

Corn Grain Variety Tests in Tennessee

2003

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

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

Robert C. Williams, Jr. Extension Area Specialist, Grain Crops

**Agronomic Crop Variety Testing and Demonstrations
Department of Plant Sciences
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://taes.tennessee.edu/researchprograms/Variety_trials/

Acknowledgments

This research was funded by the Tennessee Agricultural Experiment Station and the Tennessee Cooperative Extension Service 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

Mr. David Kincer, Research Associate

Experiment Stations:

Knoxville Experiment Station, Knoxville

Dr. John Hodges, Superintendent

Mr. Bobby McKee, Sr. Farm Crew Leader

Mr. Lee Ellis, Research Assistant

Plateau Experiment Station

Mr. Walt Hitch, Superintendent

Mr. Greg Blaylock, Light Farm Equipment Operator

Mr. Sam Simmons, Light Farm Equipment Operator

Highland Rim Experiment Station, Springfield

Dr. Barry Sims, Superintendent

Mr. William Pitt, Research Associate

Middle Tennessee Experiment Station, Spring Hill

Dr. Dennis Onks, Superintendent

Mr. Roy Thompson, Research Assistant

Milan Experiment Station, Milan

Dr. Blake Brown, Superintendent

Mr. Jason Williams, Research Associate

Mr. James McClure, Research Associate

Ames Plantation, Grand Junction

Dr. Rick Carlisle, Superintendent

Mr. Marshall Smith, Research Associate

County Standard Corn Tests

Coordinator: **Robert C. Williams, Jr.**, Area Specialist, Grain Crops

<u>County</u>	<u>Agent</u>	<u>Producer</u>
<u>Early Season Corn Hybrid</u>		
Lake	Greg Allen	Terry Petty
Henry	Ken Goddard	Jimmy Tosh
Obion	Tim Smith	David Weisner
Gibson	Phillip Shelby	William Simms
Weakley	Jeff Lannom	David Oliver
Dyer	Tim Campbell	Carl & Marvin Schultz
Giles	Kevin Rose	Pat Sulcer
Carlisle, Ky	Bob Middleton	Warren Dunn
Lauderdale	Jerry Parker	Mike Escue
Coffee	Dean Northcutt	L. A. Teal
<u>Medium Season Corn Hybrid</u>		
Henry	Ken Goddard	Jimmy Tosh
Tipton	Michelle Rankin	Darrell & Keith Whitehorn
Obion	Tim Smith	Elwin Tanner
Lake	Greg Allen	John Lindamood
Dyer	Tim Campbell	Carl & Marvin Schultz
Montgomery	Rusty Evans	Tony & Jason Hagewood
Haywood	Tracey Sullivan	Doug Tims
WTES	Bob Hayes	Angela Thompson
Robertson	Paul Hart	Freddie Edwards
Coffee	Dean Northcutt	L. A. Teal
Chester	Tommy Patterson	Bill Morrison
Weakley	Jeff Lannom	Billy Scarbrough
Gibson	Phillip Shelby	Mike Minton
<u>Full Season Corn Hybrid</u>		
Obion	Tim Smith	Bill & Jerry Sellers
Henry	Ken Goddard	Jimmy Tosh
Tipton	Michelle Rankin	Tommy & Keith Wilder
Lake	Greg Allen	John Lindamood
Gibson	Phillip Shelby	Mike Minton
Weakley	Jeff Lannom	Billy Scarbrough
Ballard, Ky	Bob Middleton	Powell Farms
Dyer	Tim Campbell	Carl & Marvin Schultz
Giles	Kevin Rose	Joe Bryan
Lauderdale	Jerry Parker	Mike Escue

Bt Corn Hybrid Test

Crockett	Richard Buntin	Steve Bailey
Carroll	Steve Burgess	Steve Coleman
Henry	Ken Goddard	Jimmy Tosh
Humphreys	Mike Wright	Steve May
Weakley	Jeff Lannom	Luke Cochran
Haywood	Tracey Sullivan	Clinton Evans
Lake	Greg Allen	Keiser Farms
Dyer	Tim Campbell	Carl & Marvin Schultz
Obion	Tim Smith	Ty & John McConnell
Coffee	Dean Northcutt	L. A. Teal

Glyphosate Tolerant (RR) Corn Hybrid Test

Obion	Tim Smith	William & Bill Thompson
Fayette	Jamie Jenkins	Harris Armour
Henry	Ken Goddard	David Wilson
Haywood	Tracey Sullivan	Clinton Evans
Lake	Greg Allen	Ed Sumara
Dyer	Tim Campbell	Jimmy Hester
Giles	Kevin Rose	J. Tucker
Robertson	Paul Hart	S & T Farm
Henry	Ken Goddard	Jimmy Tosh
Coffee	Dean Northcutt	Greg Freeze
Tipton	Michelle Rankin	Bubba Kirk
Lauderdale	Jerry Parker	Bill Spiller

White Corn Hybrid Test

Gibson	Phillip Shelby	Andy & Charles King
Benton	Jimmy Lumpkin	Mike Fitchpatrick
Lake	Greg Allen	Ed Sumara
Henry	Ken Goddard	David Wilson
Weakley	Jeff Lannom	Gary Brewer
Lincoln	David Qualls	Tommy & Jared Bradley

Table of Contents

Experimental Procedures	6
Interpretation of Data	6
Experiment Station Information	8
Experiment Station Tests	
Early-season Hybrids	9
Medium-season Hybrids	14
Full-season Hybrids	18
Gaucho Treated Seed	22
Hybrid Blends	28
County Standard Tests	
Early-season Hybrids	30
Medium-season Hybrids	31
Full-season Hybrids	32
BT Hybrids	33
Glyphosate (RR) Tolerant Hybrids	34
White Grain Hybrids	35
Common Hybrids in County and Experiment Station Tests	
Early-season Hybrids	36
Medium-season Hybrids	37
Full-season Hybrids	38
Hybrid Characteristics	39
USDA Regional Test	42

CORN GRAIN VARIETY TESTS IN TENNESSEE

EXPERIMENT STATION AND COUNTY STANDARD TESTS

2003

Experimental Procedures:

Experiment Station Tests: All corn hybrid trials were conducted in each of the physiographic regions of the state. Tests were conducted at the Ames Plantation (Grand Junction) and at the Highland Rim (Springfield), Knox (Knoxville), Middle TN (Spring Hill), and Milan (Milan) Agricultural Experiment Stations. Duplicate plantings of all three tests (early-, medium- and full-season) were made at the Milan and Middle Tennessee Experiment Stations for performance testing with and without irrigation. Also, an earlier planting of lower population density and a later planting of higher population density of the early-season test were made at the Plateau Experiment Station.

The corn hybrids were placed in either the early-, medium-, or full-season tests based on the maturity as reported by the company providing the hybrid. The early season test contained hybrids that had maturity <114 days after planting (DAP); the medium season test contained hybrids with maturity of 114-116 DAP; and the full season test contained hybrids with maturities >116 DAP. All corn hybrid trials were over-planted and thinned to a uniform population per acre at each location (see Table 1). Population varied with location but was the same for all hybrids at a given location. Tests were conducted using 30 inch row spacing. The tests were fertilized with 150 pounds of nitrogen per acre. A portion of the nitrogen was applied prior to seeding and the remainder was applied as a side-dress. The plot size was two rows, 30 feet in length. Plots were replicated three times at each location in a randomized complete block design. Because of the large number of hybrids in each test and the field variation at each location, an incomplete block design was imposed *ex post facto* prior to data analysis in order to reduce the within-block field variability and the experimental error.

County Standard Tests: The County Standard Corn Tests were conducted in several counties in Tennessee, and a few in West Kentucky. The number of counties depended on the test. The County Standard Tests were divided into early, medium, full, white, Bt, and Roundup Ready tests. Each hybrid was evaluated in a large strip-plot at each location, thus each county test was considered as one replication of the test in calculating the overall average yield and in conducting the statistical analysis to determine significant differences. At each location, plots were planted, sprayed, fertilized, and harvested with the equipment used in the cooperating producer's farming operation. The width and length of strip-plots were different in each county; however, within a location in a county, 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.

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. **All yields presented have been adjusted to 15.5% moisture.** 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 in order 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 8.0 bu/a and the mean yield of Hybrid A was 110 bu/a and the mean yield of Hybrid B was 115 bu/a, then the two hybrids are not statistically different in yield because the difference of 5 bu/a is less than the minimum of 8 bu/a required for them to be significant. Similarly, if the average yield of Hybrid C was 123

bu/a then it is significantly higher yielding than both Hybrid B ($123 - 115 = 8$ bu/a = LSD of 8) and Hybrid A ($123 - 110 = 13$ bu/a > LSD of 8).

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 mean square 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%.

RESULTS

Yield and Agronomic Traits. Ninety five corn hybrids were evaluated in the 2003 **Experiment Station (ES)** tests in Tennessee. There were 32 hybrids in the early- (Tables 2–5), 40 in the medium- (Tables 6-9) and 23 hybrids in the full-season tests (Tables 10–13). The 95 hybrids represent 15 different brands (Table 31). Common to both the ES and the **County Standard (CS)** tests were 17 early-season, 22 medium-season, and 11 full-season hybrids. The CS tests consisted of an early-season test (25 hybrids at 10 locations, Table 22), a medium-season test (19 hybrids at 13 locations, Table 23), a full-season test (9 hybrids at 10 locations, Table 24), a test of hybrids containing a Bt gene (23 hybrids at 9 locations, Table 25), a test of hybrids containing a gene for glyphosate tolerance (Roundup Ready)(18 hybrids at 12 locations, Table 26) and a test of white grain hybrids (6 hybrids at 6 locations, Table 27) for a total of 100 hybrids. In addition to Tennessee counties, the County Standard full-season test involved Ballard county in West Kentucky. In the Experiment Station tests, the white grain, Bt, RR, CL and stacked-trait hybrids were not placed in separate tests, but were placed in the maturity test for which they fit. Forty-three of the 95 hybrids in the 2003 ES tests have a Bt gene for insect resistance; 24 have a Roundup Ready gene for tolerance to glyphosate herbicide (denoted by RR); five have a gene for tolerance to Imadizolinone herbicide (denoted by CL); one has a gene for tolerance to Liberty herbicide; and 15 have “stacked” genes (primarily, RR and Bt).

Irrigated vs. Non-irrigated Yields. Duplicate tests were conducted at the Milan and Middle TN Experiment Stations with and without irrigation. In a year of very favorable moisture conditions, the average differences in yields across hybrids receiving irrigation versus non-irrigation at Milan in 2003 were: 33 bu/a for early-season hybrids (Table 2), 44 bu/a for medium-season hybrids (Table 6) and 41 bu/a for full-season hybrids (Table 10). The differences in yield between irrigated and non-irrigated plots were not as great at the Middle TN station. The differences in the overall test averages were 14, 9, and 3 bu/a for the early-, medium-, and full-season tests, respectively (Tables 2, 6, and 10).

Gaicho Treated vs. Untreated Seed. Eight hybrids were evaluated for yield following seed treated versus untreated with Gaicho insecticide. The results are presented in Tables 14-19. Across hybrids and locations the differences in yield were erratic. Agrigold A6607, Agrigold 6445, and Pioneer 31G98 had positive responses to Gaicho treated seed (+16, +4, and +2 bu/a, respectively). Dekalb DKC 64-10, Pioneer 34B24, and Pioneer 33R77 showed no response to the Gaicho treated seed; whereas, Dekalb DKC 69-71 and Dekalb DKC 60-09 responded negatively to the seed treatment (-1 and -9 bu/a, respectively).

