

Corn and Grain Sorghum Performance Tests in Tennessee

2002

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PERFORMANCE OF CORN HYBRIDS IN TENNESSEE

EXPERIMENT STATION AND COUNTY STANDARD TESTS

2002

Background Information:

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 (20K/acre) and a later planting of higher population density (28K/acre) of all three tests were made at the Ames Plantation. All three tests at Knoxville received approximately 1.5 inches of water per week via irrigation beginning at early tassel and continuing through grain fill. Due to extensive damage of the plots by raccoons, the non-irrigated tests at the Middle TN station are not included in this report.

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 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 ($123 - 115 = 8 \text{ bu/a} = \text{LSD of } 8$) and Hybrid A ($123 - 110 = 13 \text{ bu/a} > \text{LSD of } 8$).

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%.

Table 1. Experiment Station location information where the corn hybrid tests were conducted in 2002.

Experiment Station	Location	Planting Date	Harvest Date	Plant Population	Soil Type
Ames (early planting)	Grand Junction	April 15, 2002	September 10-11, 2002	20,000	Lexington Silt Loam
“ (late planting)	“ ”	May 8, 2002	September 16 & 23, 2002	28,000	“ ” “
Highland Rim	Springfield	April 19, 2002	October 9, 10 & 14, 2002	28,000	Sango Silt Loam
Knoxville	Knoxville	April 15, 2002	September 11-12, 2002	28,000	Sequatchie Silt Loam
Middle TN (irrigated)	“ ”	April 26, 2002	September 20, 2002	25,000	Maury Silt Loam
Milan (non-irrigated)	Milan	April 15, 2002	September 4, 2002	26,000	Grenada, Routon Silt Loam
“ (irrigated)	“	April 16, 2002	September 5, 2002	28,000	Loring , Henry Silt Loam
Plateau	Crossville	April 26, 2002	October 14, 2002	22,000	Lily Loam

RESULTS

Hybrids

Ninety five corn hybrids were evaluated in the 2002 Experiment Station (ES) tests in Tennessee. There were 30 hybrids in the early- (Tables 2 – 4), 38 in the medium- (Tables 5 – 7) and 27 hybrids in the full-season tests (Tables 8 – 10). The 95 hybrids represent 15 different brands (Table 19). Twenty-two of the hybrids in the 2002 tests have a Bt gene for insect resistance; seventeen have a Roundup Ready gene for tolerance to glyphosate herbicide (denoted by RR); seven have a gene for tolerance to Imadizolinone herbicide (denoted by CL); and five have “stacked” genes (four with RR/Bt and one with CL/Bt). The County Standard (CS) tests consisted of an early-season test (23 hybrids at 7 locations, Table 11), a medium-season test (16 hybrids at 9 locations, Table 12), a full-season test (7 hybrids at 7 locations, Table 13), a test of hybrids containing a Bt gene (20 hybrids at 13 locations, Table 14) and a test of white grain hybrids (9 hybrids at 5 locations, Table 15) for a total of 75 hybrids. In addition to Tennessee counties, the County Standard Bt Test involved Graves 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.

Yields

Test Averages: The test average of the 30 early-season hybrids across all Experiment Station environments was 141 bu/a (Table 2). The test average of the 23 early-season hybrids in the County Standard locations was 139 bu/a (Table 11). Similarly, the test average for the 38 medium-season hybrids across the seven ES environments was 146 bu/a (Table 5), which was the same average yield for the 16 medium-season hybrids in the nine CS test environments (Table 12). Among the early-, medium-, and full-season tests, the highest yields were produced by the full-season hybrids. The test averages for the ES and CS full-season tests were, 160 and 157 bu/a, respectively (Tables 8 and 13). The highest average yield of any hybrid in any of the tests during 2002 was produced by Pioneer 31G98 (257 bu/a) in the full-season ES test at Knoxville (Table 8). Because of the very dry conditions, the test at Knoxville received approximately 1.5 inches of water per week via irrigation beginning at tassel and continuing through soft dough stage.

There were large differences among test averages among ES locations and among CS locations. The variations in the yield responses are reflective of the large variation in the rainfall received across the state from late-June through August. In general, the weather conditions were hot and dry, but some locations received timely rains during the tassel and grain fill periods, which enhanced the yields at those locations.

Highs and Lows:

Early-Season Hybrids. The highest yielding of the 30 early-season hybrids across all locations in the Experiment Station (ES) tests was FFR 736 (Bt) at 162 bu/a (Table 2). This hybrid was significantly ($P < 0.05$) higher yielding than all other hybrids in the test, based on the LSD value. This hybrid ranked fourth in the County Standard (CS) Bt test at 137 bu/a (Table 14) versus the top yielder in that test, Pioneer 31B13 (Bt) at 143 bu/a. The highest yielding hybrid in the CS early-season test was NK Brand N65-M7 (152 bu/a, Table 11). There were six other hybrids in the CS early-season test (Croplan CG631, Agrigold 6445, Adler 4500, LG Seeds 2585, Pioneer 34B28, and Vigoro V5520) that were not statistically ($P < 0.05$) lower in yield than NK N65-M7 (Table 11). The NK N65-M7 tied for fourth place in the Experiment Station early-season test (151 bu/a, Table 2). The lowest yielding hybrid in the ES early-season test was Adler Seeds 5600 at 114 bu/a. This hybrid was not tested in the CS tests. The lowest yielding hybrid in the CS early-season test was Steyer 2490 at

113 bu/a (Table 11). Fourteen hybrids were common in both the ES and the CS early-season tests in 2002 (Table 16).

Out of the 30 early-season hybrids evaluated in the ES test, only nine have been tested for two years and only two have been tested three years (Table 4). FFR 736 (Bt) tied with Agrigold A6445 for the highest overall average for two years at 163 bu/a, when tested over four ES locations. Of the two hybrids that have been tested for three years, Pioneer 33T17 (W) averaged 157 bu/a compared to 155 bu/a for FFR 726 (Table 4).

Medium-Season Hybrids. Pioneer 33J57 (Bt) was the highest yielding of the 38 medium season hybrids in the seven ES environments in 2002, producing 161 bu/a (Table 5). One other medium-season hybrid, USG/BG BT1152 (154 bu/a) was not statistically ($P < 0.05$) lower in yield than Pioneer 33J57. This hybrid was not entered into the CS Bt test in 2002. There was a 27 bu/a range in the overall average yields of hybrids in the ES medium-season test with Terral TV 2140 RR being the lowest at 134 bu/a. The mean yield of the ES medium-season test across all hybrids and locations was 146 bu/a (Table 5). The ES location with the highest test mean yield was Knoxville (212 bu/a) in which the highest yielding medium-season hybrid was Pioneer 33R77 (231 bu/a). The lowest average yield in that test was 196 bu/a (DeKalb DK 647 BtY and Golden Harvest H-9504, Table 5).

The 16 hybrids in the CS medium-season test also averaged 146 bu/a across the nine county locations. USG BG316 produced the highest yield, 157 bu/a, and Adler 5480 produced the lowest yield, 131 bu/a a range of 26 bu/a (Table 12). Five other medium-season hybrids in the CS test (Pioneer 33R77, Golden Harvest H9364, Garst 8348, Garst 8288, and Pioneer 32H58) were not statistically lower in yields than USG BG316 (Table 12). The highest yields in the CS medium-season test was obtained in Lake county (191 bu/a test average) with USG BG316 having the highest mean yield of 213 bu/a and Adler 5480 producing the least at 164 bu/a (Table 12). Twelve of the medium-season hybrids that were evaluated in the CS test were also evaluated in the ES medium-season test in 2002 (Table 17).

Fifteen of the 38 medium-season hybrids have been evaluated for two years in the ES tests and five have been evaluated for three years (Table 7). The highest yielding hybrid based on the two-year average was Pioneer 33J57 (Bt) at 192 bu/a (two location average over two years); whereas the lowest yielding of the two-year group was DeKalb DK 647 (BtY) (159 bu/a, Table 7). The top producer for the three-year test group was Terral TV 2140 with a three-year average yield of 176 bu/a. The Roundup Ready version of this hybrid, Terral TV 2140 RR (161 bu/a), has averaged less than the non-RR sister line over the same three years of tests (Table 7).

Full-Season Hybrids. The highest hybrid yields in the ES full-season test over seven environments in 2002 were 176 – 175 bu/a [FFR 900 (Bt) and Pioneer 31G98, respectively, Table 8]. Nine other full-season hybrids in the ES test were not statistically lower in yield than the two mentioned above (see Table 8). Pioneer 31G98 also tied with FFR 849 (CL) for the highest average yields in the CS tests (162 bu/a, Table 13). Furthermore, Pioneer 31G98 produced the highest average yields among the eight hybrids in the ES full-season two-year test (202 bu/a) and the highest average yield among the five full-season hybrids in three years of ES tests (180 bu/a, Table 10).

The lowest average yield across locations for the commercial hybrids in the ES full-season test was 115 bu/a (Augusta A 3869). Among the seven hybrids in the CS full-season test, the lowest average yield for a hybrid across the seven counties was 152 bu/a (Croplan CG818). Nine of the full-season hybrids were evaluated in both the Experiment Station tests and in the County Standard tests in 2002 (Table 18).

