Evaluations of Corn Hybrids in Alabama, 1999

Agronomy and Soils Departmental Series No. 222
Alabama Agricultural Experiment Station
Luther Waters, Jr., Director
Auburn University
Auburn, Alabama

Table of Contents

Page

Acknowledgments 4
Introduction 5
Procedure 5
Interpretation of Data 5
Table 1. Locations and Cultural Practices for the 1999 Corn Hybrid Tests 6

NORTHERN ALABAMA

Table 2. Two- and Three-year Yield and Lodging Averages for Yellow Corn for Northern Alabama, 1997-99 7
Table 3. 1999 Yield of Yellow Corn Hybrids by Location and Regional Averages of Hybrid Characteristics in Northern Alabama 8
Table 4. Early Corn Hybrid Test at Crossville in Northern Alabama, 1997-99 9
Table 5. Characteristics of Corn Hybrids Tested One Year in Preliminary Test at Crossville in Northern Alabama, 1999 9
Table 6. Irrigated Corn Hybrid Performance and Characteristics, Belle Mina, Alabama, 1999 10

CENTRAL ALABAMA

Table 7. Two- and Three-year Yield and Lodging Averages for Yellow Corn for Central Alabama, 1997-99 11
Table 8. 1999 Yield of Yellow Corn Hybrids by Location and Regional Averages of Hybrid Characteristics in Central Alabama 11
Table 9. Early Corn Hybrid Test at Shorter in Central Alabama, 1997-99 12
Table 10. Characteristics of Corn Hybrids Tested One Year in Preliminary Test at Tallassee in Central Alabama, 1999 12
Table 11. Characteristics of Irrigated Corn Hybrids Tested One Year in Preliminary Test at Tallassee in Central Alabama, 1999 13

SOUTHERN ALABAMA

Table 12. Two- and Three-year Yield and Lodging Averages for Yellow Corn for Southern Alabama, 1997-99 13
Table 13. 1999 Yield of Yellow Corn Hybrids by Location and Regional Averages of Hybrid Characteristics in Southern Alabama 14
Table 14. Irrigated Corn Hybrid Performance and Characteristics, Headland, Alabama, 1997-99 15
Table 15. Early Corn Hybrid Test at Fairhope in Southern Alabama, 1997-99 16
Table 16. Characteristics of Corn Hybrids Tested One Year in Preliminary Test at Fairhope in Southern Alabama, 1999 16
Table 17. Growing Season Rainfall, 1997-99 17
Table 18. Soil Types for Corn Trials, 1999 18

Sources of 1999 Corn Hybrid Test Seed 18

Acknowledgments

Appreciation is expressed to Mien-Huei Tzeng, Research Data Analysis, for the computation, summarization, and analysis of the data in this report.

Appreciation is also expressed to the following supervisory personnel of the outlying units whose quality work makes this a reliable source of information for farmers in their areas. Chet Norris and Ellis Burgess, Tennessee Valley Research and Extension Center; Tony Dawkins, Sand Mountain Research and Extension Center; Randall Rawls, Upper Coastal Plains Research Station; Jimmy Holliman, Black Belt Research and Extension Center; Don Moore, Prattville Experiment Field; James Bannon, Bobby Durbin, and Steve Nightengale, E.V. Smith Research Center; Joe Little, Lower Coastal Plain Research Station; Randy Akridge, Brewton and Monroeville Experiment Fields; Ronnie McDaniel and Malcomb Pegues, Gulf Coast Research and Extension Center; Larry Wells and Brian Gamble, Wiregrass Research and Extension Center.

Evaluations of Corn Hybrids in Alabama, 1999

K. M. Glass and P. L. Mask[1]

INTRODUCTION

Selected corn hybrids are evaluated annually by the Alabama Agricultural Experiment Station as a service to producers and industry. These tests are conducted throughout the state in an attempt to determine effects of different climatic factors and soil types on yield. There are several types of tests in the program. The Preliminary Hybrid Tests are conducted at one location in each of the northern, central, and southern regions of Alabama. These tests include experimental and newly released hybrids. If a hybrid is outstanding in the preliminary test, it is entered in the Regular Corn Hybrid Test the following year.

The Regular Corn Hybrid Test is conducted at three locations in the northern region, three locations in the central region, and four locations in the southern region. Early yellow corn hybrids are tested at one location in each region. A white corn hybrid test is normally conducted at Crossville in northern Alabama but this year, with only two entries, they were added to the end of the regular test. In addition, a regular corn hybrid test is irrigated at both Belle Mina and Headland and a preliminary test is irrigated at Tallassee. Locations and cultural practices for all tests are given in Table 1.

PROCEDURE

All tests are laid out in a randomized complete block design with four replicate plots for each variety at each location. Rows are 30 to 36 inches apart, depending on location. Two-row plots are used, and both rows are harvested. Plots are 20 to 30 feet long, depending on location. The target plant population for the tests is 20,000 plants per acre with a seeding rate of 23,000 seeds per acre. The irrigated tests at Belle Mina, Tallassee, and Headland are seeded at a rate to achieve 30,000 plants per acre, but are thinned to 25,000 plants per acre.

Grain yields are adjusted to 15.5 percent moisture and converted to bushels (56 pounds) per acre. Stalks broken or leaning more than 45 degrees are considered lodged. The mid-silk data show the number of days from planting until approximately half the plants in the plots are showing silks. The Regular Corn Hybrid tests also are examined for disease incidence at selected locations each year. When virus or other disease symptoms indicate crop damage, disease ratings are compiled and published in this report. In 1998, the virus test at Marion Junction was not harvested due to extremely dry growing conditions.