50/50 Blends of Hybrids. A 50/50 seed blend of two hybrids in each of the early-, medium-, and full-season was made to compare the yield of the blend to the pure stand of the two hybrids. In all cases the blend was intermediate between the two hybrids making up the blend (Table 20). The blend was lower than the highest yielding hybrid of the blend and higher yielding than the lower yielding hybrid. In the early- and full-season tests we blended a Bt hybrid with a non-Bt hybrid. In the medium-season test, we blended two Bt hybrids.

EXPERIMENT STATION TESTS

Table 1. Location information from experiment stations where the corn hybrid tests were conducted in Tennessee in 2003.

Experiment Station	Location	Planting Date	Harvest Date	Plant Population	Soil Type
Early Season Corn Hybrids					
Knoxville	Knoxville	April 24, 2003	September 16, 2003	28,400	Sequatchie Silt Loam
Plateau (early planting)	Crossville	April 29, 2003	October 13, 2003	27,100	Lily Loam
" (late planting)	"	May 28, 2003	October 31, 2003	26,100	Lily Loam
Highland Rim	Springfield	April 15, 2003	September 15, 2003	26,000	Sango Silt Loam
Middle TN (irrigated)	Spring Hill	April 28, 2003	September 17, 2003	25,000	Maury Silt Loam
Middle TN (non-irrigated)	" "	April 28, 2003	September 18, 2003	25,000	Maury Silt Loam
Milan (irrigated)	Milan	April 16, 2003	September 18, 2003	26,100	Grenada,Routon Silt Loam
" (non-irrigated)	"	April 16, 2003	September 11, 2003	25,500	Loring , Henry Silt Loam
Ames Plantation	Grand Junction	April 15, 2003	September 9, 2003	26,100	Lexington Silt Loam

Experiment Station	Location	Planting Date	Harvest Date	Plant Population	Soil Type
Medium Season Corn Hybrids					
Knoxville	Knoxville	April 24, 2003	September 24, 2003	28,400	Sequatchie Silt Loam
Highland Rim	Springfield	April 15, 2003	September 24, 2003	26,000	Sango Silt Loam
Middle TN (irrigated)	Spring Hill	April 28, 2003	September 17, 2003	25,000	Maury Silt Loam
Middle TN (non-irrigated)	" "	April 28, 2003	September 18, 2003	25,000	Maury Silt Loam
Milan (irrigated)	Milan	April 16, 2003	September 18, 2003	26,100	Grenada,Routon Silt Loam
" (non-irrigated)	"	April 16, 2003	September 11, 2003	25,500	Loring , Henry Silt Loam
Ames Plantation	Grand Junction	April 15, 2003	September 10, 2003	26,100	Lexington Silt Loam

Experiment Station	Location	Planting Date	Harvest Date	Plant Population	Soil Type
Full Season Corn Hybrids					
Knoxville	Knoxville	April 24, 2003	September 16, 2003	28,400	Sequatchie Silt Loam
Highland Rim	Springfield	April 15, 2003	September 15, 2003	26,000	Sango Silt Loam
Middle TN (irrigated)	Spring Hill	April 28, 2003	September 17, 2003	25,000	Maury Silt Loam
Middle TN (non-irrigated)	" "	April 28, 2003	September 18, 2003	25,000	Maury Silt Loam
Milan (irrigated)	Milan	April 16, 2003	September 18, 2003	26,100	Grenada,Routon Silt Loam
" (non-irrigated)	"	April 16, 2003	September 11, 2003	25,500	Loring , Henry Silt Loam
Ames Plantation	Grand Junction	April 15, 2003	September 11, 2003	26,100	Lexington Silt Loam

Table 2. Mean yields of 32 early-season (<114 DAP) corn hybrids evaluated in nine environments in Tennessee during 2003.

Brand	Hybrid	Avg. Yield [†] ± Std Err (n=9)	Crossville		Spring Hill		Springfield		Milan		Ames
			Knoxville	(Early) (Late)	(Irr.) (Non-Irr.)	(Irr.) (Non-Irr.)	(Irr.) (Non-Irr.)	(Irr.) (Non-Irr.)			
-----bu/a-----											
Dekalb	DKC 63-24 (RR2/YGCB)	206 ± 3	248	184	213	205	182	257	216	180	169
Dyna-Gro	57P69 (RR/Bt)	205 ± 3	257	173	194	183	177	270	227	196	167
NK Brand	N 70-T9 (CL/LL/YG)	199 ± 3	247	159	195	188	165	225	230	191	187
Vigoro	V 52Y41 (Bt)	198 ± 3	243	179	179	199	183	231	211	182	177
FFR	736 Bt	198 ± 3	251	171	181	174	180	279	208	168	171
Pioneer	34B24 (Bt)	196 ± 3	251	182	181	172	165	234	237	173	172
FFR	692 Bt	196 ± 3	250	160	193	174	166	257	222	194	144
Belle	1240 RY (RR/YG)	195 ± 3	243	170	179	192	168	201	247	201	155
Belle	1130 Y (YG)	194 ± 3	245	171	186	187	167	221	207	182	183
Belle	1540 RY (RR/YG)	194 ± 3	235	184	189	184	170	223	213	194	152
NK Brand	N 70-F1 (LL/YG)	192 ± 3	240	143	173	176	169	228	239	191	167
NK Brand	N 65-M7	191 ± 3	252	164	187	182	174	205	205	185	168
Pioneer	33T17 (W)	190 ± 3	254	171	171	169	148	246	220	164	168
Agrigold	A 6445	189 ± 3	215	169	187	192	170	223	194	185	168
FFR	693 RR	188 ± 3	234	166	191	173	168	219	197	161	181
UniSouth Genetics	USG/BG 1132	187 ± 3	240	164	180	168	170	229	192	176	165
FFR	740	187 ± 3	228	182	194	177	160	214	209	156	160
Dyna-Gro	57K14 (RR)	186 ± 3	229	158	176	187	161	234	197	177	152
Dyna-Gro	5545	186 ± 3	221	161	174	184	178	193	208	162	189
Dekalb	DKC 60-09 (RR2/YGCB)	185 ± 3	220	129	181	179	150	257	219	168	161
Augusta Seed Corp.	A 1187	183 ± 3	244	162	182	174	160	218	184	169	156
Augusta Seed Corp.	A 4587	183 ± 3	219	158	159	188	160	233	182	186	158
Trisler Seed Farms	T-5327 Bt	182 ± 3	201	153	167	173	160	225	209	176	171
Agrigold	A 6490 Bt	180 ± 4	212	165	166	176	159	220	195	171	158
Triumph Seed	1120 Bt/RR	180 ± 3	210	161	169	160	159	205	208	184	163
Trisler Seed Farms	T-5247	180 ± 3	217	156	170	160	160	221	218	169	148
FFR	691	178 ± 3	225	137	171	171	159	221	223	158	140
Agrigold	A 6395 RR	176 ± 3	204	145	178	175	153	221	188	166	152
Belle	BXR 1255 C	176 ± 3	214	159	170	166	155	189	187	184	156
Pioneer	34B28 (CL)	176 ± 3	202	150	172	169	141	196	200	173	177
Pioneer	34H31	175 ± 3	219	134	174	168	166	180	203	170	159
Belle	BXR 1122 C	171 ± 3	206	161	176	164	142	185	204	160	143
	Avg. (bu/a)	188	231	161	180	179	164	225	210	176	164
	L.S.D._{.05} (bu/a)	9	18	24	25	15	22	48	32	24	20
	C.V. (%)	8.7	4.8	9.1	8.5	4.9	8.1	13.1	8.9	8.2	7.3

Codes: Bt, YG, YGCB = contains a *Bacillus thuringiensis* gene for insect resistance; RR = 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; W = white grain

[†]All Yields are adjusted to 15.5% moisture.

Table 3. Overall mean yields and agronomic characteristics of 32 early-season corn hybrids evaluated in nine environments in Tennessee during 2003.

Brand	Hybrid	Avg. Yield		Test		Plant	Ear
		± Std Error (n=9)	Moisture (n=9)	Weight (n=7)	Lodging (n=3)	Height [†] (n=2)	Height [†] (n=2)
		bu/a	%	lbs/bu	%	in.	in.
Dekalb	DKC 63-24 (RR2/YGCB)	206 ± 3	18.2	56.3	3	119	51
Dyna-Gro	57P69 (RR/Bt)	205 ± 3	17.9	55.5	2	113	40
NK Brand	N 70-T9 (CL/LL/YG)	199 ± 3	19.6	55.7	1	112	44
Vigoro	V 52Y41 (Bt)	198 ± 3	17.7	55.6	2	114	42
FFR	736 Bt	198 ± 3	18.9	56.1	4	116	43
Pioneer	34B24 (Bt)	196 ± 3	18.4	58.1	1	117	46
FFR	692 Bt	196 ± 3	18.5	56.7	1	109	42
Belle	1240 RY (RR/YG)	195 ± 3	19.7	54.7	1	111	44
Belle	1130 Y (YG)	194 ± 3	20.4	53.9	3	120	45
Belle	1540 RY (RR/YG)	194 ± 3	19.3	55.9	2	112	47
NK Brand	N 70-F1 (LL/YG)	192 ± 3	19.3	55.4	1	106	41
NK Brand	N 65-M7	191 ± 3	17.8	55.7	2	114	41
Pioneer	33T17 (W)	190 ± 3	17.9	59.2	2	114	47
Agrigold	A 6445	189 ± 3	18.0	55.7	2	113	39
FFR	693 RR	188 ± 3	17.8	57.1	3	125	42
UniSouth Genetics	USG/BG 1132	187 ± 3	19.1	54.7	2	108	45
FFR	740	187 ± 3	18.7	57.1	4	118	44
Dyna-Gro	57K14 (RR)	186 ± 3	17.3	55.7	2	114	40
Dyna-Gro	5545	186 ± 3	18.8	54.7	4	117	43
Dekalb	DKC 60-09 (RR2/YGCB)	185 ± 3	17.2	57.0	1	110	39
Augusta Seed Corp.	A 1187	183 ± 3	20.4	54.2	3	117	43
Augusta Seed Corp.	A 4587	183 ± 3	19.4	55.0	3	113	43
Trisler Seed Farms	T-5327 Bt	182 ± 3	20.4	55.8	2	104	44
Agrigold	A 6490 Bt	180 ± 4	18.0	57.7	4	109	44
Triumph Seed	1120 Bt/RR	180 ± 3	17.9	56.4	3	113	45
Trisler Seed Farms	T-5247	180 ± 3	17.7	57.9	2	111	44
FFR	691	178 ± 3	17.3	57.1	2	111	42
Agrigold	A 6395 RR	176 ± 3	17.4	55.6	1	103	35
Belle	BXR 1255 C	176 ± 3	22.3	55.8	2	119	55
Pioneer	34B28 (CL)	176 ± 3	18.1	57.5	3	111	38
Pioneer	34H31	175 ± 3	17.7	59.0	4	113	42
Belle	BXR 1122 C	171 ± 3	18.6	56.1	3	120	47

Codes:

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

RR = 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

W = white grain

[†]Average of Knoxville and Ames Plantation

Table 4. Mean yields and agronomic characteristics of 11 early-season (<114 DAP) corn hybrids evaluated in seven environments for two years (2002-2003) in Tennessee.