Bt Hybrids. There was a 24 bu/a range (119 – 143 bu/a) in the overall mean yields of hybrids in the CS Bt test (Table 14). Pioneer 31B13 produced the highest mean yield (143 bu/a, Table 14). Seven other hybrids (Mycogen 6920, Pioneer 34B24, Pioneer 31A13, Steyer 2590, FFR 736, USG BG1150 and Vigoro V55Y21) were not statistically ($P < 0.05$) lower in yields than Pioneer 31B13 (Table 14). In the ES tests in 2002, FFR 736, DeKalb DKC 61-25, Golden Harvest H-9247, Pioneer 34B24, Pioneer 33G30 (early-season hybrids, Table 2); Pioneer 33J57, USG/BG BT1152, DeKalb DKC 647, Pioneer 33P67, Terral TV2155 (medium-season hybrids, Table 5); FFR 900, Pioneer 31A13, and Agrigold XA 2100 (full-season hybrids, Table 8) were top performing Bt hybrids.

White Grain Hybrids. The highest yielding white grain hybrid in the ES tests was the full-season hybrid, Zimmerman 1851W at 156 bu/a (Table 8). This compares to a test mean of 160 bu/a and an average yield of 176 bu/a for the top hybrid in the test. There was one white grain hybrid in the early-season test, Pioneer 33T17 that averaged 149 bu/a (test mean of 141 bu/a and top hybrid yield of 162 bu/a, Table 2). Furthermore, Pioneer 33T17 produced the highest yield (124 bu/a) in the CS white grain hybrid test (Table 15). The range in overall mean yields of hybrids in that test was 17 bu/a (107 – 124 bu/a), and the test mean was 114 bu/a. There were two white grain hybrids included in the ES medium-season test, Pioneer 32T78 (146 bu/a) and Zimmerman WX 7812 (140 bu/a, Table 5). The range in average yields in that test was 134 – 161 bu/a, and the test average was 146 bu/a. Additionally, Pioneer 32T78 ranked third (116 bu/a) in the CS white grain hybrid test (Table 15). Thus, there are several high producing white grain hybrids available commercially.

Irrigated vs. Non-irrigated Test. Duplicate tests were conducted at the Milan Experiment Station with and without irrigation. The average differences in yields across hybrids receiving irrigation versus non-irrigation in 2002 were: 83 bu/a for early-season hybrids (179 versus 96 bu/a, Table 2), 75 bu/a for medium-season hybrids (180 versus 105 bu/a, Table 5) and 71 bu/a for full-season hybrids (165 versus 94 bu/a, Table 8). Thus, irrigation increased yields at the Milan location in 2002 across all the hybrids in the tests by an average of 76 bu/a. Hybrids with a 100+ bu/a response to irrigation were: (early-season hybrids, Table 2) FFR 736 (Bt) (107 vs. 206 bu/a), NK Brand N65-M7 (96 vs. 202 bu/a), Dyna-Gro DG X15618 (RR/Bt) (77 vs. 182 bu/a), Terral TV X24R002 (RR) (71 vs. 181 bu/a), Pioneer 34B97 (69 vs. 178 bu/a), Terral TV 23R15n (RR) (61 vs. 171 bu/a); (medium-season hybrids, Table 5) DeKalb TXP 267-D (RR/YG) (90 vs. 196 bu/a), Terral TV 2140Xn1 (RR) (86 vs. 192 bu/a); (full-season hybrids, Table 8) FFR 900 (Bt) (82 vs. 192 bu/a), FFR 849 (CL) (87 vs. 195 bu/a), and Pioneer 31R88 (79 vs. 181 bu/a).

EXPERIMENT STATION TESTS

Table 2. Mean yields of 30 early-season (<114 DAP) corn hybrids evaluated in eight environments in Tennessee during 2002.

Brand	Hybrid	Avg. Yield [†]	Ames		Spring-	Knox-	Milan		Spring	Crossville
		± Std Err (n=7)	(Early)	(Late)	field	ville	(Irr.)	(Non-Irr.)	Hill (Irr.)	
----- bu/a -----										
FFR	736 Bt	162 ± 3	159	154	84	220	206	107	138	148
Dekalb	DKC 61-25 Bt	153 ± 3	139	154	103	213	179	103	115	166
Agrigold	A 6445	152 ± 3	138	140	63	215	197	98	118	159
Dyna-Gro	5467 RR	151 ± 3	145	140	61	205	191	97	127	148
NK Brand	N 65-M7	151 ± 3	137	138	77	219	202	96	120	142
Golden Harvest	H-9247 Bt	149 ± 3	135	137	86	200	183	100	127	164
Pioneer	33T17 (W)	149 ± 3	122	138	82	204	192	115	123	146
Pioneer	34B24 Bt	149 ± 3	136	130	97	196	176	120	119	162
Dyna-Gro	5545 RR	148 ± 3	135	139	95	216	195	100	108	144
Dekalb	DKC 61-24	147 ± 3	153	135	84	211	176	88	103	165
Pioneer	33G30 Bt	145 ± 3	122	129	97	201	182	118	113	149
Agrigold	A 6490 Bt	144 ± 3	137	136	100	195	187	101	116	139
FFR	726	144 ± 3	128	126	70	210	171	101	121	148
FFR	692 Bt	143 ± 3	112	132	97	212	171	93	121	163
Pioneer	34B28 CL	142 ± 3	127	122	83	181	201	107	103	151
Golden Harvest	H-9231	141 ± 3	122	130	83	192	180	104	117	145
Dyna-Gro	DG X15618 RR/Bt	141 ± 3	130	134	64	201	182	77	107	152
Croplan Genetics	671 CL/Bt	136 ± 3	133	128	87	193	162	103	107	128
FFR	740	136 ± 3	130	123	96	194	184	92	109	122
FFR	713	136 ± 3	130	117	93	199	172	98	92	142
FFR	691	136 ± 3	107	92	81	203	173	101	108	166
Agrigold	A 6434	135 ± 3	110	112	75	199	176	102	112	132
Augusta Seed Corp.	A 3685 CL	134 ± 3	115	130	69	195	179	103	99	116
NK Brand	N 70-A2 CL	133 ± 3	117	123	91	183	171	98	112	131
Terral	TV X24R002 RR	133 ± 3	108	132	71	197	181	71	100	142
Garst	8442	131 ± 3	109	130	89	187	165	91	109	127
Adler Seeds	4060 CF	130 ± 3	104	101	89	197	148	105	122	136
Pioneer	34B97	130 ± 3	117	115	80	196	178	69	95	136
Terral	TV 23R15n RR	128 ± 3	122	118	78	186	171	61	107	128
Adler Seeds	5600	114 ± 3	103	84	54	176	151	70	106	106
Avg. (bu/a)		141	126	127	83	201	179	96	113	143
L.S.D._{.05} (bu/a)		8	18	16	28	15	22	24	16	26
C.V. (%)		8.7	8.7	7.8	20.1	4.4	7.6	15.4	8.6	10.9

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

Table 3. Overall mean yields and agronomic characteristics of 30 early-season corn hybrids evaluated in eight environments in Tennessee during 2002.

Brand	Hybrid	Avg. Yield	Test		Plant	Ear	
		± Std Error (n=7)	Moisture (n=8)	Weight (n=7)	Lodg. (n=8)	Height [†] (n=2)	Height [†] (n=2)
		bu/a	%	lbs/bu	%	in.	in.
FFR	736 Bt	162 ± 3	16.7	56.6	1	111	45
Dekalb	DKC 61-25 Bt	153 ± 3	16.2	56.9	1	106	51
Agrigold	A 6445	152 ± 3	16.6	56.2	3	106	42
Dyna-Gro	5467 RR	151 ± 3	16.4	55.8	3	104	41
NK Brand	N 65-M7	151 ± 3	16.2	56.2	3	103	43
Golden Harvest	H-9247 Bt	149 ± 3	16.3	57.7	2	101	44
Pioneer	33T17 (W)	149 ± 3	17.1	58.7	4	106	47
Pioneer	34B24 Bt	149 ± 3	16.8	58	2	107	45
Dyna-Gro	5545 RR	148 ± 3	16.8	55.9	3	107	42
Dekalb	DKC 61-24	147 ± 3	16.2	56.9	2	103	48
Pioneer	33G30 Bt	145 ± 3	16.3	58.3	1	109	48
Agrigold	A 6490 Bt	144 ± 3	16.4	58.1	2	98	42
FFR	726	144 ± 3	16.9	56.8	3	104	45
FFR	692 Bt	143 ± 3	16.6	57.8	2	102	40
Pioneer	34B28 CL	142 ± 3	16.7	57.7	4	104	40
Golden Harvest	H-9231	141 ± 3	16.4	55.6	3	109	47
Dyna-Gro	DG X15618 RR/Bt	141 ± 3	17.3	55.9	1	104	47
Croplan Genetics	671 CL/Bt	136 ± 3	17	56.1	1	102	41
FFR	740	136 ± 3	17	57.6	4	106	44
FFR	713	136 ± 3	16.9	57.5	4	107	44
FFR	691	136 ± 3	16	57	5	101	40
Agrigold	A 6434	135 ± 3	15.9	56.3	3	103	44
Augusta Seed Corp.	A 3685 CL	134 ± 3	17.1	56.4	3	101	36
NK Brand	N 70-A2 CL	133 ± 3	16.5	57.6	3	101	41
Terral	TV X24R002 RR	133 ± 3	18.6	58.5	3	111	55
Garst	8442	131 ± 3	16.1	58.3	4	98	45
Adler Seeds	4060 CF	130 ± 3	17.9	56.8	3	98	41
Pioneer	34B97	130 ± 3	15.9	58.7	5	103	42
Terral	TV 23R15n RR	128 ± 3	17	56.4	2	109	52
Adler Seeds	5600	114 ± 3	16.9	57.1	3	94	41

Codes:

Bt (or YG) = contains a *Bacillus thuringiensis* gene for insect resistance

RR = contains a gene for tolerance to glyphosate

CL (or CF) = contains a gene for tolerance to Imidazolinone class herbicides

W = white grain

[†]Average of Knoxville and Ames Plantation

Table 4 . Mean yields of nine early-season corn hybrids evaluated at four locations (n=8) for two years (2001-2002) and two early-season corn hybrids evaluated at four locations (n=12) for three years (2000-2002) in Tennessee.