INTERPRETATION OF DATA

In replicated experiments such as those reported here, yields from each of the four replicate plots of a particular variety at a given location will be slightly different, because of inherent differences in productivity among those plots. These differences in yield among replicate plots are known as random variation. Given this situation it is clearly necessary to have a method to determine whether differences among hybrids are "true" or "real" differences, or whether they are due to random variation. To do this, a statistical analysis was conducted to determine a "least significant difference" (LSD) by comparing the differences among varieties with random variation. If the difference in yield between two hybrids is larger than the LSD, then the difference is probably real, but if the difference is less than the LSD, it may not be real. If the difference between two hybrids is less than, but close to the LSD, then there is

[1]*Glass is an Agricultural Program Associate and Mask is a Professor in the Auburn University Department of Agronomy and Soils.*

still a chance that it is real, but if it is considerably smaller than the LSD, then it is probably not real and mainly due to random variation.

With this in mind **it is very important to study differences in hybrid yields in relation to the LSD** which is provided at the bottom of the table for each of the current year yield columns at each location. Clearly, LSDs vary from one location to another. This is because random variation varies among locations and from year to year. The coefficient of variation (CV) is a reflection of random variation, and is reported below the LSD values in the tables. If the CV is low, a precise or reliable test is indicated. Ideally, the CV should be below 10 percent, but CVs of 10 to 20 percent are acceptable. Values for the CV above 20 percent indicate a rather unreliable test, which may have been caused by factors such as disease variation among replicates, etc.

In comparing yield potential of two hybrids it is important to consider a wide range of results. **Do not focus on results from only one year at one location**. Two- and three-year average yields are provided by location and region. These are more useful guides than yields from only one year. However, other factors may deserve consideration. For example, differences between the highest and the lowest yield of a hybrid across several locations may be an indication of the stability of its yield under variable conditions, or what is the "risk level" of the variety.

Differences in yield of hybrids among locations will be a result of the combined effects of differences among locations in soil, weather (mainly rainfall), planting date, weed control, and other factors. To assist in estimating which factors most likely had the greatest effect on yield differences among locations, planting dates and cultural practices (Table 1), rainfall records (Table 17), and soil types (Table 18) are provided. This information also serves as a guide for assessing conditions to which results may be extrapolated.

Table 1. Locations and Cultural Practices for the 1999 Corn Hybrid Tests

Location	Planting date	Nitrogen rate[1]	Plant population	Date harvested	Herbicides used
Northern Alabama					
Tennessee Valley Substation (Belle Mina)					
Regular test (unirrigated)	April 5	150	20,000	Sept. 9	Atrazine/Dual
Regular test (irrigated)	April 5	175	25,000	Sept. 10	Atrazine/Dual
Sand Mountain Substation (Crossville)					
Early corn test	April 5	150	20,000	Sept. 2	Atrazine/Dual
Regular test	April 12	150	20,000	Sept. 2	Atrazine/Dual
Preliminary test	April 12	150	20,000	Sept. 2	Atrazine/Dual
Upper Coastal Plain Substation (Winfield)	April 13	120	20,000	Sept. 16	Atrazine/Dual/ Broadstrike
Central Alabama					
E.V. Smith Research Center (Shorter)					
Early corn test	April 5	150	20,000	Aug. 11	Atrazine/Dual
Plant Breeding Unit (Tallassee)					
Preliminary test	April 5	150	20,000	Aug. 23	Atrazine
Preliminary test (irrigated)	April 5	150	25,000	Aug. 23	Atrazine
Prattville Experiment Field (Prattville)	March 29	120	20,000	Sept. 2	Atrazine
Black Belt Substation (Marion Junction)	April 14	120	20,000	Not harvested	Atrazine
Lower Coastal Plain Substation (Camden)	April 20	140	20,000	Aug. 17	Atrazine/Dual
Southern Alabama					
Brewton Experiment Field (Brewton)	March 24	140	20,000	Aug. 17	Atrazine/Dual
Monroeville Experiment Field (Monroeville)	March 26	140	20,000	Aug. 6	Atrazine/Dual
Wiregrass Substation (Headland)					
Regular test (unirrigated)	March 24	120	20,000	Aug. 24	Atrazine
Regular test (irrigated)	March 24	200	25,000	Aug. 24	Atrazine
Gulf Coast Substation (Fairhope)					
Early corn test	March 4	150	20,000	Aug. 4	Atrazine/Dual
Regular test	March 24	110	20,000	Aug. 11	Atrazine/Dual
Preliminary test	March 24	150	20,000	Aug. 9	Atrazine/Dual

[1]Pounds per acre N. Lime, phosphorus, potassium, zinc, and sulfur were applied according to soil test recommendations.

TABLE 2. TWO- AND THREE-YEAR YIELD AND LODGING AVERAGES FOR YELLOW CORN FOR NORTHERN ALABAMA,[1] 1997-99

Brand name–hybrid	———Yield per acre, av.———		———Lodged stalks, av.———	
	3-yr. (1997-99)	2-yr. (1998-99)	3-yr. (1997-99)	2-yr. (1998-99)
	bu.	*lb./bu.*	*pct.*	*pct.*
Dekalb DK 687	122	128	1.1	1.2
HyPerformer AP 9707	122	121	1.9	2.0
Pioneer 3163[2]	119	121	1.7	1.5
Funk's DG 5516	119	119	1.2	1.2
Terra TR 1185	118	116	2.2	2.2
Pioneer 3223	118	116	1.4	1.0
Pioneer 32K61	117	116	1.7	1.7
Funk's 5510A	114	110	1.7	2.0
Terra TR 1167	112	112	1.3	1.7
Pioneer 3167[2]	112	107	1.3	1.5
Hy Performer HS9843	107	105	1.4	1.5
Terra TR 1154	105	107	0.8	0.8
Funk's 4653	-	123	-	1.7
AgriPro AP 9909	-	117	-	1.3
Garst 8222IT	-	116	-	1.5
Pioneer 33G26	-	102	-	1.5

[1] Belle Mina, Crossville, and Winfield. [2] Standard hybrids for comparison.