Brand	Hybrid	Avg. Yield [†]								Test			Plant	Ear		
		± Std Err (n=14)	Knoxville	Crossville	Springfield	Spring Hill (Irr.)	Milan (Irr.)	Milan (Non-Irr.)	Ames	Moisture (n=14)	Weight (n=13)	Lodging (n=7)	Height [‡] (n=4)	Height [‡] (n=4)		
		bu/a-----										%	lbs/bu	%	in.	in.
FFR	736 Bt	177 ± 3	235	159	181	156	207	137	165	17.1	56.5	3	115	44		
Pioneer	34B24 (Bt)	173 ± 2	224	172	166	146	206	146	154	17.0	58.4	2	114	45		
Pioneer	33T17 (W)	170 ± 2	229	158	164	146	206	139	145	17.3	59.2	4	112	47		
FFR	692 Bt	169 ± 2	231	161	177	147	197	144	128	17.0	57.3	2	108	41		
NK Brand	N 65-M7	168 ± 3	236	153	141	151	203	140	153	16.5	56.2	4	110	42		
Agrigold	A 6445	167 ± 3	215	164	143	155	195	141	153	16.9	55.9	4	113	40		
Dyna-Gro	5545	165 ± 3	218	152	144	146	202	131	162	17.2	55.7	5	114	43		
Agrigold	A 6490 Bt	162 ± 3	204	152	160	146	191	136	147	16.8	58.1	4	105	43		
FFR	740	161 ± 3	211	152	155	143	196	124	145	17.4	57.6	5	115	44		
Pioneer	34B28 (CL)	159 ± 2	191	150	140	136	200	140	152	16.9	57.8	5	111	39		
FFR	691	158 ± 2	214	151	151	139	198	129	123	16.3	57.1	6	107	41		
Avg. (bu/a)		166	219	157	157	146	200	137	148							
L.S.D._{.05} (bu/a)		9	16	23	38	14	26	23	18							
C.V. (%)		9.2	4.6	9.9	15.1	6.3	8.4	10.5	7.9							

Codes: Bt = contains a *Bacillus thuringiensis* gene for insect resistance; RR = contains a gene for tolerance to glyphosate; CL = contains a gene for tolerance to Imidazolinone class herbicides; W = white grain.

[†]All Yields are adjusted to 15.5% moisture.

[‡]Average of Knoxville and Ames Plantation

Table 5. Mean yields and agronomic characteristics of five early-season (<114 DAP) corn hybrids evaluated in four environments for three years (2001-2003) in Tennessee.

Brand	Hybrid	Avg. Yield [†]					Test			Plant	Ear
		± Std Err (n=12)	Knoxville	Crossville	Milan (Non-Irr.)	Ames	Moisture (n=12)	Weight (n=8)	Lodging (n=8)	Height [‡] (n=4)	Height [‡] (n=4)
		-----bu/a-----					%	lbs/bu	%	in.	in.
FFR	736 Bt	172 ± 3	230	164	142	152	17.6	56.1	2	115	44
Agrigold	A 6445	170 ± 2	223	175	136	147	16.7	55.5	2	113	40
Pioneer	34B24 (Bt)	167 ± 2	214	169	141	145	16.9	58.0	1	114	45
Pioneer	33T17 (W)	166 ± 2	224	159	142	140	17.0	58.8	3	112	47
FFR	692 Bt	163 ± 2	222	163	149	119	17.0	57.2	2	108	41
Avg. (bu/a)		168	223	166	142	141					
L.S.D._{.05} (bu/a)		11	16	25	27	18					
C.V. (%)		9.1	5.1	10.7	12.9	8.6					

Codes:

Bt = contains a *Bacillus thuringiensis* gene for insect resistance

W = white grain

[†]All Yields are adjusted to 15.5% moisture.

[‡]Average of Knoxville and Ames Plantation

Table 6. Mean yields of 40 medium-season (114-116 DAP) corn hybrids evaluated in seven environments in Tennessee during 2003.

Brand	Hybrid	Avg. Yield [†]	Spring Hill			Milan		Ames	
		± Std Err (n=7)	Knoxville	(Irr.)	(Non-Irr.)	Springfield	(Irr.)		(Non-Irr.)
		----- bu/a -----							
Pioneer	33P67 (Bt)	220 ± 4	270	177	193	258	265	195	183
Triumph Seed	1416 Bt	219 ± 4	267	200	184	254	258	170	201
Garst	8350 YG1	216 ± 4	250	185	173	268	236	207	195
Dyna-Gro	57F87 YG (CXO 03515)	216 ± 4	255	188	188	284	214	194	186
Pioneer	33R77	212 ± 4	251	184	181	232	233	211	191
Dekalb	DKC 64-11 (RR2/YGCB)	211 ± 4	242	188	174	241	247	195	192
Agrigold	XA 4300 Bt	210 ± 4	249	192	181	236	255	166	194
Belle	1430 Y (YG)	210 ± 4	244	196	169	253	230	191	187
Dekalb	DKC 64-10 (RR)	208 ± 4	242	173	172	248	248	189	184
Trisler Seed Farms	T-5337 Bt	207 ± 4	240	195	181	235	225	170	205
Pioneer	33J57 (Bt)	207 ± 4	239	196	168	238	240	187	182
Vigoro	V 55Y21 (Bt)	206 ± 4	222	192	166	222	248	190	206
Pioneer	32T78 (W)	206 ± 5	226	188	178	237	240	190	186
Terral	TV 26B23 (Bt)	205 ± 4	247	189	170	226	227	191	186
Pioneer	33M54	205 ± 4	234	184	175	225	253	178	186
Terral	TV 2155 Bt	205 ± 4	235	185	183	239	223	182	186
Terral	TV 26BR10n (RR/Bt)	203 ± 4	237	190	170	246	214	182	184
Garst	8288	203 ± 4	226	186	155	268	229	177	182
Trisler Seed Farms	T-5338	203 ± 4	246	180	170	225	222	201	178
Agrigold	A 6610	201 ± 4	242	177	178	214	229	167	203
Belle	1520 R (RR)	201 ± 4	240	190	171	219	221	178	188
FFR	763 RR/Bt	201 ± 4	231	180	175	228	225	185	183
Terral	TV 2140nRR	201 ± 4	251	181	180	201	227	174	193
UniSouth Genetics	USG/BG 316	201 ± 4	238	178	175	214	231	182	188
FFR	781	201 ± 4	249	178	164	232	225	168	189
Belle	1510 C	200 ± 4	245	197	187	224	210	147	191
Pioneer	33V15	199 ± 4	230	181	182	214	229	171	190
Trisler Seed Farms	T-5399	198 ± 4	254	171	176	213	202	172	198
FFR	753 BT/CL	197 ± 4	229	184	160	233	212	184	176
UniSouth Genetics	USG/BG RR 1153	196 ± 4	238	186	168	152	219	210	201
Dyna-Gro	CXO 03914	196 ± 4	238	184	173	202	204	183	188
Agrigold	A 6607	195 ± 4	237	164	166	215	239	171	174
Terral	TV 25B30 (Bt)	194 ± 4	228	163	167	231	199	182	190
Belle	1420 R (RR)	192 ± 4	218	169	165	222	226	158	187
UniSouth Genetics	USG/BG BT 1152	184 ± 5	200	175	171	206	201	152	179
Terral	TV 23R15n (RR)	181 ± 4	193	173	165	178	193	173	195
Vigoro	V 54R66 (RR)	176 ± 4	204	171	152	178	185	165	181
Dyna-Gro	CXO 03911	176 ± 4	191	162	157	185	208	158	174
Trisler Seed Farms	T-00-103	170 ± 4	195	163	144	168	180	162	179
Vigoro	V 54C69 (CL)	163 ± 5	186	183	155	152	164	131	172
Avg. (bu/a)		201	237	182	173	226	224	179	188
L.S.D._{.05} (bu/a)		11	22	20	18	47	34	26	18
C.V. (%)		8.5	4.9	6.5	5.9	12.6	9.3	8.6	5.8

Codes: Bt, YG, YGCB = contains a *Bacillus thuringiensis* gene for insect resistance; RR = 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; W = white grain.

[†]All Yields are adjusted to 15.5% moisture.

Table 7. Overall mean yields and agronomic characteristics of 40 medium-season corn hybrids evaluated in seven environments in Tennessee during 2003.

Brand	Hybrid	Avg. Yield		Test		Plant	Ear
		± Std Error (n=7)	Moisture (n=7)	Weight (n=5)	Lodging (n=4)	Height [†] (n=2)	Height [†] (n=2)
		bu/a	%	lbs/bu	%	in.	in.
Pioneer	33P67 (Bt)	220 ± 4	18.9	59.3	3	118	46
Triumph Seed	1416 Bt	219 ± 4	18.0	56.3	1	117	47
Garst	8350 YG1	216 ± 4	17.9	57.9	1	113	48
Dyna-Gro	57F87 YG (CXO 03515)	216 ± 4	19.0	55.5	2	122	47
Pioneer	33R77	212 ± 4	19.0	56.3	1	117	50
Dekalb	DKC 64-11 (RR2/YGCB)	211 ± 4	17.4	57.7	1	112	48
Agrigold	XA 4300 Bt	210 ± 4	18.8	56.1	1	115	45
Belle	1430 Y (YG)	210 ± 4	20.0	58.7	1	116	53
Dekalb	DKC 64-10 (RR2)	208 ± 4	17.3	56.8	3	112	46
Trisler Seed Farms	T-5337 Bt	207 ± 4	19.2	55.8	2	119	46
Pioneer	33J57 (Bt)	207 ± 4	17.6	57.6	3	117	49
Vigoro	V 55Y21 (Bt)	206 ± 4	18.2	57.0	2	116	49
Pioneer	32T78 (W)	206 ± 5	18.9	59.1	3	115	47
Terral	TV 26B23 (Bt)	205 ± 4	19.8	58.6	1	116	54
Pioneer	33M54	205 ± 4	18.9	59.1	1	120	47
Terral	TV 2155 Bt	205 ± 4	19.3	58.5	4	117	52
Terral	TV 26BR10n (RR/Bt)	203 ± 4	18.6	56.8	2	111	48
Garst	8288	203 ± 4	19.8	57.6	1	122	46
Trisler Seed Farms	T-5338	203 ± 4	18.9	55.3	3	110	47
Agrigold	A 6610	201 ± 4	18.6	55.5	2	110	43
Belle	1520 R (RR)	201 ± 4	18.8	56.8	5	118	52
FFR	763 RR/Bt	201 ± 4	18.6	58.3	1	109	49
Terral	TV 2140nRR	201 ± 4	18.8	57.0	3	119	52
UniSouth Genetics	USG/BG 316	201 ± 4	19.2	56.5	1	108	46
FFR	781	201 ± 4	18.5	56.9	3	119	52
Belle	1510 C	200 ± 4	18.8	57.1	6	118	55
Pioneer	33V15	199 ± 4	18.2	60.0	3	120	47
Trisler Seed Farms	T-5399	198 ± 4	19.9	57.0	2	120	54
FFR	753 BT/CL	197 ± 4	18.6	58.1	1	111	51
UniSouth Genetics	USG/BG RR 1153	196 ± 4	19.4	55.3	2	110	47
Dyna-Gro	CXO 03914	196 ± 4	18.9	56.0	1	113	44
Agrigold	A 6607	195 ± 4	18.1	58.3	5	114	46
Terral	TV 25B30 (Bt)	194 ± 4	19.5	59.8	1	117	54
Belle	1420 R (RR)	192 ± 4	20.4	57.8	1	116	51
UniSouth Genetics	USG/BG BT 1152	184 ± 5	19.2	57.1	1	105	46
Terral	TV 23R15n (RR)	181 ± 4	18.3	57.5	2	114	52
Vigoro	V 54R66 (RR)	176 ± 4	17.2	57.7	3	108	46
Dyna-Gro	CXO 03911	176 ± 4	17.7	57.7	3	114	47
Trisler Seed Farms	T-00-103	170 ± 4	18.8	57.8	1	106	45
Vigoro	V 54C69 (CL)	163 ± 5	17.3	58.1	2	108	47

Codes:

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

RR = contains a gene for tolerance to glyphosate

CL = contains a gene for tolerance to Imidazolinone class herbicides

W = white grain

[†]Average of Knoxville and Ames Plantation

Table 8. Mean yields and agronomic characteristics of 13 medium-season (114-116 DAP) corn hybrids evaluated in six environments for two years (2002-2003) in Tennessee.