Brand	Hybrid	2 Years							3 Years						
		Avg. Yield			Milan				Avg. Yield			Milan			
		± Std Err.	Moisture	Lodging	Ames	Knoxville (Non-Irr.)	Crossville	± Std Err	Moisture	Lodging	Ames	Knoxville (Non-Irr.)	Crossville		
bu/a	%	%	-----bu/a-----				bu/a	%	%						
Agrigold	A 6445	163 ± 3	16.4	2	137	227	111	179	---	---	---	---	---	---	---
FFR	736 Bt	163 ± 3	17.5	0	142	219	130	160	---	---	---	---	---	---	---
Dekalb	DKC 61-24	161 ± 3	16.5	1	139	221	114	171	---	---	---	---	---	---	---
Pioneer	33G30 Bt	160 ± 3	16.3	1	115	213	141	172	---	---	---	---	---	---	---
Golden Harvest	H-9247 Bt	157 ± 3	16.6	0	124	201	125	179	---	---	---	---	---	---	---
FFR	726	156 ± 3	17.0	3	136	209	118	160	155 ± 2	17.2	4	112	198	145	166
Pioneer	33T17 (W)	155 ± 3	16.9	3	126	209	130	153	157 ± 2	17.0	3	111	199	152	167
Pioneer	34B24 Bt	153 ± 3	16.8	1	131	196	125	162	---	---	---	---	---	---	---
FFR	692 Bt	151 ± 3	16.8	2	107	208	126	165	---	---	---	---	---	---	---
	Avg. (bu/a)	158			129	211	124	167	156			112	199	149	167
	L.S.D._{.05} (bu/a)	11.4			18.4	16.5	27.9	26.7	10.7			17.7	16.3	23.7	26.2
	C.V. (%)	10.4			10.0	5.4	16.3	11.7	10.2			12.2	6.1	11.8	11.5

Codes:

Bt (or YG) = contains a *Bacillus thuringiensis* gene for insect resistance

W = white grain

Table 5. Mean Yields of 38 medium-season (114-116 DAP) corn hybrids evaluated in seven environments in Tennessee during 2002.

Brand	Hybrid	Avg. Yield	Ames		Springfield		Milan		Spring Hill
		± Std. Err.	(Early)	(Late)	Knoxville	(Irr.)	(Non-Irr.)	(Irr.)	
-----bu/a-----									
Pioneer	33J57 Bt	161 ± 3	159	159	132	227	181	128	141
USG/ BG	BT1152 Bt	154 ± 3	159	151	131	208	174	109	147
Augusta Seed Corp.	A 4487	152 ± 3	160	136	104	217	200	115	133
Dekalb	DKC 64-10 RR	151 ± 3	159	137	107	212	196	108	135
Dekalb	DK 647 BtY	150 ± 3	159	145	116	196	191	102	143
Dekalb	DKC 64-11 RR/YG	150 ± 3	145	143	108	205	198	111	142
Pioneer	33R77	149 ± 3	152	136	107	231	180	107	133
Pioneer	33P67 Bt	149 ± 3	151	120	112	230	183	117	127
Agrigold	A 6607	149 ± 3	154	145	117	206	194	97	127
Terral	TV 2155 Bt	148 ± 3	154	138	130	213	170	102	128
Dekalb	TXP 267-D RR/YG	147 ± 3	141	152	104	197	196	90	150
Dekalb	DKC 65-26 YG	147 ± 3	145	133	126	217	159	114	134
Augusta Seed Corp.	A 3162	147 ± 3	158	141	86	223	177	110	131
Pioneer	32W86	147 ± 3	142	128	117	213	197	106	124
Pioneer	32K61	146 ± 3	153	132	121	213	166	105	133
Golden Harvest	H-9364	146 ± 3	163	133	89	212	193	116	118
USG/ BG	1140	146 ± 3	147	123	117	199	189	116	133
Pioneer	32T78 (W)	146 ± 3	160	143	86	219	175	114	124
Pioneer	32H58	146 ± 3	144	126	130	208	181	99	132
Terral	TV 26BR10n RR/Bt	146 ± 3	157	145	87	214	173	94	149
Terral	TV 2130	145 ± 3	138	152	95	217	175	106	133
Garst	8348	145 ± 3	133	119	116	218	183	114	132
Agrigold	A 6540	145 ± 3	148	116	110	220	183	110	129
FFR	781	145 ± 3	135	129	101	226	183	111	126
Terral	TV 2140Xn1 RR	144 ± 3	156	130	103	211	192	86	133
Croplan Genetics	747	144 ± 3	136	138	121	199	163	121	127
Garst	8288	144 ± 3	143	119	95	214	190	108	136
Golden Harvest	H-9471	143 ± 3	152	134	97	208	186	104	122
Golden Harvest	H-9504	142 ± 3	143	149	110	196	172	98	128
Terral	TV 2140Xn2 RR	142 ± 3	140	132	114	215	170	91	132
Dyna-Gro	5555 RR	142 ± 3	145	120	119	212	180	88	128
Vigoro	V 5800	142 ± 3	149	126	105	206	171	99	137
Terral	TV 2140	141 ± 3	141	134	96	219	182	91	122
USG/ BG	1141	141 ± 3	134	109	115	204	171	115	137
Zimmerman	WX 7812 (W)	140 ± 3	142	116	112	200	173	102	133
Agrigold	XA 3033	139 ± 3	144	122	110	210	163	107	119
Vigoro	EX 462009	139 ± 3	152	131	93	206	169	93	127
Terral	TV 2140 RR	134 ± 3	123	138	101	211	167	75	127
	Avg. (bu/a)	146	148	134	109	212	180	105	133
	L.S.D._{.05} (bu/a)	7	17	17	30	16	25	15	15
	C.V. (%)	8.3	6.9	7.8	16.3	4.7	8.7	8.6	6.9

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

Table 6. Overall mean yields and agronomic characteristics of 38 medium-season corn hybrids evaluated in seven environments in Tennessee during 2002.

Brand	Hybrid	Avg. Yield		Test Weight		Plant	Ear
		± Std. Err.	Moisture	(n=6)	Lodging	Height (n=3)	Height† (n=1)
		bu/a	%	lbs/bu	%	in.	in.
Pioneer	33J57 Bt	161 ± 3	15.6	58.0	1	115	49
USG/ BG	BT1152 Bt	154 ± 3	17.3	57.9	1	100	43
Augusta Seed Corp.	A 4487	152 ± 3	16.2	57.1	2	111	45
Dekalb	DKC 64-10 RR	151 ± 3	15.5	57.6	3	108	46
Dekalb	DK 647 BtY	150 ± 3	16.0	56.9	1	115	49
Dekalb	DKC 64-11 RR/YG	150 ± 3	15.9	57.9	1	110	46
Pioneer	33R77	149 ± 3	16.9	56.4	1	112	52
Pioneer	33P67 Bt	149 ± 3	17.1	59.4	1	115	52
Agrigold	A 6607	149 ± 3	16.0	59.0	3	109	48
Terral	TV 2155 Bt	148 ± 3	17.2	59.2	3	112	51
Dekalb	TXP 267-D RR/YG	147 ± 3	17.9	59.8	0	114	55
Dekalb	DKC 65-26 YG	147 ± 3	17.1	58.3	1	106	47
Augusta Seed Corp.	A 3162	147 ± 3	17.3	58.0	1	114	56
Pioneer	32W86	147 ± 3	16.2	59.3	3	121	52
Pioneer	32K61	146 ± 3	16.5	60.3	2	115	49
Golden Harvest	H-9364	146 ± 3	15.9	56.9	3	112	41
USG/ BG	1140	146 ± 3	16.3	58.2	3	119	58
Pioneer	32T78 (W)	146 ± 3	17.7	60.4	3	115	48
Pioneer	32H58	146 ± 3	16.4	60.1	3	112	54
Terral	TV 26BR10n RR/Bt	146 ± 3	16.4	57.7	1	109	46
Terral	TV 2130	145 ± 3	16.8	56.5	3	115	60
Garst	8348	145 ± 3	15.7	57.7	2	107	49
Agrigold	A 6540	145 ± 3	15.7	57.5	3	107	40
FFR	781	145 ± 3	16.6	57.3	2	112	53
Terral	TV 2140Xn1 RR	144 ± 3	16.2	56.9	3	113	56
Croplan Genetics	747	144 ± 3	17.5	58.5	1	114	50
Garst	8288	144 ± 3	17.8	58.4	2	117	53
Golden Harvest	H-9471	143 ± 3	16.5	59.4	3	108	46
Golden Harvest	H-9504	142 ± 3	16.2	59.2	3	99	40
Terral	TV 2140Xn2 RR	142 ± 3	16.7	57.1	2	113	58
Dyna-Gro	5555 RR	142 ± 3	16.8	57.1	1	104	46
Vigoro	V 5800	142 ± 3	16.0	59.2	3	108	44
Terral	TV 2140	141 ± 3	16.5	56.9	3	112	59
USG/ BG	1141	141 ± 3	17.1	58.5	1	116	51
Zimmerman	WX 7812 (W)	140 ± 3	17.8	58.4	2	108	55
Agrigold	XA 3033	139 ± 3	16.4	56.0	2	110	48
Vigoro	EX 462009	139 ± 3	16.9	58.9	2	111	50
Terral	TV 2140 RR	134 ± 3	16.6	56.8	3	114	60

