, highly digestible
FFR	746 RR/Bt	Y	114	RR	Bt	R	---
FFR	755 HX (LL)	Y	115	LL	HX	R	---
FFR	787 RR2/Bt	Y	117	RR2	Bt	R	---
FFR	842 RR2	Y	117	RR2	---	R	---
FFR	886 RR2	Y	118	RR2	---	R	---
Pioneer	31G71 (HX1/LL/RR2)	Y	118	RR2/LL	HX1	R	---
Pioneer	31R87 (RR2)	Y	120	RR2	---	R	---
Pioneer	33V16 (YGCB/RR2)	Y	114	RR2	YGCB	R	---

Codes:

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

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

CL = contains a gene for tolerance to Imidazolinone class herbicides

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

LL = contains a gene for tolerance to glufosinate

W = white grain

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

Table 15. Contact information for corn hybrid and sweet sorghum seed companies evaluated in yield tests in Tennessee during 2007.†

Company	Contact	Phone	Email	Web site	Address
Augusta Seed Corporation		540-886-6055	augustaseed@aol.com		473 Tisdale Farm Ln, Stuanton, VA 24401
Croplan Genetics/Land o Lakes	Will Huckon John Patterson	931-231-6791 931-273-3590		www.croplangenetics.com	Ethridge, TN Manchester, TN
Monsanto (Dekalb)		800-335-2676		www.dekalb.com	
United Agri Products (Dyna-Gro)	Larry Stauber	901-277-3261	larry.stauber@uap.com	www.dynagroseed.com	57 Germantown Ct Suite 200, Cordova, TN 38018
Tennessee Farmers Coop	Jim Payne Chris Morris	901-652-0903 615-218-7963	jpayne@ourcoop.com	www.ourcoop.com	West TN East & Middle TN
Pioneer Hi-Bred Int.	Michael Hughes	800-331-2475	michael.hughes@pioneer.com	www.pioneer.com	7501 Memorial Pkwy SW Suite 205, Huntsville, AL 35802
Wyffels Hybrids Inc.	Scott Janes	270-926-2420	scojan@milesnmore.com	www.wyffels.com	Miles Farm Supply, P.O. Box 22879, Owensboro, KY 42304
Kentucky Sweet Sorghum Association	Morris Bitzer	859-806-3358	mbitzer@uky.edu	www.ca.uky.edu/nssppa	2049 Rebel Road, Lexington, KY 40503