Brand	Hybrid	Avg. Yield [†] ± Std Err (n=12)	bu/a						Moisture (n=12) %	Test		Plant Height [‡] (n=4) in.	Ear Height [‡] (n=3) in.
			Knoxville	Springfield	Spring Hill (Irr.)	Milan (Irr.)	Milan (Non-Irr.)	Ames		Weight (n=10) lbs/bu	Lodging (n=7) %		
Pioneer	33P67 (Bt)	189 ± 3	250	185	152	224	156	167	17.7	59.2	2	120	48
Pioneer	33J57 (Bt)	188 ± 3	233	185	168	210	158	171	16.2	57.6	2	118	49
Dekalb	DKC 64-11 (RR2/YGCE)	185 ± 3	224	175	165	223	153	168	16.2	57.6	1	113	47
Pioneer	33R77	184 ± 3	241	169	158	206	159	171	17.7	56.0	1	118	50
Dekalb	DKC 64-10 (RR2)	184 ± 3	227	178	154	222	149	172	16.0	56.9	3	112	46
Garst	8288	179 ± 3	220	182	161	209	142	163	18.3	57.7	2	123	49
Terral	TV 2155 Bt	179 ± 3	224	184	156	196	142	170	17.9	58.7	4	117	52
Pioneer	32T78 (W)	179 ± 3	223	161	156	207	152	173	18.0	59.3	3	118	48
Terral	TV 26BR10n (RR/Bt)	177 ± 3	225	167	169	193	138	171	17.1	57.1	2	111	47
FFR	781	177 ± 3	238	167	152	204	139	162	17.3	57.0	3	119	53
Terral	TV 2140nRR	176 ± 3	231	152	157	209	130	175	17.1	56.8	4	119	53
Agrigold	A 6607	175 ± 3	222	166	146	216	134	164	16.7	58.4	5	115	46
UniSouth Genetics	USG/BG BT 1152	170 ± 3	204	169	161	188	131	169	18.0	57.4	1	103	45
Avg. (bu/a)		180	228	172	158	208	145	169					
L.S.D._{.05} (bu/a)		10	18	38	17	29	20	16					
C.V. (%)		8.7	4.8	14.1	6.7	9.1	8.9	6.3					

Codes: Bt, YGCB = contains a *Bacillus thuringiensis* gene for insect resistance; RR = contains a gene for tolerance to glyphosate; W = white grain.

[†]All Yields are adjusted to 15.5% moisture.

[‡]Average of Knoxville and Ames Plantation

Table 9. Mean yields and agronomic characteristics of five medium-season (114-116 DAP) corn hybrids evaluated in two environments for three years (2001-2003) in Tennessee.

Brand	Hybrid	Avg. Yield [†]			Test			Plant	Ear
		± Std Err (n=6)	Knoxville	Milan (Non-Irr.)	Moisture (n=6)	Weight (n=4)	Lodging (n=1)	Height [‡] (n=2)	Height [‡] (n=2)
		------(bu/a)-----			%	lbs/bu	%	in.	in.
Pioneer	33J57 (Bt)	200 ± 3	229	170	15.5	58.3	1	118	49
Pioneer	33R77	198 ± 3	234	163	16.8	55.9	0	119	50
Dekalb	DKC 64-10 (RR2)	188 ± 3	222	154	15.2	57.0	1	114	47
Garst	8288	185 ± 4	222	147	17.8	57.9	3	125	49
Agrigold	A 6607	184 ± 4	220	148	16.4	59.1	3	116	46
Avg. (bu/a)		191	224	153					
L.S.D._{.05} (bu/a)		15	19	24					
C.V. (%)		7.9	5.6	10.9					

Codes:

Bt = contains a *Bacillus thuringiensis* gene for insect resistance

RR = contains a gene for tolerance to glyphosate

[†]All Yields are adjusted to 15.5% moisture.

[‡]Average of Knoxville and Ames Plantation

Table 10. Mean yields of 23 full-season (>116 DAP) corn hybrids evaluated in seven environments in Tennessee during 2003.

Brand	Hybrid	Avg. Yield [†]	Spring Hill			Milan		Ames	
		± Std Err (n=7)	Knoxville	(Irr.)	(Non-Irr.)	Springfield	(Irr.)		(Non-Irr.)
		-----bu/a-----							
Pioneer	31G98	204 ± 4	260	184	166	209	224	218	169
Pioneer	32D99	204 ± 4	277	187	164	185	246	196	170
Pioneer	32H69 (Bt)	201 ± 4	238	186	165	190	239	228	162
Pioneer	31A13 (Bt)	200 ± 4	248	178	181	211	251	191	144
Dekalb	DKC 69-71 (RR2/YGCB)	199 ± 4	246	184	179	178	248	198	157
FFR	900 Bt	197 ± 4	237	182	180	180	244	185	170
FFR	842 RR	196 ± 4	227	165	181	172	254	184	187
Triumph Seed	1866 Bt	195 ± 4	228	167	193	180	243	185	168
FFR	849 CL	193 ± 4	231	168	174	184	232	178	181
Pioneer	31G66	189 ± 4	237	179	141	188	231	181	169
Pioneer	31R88	189 ± 4	215	172	188	195	214	173	167
Agrigold	A 6610 Bt	188 ± 4	233	176	174	171	225	173	168
Dekalb	DKC 69-72 (RR2)	188 ± 5	237	160	184	186	226	172	148
Vigoro	V 58Y41 (Bt)	184 ± 4	220	182	168	177	203	179	160
Agrigold	XA 2300 Bt	178 ± 4	208	157	169	212	187	177	133
Zimmerman	1851 W	176 ± 4	216	152	155	171	194	176	166
Augusta Seed Corp.	A 5965	171 ± 4	198	148	164	211	203	146	128
Dyna-Gro	5515	169 ± 4	215	165	159	156	172	153	164
TN Exp	TN 0304 (W)	168 ± 4	213	162	151	186	186	143	138
Augusta Seed Corp.	265	164 ± 4	203	161	152	157	192	150	136
TN Exp	TN 0301	163 ± 4	174	147	134	188	192	167	141
TN Exp	TN 0302	155 ± 4	201	132	111	170	195	145	132
TN Exp	TN 0303 (W)	152 ± 4	197	142	139	132	162	147	145
Avg. (bu/a)		187	230	169	166	186	219	179	156
L.S.D._{.05} (bu/a)		11	20	13	26	45	34	42	24
C.V. (%)		9.8	5.4	4.8	9.3	14.7	9.2	13.1	9.4

Codes: Bt, YGCB = contains a *Bacillus thuringiensis* gene for insect resistance; RR = contains a gene for tolerance to glyphosate; CL = contains a gene for tolerance to Imidazolinone class herbicides; W = white grain.

[†]All Yields are adjusted to 15.5% moisture.

Table 11. Overall mean yields and agronomic characteristics of 23 full-season corn hybrids evaluated in seven environments in Tennessee during 2003.

Brand	Hybrid	Avg. Yield		Test		Plant	Ear
		± Std Error (n=7)	Moisture (n=7)	Weight (n=5)	Lodging (n=3)	Height [†] (n=2)	Height [†] (n=2)
		bu/a	%	lbs/bu	%	in.	in.
Pioneer	31G98	204 ± 4	18.7	58.2	5	118	53
Pioneer	32D99	204 ± 4	20.7	56.9	3	119	53
Pioneer	32H69 (Bt)	201 ± 4	20.6	60.3	5	121	51
Pioneer	31A13 (Bt)	200 ± 4	20.4	58.8	3	114	46
Dekalb	DKC 69-71 (RR2/YGCB)	199 ± 4	21.7	58.3	1	115	50
FFR	900 Bt	197 ± 4	20.3	56.8	10	114	45
FFR	842 RR	196 ± 4	20.8	56.1	4	113	48
Triumph Seed	1866 Bt	195 ± 4	20.4	58.9	2	110	51
FFR	849 CL	193 ± 4	20.4	55.6	4	116	49
Pioneer	31G66	189 ± 4	19.2	57.8	4	116	45
Pioneer	31R88	189 ± 4	20.1	58.7	3	119	51
Agrigold	A 6610 Bt	188 ± 4	19.0	55.6	1	106	40
Dekalb	DKC 69-72 (RR2)	188 ± 5	20.8	58.4	2	116	49
Vigoro	V 58Y41 (Bt)	184 ± 4	19.8	56.0	5	112	44
Agrigold	XA 2300 Bt	178 ± 4	18.8	58.4	3	104	44
Zimmerman	1851 W	176 ± 4	20.3	57.8	2	115	53
Augusta Seed Corp.	A 5965	171 ± 4	20.7	59.6	2	113	49
Dyna-Gro	5515	169 ± 4	18.6	57.7	5	112	48
TN Exp	TN 0304 (W)	168 ± 4	21.0	58.2	8	110	55
Augusta Seed Corp.	265	164 ± 4	20.0	59.7	3	110	52
TN Exp	TN 0301	163 ± 4	23.0	54.8	6	121	52
TN Exp	TN 0302	155 ± 4	24.1	57.8	18	122	56
TN Exp	TN 0303 (W)	152 ± 4	21.6	57.6	7	107	46

Codes:

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

RR = contains a gene for tolerance to glyphosate

CL = contains a gene for tolerance to Imidazolinone class herbicides

W = white grain

[†]Average of Knoxville and Ames Plantation

Table 12. Mean yields and agronomic characteristics of seven full-season (>116 DAP) corn hybrids evaluated in six environments for two years (2002-2003) in Tennessee.

Brand	Hybrid	Avg. Yield [†] ± Std Err (n=12)	bu/a						Test			Plant	Ear
			Knoxville	Springfield	Spring Hill (Irr.)	Milan (Irr.)	Milan (Non-Irr.)	Ames	Moisture (n=12)	Weight (n=10)	Lodging (n=9)	Height [‡] (n=4)	Height [‡] (n=4)
								%	lbs/bu	%	in.	in.	
Pioneer	31G98	185 ± 3	259	159	152	205	171	165	17.2	57.9	3	121	55
Pioneer	31A13 (Bt)	175 ± 3	243	144	149	216	149	151	18.8	58.4	2	117	47
FFR	900 Bt	175 ± 3	231	140	158	218	134	170	18.6	56.6	5	117	47
FFR	842 RR	173 ± 3	239	129	142	210	133	183	18.8	55.7	5	115	51
FFR	849 CL	171 ± 3	228	136	138	214	132	181	18.4	55.0	4	119	51
Pioneer	31R88	165 ± 3	214	147	142	198	126	166	18.7	58.5	5	123	56
Zimmerman	1851 W	159 ± 3	210	129	139	180	138	157	18.5	57.7	3	118	55
Avg. (bu/a)		172	232	140	146	206	140	167					
L.S.D._{.05} (bu/a)		13	21	41	16	34	37	20					
C.V. (%)		11.0	5.9	17.6	6.9	11.2	16.6	8.3					

Codes: Bt = contains a *Bacillus thuringiensis* gene for insect resistance; RR = contains a gene for tolerance to glyphosate; CL = contains a gene for tolerance to Imidazolinone class herbicides; W = white grain.

[†]All Yields are adjusted to 15.5% moisture.

[‡]Average of Knoxville and Ames Plantation

Table 13. Mean yields and agronomic characteristics of six full-season corn hybrids evaluated in two environments for three years (2001-2003) in Tennessee.