TABLE 3. 1999 YIELD OF CORN HYBRIDS BY LOCATION AND REGIONAL AVERAGES OF HYBRID CHARACTERISTICS IN NORTHERN ALABAMA

Brand name–hybrid	Belle Mina *bu.*	Cross-ville *bu.*	Win-field *bu.*	1999 Regional Averages: Yield per a. *bu.*	Lodged stalks *%*	Test weight *lb./bu.*	Mid-silk *mo.-da.*	Husk cover rating[1]	Harvest moisture *pct.*
Dekalb DK 687	176	196	144	172	0.7	58.0	6-26	1	12.1
Funk's 4653	162	193	160	172	1.7	58.1	6-24	2	11.9
Asgrow RX 770	176	180	152	170	0.7	57.0	6-23	1	12.3
SS 729 CL	169	192	145	169	1.0	56.9	6-23	2	11.5
SS 859 CL	188	162	154	168	0.7	55.5	6-24	1	11.9
HyPerformer AP 9707	178	169	155	167	1.7	56.8	6-25	2	11.6
SS 849 CL	168	192	140	166	1.0	54.8	6-24	3	11.3
Garst 8222IT	183	134	180	165	1.0	58.5	6-23	1	12.4
Pioneer 32K61	166	201	129	165	1.3	60.8	6-23	2	11.6
Pioneer 3163[2]	176	179	137	164	2.0	57.4	6-25	3	11.2
Garst 8220	166	185	139	163	1.3	55.3	6-26	2	11.5
Terra TR 1185	156	211	117	161	2.0	57.8	6-25	2	12.2
Funk's DG 5516	168	170	145	161	0.3	57.4	6-23	1	11.4
Pioneer 3223	173	174	130	159	1.3	58.2	6-25	2	11.9
Pioneer 3167[2]	163	192	121	158	1.3	58.2	6-27	1	12.3
Pioneer 33J56	170	167	135	157	2.3	58.9	6-23	3	11.3
Funk's 5510A	167	144	144	152	1.7	55.9	6-23	2	11.7
Pioneer 33K81	150	177	124	150	1.7	59.2	6-25	2	11.7
Asgrow RX 740	169	135	145	150	1.0	59.2	6-23	3	11.5
Terra TR 1154	158	145	146	149	0.7	57.3	6-23	1	12.0
AgriPro AP 9909	159	165	122	149	1.3	58.7	6-24	2	11.3
Terra TR 1167	156	148	142	149	0.7	57.4	6-23	1	11.4
Pioneer 33G26	161	160	121	147	1.0	59.1	6-23	3	11.5
SS 769 Bt	170	138	123	143	0.3	57.9	6-23	2	12.5
SS 726	141	155	115	137	1.0	56.4	6-24	3	11.4
Hy Performer HS9843	153	115	136	135	1.0	57.8	6-24	1	11.7
Pioneer 3563	155	144	89	129	1.0	58.8	6-23	2	11.4
Asgrow RX 889	148	138	94	127	1.7	57.9	6-24	2	11.6
Test average	***165.1***	***166.2***	***135.1***						
LSD (.05)	***17.2***	***41.5***	***27.4***						
CV (%)	***7.4***	***17.7***	***14.3***						
White Corn									
Zimmerman Z62W	-	166	-	166	1.0	-	7-2	2	16.9
Zimmerman 1851W	-	163	-	163	0	-	7-2	1	18.0

[1]1= Excellent; 5= Very poor. [2]Standard hybrids for comparison.

Table 4. Early Corn Hybrid Test at Crossville in Northern Alabama, 1997-99

Brand name–hybrid	—Yield per acre/av.— 3-yr. 1997-99 *bu.*	2-yr. 1998-99 *bu.*	1999 *bu.*	—Lodged stalks, av.— 3-yr. 1997-99 *pct.*	2-yr. 1998-99 *pct.*	1999 *pct.*	————1999———— Mid-silk *mo.-da.*	Test weight *lb./bu.*	Husk cover rating[1]	Harvest moisture *pct.*
Pioneer 3245[2]	133	132	170	2.3	1.5	1.0	6-23	59.8	1	12.9
Terra TR 1106	132	130	173	2.3	2.5	2.0	6-25	56.5	2	13.1
Pioneer 32K61	-	145	187	-	0.5	0	6-23	59.7	2	13.5
Funk's DG 5516	-	134	156	-	0.5	0	6-25	57.2	1	14.3
Pioneer 33G26	-	132	167	-	0.5	0	6-23	59.3	2	12.3
Funk's 5510A	-	-	219	-	-	1.0	6-24	56.7	2	15.3
Pioneer 33J56	-	-	202	-	-	2.0	6-23	58.5	2	12.9
Dekalb DK 595	-	-	194	-	-	1.0	6-22	58.2	2	12.3
Dekalb DK 611	-	-	186	-	-	1.0	6-24	58.6	2	11.4
Pioneer 34B23	-	-	185	-	-	1.0	6-23	58.8	2	13.2
Pioneer 33K81	-	-	183	-	-	1.0	6-24	59.8	2	12.8
Terra TR 1087	-	-	179	-	-	2.0	6-25	58.1	2	11.7
Pioneer 3563	-	-	169	-	-	1.0	6-22	59.7	2	11.1
Terra TR 1147RR	-	-	155	-	-	1.0	6-24	57.0	3	12.7
Funk's G 5505RR	-	-	150	-	-	4.0	6-24	58.2	2	10.9
Test average			***178.3***							
LSD (.05)			***31.5***							
CV (%)			***12.4***							

[1] 1= Excellent; 5= Very poor. [2]Standard mid to late season hybrids.