Codes:

Bt (or YG) = contains a *Bacillus thuringiensis* gene for insect resistance

RR = contains a gene for tolerance to glyphosate

CL (or CF) = contains a gene for tolerance to Imidazolinone class herbicides

W = white grain

†Average of Knoxville location only.

Table 7. Mean yields of 15 medium-season corn hybrids evaluated at two locations (n=4) for two years (2001-2002) and five medium-season corn hybrids evaluated at two locations (n=6) for three years (2000-2002) in Tennessee.

Brand	Hybrid	2 Years					3 Years				
		Avg. Yield			Milan		Avg. Yield			Milan	
		± Std. Err.	Moisture	Lodging Knoxville (Non-Irr.)	bu/a	%	± Std. Err.	Moisture	Lodging Knoxville (Non-Irr.)	bu/a	%
Pioneer	33J57 Bt	192 ± 4	14.8	1	224	160	---	---	---	---	---
Agrigold	A 6540	183 ± 4	15.2	0	219	147	---	---	---	---	---
Pioneer	33R77	182 ± 4	15.8	0	224	139	---	---	---	---	---
Pioneer	32K61	180 ± 4	15.8	2	212	147	173 ± 3	16.8	1	185	161
Garst	8288	176 ± 4	16.9	3	221	132	---	---	---	---	---
Golden Harvest	H-9364	175 ± 4	15.1	1	213	137	---	---	---	---	---
Pioneer	32H58	175 ± 4	15.7	1	210	140	---	---	---	---	---
Dekalb	DKC 64-10 RR	174 ± 4	14.4	1	212	136	---	---	---	---	---
Agrigold	A 6607	174 ± 4	15.7	2	211	137	---	---	---	---	---
Golden Harvest	H-9471	172 ± 4	15.9	2	214	131	---	---	---	---	---
Terral	TV 2140	171 ± 4	16.4	2	215	127	176 ± 4	18.3	1	200	152
Terral	TV 2130	169 ± 4	16.5	1	210	128	169 ± 3	18.4	1	191	147
Terral	TV 2140 RR	161 ± 4	16.4	1	211	111	161 ± 3	18.4	1	188	135
Vigoro	V 5800	159 ± 4	15.9	2	208	110	---	---	---	---	---
Dekalb	DK 647 BtY	159 ± 4	15.3	1	186	132	166 ± 3	17.4	0	182	151
Avg. (bu/a)		173			213	134	169			189	149
L.S.D._{.05} (bu/a)		15			17	25	15			16	25
C.V. (%)		8.8			5.9	12.9	8.9			6.2	12.1

Codes:

Bt (or YG)= contains a *Bacillus thuringiensis* gene for insect resistance

RR = contains a gene for tolerance to glyphosate

Table 8. Mean Yields of 27 full-season (>116 DAP) corn hybrids evaluated in seven environments in Tennessee during 2002.

Brand	Hybrid	Avg. Yield [†] ± Std. Err. (n=5)	Ames		Spring- field	Knox- ville	Milan		Spring Hill (Irr.)
			(Early)	(Late)			(Irr.)	(Non-Irr.)	
			----- bu/a -----						
FFR	900 Bt	176 ± 4	170	159	101	226	192	82	135
Pioneer	31G98	175 ± 4	162	149	109	257	186	124	121
FFR	842 RR	172 ± 4	178	145	85	251	167	81	120
Dekalb	DK 697	171 ± 4	167	149	85	232	184	107	125
FFR	849 CL	171 ± 4	181	149	87	224	195	87	108
Vigoro	V 58C29 (CL)	170 ± 4	178	146	83	225	177	94	122
Pioneer	31A13 Bt	168 ± 4	157	143	77	238	182	107	119
Croplan Genetics	DS 822 RR	167 ± 4	168	157	99	237	153	91	120
Agrigold	XA 2100 Bt	166 ± 4	157	143	109	217	171	82	141
Pioneer	31R88	165 ± 4	165	154	98	214	181	79	113
Augusta Seed Corp.	A 3562	163 ± 4	156	143	78	224	177	98	118
Augusta Seed Corp.	A 5635	162 ± 4	151	137	78	242	162	113	118
Croplan Genetics	818 Bt	162 ± 4	152	133	80	219	175	88	130
Dyna-Gro	5518 RR	161 ± 4	164	130	92	228	178	102	106
Agrigold	A 6725	161 ± 4	146	135	100	230	167	105	124
FFR	853	159 ± 4	157	131	82	222	173	107	113
Zimmerman	1851 W	156 ± 4	147	138	87	203	167	100	126
FFR	933	153 ± 4	155	105	82	230	171	78	106
TN Exp	TN 021	153 ± 4	157	137	85	203	139	109	127
Vigoro	V 61R36 (RR)	152 ± 4	134	129	97	207	173	93	119
TN Exp	TN 022	152 ± 4	148	153	61	223	125	74	109
Augusta Seed Corp.	A 3869	115 ± 4	96	122	74	146	123	62	88
TN Exp	TN 023	126	164	.	95	.	152	99	120
TN Exp	TN 024	105	156	.	54	.	93	94	126
TN Exp	TN 025	174	.	141	.	206	.	.	.
TN Exp	TN 026	188	.	.	.	188	.	.	.
TN Exp	TN 027	106	.	106
	Avg. (bu/a)	160	157	139	86	222	165	94	119
	L.S.D._{.05} (bu/a)	13	18	20	38	24	39	37	20
	C.V. (%)	9.6	6.8	8.5	24.7	6.5	14.3	23.7	10.2

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

[†]Due to inconsistencies in the data, Springfield and Milan (Non-irr.) tests were not included in the overall analysis.

Table 9. Overall mean yields and agronomic characteristics of 27 full-season corn hybrids evaluated in seven environments in Tennessee during 2002.

Brand	Hybrid	Avg. Yield ± Std. Err.		Test	Lodging	Plant	Ear
		(n=5)	Moisture	Weight (n=6)		Height [†]	Height [†]
		bu/a	%	lbs/bu	%	in	in.
FFR	900 Bt	176 ± 4	17.9	56.3	3	114	49
Pioneer	31G98	175 ± 4	16.5	57.5	3	118	57
FFR	842 RR	172 ± 4	17.7	55.3	6	110	54
Dekalb	DK 697	171 ± 4	18.2	57.9	3	110	53
FFR	849 CL	171 ± 4	17.4	54.4	4	113	54
Vigoro	V 58C29 (CL)	170 ± 4	18.1	54.9	3	112	55
Pioneer	31A13 Bt	168 ± 4	18.2	58.1	2	114	49
Croplan Genetics	DS 822 RR	167 ± 4	18.3	54.9	5	110	52
Agrigold	XA 2100 Bt	166 ± 4	17.9	57.4	2	98	45
Pioneer	31R88	165 ± 4	18.4	58.4	5	118	61
Augusta Seed Corp.	A 3562	163 ± 4	17.8	56.8	2	112	56
Augusta Seed Corp.	A 5635	162 ± 4	17.3	56.0	3	119	58
Croplan Genetics	818 Bt	162 ± 4	17.9	56.6	1	98	48
Dyna-Gro	5518 RR	161 ± 4	16.4	55.8	3	112	55
Agrigold	A 6725	161 ± 4	17.2	58.0	2	110	53
FFR	853	159 ± 4	18.0	57.6	5	118	48
Zimmerman	1851 W	156 ± 4	17.6	57.6	3	114	57
FFR	933	153 ± 4	19.0	56.8	5	102	51
TN Exp	TN 021	153 ± 4	20.7	57.3	17	120	64
Vigoro	V 61R36 (RR)	152 ± 4	17.9	59.3	2	112	57
TN Exp	TN 022	152 ± 4	19.9	57.3	21	125	64
Augusta Seed Corp.	A 3869	115 ± 4	22.0	55.8	6	128	57
TN Exp	TN 023	126	18.5	55.7	10	121	57
TN Exp	TN 024	105	17.7	55.7	27	115	47
TN Exp	TN 025	174	22.4	53.7	5	117	68
TN Exp	TN 026	188	25.3	51.7	8	123	54
TN Exp	TN 027	106	19.3	57.4	6	92	.