Brand	Hybrid	Avg. Yield [†]			Test			Plant	Ear
		± Std Err (n=6)	Knoxville	Ames	Moisture (n=6)	Weight (n=4)	Lodging (n=5)	Height [‡] (n=4)	Height [‡] (n=4)
		-----bu/a-----			%	lbs/bu	%	in.	in.
Pioneer	31G98	206 ± 4	257	155	17.4	57.0	1	121	55
FFR	849 CL	199 ± 4	231	168	19.0	54.5	3	119	51
Pioneer	31A13 (Bt)	194 ± 4	246	143	18.8	58.0	1	117	47
FFR	900 Bt	194 ± 4	232	156	18.7	56.4	5	117	47
Pioneer	31R88	189 ± 4	224	155	18.7	57.8	1	123	56
Zimmerman	1851 W	176 ± 4	212	140	18.8	57.1	1	118	55
Avg. (bu/a)		193	234	153					
L.S.D._{.05} (bu/a)		16	22	23					
C.V. (%)		8.1	6.5	10.5					

Codes:

Bt = contains a *Bacillus thuringiensis* gene for insect resistance

CL = contains a gene for tolerance to Imidazolinone class herbicides

W = white grain

[†]All Yields are adjusted to 15.5% moisture.

[‡]Average of Knoxville and Ames Plantation

Table 14. Yield comparisons of three early-season (<114 DAP) corn hybrids between seed treated or untreated with a systemic insecticide, evaluated in nine environments in Tennessee during 2003.

Brand	Hybrid	Crossville		Spring Hill		Springfield	Milan		Ames	Avg. Yield [†] (n=9)	Avg. Yield Difference	
		Knoxville	(Early) (Late)	(Irr.) (Non-Irr.)	(Irr.) (Non-Irr.)							
Agrigold	A 6445 (Gaucho)	232	160	182	190	180	230	210	178	177	193	+4
Agrigold	A 6445	215	169	187	192	170	223	194	185	168	189	
Dekalb	DKC 60-09 (RR2/YGCB) (Gaucho)	210	102	180	173	148	236	216	160	157	176	-9
Dekalb	DKC 60-09 (RR2/YGCB)	220	129	181	179	150	257	219	168	161	185	
Pioneer	34B24 (Bt) (Gaucho)	241	165	192	191	178	248	206	178	161	196	0
Pioneer	34B24 (Bt)	251	182	181	172	165	234	237	173	172	196	
Average -- Treated Seed (bu/a)		228	142	185	185	169	238	211	172	165	188	-2
Average -- Untreated Seed (bu/a)		229	160	183	181	162	238	216	175	167	190	
L.S.D._{.05} (bu/a)		18	24	25	15	22	48	32	24	20	9	
C.V. (%)		4.8	9.1	8.5	4.9	8.1	13.1	8.9	8.2	7.3	8.7	

Codes: Bt, YGCB = contains a *Bacillus thuringiensis* gene for insect resistance; RR = contains a gene for tolerance to glyphosate; Gaucho = seed treated with a systemic insecticide.

[†]All Yields are adjusted to 15.5% moisture.

Table 15. Comparisons of overall mean yields and agronomic characteristics of three early-season corn hybrids between seed treated or untreated with a systemic insecticide, evaluated in nine environments in Tennessee during 2003.

Brand	Hybrid	Test				Plant	Ear
		Avg. Yield (n=9)	Moisture (n=9)	Weight (n=7)	Lodging (n=3)	Height [†] (n=2)	Height [†] (n=2)
		bu/a	%	lbs/bu	%	in.	in.
Agrigold	A 6445 (Gaucho)	193	17.6	55.4	2	112	39
Agrigold	A 6445	189	18.0	55.7	2	113	39
Dekalb	DKC 60-09 (RR2/YGCB) (Gaucho)	176	17.0	56.7	5	113	38
Dekalb	DKC 60-09 (RR2/YGCB)	185	17.2	57.0	1	110	39
Pioneer	34B24 (Bt) (Gaucho)	196	18.3	58.5	1	119	43
Pioneer	34B24 (Bt)	196	18.4	58.1	1	117	46

Codes:

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

RR = contains a gene for tolerance to glyphosate

Gaucho = seed treated with a systemic insecticide

[†]Average of Knoxville and Ames Plantation

Table 16. Yield comparisons of three medium-season (114-116 DAP) corn hybrids between seed treated or untreated with a systemic insecticide, evaluated in seven environments in Tennessee during 2003.

Brand	Hybrid	Spring Hill			Milan			Ames	Avg. Yield [†] (n=7)	Avg. Yield Difference
		Knoxville	(Irr.)	(Non-Irr.)	Springfield	(Irr.)	(Non-Irr.)			
Pioneer	33R77 (Gaucho)	244	180	195	250	250	180	180	212	0
Pioneer	33R77	251	184	181	232	233	211	191	212	
Agrigold	A 6607 (Gaucho)	263	183	178	256	229	180	188	211	+16
Agrigold	A 6607	237	164	166	215	239	171	174	195	
Dekalb	DKC 64-10 (RR2) (Gaucho)	241	181	176	249	227	190	189	208	0
Dekalb	DKC 64-10 (RR2)	242	173	172	248	248	189	184	208	
Average -- Treated Seed (bu/a)		249	181	183	252	235	183	186	210	+5
Average -- Untreated Seed (bu/a)		244	174	173	232	240	191	183	205	
L.S.D._{.05} (bu/a)		22	20	18	47	34	26	18	11	
C.V. (%)		4.9	6.5	5.9	12.6	9.3	8.6	5.8	8.5	

Codes: RR = contains a gene for tolerance to glyphosate
 Gaucho = seed treated with a systemic insecticide.

[†]All Yields are adjusted to 15.5% moisture.

Table 17. Comparisons of overall mean yields and agronomic characteristics of three medium-season corn hybrids between seed treated or untreated with a systemic insecticide, evaluated in seven environments in Tennessee during 2003.

Brand	Hybrid	Avg. Yield	Test			Plant	Ear
		(n=7)	Moisture (n=7)	Weight (n=5)	Lodging (n=4)	Height [†] (n=2)	Height [†] (n=2)
		bu/a	%	lbs/bu	%	in.	in.
Pioneer	33R77 (Gaucho)	212	18.9	56.1	2	118	50
Pioneer	33R77	212	19.0	56.3	1	117	50
Agrigold	A 6607 (Gaucho)	211	18.2	58.5	3	114	45
Agrigold	A 6607	195	18.1	58.3	5	114	46
Dekalb	DKC 64-10 (RR2) (Gaucho)	208	17.3	56.7	1	113	46
Dekalb	DKC 64-10 (RR2)	208	17.3	56.8	3	112	46

Codes:

RR = contains a gene for tolerance to glyphosate

Gaucho = seed treated with a systemic insecticide

[†]Average of Knoxville and Ames Plantation

Table 18. Yield comparisons of two full-season (>116 DAP) corn hybrids between seed treated or untreated with a systemic insecticide, evaluated in seven environments in Tennessee during 2003.

Brand	Hybrid	Spring Hill			Milan			Ames	Avg. Yield [†] (n=7)	Avg. Yield Difference
		Knoxville	(Irr.)	(Non-Irr.)	Springfield	(Irr.)	(Non-Irr.)			
Pioneer	31G98 (Gaucho)	260	173	164	226	242	219	158	206	+2
Pioneer	31G98	260	184	166	209	224	218	169	204	
Dekalb	DKC 69-71 RR/YGCB (Gaucho)	251	184	184	225	224	169	147	198	-1
Dekalb	DKC 69-71 RR/YGCB	246	184	179	178	248	198	157	199	
Average -- Treated Seed (bu/a)		256	179	174	226	233	194	152	202	0
Average -- Untreated Seed (bu/a)		253	184	172	194	236	208	163	202	
L.S.D._{.05} (bu/a)		20	13	26	45	34	42	24	11	
C.V. (%)		5.4	4.8	9.3	14.7	9.2	13.1	9.4	9.8	

Codes: YGCB = contains a *Bacillus thuringiensis* gene for insect resistance; RR = contains a gene for tolerance to glyphosate; Gaucho = seed treated with a systemic insecticide.

[†]All Yields are adjusted to 15.5% moisture.

Table 19. Comparisons of overall mean yields and agronomic characteristics of two full-season corn hybrids between seed treated or untreated with a systemic insecticide, evaluated in seven environments in Tennessee during 2003.

Brand	Hybrid	Test				Plant	Ear
		Avg. Yield (n=7)	Moisture (n=7)	Weight (n=5)	Lodging (n=3)	Height [†] (n=2)	Height [†] (n=2)
		bu/a	%	lbs/bu	%	in.	in.
Pioneer	31G98 (Gaucho)	206	18.6	58.6	4	121	55
Pioneer	31G98	204	18.7	58.2	5	118	53
Dekalb	DKC 69-71 (RR2/YGCB) (Gaucho)	198	22.2	58.2	1	119	51
Dekalb	DKC 69-71 (RR2/YGCB)	199	21.7	58.3	1	115	50

Codes:

YGCB = contains a *Bacillus thuringiensis* gene for insect resistance

RR = contains a gene for tolerance to glyphosate

Gaucho = seed treated with a systemic insecticide

[†]Average of Knoxville and Ames Plantation

Table 20. Mean yields of six corn hybrids and blends of those hybrids evaluated in seven or nine environments in Tennessee during

Brand	Hybrid	n	Knox ville	Crossville (Early) (Late)	Spring Hill (Irr.) (Non-Irr.)	Spring field	Milan (Irr.) (Non-Irr.)	Ames	Avg. Yield [†]	Avg. Yield Difference (Blend minus best hybrid)	Avg. Yield Difference (Blend minus lower hybrid)			
Early-season														
FFR	736 Bt	9	251	171	181	174	180	279	208	168	171	198	-9	
Blend FFR & Agrigold	FFR 736 Bt & A 6445	9	238	160	171	189	162	236	199	172	177	189		
Agrigold	A 6445	9	215	169	187	192	170	223	194	185	168	189		0
Medium-season														
Pioneer	33J57 (Bt)	7	239	---	---	196	168	238	240	187	182	207	-14	
Blend Pion & USG	33J57 Bt & BT 1152	7	202	---	---	158	189	235	208	172	189	193		
UniSouth Genetics	USG/BG BT 1152	7	200	---	---	175	171	206	201	152	179	184		+9
Full-season														
Pioneer	32D99	7	277	---	---	187	164	185	246	196	170	204	+2	
Blend FFR + Pioneer	FFR 900Bt & Pioneer 32D99	7	268	---	---	184	187	177	228	218	178	206		
FFR	900 Bt	7	237	---	---	182	180	180	244	185	170	197		+9
Average (bu/a) of blended hybrids			236	160	171	177	179	216	211	187	181	196	-7	
Average (bu/a) of higher yielding hybrids used			256	171	181	186	171	234	231	184	174	203		
Average (bu/a) of lower yielding hybrids used			217	169	187	183	174	203	213	174	172	190		+6

Codes: Bt = contains a *Bacillus thuringiensis* gene for insect resistance

† Average yield of the best performing hybrid in each environment

Table 21. Overall mean yields and agronomic characteristics of six corn hybrids and blends of those hybrids evaluated in seven or nine environments in Tennessee during 2003.