Table 5. Characteristics of Corn Hybrids Tested One Year in Preliminary Test at Crossville in Northern Alabama, 1999

Brand name–hybrid	Av. yield per acre *bu.*	Lodged stalks *pct.*	Husk cover rating[1]	Midsilk *mo.-da.*	Test weight *lb./bu.*	Harvest moisture *pct.*
Dekalb DK 697	189	0	2	7-5	58.8	14.3
Asgrow RX 799Bt	183	0	2	7-1	57.2	15.3
Pioneer 3245[2]	171	0	2	7-4	58.9	13.3
Pioneer 3167[2]	171	1.0	2	7-5	58.4	17.2
Pioneer 3163[2]	165	0	2	7-3	56.7	12.8
Terra TR702E	160	3.0	2	7-5	57.3	16.1
Dekalb DK 650	149	1.0	3	7-5	57.5	14.5
Funk's G X5583	140	0	2	7-3	57.4	15.0
Funk's G X5575	138	1.0	2	7-3	57.0	14.8
Funk's G 5505RR	130	1.0	3	7-2	56.3	12.6
SS 77095 Exp	122	0	2	7-2	55.2	14.4
Terra TR 1157	104	1.0	2	7-4	55.8	15.4
Test average	***151.8***					
LSD (.05)	***54.6***					
CV (%)	***25.0***					

[1] 1= Excellent; 5= Very poor. [2] Standard hybrids for comparison.

Table 6. Irrigated Corn Hybrid Performance and Characteristics, Belle Mina, Alabama,[1] 1999

Brand name–hybrid	Av. yield per acre *bu.*	Lodged stalks *pct.*	Husk cover rating[2]	Midsilk *mo.-da.*	Test weight *lb./bu.*	Harvest moisture *pct.*
SS 859 CL	235	1.0	1	6-16	55.7	9.9
SS 849 CL	228	1.0	2	6-15	55.0	10.1
Pioneer 3163[3]	226	1.0	2	6-17	56.0	9.7
Funk's 5510A	222	0	2	6-15	55.6	10.9
Garst 8222IT	221	1.0	1	6-14	59.1	11.4
Pioneer 33J56	215	1.0	2	6-14	58.1	10.1
Pioneer 3223	215	2.0	2	6-17	57.4	10.5
HyPerformer AP 9707	214	1.0	2	6-16	57.0	10.0
Dekalb DK 687	213	0	1	6-17	57.5	10.6
Asgrow RX 770	213	0	1	6-13	56.5	10.2
Garst 8220	213	1.0	2	6-16	56.5	11.3
Funk's 4653	211	1.0	1	6-14	57.7	10.8
Pioneer 3245[3]	207	1.0	2	6-17	59.5	11.0
AgriPro AP 9909	207	1.0	2	6-16	58.3	11.1
Pioneer 3167[3]	206	0	1	6-19	58.0	12.1
Pioneer 32K61	205	0	2	6-16	60.5	11.3
Terra TR 1167	204	0	1	6-15	57.4	10.4
Asgrow RX 740	203	0	2	6-14	59.6	10.2
SS 769 Bt	201	0	1	6-14	58.6	10.4
Funk's DG 5516	201	1.0	1	6-16	56.8	9.9
SS 729 CL	201	1.0	2	6-15	57.3	10.0
Terra TR 1185	199	1.0	1	6-15	58.0	10.9
Terra TR 1154	198	1.0	1	6-14	56.4	9.9
Pioneer 33G26	192	2.0	3	6-15	58.4	10.5
Asgrow RX 889	192	1.0	2	6-15	57.1	10.3
HyPerformer HS9843	191	0	1	6-17	57.1	10.3
Pioneer 33K81	190	1.0	1	6-15	58.3	10.0
Pioneer 3563	175	0	2	6-13	59.1	10.8
SS 726	170	1.0	2	6-17	57.4	9.9
Test average	***205.7***					
LSD (.05)	***15.1***					
CV (%)	***5.2***					

[1] The test received approximately 5.3 inches of irrigation water. [2] 1= Excellent; 5= Very poor. [3] Standard hybrids for comparison.

TABLE 7. TWO- AND THREE-YEAR YIELD AND LODGING AVERAGES FOR YELLOW CORN FOR CENTRAL ALABAMA,[1] 1997-99

Brand name–hybrid	———Yield per acre, av.———		———Lodged stalks, av.———	
	3-yr. (1997-99)	2-yr. (1998-99)	3-yr. (1997-99)	2-yr. (1998-99)
	bu.	*lb./bu.*	*pct.*	*pct.*
Pioneer 3167[2]	106	100	2.8	3.0
Pioneer 3223	106	99	3.0	4.0
HyPerformer HS9843	93	85	2.5	3.5
Pioneer 32K61	92	80	3.5	5.3
Pioneer 3163[2]	91	81	3.5	5.0
Terra TR 1154	89	89	2.8	4.0
Terra TR 1185	86	79	5.0	6.5
Terra TR 1167	84	81	3.3	4.3
Pioneer 31B13	-	99	-	6.8
Pioneer 33G26	-	61	-	7.5

[1] Prattville and Camden. [2] Standard hybrids for comparison.