Codes:

Bt (or YG) = contains a *Bacillus thuringiensis* gene for insect resistance

RR = contains a gene for tolerance to glyphosate

CL (or CF) = contains a gene for tolerance to Imidazolinone class herbicides

W = white grain

[†]Average of Knoxville and Ames locations.

Table 10. Mean yields of eight full-season corn hybrids evaluated at two locations (n=4) for two years (2001-2002) and five full-season corn hybrids evaluated at two locations (n=6) for three years (2000-2002) in Tennessee.

Brand	Hybrid	2 Years					3 Years				
		Avg. Yield ± Std. Err.	Moisture	Lodging	Ames	Knoxville	Avg. Yield ± Std. Err.	Moisture	Lodging	Ames	Knoxville
		bu/a	%	%	-----bu/a-----		bu/a	%	%	-----bu/a-----	
Pioneer	31G98	202 ± 4	17.1	1	148	256	180 ± 4	16.1	1	126	234
FFR	849 CL	196 ± 4	18.8	2	161	231	---	---	---	---	---
Agrigold	A 6725	194 ± 4	18.1	2	147	241	---	---	---	---	---
Pioneer	31A13 Bt	193 ± 4	18.8	0	142	245	173 ± 4	17.8	1	126	220
FFR	900 Bt	189 ± 5	18.6	1	149	229	166 ± 4	17.5	1	131	201
Dekalb	DK 697	189 ± 4	18.8	1	148	229	172 ± 4	18.1	2	130	214
Pioneer	31R88	189 ± 4	18.4	1	148	229	171 ± 4	17.5	1	130	212
Zimmerman	1851 W	168 ± 4	18.6	1	127	210	---	---	---	---	---
	Avg. (bu/a)	190			146	234	172			129	216
	L.S.D._{.05} (bu/a)	17			23	23	16			23	21
	C.V. (%)	8.7			11.2	7.0	9.5			13.3	7.2

Codes:

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

CL = contains a gene for tolerance to Imidazolinone class herbicides

W = white grain

COUNTY STANDARD TESTS

Table 11. Yields of 23 early-season (108-113 DAP) corn hybrids in seven County Standard Tests in West Tennessee during 2002.^{†‡}

MS	Hybrids	Avg.		DYER	GIBSON	HENRY	LAKE	LAUDERDALE	OBION	WEAKLEY
		Yield	Moisture							
		bu/a	%	-----bu/a-----						
A	*NK N65-M7	152	14.3	132	131	180	138	156	165	163
AB	Croplan CG631	149	14.5	144	144	164	109	159	164	160
AB	*Agrigold 6445	148	14.3	139	143	163	122	156	156	156
AB	Adler 4500	147	14.8	145	137	162	129	144	168	146
AB	LG Seeds 2585	147	14.2	124	124	175	124	149	164	166
ABC	Pioneer 34B28	146	14.3	139	120	179	119	150	148	165
ABCD	Vigoro V5520	144	14.9	131	124	165	128	152	162	147
BCD	Mycogen 2784	143	14.3	140	125	169	121	140	155	151
BCD	Dekalb DKC61-24	143	14.3	131	129	162	124	141	156	158
BCD	Dekalb DKC62-15	143	14.3	142	133	172	111	138	146	156
BCDE	FFR 740	141	15.0	134	120	175	111	146	150	149
CDEF	USG BG1130	138	14.9	125	117	176	108	136	152	154
CDEF	Mycogen 7474	138	14.8	125	129	163	120	136	142	152
CDEF	Agrigold 6434	138	14.1	139	132	150	107	133	150	155
CDEF	Pioneer 34B97	138	14.3	146	94	167	111	140	151	154
CDEF	Steyer 2383	137	14.0	129	126	168	108	137	146	148
DEFG	Agrigold 6490CL	137	15.0	132	125	155	108	146	140	152
DEFG	Croplan CG711	136	14.9	128	140	151	102	133	149	151
EFG	NK N70-A2	134	14.7	116	122	165	107	130	151	145
EFG	Adler 3150	133	14.9	137	109	143	110	137	151	146
FG	FFR 691	130	14.3	125	100	154	104	135	137	158
G	Garst 8366	129	15.2	125	107	144	101	140	142	143
H	Steyer 2490	113	15.4	107	104	129	77	128	134	113
Average (bu/a)		139		132	123	162	113	142	151	152

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 13% moisture. Each hybrids 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 12. Yields of 16 medium-season (110-116 DAP) corn hybrids in nine County Standard Tests in West and Middle Tennessee during 2002.^{†‡}

MS	Hybrids	Avg.		DYER	GIBSON	GILES	HARDIN	HENRY	LAKE	MOORE	OBION	WEAKLEY
		Yield	Moisture									
		bu/a	%	bu/a								
A	USG BG316	157	16.7	143	127	172	136	168	213	131	188	132
AB	*Pioneer33R77	155	16.5	158	135	155	143	184	202	121	176	124
ABC	Golden Harvest H9364	154	15.6	145	133	191	135	154	203	121	178	123
ABCD	Garst 8348	152	15.3	146	126	158	126	159	188	147	188	128
ABCDE	*Garst 8288	150	17.6	160	115	173	129	149	182	125	188	133
ABCDEF	Pioneer 32H58	148	15.9	149	125	166	105	163	195	124	189	121
BCDEFG	Mycogen 2833	148	16.4	149	137	170	121	154	189	105	174	129
CDEFG	Agrigold 6607	146	15.9	129	112	160	125	161	191	144	171	124
CDEFG	Golden Harvest H9471	146	15.6	155	111	162	118	168	193	116	168	120
DEFG	Mycogen 2A791	144	17.1	147	122	154	121	158	192	119	168	120
EFG	FFR 781	143	16.6	130	124	150	122	173	187	112	174	119
EFG	Vigoro V5800	143	15.8	149	102	153	127	167	186	118	166	122
EFG	LG Seeds 2699CL	143	15.8	146	121	157	120	147	195	113	171	116
FG	Dekalb DKC65-25	142	15.9	136	117	165	113	153	185	116	173	117
G	Steyer 2650	140	16.3	133	112	151	124	151	187	115	160	126
H	Adler 5480	131	17.0	123	99	148	103	151	164	125	145	125
Average (bu/a)		146		144	120	162	123	160	191	122	173	124

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 13% moisture. Each hybrids 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 13. Yields of seven full-season (>116 DAP) corn hybrids in seven County Standard Tests in West and Middle Tennessee during 2002.^{†‡}

MS Hybrids		Avg.	DYER	GIBSON	GILES	HENRY	LAKE	MOORE	OBION	
		Yield								Moisture
		bu/a	-----bu/a-----							
A	*Pioneer 31G98	162	16.4	164	131	170	180	197	132	160
A	FFR 849	162	17.6	168	142	157	171	195	153	149
AB	Vigoro V58C29	159	17.0	166	127	167	167	197	139	147
AB	Croplan CG822	156	17.0	163	118	175	170	189	142	132
AB	Dekalb DK697	155	17.7	169	132	171	168	171	136	141
AB	*Pioneer 31R88	155	19.5	183	143	172	170	168	117	134
B	Croplan CG818	152	17.3	156	123	161	166	168	137	151
Average (bu/a)		157		167	131	168	170	184	137	145

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 13% moisture. Each hybrids 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 14. Yields of 20 Bt corn hybrids in 13 County Standard Tests in Tennessee and West Kentucky () during 2002.^{†‡}

MS	Hybrids	Avg.		Yield Moisture CANN COFF CROC DYER GIBS (GRAV) HARD HAYW HENR LAKE LAUD OBIO WEAK												
		bu/a	%	-----bu/a-----												
A	*Pioneer 31B13	143	15.9	129	95	111	162	153	156	139	129	180	159	160	156	124
AB	*Mycogen 6920	139	14.8	153	103	121	156	140	133	127	124	163	181	150	149	115
ABC	*Pioneer 34B24	139	14.8	138	91	116	160	136	152	106	125	170	184	154	154	115
ABC	*Pioneer 31A13	138	16.2	152	86	110	165	136	143	118	127	182	178	148	157	96
ABC	Steyer 2590	138	15.2	155	97	107	155	133	130	131	107	169	185	149	163	113
ABC	*FFR 736	137	15.4	142	87	108	151	146	125	115	144	157	171	158	158	121
ABC	USG BG1150	136	16.2	135	100	102	142	139	153	132	123	155	176	162	149	105
ABC	Vigoro V55Y21	136	15.5	152	93	116	137	132	129	123	123	164	185	142	153	120
BCD	Croplan CG818	134	16.9	148	88	123	152	139	130	112	97	161	180	145	151	119
BCDE	Pioneer 33P67	133	15.8	142	89	87	154	128	154	107	103	171	178	150	153	118
BCDE	Croplan CG691	132	15.3	140	87	112	142	140	129	120	116	152	172	150	153	109
BCDE	Dekalb DKC61-25	132	14.6	144	76	120	153	131	137	117	118	158	169	146	154	97
BCDEF	NK N68-K7	132	15.0	158	82	100	123	145	114	128	129	165	173	144	150	104
BCDEF	Golden Harvest H9247	132	14.6	151	105	103	151	132	121	112	110	167	159	140	144	116
CDEF	Agrigold 6490	131	14.7	150	98	114	142	144	129	108	117	156	153	143	123	120
DEF	Dekalb DK647BtY	128	15.2	134	84	96	128	123	122	115	134	143	176	145	152	107
EFG	Asgrow RX799Bt	126	15.3	132	63	105	158	142	110	138	112	166	163	138	117	92
EFG	Adler 3755	125	14.8	130	91	112	143	129	130	114	110	151	138	148	124	111
FG	Agrigold 6729	124	15.7	135	70	100	142	121	123	119	125	161	137	130	150	103
G	FFR 769	119	15.8	137	74	105	140	138	91	120	114	155	154	136	86	94
Average (bu/a)		133		143	88	108	148	136	131	120	119	162	169	147	145	110

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 13% moisture. Each hybrids 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 show above.