Brand	Hybrid	n	Test				Plant	Ear
			Avg. Yield (n=9)	Moisture (n=9)	Weight (n=7)	Lodging (n=3)	Height [†] (n=2)	Height [†] (n=2)
Early-season			bu/a	%	lbs/bu	%	in.	in.
FFR	736 Bt	9	198	18.9	56.1	4	116	43
Blend Agrigold & FFR	FFR 736 Bt & A 6445	9	189	18.3	56.4	3	114	43
Agrigold	A 6445	9	189	18.0	55.7	2	113	39
Medium-season								
Pioneer	33J57 (Bt)	7	207	17.6	57.6	3	117	49
Blend Pion & USG	33J57 Bt & BT 1152	7	193	18.3	57.9	2	117	44
UniSouth Genetics	USG/BG BT 1152	7	184	19.2	57.1	1	105	46
Full-season								
Pioneer	32D99	7	204	20.7	56.9	3	119	53
Blend FFR + Pioneer	FFR 900Bt & Pioneer 32D99	7	206	20.5	57.2	5	117	49
FFR	900 Bt	7	197	20.3	56.8	10	114	45

Codes:

Bt = contains a *Bacillus thuringiensis* gene for insect resistance

[†]Average of Knoxville and Ames Plantation

Table 22. Yields of 25 early-season (<114 DAP) corn hybrids in 10 County Standard Tests in Middle and West Tennessee and Kentucky during 2003.†‡

MS	Brand/Hybrid	Avg.	Avg.	KY									
		Yld	Moisture	Carlisle	Coffee	Dyer	Gibson	Giles	Henry	Lake	Lauderdale	Obion	Weakley
		bu/a	%	-----bu/a-----									
A	Dynagro 5545	174	17.4	172	182	157	127	185	195	192	127	191	209
AB	Dekalb DKC61-42	173	15.8	173	171	141	111	180	200	204	156	179	211
ABC	*Adler 4500	171	17.3	157	180	166	117	172	199	182	145	181	213
ABCD	**NK Brand N65-M7	170	16.6	169	177	142	120	189	205	194	123	168	210
ABCD	*LG Seeds LG2585	169	16.7	167	179	118	146	191	176	196	139	164	218
ABCD	*Croplan CG631	169	17.1	163	171	150	128	177	185	195	147	170	206
ABCDE	USG BG1111	167	16.6	170	185	135	100	183	199	191	146	160	204
ABCDEF	**Agrigold 6445	167	16.9	167	174	106	146	172	200	175	147	175	206
ABCDEF	Golden Harvest H8906	167	17.0	163	179	135	117	188	210	165	127	187	197
ABCDEF	Triumph 1416	165	17.8	167	179	123	123	182	176	207	123	171	205
BCDEFG	FFR 726	162	17.4	162	164	150	121	167	189	189	133	139	209
CDEFG	Vigoro V5520	161	17.7	150	196	103	102	179	191	187	129	171	203
DEFG	Agrigold 6395	161	15.6	159	165	174	96	170	183	156	152	151	203
DEFG	Dekalb DKC62-15	160	16.4	154	174	123	114	166	188	175	123	174	212
EFGH	LG Seeds LG2540	158	15.8	163	162	135	108	183	162	166	129	164	204
EFGH	Asgrow RX774	157	16.5	147	163	142	111	163	197	178	122	171	181
EFGH	FFR 740	157	17.0	154	165	110	109	173	190	176	127	175	193
FGH	Pioneer 34H31	157	16.3	158	169	114	119	163	170	178	132	173	192
GH	Agrigold 6490	155	17.2	158	163	108	116	169	187	186	118	143	198
GH	Pioneer 34B28	153	16.4	165	157	118	106	169	181	172	125	160	177
GH	Mycogen 2784	153	17.0	137	162	142	113	167	204	172	103	156	174
GH	Croplan CG705	153	17.5	149	169	116	109	164	195	174	121	161	170
HI	Steyer 2430	150	16.7	167	156	104	113	168	173	170	120	149	179
HI	Unity 6250	148	15.4	118	161	110	92	163	198	150	160	147	183
I	Steyer 2387	143	15.9	150	165	106	81	156	172	164	114	135	183
Average (bu/a)		161		158	171	129	114	174	189	180	132	165	198

MS = Hybrids that have any MS letter in common are not statistically different in yield at the 5% level of probability.

†Yields have been adjusted to 15.5% moisture. Each hybrid was evaluated in a large strip-plot at each location, thus each county test was considered as one replication of the test in calculating the average yield and in conducting the statistical analysis to determine significant differences (MS).

‡Data provided by Robert C. Williams, Ext. Area Specialist, Grain Crops, and extension agents in counties shown above.

Hybrids denoted with an asterisk () were in the top performing group for two years.

Table 23. Yields of 19 medium-season (114-116 DAP) corn hybrids in 13 County Standard Tests in Middle and West Tennessee during 2003.†‡

MS	Brand/Hybrid	Avg.	Avg.	-----bu/a-----													WTES
		Yld bu/a	Moisture %	Chester	Coffee	Dyer	Gibson	Haywood	Henry	Lake	Montgomery	Obion	Robertson	Tipton	Weakley	Madison	
A	Golden Harvest H9461	174	17.2	161	177	186	138	114	208	168	186	229	206	131	166	195	
AB	**Pioneer 33R77	169	17.3	141	182	190	160	129	187	156	186	205	199	132	173	153	
ABC	*USG BG316	168	17.3	154	164	172	157	124	211	157	148	213	197	124	159	203	
ABCD	Pioneer 33M54	167	17.2	161	170	176	157	118	204	137	155	217	189	120	157	205	
ABCDE	Agriold 6610	164	17.4	160	174	183	131	120	200	148	151	210	193	124	148	190	
BCDE	Pioneer 33V15	163	16.2	149	163	183	165	141	212	149	141	208	188	114	166	145	
BCDEF	Garst 8348	163	16.2	154	177	177	164	93	180	143	171	213	196	120	176	154	
BCDEF	Golden Harvest H9364	161	16.6	170	138	148	127	132	185	162	153	224	193	125	137	195	
BCDEFG	Agrogold 6607	160	16.4	163	146	155	154	133	183	130	167	208	184	119	152	188	
BCDEFG	Garst 8288	159	17.6	166	169	162	171	144	199	152	152	185	183	126	136	127	
BCDEFGH	LG Seeds LG2622	159	17.6	154	162	156	138	113	188	138	157	193	193	126	156	191	
CDEFGHI	Triumph 1866	158	17.6	170	164	173	142	126	204	143	146	189	180	121	152	146	
CDEFGHI	Mycogen 2A775	158	17.4	159	168	157	153	113	195	130	169	202	188	124	159	137	
DEFGHI	Adler 6400	158	17.5	154	152	161	158	116	171	141	151	199	183	122	144	200	
EFGHI	FFR 781	155	16.9	150	171	158	142	80	165	137	169	204	178	130	149	176	
FGHI	Steyer 2600	153	17.2	143	170	160	142	127	187	147	147	179	171	120	160	139	
GHI	Unity 6287	150	16.8	145	154	166	149	86	199	135	148	192	176	122	144	135	
HI	Dekalb DKC66-50	149	16.8	160	163	148	121	77	187	118	160	197	181	111	149	165	
I	Vigoro V54C69	148	15.8	129	153	160	131	113	194	151	143	179	163	109	138	167	
Average (bu/a)		160		155	164	167	147	116	193	144	158	202	186	122	154	169	

MS = Hybrids that have any MS letter in common are not statistically different in yield at the 5% level of probability.

†Yields have been adjusted to 15.5% moisture. Each hybrid was evaluated in a large strip-plot at each location, thus each county test was considered as one replication of the test in calculating the average yield and in conducting the statistical analysis to determine significant differences (MS).

WTES = West Tennessee Experiment Station - Jackson, TN.

‡Data provided by Robert C. Williams, Ext. Area Specialist, Grain Crops, and extension agents in counties shown above.

Hybrids denoted with an asterisk () were in the top performing group for two years.

Table 24. Yields of nine full-season (>116 DAP) corn hybrids in 10 County Standard Tests in West Tennessee and Kentucky during 2003.†‡

MS	Brand/Hybrid	Avg.	Avg.	KY									
		Yld	Moisture	Ballard	Dyer	Gibson	Giles	Henry	Lake	Lauderdale	Obion	Tipton	Weakley
		bu/a	%	-----bu/a-----									
A	*FFR 849CL	181	17.8	170	175	148	173	217	177	171	181	225	174
AB	Pioneer 32D99	178	17.7	149	145	149	163	240	176	152	189	238	180
ABC	Pioneer 31G66	172	17.3	166	128	140	169	216	176	133	194	220	174
BC	Pioneer 31R88	171	18.1	154	158	148	175	203	169	128	182	210	180
BCD	Pioneer 31G98	168	16.0	154	133	137	160	208	160	145	191	217	180
CD	Dynagro 5515	167	16.6	135	156	146	147	178	179	175	179	210	163
D	Dekalb DK697	161	18.0	144	133	133	136	203	150	132	181	219	176
D	Croplan CG818	160	17.7	147	136	129	170	199	145	116	172	214	167
E	Triumph 2010	149	16.6	127	129	127	150	172	157	116	172	198	144
Average (bu/a)		167		150	144	140	160	204	165	141	182	217	171

MS = Hybrids that have any MS letter in common are not statistically different in yield at the 5% level of probability.

†Yields have been adjusted to 15.5% moisture. Each hybrid was evaluated in a large strip-plot at each location, thus each county test was considered as one replication of the test in calculating the average yield and in conducting the statistical analysis to determine significant differences (MS).

‡Data provided by Robert C. Williams, Ext. Area Specialist, Grain Crops, and extension agents in counties shown above.

Hybrids denoted with an asterisk () were in the top performing group for two years.

Table 25. Yields of 23 Bt corn hybrids in nine County Standard Tests in Tennessee during 2003.†‡

MS	Brand/Hybrid	Avg.	Avg.	Carroll	Coffee	Crockett	Dyer	Henry	Humpfreys	Lake	Obion	Weakley		
		Yld	Moisture										-----bu/a-----	
		bu/a	%											
A	* Vigoro V55Y21	181	17.1	184	188	184	163	202	217	165	157	170		
A	**Pioneer 31A13	180	18.1	208	192	182	100	228	209	182	166	156		
AB	Croplan CG694	178	16.9	178	194	177	151	207	206	181	138	167		
AB	Garst 8350	177	16.3	195	180	188	132	210	206	192	122	164		
ABC	Pioneer 32H69	176	17.3	183	166	170	140	210	206	198	155	159		
ABCD	**Pioneer 31B13	174	16.3	193	190	155	154	205	222	147	150	149		
ABCD	Agrigold XA2100	172	17.6	185	173	177	124	206	220	159	153	153		
ABCDE	*Steyer 2590	171	16.9	165	187	154	129	200	213	172	155	161		
ABCDEF	Golden Harvest H9247	170	16.2	176	178	159	121	218	223	150	146	156		
ABCDEF	NK Brand N70-F1	169	16.6	165	178	170	130	209	215	140	143	172		
ABCDEF	NK Brand N70-T9	168	17.3	181	181	159	142	208	189	141	152	161		
ABCDEF	**FFR 736	168	17.0	147	173	161	151	196	187	175	155	170		
BCDEF	FFR 753	166	16.8	174	182	182	124	195	180	159	147	151		
BCDEF	Pioneer 34B24	166	15.8	153	177	172	127	211	200	139	158	156		
BCDEF	Belle 1430 Y	165	17.1	179	167	151	158	202	193	136	144	151		
CDEF	Agrigold 6445	163	16.6	137	182	157	140	191	199	167	148	149		
DEF	Mycogen 6920	163	16.7	176	179	158	119	214	204	134	128	152		
DEF	Dekalb DKC61-25	162	16.0	139	182	147	137	185	198	174	146	152		
DEF	Triumph 1866	161	18.0	177	175	163	122	153	199	171	144	147		
EFG	Vigoro V53Y41	158	15.5	152	160	155	123	190	183	180	138	141		
FG	LG Seeds LG2607	157	15.4	157	159	146	124	196	194	136	157	147		
GH	Unity 723	146	16.3	153	153	151	116	168	179	126	130	137		
H	USG BG1152	142	18.4	174	117	163	112	188	109	124	154	138		
Average (bu/a)		167		171	174	164	132	200	198	159	147	155		

MS = Hybrids that have any MS letter in common are not statistically different in yield at the 5% level of probability.