TABLE 8. 1999 YIELD OF CORN HYBRIDS BY LOCATION AND REGIONAL AVERAGES OF HYBRID CHARACTERISTICS IN CENTRAL ALABAMA

Brand name–hybrid	Pratt-ville[1]	Camden	Yield per a.	——1999 Regional Averages—— Lodged stalks	Test weight	Mid-silk	Husk cover rating[2]	Harvest moisture
	bu.	*bu.*	*bu.*	*%*	*lb./bu.*	*mo.-da.*		*pct.*
Pioneer 31B13	148	177	162	0.5	57.3	6-17	1	14.2
Pioneer 3167[3]	160	159	159	1.0	57.4	6-17	1	14.8
Dekalb DK 687	133	168	150	1.0	57.0	6-17	1	14.5
Pioneer 3223	138	154	146	1.0	56.3	6-17	2	14.0
Terra TR 1154	135	148	142	1.0	56.9	6-20	1	14.5
SS 849 CL	131	149	140	2.0	53.9	6-18	2	15.0
Pioneer 3163[3]	140	138	139	2.0	57.3	6-17	2	14.5
SS 769 Bt	131	144	137	2.0	58.1	6-19	2	14.7
AgriPro AP9939	130	143	137	2.5	56.0	6-17	1	14.7
Pioneer 32K61	113	151	132	1.0	59.9	6-17	2	14.7
SS 729 CL	123	137	130	2.0	56.8	6-17	2	14.4
Terra TR 1167	100	156	128	1.0	57.3	6-18	1	14.4
HyPerformer HS9843	129	124	127	0.5	56.9	6-20	1	14.2
Terra TR 1185	118	113	116	3.0	55.7	6-18	2	14.5
Pioneer 33G26	83	131	107	4.0	57.2	6-16	2	13.7
SS 726	100	113	107	4.5	55.7	6-18	2	14.2
SS 859 CL	108	104	106	4.5	53.0	6-18	1	13.4
Test average	***124.7***	***141.5***						
LSD (.05)	***30.6***	***27.7***						
CV (%)	***17.3***	***13.7***						

[1] Stands were low due to chinch bug infestation. [2] 1= Excellent; 5= Very poor. [3] Standard hybrids for comparison.

Table 9. Early Corn Hybrid Test at Shorter in Central Alabama, 1997-99

Brand name–hybrid	—Yield per acre/av.— 3-yr. 1997-99 *bu.*	2-yr. 1998-99 *bu.*	1999 *bu.*	—Lodged stalks, av.— 3-yr. 1997-99 *pct.*	2-yr. 1998-99 *pct.*	1999 *pct.*	————1999———— Mid-silk *mo.-da.*	Test weight *lb./bu.*	Harvest moisture *pct.*
Pioneer 3245[1]	138	113	178	0.7	1.0	1.0	6-13	60.1	23.2
Pioneer 3394	136	112	164	0	0	0	6-11	57.9	21.4
Terra TR 1106	131	110	172	0	0	0	6-14	55.4	24.9
Pioneer 32K61	-	112	172	-	0.5	0	6-13	60.6	22.8
Pioneer 33G26	-	110	162	-	3.0	2.0	6-13	59.5	22.8
Dekalb DK 611	-	-	172	-	-	0	6-13	58.0	23.1
Pioneer 33K81	-	-	168	-	-	0	6-12	59.2	22.9
Terra TR 1087	-	-	164	-	-	1.0	6-11	58.2	22.4
Dekalb DK 595	-	-	151	-	-	2.0	6-9	57.1	22.3
Terra TR 1147RR	-	-	139	-	-	0	6-11	57.4	22.3
Test average			***164.2***						
LSD (.05)			***12.3***						
CV (%)			***5.2***						

[1]Standard mid to late season hybrids.

Table 10. Characteristics of Corn Hybrids Tested One Year in Preliminary Test at Tallassee in Central Alabama, 1999

Brand name–hybrid	Av. yield per acre *bu.*	Lodged stalks *pct.*	Husk cover rating[1]	Midsilk *mo.-da.*	Test weight *lb./bu.*	Harvest moisture *pct.*
Pioneer 3163[2]	214	0	3	6-15	59.4	14.8
SS 77095 Exp	204	1.0	3	6-15	54.6	12.6
Dekalb DK 697	200	0	3	6-15	60.2	15.9
Pioneer 3167[2]	199	0	2	6-16	60.0	18.5
Dekalb DK 650	194	0	3	6-15	60.3	15.3
Terra TR 1157	190	0	3	6-14	57.0	14.6
Pioneer 3245[2]	182	1.0	3	6-14	61.1	14.5
Terra TR702E	181	2.0	2	6-17	59.2	16.6
Asgrow RX 799Bt	181	0	3	6-13	60.0	14.4
Test average	***193.8***					
LSD (.05)	***17.4***					
CV (%)	***6.1***					

[1] 1= Excellent; 5= Very poor. [2] Standard hybrids for comparison.

Table 11. Characteristics of Irrigated Corn Hybrids Tested one Year in Preliminary Test at Tallassee in Central Alabama,[1] 1999

Brand name–hybrid	Av. yield per acre *bu.*	Lodged stalks *pct.*	Husk cover rating[2]	Midsilk *mo.-da.*	Test weight *lb./bu.*	Harvest moisture *pct.*
Pioneer 3163[3]	238	0	4	6-14	58.6	15.3
Dekalb DK 697	230	0	3	6-14	60.4	16.9
Pioneer 3245[3]	221	1.0	3	6-13	61.6	15.2
Pioneer 3167[3]	219	0	2	6-15	60.6	19.2
Terra TR702E	219	0	2	6-15	60.0	17.3
Terra TR 1157	218	0	3	6-13	58.0	15.0
SS 77095 Exp	216	0	4	6-13	55.6	13.1
Dekalb DK 650	212	0	3	6-14	60.2	15.8
Asgrow RX 799Bt	206	0	3	6-13	60.2	15.3
Test average	***219.6***					
LSD (.05)	***14.0***					
CV (%)	***4.4***					

[1] The test received approximately 1.3 inches of irrigation water. [2] 1= Excellent; 5= Very poor. [3] Standard hybrids for comparison.