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

TN Counties: Cannon, Coffey, Crockett, Dyer, Gibson, Hardin, Haywood, Henry, Lake, Lauderdale, Obion, Weakley.

West KY County: Graves

Table 15. Yields of nine white corn hybrids in five County Standard Tests in Tennessee in 2002.^{†‡}

MS Hybrids	Avg.		BENTON	GIBSON	HENRY	LINCOLN	WEAKLEY
	Yield	Moisture					
	bu/a	%	-----bu/a-----				
A *Pioneer 33T17	124	16.0	127	102	166	131	96
A *Asgrow RX921W	123	18.3	121	98	167	128	98
AB Pioneer 32T78	116	17.1	134	82	161	117	86
AB *Adler 5500W	115	16.0	126	66	163	129	93
B Pioneer 32K72	112	15.7	132	72	148	124	84
B Wilson 1851W	112	19.2	133	73	158	115	81
B Pioneer 32H39	111	15.6	122	90	143	118	84
B Steyer 2675W	110	16.4	126	66	153	124	83
B Asgrow RX792W	107	16.1	129	73	145	113	75
Average (bu/a)	114		128	80	156	122	87

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 13% moisture. Each hybrids 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 16. Overall average yields, moistures and test weights of 14 early-season corn hybrids evaluated in county standard tests and experiment station tests in Tennessee during 2002.

BRAND	VARIETY	County Standard Tests			Experiment Station Tests		
		Avg. Yield bu/a	Moisture %	Loc n	Avg. Yield (n=7) bu/a	Moisture (n=8) %	Test Weight n=7 -mt lbs/bu
NK Brand	N 65-M7	152	14.3	n=7	151	16.2	56.2
Agrigold	A 6445	148	14.3	n=7	152	16.6	56.2
Pioneer	34B28 CL	146	14.3	n=7	142	16.7	57.7
Dekalb	DKC 61-24	143	14.3	n=7	147	16.2	56.9
FFR	740	141	15.0	n=7	136	17.0	57.6
Pioneer	34B24 Bt	139	14.8	n=13 [†]	149	16.8	58.0
Agrigold	A 6434	138	14.1	n=7	135	15.9	56.3
Pioneer	34B97	138	14.3	n=7	130	15.9	58.7
NK Brand	N 70-A2 CL	134	14.7	n=7	133	16.5	57.6
Dekalb	DKC 61-25 Bt	132	14.6	n=13 [†]	153	16.2	56.9
Golden Harvest	H-9247 Bt	132	14.6	n=13 [†]	149	16.3	57.7
Agrigold	A 6490 Bt	131	14.7	n=13 [†]	144	16.4	58.1
FFR	691	130	14.3	n=7	136	16.0	57.0
Pioneer	33T17 (W)	124	16.0	n=5 [‡]	149	17.1	58.7
Average (bu/a)		138	14.6		143	16.4	57.4

Codes:

Bt (or YG) = contains a *Bacillus thuringiensis* gene for insect resistance

CL (or CF) = contains a gene for tolerance to Imidazolinone class herbicides

W = white grain

[†]Evaluated in the County Standard Bt corn test

[‡]Evaluated in the County Standard White corn test

Table 17. Overall mean yields, moistures and test weights of 12 medium-season corn hybrids evaluated in the county standard tests and experiment station tests in Tennessee during 2002.

Brand	Hybrid	County Standard Tests			Experiment Station Tests		
		Avg. Yield	Moisture	No. of Locations	Avg. Yield (n=7)	Moisture	Test Weight (n=6)
		bu/a	%		bu/a	%	lbs/bu
Pioneer	33R77	155	16.5	n=9	149	16.9	56.4
Golden Harvest	H-9364	154	15.6	n=9	146	15.9	56.9
Garst	8348	152	15.3	n=9	145	15.7	57.7
Garst	8288	150	17.6	n=9	144	17.8	58.4
Pioneer	32H58	148	15.9	n=9	146	16.4	60.1
Agrigold	A 6607	146	15.9	n=9	149	16.0	59.0
Golden Harvest	H-9471	146	15.6	n=9	143	16.5	59.4
FFR	781	143	16.6	n=9	145	16.6	57.3
Vigoro	V 5800	143	15.8	n=9	142	16.0	59.2
Pioneer	33P67 Bt	133	15.8	n=13 [†]	149	17.1	59.4
Dekalb	DK 647 BtY	128	15.2	n=13 [†]	150	16.0	56.9
Pioneer	32T78 (W)	116	17.1	n=5 [‡]	146	17.7	60.4
Average (bu/a)		143	16.1		147	16.5	58.4

Codes:

Bt (or YG) = contains a *Bacillus thuringiensis* gene for insect resistance

CL (or CF) = contains a gene for tolerance to Imidazolinone class herbicides

W = white grain

[†]Evaluated in the County Standard Bt corn test

[‡]Evaluated in the County Standard White corn test

Table 18. Overall mean yields of nine full-season corn hybrids evaluated in county standard tests and experiment station tests in Tennessee during 2002.

Brand	Hybrid	County Standard Tests			Experiment Station Tests		
		Avg. Yield	Moisture	No. of Loc.	Avg. Yield (n=6)	Moisture	Test Weight (n=6)
		bu/a	%		bu/a	%	lbs/bu
FFR	849 CL	162	17.6	n=7	171	17.4	54.4
Pioneer	31G98	162	16.4	n=7	175	16.5	57.5
Vigoro	V 58C29 (CL)	159	17.0	n=7	170	18.1	54.9
Croplan Genetics	DS 822 RR	156	17.0	n=7	167	18.3	54.9
Dekalb	DK 697	155	17.7	n=7	171	18.2	57.9
Pioneer	31R88	155	19.5	n=7	165	18.4	58.4
Croplan Genetics	818 Bt	152	17.3	n=7	162	17.9	56.6
Pioneer	31A13 Bt	138	16.2	n=13 [†]	168	18.2	58.1
Zimmerman (Wilson)	1851 W	112	19.2	n=5 [‡]	156	17.6	57.6
Average (bu/a)		150	17.5		168	17.8	56.6

Codes:

Bt (or YG) = contains a *Bacillus thuringiensis* gene for insect resistance

RR = contains a gene for tolerance to glyphosate

CL (or CF) = contains a gene for tolerance to Imidazolinone class herbicides

W = white grain

[†]Evaluated in the County Standard Bt corn test

[‡]Evaluated in the County Standard White corn test

Table 19. Characteristics of corn hybrids evaluated in yield tests in Tennessee in 2002.**Early Season Corn Hybrid Entries**

Brand	Hybrid	Grain Color[†]	Maturity	Herbicide Tolerance[‡]	BT Gene[§]	Released R or Experimental E
Adler Seeds	5600	Y	112	-	-	R
Adler Seeds	4060 CF	Y	113	CL	-	R
Agrigold	A6434	Y	108	-	-	R
Agrigold	A6445	Y	109	-	-	R
Agrigold	A6490BT	Y	113	-	BT	R
Augusta	A3685	Y	112	CL	-	-
Croplan Genetics	671 CL-BT	Y	112	CL	BT	R
DeKalb	DKC61-24	-	111	-	-	-
DeKalb	DKC61-25 (YG)	-	111	-	YG	-
Dyna-Gro	5467RR	Y	113	RR	-	R
Dyna-Gro	5545RR	Y	112	RR	-	R
Dyna-Gro	DGX15618	Y	113	RR	BT	E
FFR	691	Y	111	-	-	-
FFR	713	Y	113	-	-	-
FFR	726	Y	111	-	-	-
FFR	740	Y	113	-	-	-
FFR	692 BT	Y	112	-	BT	-
FFR	736BT	Y	112	-	BT	-
Garst	8442	Y	111	-	-	R
Golden Harvest	H-9231	Y	112	-	-	R
Golden Harvest	H-9247BT	Y	113	-	BT	R
NK Brand	N65-M7	Y	110	-	-	R
NK Brand	N70-A2	Y	112	CL	-	R
Pioneer	33G30	Y	112	-	YG	R
Pioneer	33T17	W	113	-	-	R
Pioneer	34B24	Y	110	-	YG	R
Pioneer	34B28	Y	109	CL	-	R
Pioneer	34B97	Y	108	-	-	R
Terral	TV23R15n	Y	EARLY	RR	-	R
Terral	TVX24R002	Y	EARLY	RR	-	E