†Yields have been adjusted to 15.5% moisture. Each hybrid was evaluated in a large strip-plot at each location, thus each county test was considered as one replication of the test in calculating the average yield and in conducting the statistical analysis to determine significant differences (MS).

‡Data provided by Robert C. Williams, Ext. Area Specialist, Grain Crops, and extension agents in counties shown above.

Hybrids denoted with an asterisk () were in the top performing group for two years.

Table 26. Yields of 18 Glyphosate Resistant (RR) corn hybrids in 12 County Standard Tests in Middle and West Tennessee during 2003.†‡

MS	Brand/Hybrid	Avg.	Avg.	Coffee	Dyer	Fayette	Giles	Haywood	Henry	Henry T	Lake	Lauderdale	Obion	Robertson	Tipton
		Yld	Moisture												
		bu/a	%	-----bu/a-----											
A	Belle 1520 R	160	16.4	162	119	132	138	155	231	172	190	109	166	194	155
AB	FFR 842RR	155	18.3	189	147	130	119	129	220	155	176	83	137	200	178
AB	Crooplan CG818R/Y	155	17.1	170	128	127	140	119	215	174	188	92	154	199	152
ABC	Croplan CG631RR	151	15.4	109	148	139	152	110	228	169	169	90	161	189	151
ABC	Agrigold 6445RR	151	15.8	153	158	97	108	134	218	155	185	99	179	184	141
ABC	Mycogen 2H722BtRR	150	15.9	150	120	141	107	128	232	163	173	115	159	174	144
BC	Dekalb DKC64-10 (RR2)	150	15.5	138	118	102	150	149	214	163	189	102	143	183	144
BC	Belle 1540 RY	149	15.8	166	145	122	126	125	230	150	173	105	146	165	140
BC	Dekalb DKC66-80 (RR2)	149	15.9	160	136	128	145	111	195	164	172	76	154	185	162
BC	Golden Harvest 9339RR	148	15.5	168	128	97	91	125	202	160	150	117	170	202	162
BCD	Terral 26BR10RR	147	15.9	163	111	107	146	124	196	166	170	92	149	169	173
BCD	Dynagro 57K14RR	147	15.6	153	114	120	140	126	202	157	170	82	153	190	157
BCD	USG BG1153RR	146	16.8	131	121	124	108	141	210	151	169	87	155	177	176
BCD	FFR 693RR	145	15.2	150	131	103	132	114	210	161	169	92	152	173	157
BCD	Dekalb DKC64-11 (RR2/YGCB)	145	15.5	142	122	85	125	134	221	161	174	95	145	178	161
CDE	Vigoro V51R36RR	144	15.5	116	135	109	123	111	210	155	167	93	170	188	150
DE	Triumph 1120RRBt	137	15.3	139	118	109	100	114	230	153	142	99	138	166	133
E	Vigoro V54R66RR	133	14.4	144	129	107	113	101	193	154	161	73	140	151	135
Average (bu/a)		148		150	129	116	126	125	214	160	172	95	154	182	154

MS = Hybrids that have any MS letter in common are not statistically different in yield at the 5% level of probability.

†Yields have been adjusted to 15.5% moisture. Each hybrid was evaluated in a large strip-plot at each location, thus each county test was considered as one replication of the test in calculating the average yield and in conducting the statistical analysis to determine significant differences (MS).

Henry T = Henry county, Tosh Farm, irrigated, double cropped with barley.

‡Data provided by Robert C. Williams, Ext. Area Specialist, Grain Crops, and extension agents in counties shown above.

Table 27. Yields of six white corn hybrids in six County Standard Tests in Middle and West Tennessee during 2003.†‡

MS	Brand/Hybrid	Avg.	Avg.	Benton	Gibson	Henry	Lake	Lincoln	Weakley
		Yld	Moisture						
		bu/a	%	-----bu/a-----					
A	**Asgrow RX921W	138	19.4	131	178	159	108	147	103
A	*Pioneer 32T78	137	17.9	105	176	167	109	161	105
A	Pioneer 32K72	136	17.4	122	170	160	89	164	109
A	NK Brand 1851W	134	19.9	111	156	159	113	153	112
A	**Pioneer 33T17	129	17.8	112	175	171	71	141	107
B	Adler 5500W	115	18.4	114	140	136	95	123	86
Average (bu/a)		132		116	166	159	98	148	104

MS = Hybrids that have any MS letter in common are not statistically different in yield at the 5% level of probability.

†Yields have been adjusted to 15.5% moisture. Each hybrid was evaluated in a large strip-plot at each location, thus each county test was considered as one replication of the test in calculating the average yield and in conducting the statistical analysis to determine significant differences (MS).

‡Data provided by Robert C. Williams, Ext. Area Specialist, Grain Crops, and extension agents in counties shown above.

Hybrids denoted with an asterisk () were in the top performing group for two years.

Table 28. Overall average yields and moistures of 17 early-season corn hybrids evaluated in County Standard Tests and Experiment Station Tests in Tennessee during 2003.†

Brand	Hybrid	County Standard Tests			Experiment Station Tests	
		Avg. Yield	Avg. Moisture	Test / # Loc	Avg. Yield (n=9)	Moisture (n=9)
		bu/a	%		bu/a	%
NK Brand	N 70-F1 (LL/YG)	169	16.6	BT 9	192	19.3
FFR	736 Bt	168	17.0	BT 9	198	18.9
NK Brand	N 70-T9 (CL/LL/YG)	168	17.3	BT 9	199	19.6
Pioneer	34B24 (Bt)	166	15.8	BT 9	196	18.4
Dyna-Gro	5545 RR	174	17.4	Early 10	186	18.8
NK Brand	N 65-M7	170	16.6	Early 10	191	17.8
Agrigold	A 6445	167	16.9	Early 10	189	18.0
Agrigold	A 6395 RR	161	15.6	Early 10	176	17.4
FFR	740	157	17.0	Early 10	187	18.7
Pioneer	34H31	157	16.3	Early 10	175	17.7
Agrigold	A 6490 Bt	155	17.2	Early 10	180	18.0
Pioneer	34B28 (CL)	153	16.4	Early 10	176	18.1
Belle	1540 RY (RR,YG)	149	15.8	RR 12	194	19.3
Dyna-Gro	57K14 (RR)	147	15.6	RR 12	186	17.3
FFR	693 RR	145	15.2	RR 12	188	17.8
Triumph Seed	1120 Bt/RR	137	15.3	RR 12	180	17.9
Pioneer	33T17 (W)	129	17.8	White 6	190	17.9
Average (bu/a)		157	16.5		187	18.3

Codes:

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

RR = 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

W = white grain

†All Yields are adjusted to 15.5% moisture.

Yield comparisons should only be made within the group of hybrids that were evaluated in the same County Standard Test in the same number of locations, e.g., BT 9 or Early 10 or RR 12.

Table 29. Overall average yields and moistures of 22 medium-season corn hybrids evaluated in county standard tests and experiment station tests in Tennessee during 2003.†

Brand	Hybrid	County Standard Tests ⁺			Experiment Station Tests	
		Avg. Yield bu/a	Avg. Moisture %	Test / # Loc	Avg. Yield (n=7) bu/a	Moisture (n=7) %
Vigoro	V 55Y21 (Bt)	181	17.1	BT 9	208	17.3
Garst	8350 YG1	177	16.3	BT 9	201	18.8
FFR	753 BT/CL	166	16.8	BT 9	210	20.0
Belle	1430 Y (YG)	165	17.1	BT 9	201	18.6
UniSouth Genetics	USG/BG BT 1152	142	18.4	BT 9	195	18.1
Triumph Seed	1416 Bt	165	17.8	Early 10	211	17.4
Pioneer	33R77	169	17.3	Medium 13	203	18.6
UniSouth Genetics	USG/BG 316	168	17.3	Medium 13	199	18.2
Pioneer	33M54	167	17.2	Medium 13	212	19.0
Agrigold	A 6610	164	17.4	Medium 13	205	18.9
Pioneer	33V15	163	16.2	Medium 13	206	18.9
Agrigold	A 6607	160	16.4	Medium 13	216	17.9
Garst	8288	159	17.6	Medium 13	203	19.8
FFR	781	155	16.9	Medium 13	201	18.5
Vigoro	V 54C69 (CL)	148	15.8	Medium 13	197	18.6
Belle	1520 R (RR)	160	16.4	RR 12	176	17.2
Dekalb	DKC 64-10 (RR2)	150	15.5	RR 12	163	17.3
Terral	TV 26BR10n (RR/Bt)	147	15.9	RR 12	201	19.2
UniSouth Genetics	USG/BG RR 1153	146	16.8	RR 12	196	19.4
Dekalb	DKC 64-11 (RR2/YGCB)	145	15.5	RR 12	184	19.2
Vigoro	V 54R66 (RR)	133	14.4	RR 12	219	18.0
Pioneer	32T78 (W)	137	17.9	White 6	206	18.2
Average (bu/a)		158	16.7		201	18.5

Codes:

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

RR = contains a gene for tolerance to glyphosate

CL = contains a gene for tolerance to Imidazolinone class herbicides

W = white grain

†All Yields are adjusted to 15.5% moisture.

+Yield comparisons should only be made within the group of hybrids that were evaluated in the same County Standard Test in the same number of locations, e.g., BT 9 or Medium 13, etc.

Table 30. Overall average yields and moistures of 11 full-season corn hybrids evaluated in County Standard Tests and Experiment Station Tests in Tennessee during 2003.†

Brand	Hybrid	County Standard Tests ⁺			Experiment Station Tests	
		Avg. Yield bu/a	Avg. Moisture %	Test / # Loc	Avg. Yield (n=7) bu/a	Moisture (n=7) %
Pioneer	31A13 (Bt)	180	18.1	BT 9	200	20.4
Pioneer	32H69 (Bt)	176	17.3	BT 9	201	20.6
FFR	849 CL	181	17.8	Full 10	193	20.4
Pioneer	32D99	178	17.7	Full 10	204	20.7
Pioneer	31G66	172	17.3	Full 10	189	19.2
Pioneer	31R88	171	18.1	Full 10	189	20.1
Pioneer	31G98	168	16.0	Full 10	204	18.7
Dyna-Gro	5515	167	16.6	Full 10	169	18.6
Triumph Seed	1866 Bt	158	17.6	Medium 13	195	20.4
FFR	842 RR	155	18.3	RR 12	196	20.8
Zimmerman	1851 W	134	19.9	White 6	176	20.3
Average (bu/a)		167	17.7		192	20.0

Codes:

Bt = contains a *Bacillus thuringiensis* gene for insect resistance

RR = contains a gene for tolerance to glyphosate

CL = contains a gene for tolerance to Imidazolinone class herbicides

W = white grain

†All Yields are adjusted to 15.5% moisture.

+Yield comparisons should only be made within the group of hybrids that were evaluated in the same County Standard Test in the same number of locations, e.g., BT 9 or Full 10, etc.