Table 12. Two- and Three-year Yield and Lodging Averages for Yellow Corn for Southern Alabama,[1] 1997-99

Brand name–hybrid	———Yield per acre, av.———		———Lodged stalks, av.———	
	3-yr. (1997-99) *bu.*	2-yr. (1998-99) *bu.*	3-yr. (1997-99) *pct.*	2-yr. (1998-99) *pct.*
Dekalb DK 687	127	110	0.4	0
Pioneer 3223	125	113	0.6	0
HyPerformer AP 9707	121	108	1.0	0.3
Funk's DG 5516	120	106	0.2	0.1
Pioneer 3163[2]	120	106	1.4	0.9
Terra TR 1154	118	104	0.9	0.8
Funk's 5510A	116	102	0.6	0.1
HyPerformer HS9843	115	103	0.2	0.2
Pioneer 3167[2]	112	104	0.6	0.5
Terra TR 1185	112	104	1.0	0.7
Pioneer 32K61	112	98	0.1	0
AgriPro AP 9909	-	111	-	0.4
HyPerformer HY 9646	-	110	-	0.3
Terra TR 1167	-	105	-	0.3
Funk's 4653	-	101	-	0.3

[1] Fairhope, Brewton, Monroeville, and Headland. [2] Standard hybrids for comparison.

TABLE 13. 1999 YIELD OF CORN HYBRIDS BY LOCATION AND REGIONAL AVERAGES OF HYBRID CHARACTERISTICS IN SOUTHERN ALABAMA

Brand name–hybrid	Fair-hope *bu.*	Brew-ton *bu.*	Monroe-ville *bu.*	Head-land *bu.*	1999 Regional Averages: Yield per a. *bu.*	Lodged stalks *%*	Test weight *lb./bu.*	Mid-silk *mo.-da.*	Husk cover rating[1]	Harvest moisture *pct.*
Pioneer 3223	170	153	197	92	153	0	58.2	6-2	3	17.1
Dekalb DK 687	174	149	187	84	148	0	57.6	6-2	2	17.3
AgriPro AP 9909	163	139	183	97	146	0.5	58.9	6-2	3	18.2
HyPerformer HY 9646	168	143	188	82	145	0.3	56.5	6-2	2	16.6
HyPerformer AP 9707	166	143	194	70	143	0.3	57.2	6-3	2	16.7
Pioneer 3163[2]	158	149	203	56	142	0.8	57.0	6-3	3	17.0
AgriPro AP9939	166	131	183	82	140	0.8	57.3	6-5	2	18.0
Asgrow RX 913	163	140	190	65	139	0.3	58.0	6-1	3	17.7
Pioneer 3167[2]	167	145	168	73	138	1.0	57.9	6-3	2	19.4
Funk's DG 5516	159	138	187	68	138	0.3	57.6	6-3	2	16.6
HyPerformer HS9843	151	129	181	91	138	0	58.1	6-1	2	16.6
Funk's 5510A	174	135	195	41	136	0.3	55.0	6-1	3	18.9
SS 859 CL	167	137	192	47	136	1.0	54.9	6-3	2	17.7
SS 849 CL	162	135	191	51	135	0.5	55.1	6-1	3	17.6
Terra TR 1167	158	140	174	66	134	0	57.8	6-2	2	16.5
Terra TR 1154	154	131	191	58	133	1.3	57.0	5-30	2	16.2
Funk's 4653	163	138	183	41	131	0.3	57.8	6-1	2	17.3
SS 729 CL	152	130	182	58	130	0.3	57.3	5-31	2	16.1
Terra TR 1185	159	126	175	58	130	1.0	57.5	6-2	2	18.2
Funk's G-4581	145	135	176	61	129	0.5	58.4	6-4	2	17.0
Asgrow RX 889	158	126	176	56	129	0.3	57.3	6-1	2	17.0
Asgrow RX 770	156	127	181	52	129	0.3	56.6	5-31	2	16.6
Pioneer 32K61	158	125	171	45	124	0	60.3	6-2	2	17.4
SS 769 Bt	153	118	181	39	123	0	59.0	5-31	3	17.0
SS 726	145	111	152	36	111	0.3	56.8	5-31	2	16.1
Test average	***160.2***	***134.8***	***183.0***	***62.8***						
LSD (.05)	***14.6***	***12.2***	***15.6***	***23.8***						
CV (%)	***6.5***	***6.4***	***6.1***	***26.6***						

[1] 1= Excellent; 5= Very poor. [2] Standard hybrids for comparison.