Medium Season Corn Hybrid Entries

Brand	Hybrid	Grain Color [†]	Maturity	Herbicide		Released R or Experimental E
				Tolerance [‡]	Bt Gene [§]	
Agrigold	A6540	Y	113	-	-	R
Agrigold	A6607	Y	114	-	-	R
Agrigold	XA3033	Y	115	-	-	R
Augusta Seed Corp.	A4487	Y	114	-	-	-
Augusta Seed Corp.	A3162	Y	116	-	-	-
Croplan Genetics	747	Y	114	-	-	E
Dekalb	DK647BTY	-	114	-	BtY	R
Dekalb	DKC64-10 (RR)	-	114	RR	-	R
Dekalb	DKC64-11 (RR/YG)	-	114	RR	YG	R
Dekalb	DKC65-26 (YG)	-	115	-	YG	R
Dekalb	TXP267-D (RR/YG)	-	116	RR	YG	E
Dyna-Gro	5555RR	Y	114	RR	-	R
FFR	781	Y	115	-	-	-
Garst	8288	Y	116	-	-	R
Garst	8348	Y	115	-	-	R
Golden Harvest	H-9364	Y	114	-	-	R
Golden Harvest	H-9471	Y	114	-	-	R
Golden Harvest	H-9504	Y	116	-	-	R
Pioneer	32H58	Y	116	-	-	R
Pioneer	32K61	Y	114	-	-	R
Pioneer	32T78	W	116	-	-	R
Pioneer	32W86	Y	114	-	-	R
Pioneer	33J57	Y	114	-	YG	R
Pioneer	33P67	Y	114	-	YG	R
Pioneer	33R77	Y	114	-	-	R
Terral	TV2130	Y	MED	-	-	R
Terral	TV2140	Y	MED	-	-	R
Terral	TV2140RR	Y	MED	RR	-	R
Terral	TV2140Xn1RR	Y	MED	RR	-	E
Terral	TV2140Xn2RR	Y	MED	RR	-	E
Terral	TV2155BT	Y	MED	-	BT	R
Terral	TV26BR10n	Y	MED	RR	BT	R

USG/ BG	1140	Y	114	-	-	R
USG/ BG	1141	Y	114	-	-	R
USG/ BG	BT1152	Y	115	-	Mon810	R
Vigoro	EX462009	Y	114	-	-	E
Vigoro	V5800	Y	114	-	-	R
Zimmerman	WX7812	W	116	-	-	E

Full Season Corn Hybrid Entries

Brand	Hybrid	Grain Color [†]	Maturity	Herbicide Tolerance [‡]	BT Gene [§]	Released R or Experimental E
Agrigold	A6725	Y	118	-	-	R
Agrigold	XA2100BT	Y	116	-	BT	E
Augusta Seed Corp.	A3562	Y	118	-	-	R
Augusta Seed Corp.	A3869L	Y	125	-	-	E
Augusta Seed Corp.	A5635	Y	118	-	-	R
Croplan Genetics	818 BT	Y	117	-	BT	R
Croplan Genetics	DS822 RR	Y	119	RR	-	E
DeKalb	DK697	-	119	-	-	-
Dyna-Gro	5518 RR	Y	118	RR	-	R
FFR	853	Y	118	-	-	-
FFR	933	Y	120	-	-	E
FFR	842RR	Y	117	RR	-	-
FFR	849CL	Y	118	CL	-	-
FFR	900BT	Y	119	-	BT	-
Pioneer	31A13	Y	118	-	YG	R
Pioneer	31G98	Y	117	-	-	R
Pioneer	31R88	Y	120	-	-	R
TN Exp	Tn021					
TN Exp	Tn022					
TN Exp	Tn023					
TN Exp	Tn024					
Vigoro	V58C29	Y	117	CL	-	R
Vigoro	V61R36	Y	121	RR	-	R
Zimmerman	1851W	W	118	-	-	R

[†]Y = Yellow and W = White grain

[‡]RR = Contains RoundUp Ready gene for tolerance to glyphosphate herbicide and CL (or CF) = Tolerance to Imadizolinone herbicide.

[§]Bt (or YG) = contains a *Bacillus thuringiensis* (Bt) gene for insect resistance.

Entomology -- Bt Corn Hybrid Tests

Gary Lentz, Professor, Dept. of Entomology and Plant Pathology

Twenty Bt (*Bacillus thuringiensis*) corn hybrids and one non-transgenic hybrid were evaluated at the Highland Rim (Springfield), Milan, and West Tennessee (Jackson) Experiment Stations and at Ames Plantation (Grand Junction) in 2002. Planting dates for the four locations were April 19, 17, 18 and 16, respectively. Shortly before harvest, a sample of stalks from the non-Bt hybrid plots was dissected to determine the infestation of European corn borer and southwestern corn borer present at each location. The infestation was heaviest at the Milan station and stalks were dissected from all plots to determine the efficacy of the Bt gene against these corn borers. Efficacy data will be presented in a future report. Yield data from each location are presented in the following table.

Table 20. Mean yields¹ of Bt corn hybrids evaluated at four locations in Tennessee in 2002.

Brand	Hybrid	Avg. Yield	Ames	Spring-field	Milan	Jackson
		-----bu/A-----				
G. Harvest	H 9247	143	178	115	137	141
Cropland	CG 818	139	186	105	129	137
Pioneer	31B13	139	185	113	145	114
Pioneer	31A13	138	183	101	139	129
FFR	736	136	187	104	142	111
AgriGold	6490	136	168	120	134	120
Pioneer	33J57	133	170	121	139	102
USG (Biogene)	1150	133	180	105	127	120
Pioneer	34B23 (non-Bt)	131	173	98	134	119
Pioneer	34B24	130	171	96	147	105
Mycogen	6920	130	172	92	139	117
DeKalb	DKC 61-25	129	170	91	131	123
Adler	3755	128	150	120	132	112
Pioneer	33P67	128	162	102	137	111
Stever	2590	128	178	89	121	123
Vigoro	V55Y21	125	177	91	121	109
DeKalb	DK 647BtY	124	172	81	123	121
Cropland	CG 691	124	182	71	124	119
NK Brand	NK 68-K7	117	183	81	117	85
Asgrow	RX 799	116	163	82	123	93
FFR	769	112	154	76	112	106
Average (bu/A)		130	174	98	131	115
L.S.D. (.05) (bu/A)		12.5	19.8	24.8	18.8	42.4
C.V. (%)		6.82	8.05	17.91	10.14	26.04

¹ All yields adjusted to 13.5% moisture.

PERFORMANCE OF GRAIN SORGHUM HYBRIDS IN TENNESSEE

2002

EXPERIMENT STATION & COUNTY STANDARD TESTS

Background Information:

The grain sorghum variety trial was conducted in each of the physiographic regions of the state. The trial was conducted at the Knoxville (planted 4/18/02, harvested 9/6/02), Highland Rim (planted 5/23/02, harvested 10/1/02), Milan (planted 4/19/02, harvested 8/26/02), and Ames (planted 4/23/02, harvested 9/13/02) Experiment Stations. The trial contained 15 hybrids at each location. The tests were conducted using 30 inch row spacing. The tests were fertilized with 90 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. Plots were seeded at the rate of 87,000 seed per acre (approx. 7 lbs/a). Tables 1 and 2 contain the data for 2002. Table 3 contains the two and three year data, Table 4 contains the County Standard Test data from four counties, Table 5 contains the data on the grain sorghum hybrids that were common in the County and Experiment Station tests, and Table 6 contains the phenotypic trait data for the grain sorghum hybrids tested in 2002.

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 14% 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 850 lbs/a and the mean yield of Hybrid A was 4200 lbs/a and the mean yield of Hybrid B was 5000 lbs/a, then the two hybrids are not statistically different in yield because the difference of 800 lbs/a is less than the minimum of 850 lbs/a required for them to be significant. Similarly, if the average yield of Hybrid C was 5900 lbs/a then it is significantly higher yielding than both Hybrid B and Hybrid A. 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

The highest yielding sorghum hybrid in the Experiment Station (ES) and the County Standard (CS) tests was the bronze grain colored Pioneer 84G62, 5654 and 6270 lbs/a, respectively (Tables 1 and 4). According to the USDA grain standards, U.S. No. 2 grain sorghum weighs 55 lbs/bu at 14% moisture; therefore, the above yields are equivalent to approximately 103 and 114 bu/a, respectively. In the ES test, there were two

other hybrids, Dyna-Gro 751B (bronze grain) and Pioneer 83G66 (red grain), that were not statistically ($P < 0.05$) lower yielding than Pioneer 84G62 (5442 and 5356 lbs/a, respectively, Table 1). In the CS test, Pioneer 83G66, FFR 322 (red grain), DeKalb DKS54-00 (bronze grain) and FFR 319W (cream grain) were not statistically different in yield from Pioneer 84G62 (Table 4). Pioneer 84G62 and Pioneer 83G66 produced the highest yields in the ES two-years of testing (Table 3). In both the ES and the CS tests, DeKalb KDS44-41 (yellow grain) was the lowest yielding hybrid (Tables 1 and 4).