Table 31. Characteristics of corn hybrids evaluated in yield tests in Tennessee during 2003.†

Early-Season Corn Hybrid Entries		Herbicide			Released or		
Brand	Hybrid	Grain Color	Maturity	Tolerance	BT Gene	Experimental	Comments
Agrigold	A 6395 RR	Y	106	RR	---	R	---
Agrigold	A 6445	Y	109	---	---	R	---
Agrigold	A 6445 (Gaucho)	Y	109	---	---	R	---
Agrigold	A 6490 Bt	Y	113	---	Bt	R	---
Augusta Seed Corp.	A 1187	Y	113	---	---	R	---
Augusta Seed Corp.	A 4587	Y	111	---	---	R	Best in high yield environments
Belle	1540 RY (RR,YG)	---	111	RR	YG	R	Performs best under good fertility
Belle	1130 Y (YG)	---	111	---	YG	E	---
Belle	BXR 1122 C	---	112	---	---	E	---
Belle	BXR 1255 C	---	112	---	---	E	---
Belle	1240 RY (RR,YG)	---	112	RR	YG	E	---
Dekalb	DKC 60-09 (RR2/YGCB)	Y	110	RR	YG	R	---
Dekalb	DKC 60-09 (RR2/YGCB) (Gaucho)	Y	110	RR	YG	R	---
Dekalb	DKC 63-24 (RR2/YGCB)	Y	113	RR	YG	R	---
Dyna-Gro	5545	Y	112	---	---	R	Very consistent
Dyna-Gro	57K14 (RR)	Y	113	RR	---	R	High top end yielder
Dyna-Gro	57P69 (RR/Bt)	Y	113	RR	Bt	R	High top end yielder
FFR	691	Y	111	---	---	R	Good silage
FFR	740	Y	113	---	---	R	---
FFR	692 Bt	Y	112	---	Bt	R	---
FFR	693 RR	Y	112	---	---	R	---
FFR	736 Bt	Y	112	---	Bt	R	---
NK Brand	N 65-M7	Y	109	---	---	R	Does well on most soil types
NK Brand	N 70-F1 (LL/YG)	Y	111	LL	YG	R	Best on productive ground
NK Brand	N 70-T9 (CL/LL/YG)	Y	111	CL / LL	YG	R	Very adaptable
Pioneer	33T17 (W)	W	113	---	---	R	---
Pioneer	34B24 (Bt)	Y	110	---	YGCB	R	---
Pioneer	34B24 (Bt) (Gaucho)	Y	110	---	YGCB	R	---
Pioneer	34B28 (CL)	Y	109	CL	---	R	---
Pioneer	34H31	Y	109	---	---	R	---
Trisler Seed Farms	T-5247	Y	112	---	---	R	---
Trisler Seed Farms	T-5327 Bt	Y	113	---	M810	R	---
Triumph Seed	1120 Bt/RR	Y	112	RR	M810	R	---
UniSouth Genetics	USG/BG 1132	Y	113	---	---	R	---
Vigoro	V 52Y41 (Bt)	Y	111	---	YG	R	Best in high yield environments
Blend Agrigold & FFR	FFR 736 Bt & A 6445	---	---	---	---	---	---

Medium-Season Corn Hybrid Entries and Traits for 2003

Brand	Hybrid	Grain Color	Maturity	Herbicide		Released or		Comments
				Tolerance	BT Gene	Experimental		
Agrigold	A 6607	Y	114	---	---	R	---	
Agrigold	A 6607 (Gaucho)	Y	114	---	---	R	---	
Agrigold	A 6610	Y	115	---	---	R	---	
Agrigold	XA 4300 Bt	Y	113	---	Bt	E	---	
Belle	1420 R (RR)	---	114	RR	---	R	---	Above average stress tolerance
Belle	1430 Y (YG)	---	114	---	YG	R	---	Consistent on a wide range of soils
Belle	1510 C	---	115	---	---	R	---	Above average roots and hard textured kernels
Belle	1520 R (YG)	---	115	RR	---	R	---	Excellent Staygreen
Dekalb	DKC 64-10 (RR2)	Y	114	RR	---	R	---	
Dekalb	DKC 64-10 (RR2) (Gaucho)	Y	114	RR	---	R	---	
Dekalb	DKC 64-11 (RR2/YGCB)	Y	114	RR	YG	R	---	
Dyna-Gro	57F87 YG (CXO 03515)	Y	115	---	Bt	E	---	
Dyna-Gro	CXO 03911	Y	115	---	---	E	---	
Dyna-Gro	CXO 03914	Y	114	---	---	E	---	
FFR	781	Y	115	---	---	R	---	
FFR	753 BT/CL	Y	115	CL	Bt	R	---	
FFR	763 RR/Bt	Y	116	RR	YG	R	---	
Garst	8288	Y	116	---	---	R	---	
Garst	8350 YG1	Y	115	---	YG	R	---	
Pioneer	32T78 (W)	W	116	---	---	R	---	
Pioneer	33J57 (Bt)	Y	114	---	YGCB	R	---	
Pioneer	33M54	Y	114	---	---	R	---	
Pioneer	33P67 (Bt)	Y	114	---	YGCB	R	---	
Pioneer	33R77	Y	114	---	---	R	---	
Pioneer	33R77 (Gaucho)	Y	114	---	---	R	---	
Pioneer	33V15	Y	114	---	---	R	---	
Terral	TV 2140nRR	Y	114	RR	---	R	---	
Terral	TV 2155 Bt	Y	115	---	Bt	R	---	
Terral	TV 23R15n (RR)	Y	115	RR	---	R	---	
Terral	TV 25B30 (Bt)	Y	115	---	Bt	R	---	
Terral	TV 26B23 (Bt)	Y	116	---	Bt	R	---	
Terral	TV 26BR10n (RR/Bt)	Y	116	RR	Bt	R	---	
Trisler Seed Farms	T-00-103	Y	114	---	---	R	---	
Trisler Seed Farms	T-5337 Bt	Y	114	---	M810	R	---	
Trisler Seed Farms	T-5338	Y	114	---	---	R	---	
Trisler Seed Farms	T-5399	Y	115	---	---	R	---	
Triumph Seed	1416 Bt	Y	114	---	M810	R	---	
UniSouth Genetics	USG/BG 316	Y	114	---	---	R	---	
UniSouth Genetics	USG/BG BT 1152	Y	115	---	YGCB	R	---	
UniSouth Genetics	USG/BG RR 1153	Y	115	RR	---	R	---	
Vigoro	V 54C69 (CL)	Y	114	CL	---	R	---	
Vigoro	V 54R66 (RR)	Y	114	RR	---	R	---	
Vigoro	V 55Y21 (Bt)	Y	114	---	YG	R	---	
Blend Pion & USG	33J57 Bt & BT 1152	---	---	---	---	---	---	

Full-Season Corn Hybrid Entries and Traits for 2003

Brand	Hybrid	Grain Color	Maturity	Herbicide		Released or		Comments
				Tolerance	BT Gene	Experimental		
Agrigold	A 6610 Bt	Y	116	---	Bt	R	---	
Agrigold	XA 2300 Bt	Y	117	---	Bt	E	---	
Augusta Seed Corp.	265	Y	118	---	---	E	---	Duel purpose - wide range of soils
Augusta Seed Corp.	A 5965	Y	118	---	---	E	---	Duel purpose - wide range of soils
Dekalb	DKC 69-71 (RR2/YGCB)	Y	119	RR	YG	R	---	
Dekalb	DKC 69-71 (RR2/YGCB) (Gaucho)	Y	119	RR	YG	R	---	
Dekalb	DKC 69-72 (RR2)	Y	119	RR	---	R	---	
Dyna-Gro	5515	Y	117	---	---	R	---	Responds well to management, possible silage
FFR	842 RR	Y	117	RR	---	R	---	
FFR	849 CL	Y	118	CL	---	R	---	
FFR	900 Bt	Y	119	---	YG	R	---	Good silage
Pioneer	31A13 (Bt)	Y	118	---	YGCB	R	---	
Pioneer	31G66	Y	118	---	---	R	---	
Pioneer	31G98	Y	117	---	---	R	---	
Pioneer	31G98 (Gaucho)	Y	117	---	---	R	---	
Pioneer	31R88	Y	120	---	---	R	---	
Pioneer	32D99	Y	118	---	---	R	---	
Pioneer	32H69 (Bt)	Y	117	---	YGCB	R	---	
TN Exp	TN 0301	Y	---	---	---	E	---	
TN Exp	TN 0302	Y	---	---	---	E	---	
TN Exp	TN 0303	W	---	---	---	E	---	
TN Exp	TN 0304	W	---	---	---	E	---	
Triumph Seed	1866 Bt	Y	118	---	M810	R	---	
Vigoro	V 58Y41 (Bt)	Y	118	---	YG	R	---	High yield / potential silage
Zimmerman	1851 W	W	117	---	---	R	---	Very adaptable
Blend FFR + Pioneer	FFR 900Bt & Pioneer 32D99	---	---	---	---	---	---	

Codes:

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

RR = 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

Gaucho = seed treated with a systemic insecticide

W = white grain

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

Table 32. Mean yields and agronomic characteristics of 18 corn hybrids tested in the UDSA Early Maturing Corn Hybrid Regional Trial evaluated at the Knoxville Tennessee Agricultural Experiment Station in 2003.

Brand	Hybrid	Avg. Yield [†]		Test Weight	Silking	Plant Height	Ear Height	Reported Relative Maturity	Black Layer	Lodging	Seed Size
		± Std Err Knoxville	Moisture								
		bu/a	%	lbs/bu	DAP	in.	in.	DAP	DAP	%	g/100
Pioneer	32R25	232 ± 7	21.9	55.5	68	133	66	116	122	12	37
NK Brand	N79-L3	230 ± 7	21.8	58.5	64	121	48	118	119	0	35
Agrigold	A6333 Bt	223 ± 7	18.6	55.7	63	107	43	101	116	2	36
Asgrow	RX 634	217 ± 7	18.5	55.3	63	108	48	105	120	6	37
Asgrow	RX 452	209 ± 7	17.4	57.8	61	104	44	99	111	0	34
Dekalb	DKC 42-22	206 ± 7	16.7	55.9	62	106	44	92	111	0	30
Dekalb	DKC 46-26	205 ± 7	16.7	57.2	61	102	42	96	113	5	32
Pioneer	38T27	201 ± 7	18.1	57.8	60	106	40	96	113	3	36
Asgrow	RX 393 YG	199 ± 7	16.5	56.2	61	101	41	90	111	0	29
Pioneer	38P06	196 ± 7	17.1	57.3	58	104	43	93-97	108	1	33
Dekalb	DKC 42-70	193 ± 7	16.4	57.2	59	103	40	92	110	2	31
Hoegemeyer	H 2593	186 ± 7	16.4	57.2	63	111	46	101-105	114	2	29
Agrigold	A 6257	185 ± 7	18.0	57.3	62	108	41	96-104	114	3	37
Hoegemeyer	H 2590	182 ± 7	17.6	57.0	61	98	35	100-102	113	1	29
Hoegemeyer	H 598 CL	175 ± 7	18.9	56.5	64	112	46	103-105	118	2	34
Garst Agripro	AP 8830	174 ± 7	16.2	56.3	61	91	37	95	112	1	28
Garst Agripro	AP 9185 Bt	160 ± 7	16.3	55.9	57	91	33	93	104	1	27
Garst Agripro	AP 8946	157 ± 7	15.8	54.9	60	92	35	90	109	7	27
Avg. (bu/a)		196									
L.S.D._{.05} (bu/a)		19									
C.V. (%)		6.6									

Codes:

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

CL = contains a gene for tolerance to Imidazolinone class herbicides

DAP = days after planting

Bushel weight of U.S. # 1 corn = 56 lbs.

[†]All Yields are adjusted to 15.5% moisture, planted 5/14/2003 at 31600/acre population, harvested 9/24/2003