TABLE 14. IRRIGATED CORN HYBRID PERFORMANCE AND CHARACTERISTICS, HEADLAND, ALABAMA,[1] 1997-99

Brand name–hybrid	—Yield per acre/av.—			—Lodged stalks, av.—			————1999————			
	3-yr. 1997-99	2-yr. 1998-99	1999	3-yr. 1997-99	2-yr. 1998-99	1999	Mid--silk	Test weight	Husk cover rating[2]	Harvest moisture
	bu.	*bu.*	*bu.*	*pct.*	*pct.*	*pct.*	*mo.-da.*	*lb./bu.*		*pct.*
HyPerformer AP 9707	175	169	181	2.7	3.0	0	6-4	57.5	1	14.7
Funk's DG 5516	175	170	172	1.7	1.0	0	6-1	58.1	2	14.7
Pioneer 3223	168	162	174	3.0	3.5	0	6-6	58.3	2	14.7
Pioneer 3163[3]	159	153	156	2.3	3.0	0	6-4	56.9	2	14.7
Pioneer 3167[3]	156	156	162	7.3	10.0	0	6-4	59.0	2	14.7
HyPerformer HS9843	156	151	158	3.3	3.0	0	6-4	58.3	1	14.7
Dekalb DK 687	156	146	157	5.3	8.0	0	6-4	58.1	2	14.7
Pioneer 32K61	153	145	152	0.7	0	0	6-2	60.5	2	14.7
Terra TR 1154	152	138	157	3.0	1.5	0	5-28	56.1	2	14.7
Terra TR 1185	149	146	139	4.0	5.0	0	6-1	57.5	2	14.7
Funk's 5510A	141	129	145	5.7	7.5	0	6-1	55.7	2	14.7
HyPerformer HY 9646	-	162	167	-	3.5	0	6-1	56.5	2	14.7
Terra TR 1167	-	161	166	-	5.5	0	6-1	58.0	1	14.7
AgriPro AP 9909	-	161	160	-	2.5	0	6-4	59.3	2	14.7
Funk's 4653	-	147	147	-	2.0	0	6-1	57.4	2	14.7
AgriPro AP9939	-	-	171	-	-	0	6-7	58.8	2	14.7
Asgrow RX 913	-	-	162	-	-	0	6-1	59.4	1	14.7
SS 859 CL	-	-	162	-	-	0	6-4	56.0	2	14.7
SS 729 CL	-	-	155	-	-	0	6-4	58.0	1	14.7
Funk's G-4581	-	-	154	-	-	0	6-4	59.3	1	14.7
SS 849 CL	-	-	154	-	-	0	6-1	55.5	2	14.7
Asgrow RX 889	-	-	148	-	-	0	6-2	57.5	1	14.7
SS 769 Bt	-	-	147	-	-	0	6-2	59.2	2	14.7
Asgrow RX 770	-	-	137	-	-	0	6-1	55.4	2	14.7
SS 726	-	-	122	-	-	0	6-4	56.9	2	14.7
Test average			***156.1***							
LSD (.05)			***19.6***							
CV (%)			***8.9***							

[1] The test received approximately 10.00 inches of irrigation water. [2] 1= Excellent; 5= Very poor. [3]Standard mid to late season hybrids.

Table 15. Early Corn Hybrid Test at Fairhope in Southern Alabama, 1997-99

Brand name–hybrid	—Yield per acre/av.— 3-yr. 1997-99 *bu.*	2-yr. 1998-99 *bu.*	1999 *bu.*	—Lodged stalks, av.— 3-yr. 1997-99 *pct.*	2-yr. 1998-99 *pct.*	1999 *pct.*	————1999———— Mid--silk *mo.-da.*	Test weight *lb./bu.*	Husk cover rating[1]	Harvest moisture *pct.*
Terra TR 1106	140	142	153	-	0	0	5-22	54.2	4	16.6
Pioneer 3245[2]	132	140	164	-	0.5	1.0	5-21	58.4	4	18.7
Pioneer 32K61	-	146	161	-	0	0	5-21	58.9	3	18.5
Pioneer 33G26	-	136	155	-	0	0	5-20	58.8	3	18.6
Funk's DG 5516	-	134	147	-	0	0	5-21	56.7	2	17.2
Funk's 5510A	-	-	166	-	-	0	5-22	51.9	3	21.2
Pioneer 3394	-	-	162	-	-	0	5-20	57.9	3	16.8
Dekalb DK 611	-	-	156	-	-	0	5-21	56.7	3	16.3
Dekalb DK 595	-	-	147	-	-	0	5-20	57.5	2	15.8
Terra TR 1087	-	-	146	-	-	0	5-20	56.3	4	15.6
Pioneer 33K81	-	-	144	-	-	1.0	5-21	59.1	2	18.0
Funk's G 5505RR	-	-	132	-	-	0	5-21	56.9	3	17.2
Terra TR 1147RR	-	-	115	-	-	0	5-21	57.1	4	17.0
Test average			***149.7***							
LSD (.05)			***10.5***							
CV (%)			***4.9***							

[1] 1= Excellent; 5= Very poor. [2] Standard mid to late season hybrids.

Table 16. Characteristics of Corn Hybrids Tested One Year in Preliminary Test at Fairhope, Alabama, 1999

Brand name–hybrid	Av. yield per acre *bu.*	Lodged stalks *pct.*	Husk cover rating[1]	Midsilk *mo.-da.*	Test weight *lb./bu.*	Harvest moisture *pct.*
Dekalb DK 697	183	0	4	5-30	58.4	21.3
Pioneer 3163[2]	176	1.0	3	5-30	57.2	19.9
Terra TR702E	173	0	3	5-30	58.3	18.6
Terra TR 1157	173	0	3	5-27	56.4	16.7
Pioneer 3167[2]	170	1.0	3	5-30	57.4	21.2
Greenwood 830	169	2.0	2	5-31	55.2	23.5
Dekalb DK 650	168	0	3	5-30	57.9	19.3
SS 77095 Exp	167	1.0	3	5-28	53.6	15.6
Asgrow RX 799Bt	165	0	3	5-26	58.9	18.3
Pioneer 3245[2]	164	1.0	3	5-28	58.0	19.5
Funk's G X5583	154	1.0	3	5-28	56.6	22.2
Greenwood 835	152	1.0	2	6-4	55.9	26.1
Funk's G X5575	148	0	3	5-29	56.9	16.8
Funk's G 5505RR	145	1.0	4	5-27	58.0	17.6
Test average	***164.7***					
LSD (.05)	***12.7***					
CV (%)	***5.4***					

[1] 1= Excellent; 5= Very poor. [2] Standard hybrids for comparison.