A number of the hybrids exhibited head blight, especially at the Milan ES location. The average head blast scores and the averages across four locations are shown in Table 2. DeKalb DKS54-00 and Steyer 2142A had the greatest amount of moldy heads, 4.0 and 3.5, respectively. The mold was severe enough to affect yields of those entries at the Milan location.

EXPERIMENT STATION TESTS

Table 1. Mean Yields of 15 grain sorghum hybrids evaluated at four locations in Tennessee for one year (2002).

Brand	Variety	Avg. Yield§	Knoxville	Springfield	Milan	Ames
		± Std. Err.				
		----- lbs/a -----				
Pioneer	84G62	5654 ± 209	7551	3698	4534	6831
Dyna-Gro	751B	5442 ± 195	8184	3338	3977	6268
Pioneer	83G66	5356 ± 196	7491	3247	4735	5949
Pioneer	8282	5010 ± 196	7151	2978	4507	5404
Asgrow	A571	4982 ± 196	8110	3458	3361	5000
FFR	322	4874 ± 196	6330	2546	4122	6498
FFR	318	4812 ± 196	6552	3215	3851	5629
Dyna-Gro	780B	4667 ± 196	7130	3325	2943	5269
Dekalb	DKS54-00	4655 ± 195	7653	3772	1882	5311
Asgrow	A459	4607 ± 209	7318	3292	2887	4933
Dyna-Gro	760C	4592 ± 195	7120	3784	3108	4353
Steyer	2142A	4553 ± 208	6227	2461	3561	5965
FFR	319W	4462 ± 207	5957	3509	2848	5534
Steyer	2300	4456 ± 195	6352	3432	3057	4981
Dekalb	DKS44-41	3845 ± 195	4931	3773	3014	3662
Avg. (lbs/a)		4797	6938	3258	3475	5426
L.S.D._{.05} (lbs/a)		527	1383	828	1064	984
C.V. (%)		13.4	11.9	14.3	18.2	10.6

§Bushel weight of No. 2 sorghum equals 55 lbs at 14% moisture

Table 2. Overall mean yields and agronomic characteristics of 15 grain sorghum hybrids evaluated at four locations in Tennessee during 2002.

Brand	Variety	Avg. Yield ± Std. Err. (n=4)	Moisture At Harvest (n=4)	Test Weight (n=1)	Head Blast [†]		Height (n=4)	Headtype [‡] (n=2)
					Milan	Avg. (n=4)		
		lbs/a	%	lbs/bu	-----score-----		in.	score
Pioneer	84G62	5654 ± 209	14.9	60.5	2.2	1.5	48	3.2
Dyna-Gro	751B	5442 ± 195	16.0	61.1	1.7	1.4	51	2.3
Pioneer	83G66	5356 ± 196	15.8	60.2	2.0	1.4	50	2.3
Pioneer	8282	5010 ± 196	16.6	59.7	1.3	1.1	52	3.3
Asgrow	A571	4982 ± 196	15.7	58.4	3.0	1.6	49	2.9
FFR	322	4874 ± 196	16.0	60.9	1.2	1.3	50	1.9
FFR	318	4812 ± 196	15.1	59.6	2.7	1.7	50	2.1
Dyna-Gro	780B	4667 ± 196	15.1	60.0	3.0	1.7	50	2.2
Dekalb	DKS54-00	4655 ± 195	15.9	60.5	4.0	2.0	54	2.6
Asgrow	A459	4607 ± 209	14.8	60.4	2.3	1.6	50	2.5
Dyna-Gro	760C	4592 ± 195	14.3	59.9	2.5	1.5	49	3.1
Steyer	2142A	4553 ± 208	13.9	59.3	3.5	2.1	43	3.5
FFR	319W	4462 ± 207	15.0	60.0	3.0	1.6	50	3.0
Steyer	2300	4456 ± 195	14.2	60.9	3.0	1.8	43	3.0
Dekalb	DKS44-41	3845 ± 195	15.3	59.4	3.3	1.7	45	3.0

[†]Score of 1-5; where 1 = 95+% of florets on the head are filled with grain and no mold; 5 = 95+% of florets unfilled with grain or moldy or both.

[‡]Score of 1-5; where 1 = compact head; 5 = open head.

Table 3. Mean yields of six grain sorghum hybrids evaluated at three locations for two years (2001-2002) and three grain sorghum hybrids evaluated at two locations for three years (2000-2002) in Tennessee.

Brand	Variety	2 Years					3 Years			
		Avg. Yield ± Std. Err.	Moisture	Grand Junction	Springfield	Milan	Avg. Yield ± Std. Err.	Moisture	Springfield	Milan
		lbs/a	%				lbs/a	%		
Pioneer	84G62	4607 ± 146	14.6	5000	4049	4772	-	-	-	-
Pioneer	83G66	4444 ± 142	15.3	4504	3650	5179	4418 ± 206	16.4	3590	5245
Pioneer	8282	4437 ± 139	15.6	4327	4032	4952	4348 ± 203	16.7	3790	4907
FFR	322	4169 ± 139	15.5	4608	3477	4424	-	-	-	-
Dekalb	DKS54-00	3952 ± 139	15.0	4355	4234	3266	-	-	-	-
Asgrow	A459	3764 ± 146	14.3	3917	3493	3883	3663 ± 209	15.5	3225	4101
	Avg. (lbs/a)	4229		4452	3823	4413	4143		3535	4751
	L.S.D._{.05} (lbs/a)	501		650	835	1094	913		1101	1469
	C.V. (%)	15.0		10.7	14.7	18.5	17.0		15.2	18.1

COUNTY STANDARD TESTS

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Table 4. Yields of 11 grain sorghum hybrids evaluated in the County Standard Test in four county environments in West Tennessee during 2002.

MS [†]	Hybrids	Avg.		Dyer(P) [‡]	Dyer(Y) [‡]	Lauderdale	Weakley
		Yield	Moisture				
		lbs/a	%	----- lbs/a -----			
A	*Pioneer 84G62	6270	13.5	7370	4015	6930	6765
AB	Pioneer 83G66	5830	14.9	6765	3520	6600	6435
AB	*FFR 322	5830	14.6	6490	3520	6545	6710
AB	Dekalb DKS54-00	5775	14.2	6545	4070	6325	6215
AB	FFR 319W	5775	14.8	6710	3960	6545	5885
BC	Pioneer 8282	5665	15.0	6875	3245	6270	6160
BCD	Asgrow A459	5555	14.6	6050	3740	6160	6380
BCD	Steyer 2300	5445	13.4	5885	3685	6380	5830
CDE	Asgrow A571	5225	14.8	6050	3300	102	5885
DE	Steyer 2142A	5060	13.3	6050	2750	6600	4840
E	Dekalb DKS44-41	4840	14.5	4730	2640	6105	5940
AVERAGE (lbs/a)		5555	14.3	6325	3520	6380	6105

[†]Hybrids that have any letter in common are not statistically different at the 5% level of probability.

[‡]P = Park farm ; Y = Yarbrow farm.

Table 5. Overall mean yields, moistures and test weights of 11 grain sorghum hybrids evaluated in four county environments and four experiment station locations in Tennessee for one year (2002).

Brand	Variety	County Standard Tests			Experiment Station Tests			
		Avg. Yield bu/a	Moisture %	Rank	Avg. Yield bu/a	Moisture %	Test Weight n=1 k lbs/bu	Rank
Pioneer	84G62	6270	13.5	1	5654	14.9	60.5	1
Pioneer	83G66	5830	14.9	2	5356	15.8	60.2	2
FFR	322	5830	14.6	3	4874	16.0	60.9	5
Dekalb	DKS54-00	5775	14.2	4	4655	15.9	60.5	6
FFR	319W	5775	14.8	5	4462	15.0	60.0	9
Pioneer	8282	5665	15.0	6	5010	16.6	59.7	3
Asgrow	A459	5555	14.6	7	4607	14.8	60.4	7
Steyer	2300	5445	13.4	8	4456	14.2	60.9	10
Asgrow	A571	5225	14.8	9	4982	15.7	58.4	4
Steyer	2142A	5060	13.3	10	4553	13.9	59.3	8
Dekalb	DKS44-41	4840	14.5	11	3845	15.3	59.4	11
Average (lbs/a)		5570	14.3		4769	15.3	60.0	

Table 6. Phenotypic trait data for sorghum hybrids tested in 2002.

Brand	Hybrid	Head Type	Grain Color	Maturity
Asgrow	A459	Open	Bronze	Medium
Asgrow	A571	Open	Bronze	Med.- Late
Dekalb	DKS44-41	Open	Yellow	Medium
Dekalb	DKS54-00	Semi-Compact	Bronze	Med.- Late
Dyna-Gro	751B	Semi-Compact	Bronze	103
Dyna-Gro	760C	Open	Cream	103
Dyna-Gro	780B	Compact	Bronze	105
FFR	318	Compact	Bronze	109-116
FFR	322	Compact	Red	111-118
FFR	319W	Open	Cream	109-116
Pioneer	8282	Open	Red	121
Pioneer	83G66	Semi-Compact	Red	122
Pioneer	84G62	Open	Bronze	122
Steyer	2300	Open	Bronze	110-115
Steyer	2142A	Open	Red	105-110