TABLE 17. GROWING SEASON RAINFALL, 1997-99

Test location	Year	Monthly rainfall (inches) Mar.	Apr.	May	June	July	Aug.	Sept.	7-month total
Belle Mina	1999	5.1	3.8	4.7	6.5	3.6	0.2	0.6	24.5
	1998	4.3	4.3	2.4	1.8	5.3	1.8	0.9	20.8
	1997	5.4	4.0	3.6	6.5	1.7	4.0	5.9	31.1
Crossville	1999	3.8	3.5	4.4	10.5	6.1	1.6	1.7	31.6
	1998	5.8	8.9	1.6	3.6	3.5	2.5	0.5	26.4
	1997	6.6	5.4	8.6	8.3	3.3	2.4	7.5	42.1
Winfield	1999	5.4	5.3	3.2	6.3	2.4	0.1	2.1	24.8
	1998	5.7	6.2	1.5	2.2	11.4	3.8	0.5	31.3
	1997	3.8	3.9	11.7	10.2	4.4	3.6	1.5	39.1
Tallassee	1999	5.9	1.4	3.6	12.2	3.1	1.9	4.0	32.1
	1998	6.3	7.5	1.7	3.9	6.1	1.4	8.8	35.7
	1997	1.5	7.7	5.2	8.7	2.1	3.4	4.5	33.1
Shorter	1999	4.7	1.9	3.3	9.2	3.5	2.4	2.1	27.1
	1998	6.5	5.2	4.4	2.6	2.6	2.2	9.9	33.4
	1997	2.2	7.0	3.5	5.5	2.4	3.9	3.3	27.8
Prattville	1999	4.9	1.7	3.2	9.6	10.7	2.6	1.8	34.5
	1998	5.3	2.4	2.5	2.7	4.1	3.4	8.6	29.0
	1997	3.0	6.0	3.3	6.8	3.0	3.4	2.2	27.7
Marion Junction	1999	6.3	0.8	1.3	12.1	5.2	1.3	3.3	30.3
	1998	3.7	4.3	1.2	2.9	6.3	2.2	9.1	29.7
	1997	2.5	7.8	4.8	12.5	5.2	1.6	4.3	38.7
Camden	1999	6.0	2.1	3.8	6.2	2.3	1.6	5.4	27.4
	1998	5.6	3.0	2.8	3.3	6.4	2.8	10.9	34.8
	1997	2.5	8.5	7.9	1.8	2.8	2.0	0.2	25.7
Monroeville	1999	8.2	2.6	4.5	7.7	3.7	2.4	2.1	31.2
	1998	5.7	3.6	2.2	1.4	7.2	9.8	17.7	47.6
	1997	2.5	6.0	7.6	5.5	2.7	1.7	0.8	26.8
Brewton	1999	8.1	1.6	5.5	9.2	12.1	7.9	2.8	47.2
	1998	13.0	6.2	0.8	1.7	8.4	5.1	25.9	61.1
	1997	4.1	7.3	4.2	6.1	2.5	2.6	1.8	28.6
Fairhope	1999	5.8	0.1	3.2	8.3	9.7	6.0	2.3	35.4
	1998	6.1	4.5	0.8	2.2	6.2	5.9	24.1	49.8
	1997	3.8	6.3	8.0	5.9	28.6	1.3	1.3	55.2
Headland	1999	3.3	1.2	6.0	5.9	4.1	1.1	1.5	23.1
	1998	9.2	2.7	0.5	2.4	9.6	3.9	4.7	33.0
	1997	2.6	5.2	4.1	5.6	4.8	2.3	3.3	27.9

Table 18. Soil Types for Corn Trials, 1999

Test location	Soil type
North	
Belle Mina	Decatur silt loam
Crossville	Wynnville fine sandy loam
Winfield	Savannah loam
Central	
Tallassee	Cahaba loamy sand
Shorter	Norfolk sandy loam
Prattville	Lucedale fine sandy loam
Marion Junction	Vaiden clay
Camden	Forkland fine sandy loam
South	
Monroeville	Lucedale loam
Brewton	Benndale fine sandy loam
Headland	Dothan sandy loam
Fairhope	Malbis fine sandy loam

Sources of 1999 Corn Hybrid Test Seed

Seed company	Brand	Seed company	Brand
AgriPro Seeds 761Walnut Knoll Lane Memphis, TN 38018	AgriPro, HyPerformer	Pioneer Hi-Bred Int. 6767 Old Madison Pike Huntsville, AL 35806	Pioneer
Garst Seed Co. 3395 Leatherwood Rd. Williamsport, TN 38487	Garst	Southern States Coop 6606 West Broad Street Richmond, VA 23260	SS
Greenwood Hybrids 8431 Davis Road Laurel Hill, FL 32567	Greenwood	Terra International, Inc. P.O. Box 6000 Sioux City, IA 51102	Terra
Monsanto Company P.O. Box 7570 Des Moines, IA 50322	Asgrow	United Agri Products P.O. Box 534 Athens, AL 35611	Funk's
Monsanto Company 3100 Sycamore Road DeKalb, IL 60115	Dekalb	Wilson Seeds, Inc. P.O. Box 391 Harlan, IA 51537	Zimmerman