Evaluation of Corn Hybrids in Alabama, 1997

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EVALUATION OF CORN HYBRIDS IN ALABAMA, 1997

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INTRODUCTION

Selected varieties of 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 the State. 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 conducted at Crossville in northern Alabama. In addition, a regular corn hybrid test is irrigated at both Headland and Belle Mina. 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 Headland and Belle Mina 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 1997, the only incidence of disease noted was at Monroeville where buggy whip was prevalent in most varieties.

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 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.

Glass is a Research Assistant and Bransby is a Professor of Auburn University Department of Agronomy and Soils.

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, LSD's 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 CV's 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 18) and soil types (Table 19) are provided. This information also serves as a guide for assessing conditions to which results may be extrapolated.

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TABLE 1. LOCATIONS AND CULTURAL PRACTICES FOR THE 1997 CORN HYBRID TESTS

Location	Planting date	Nitrogen rate*	Plant population	Date harvested	Herbicides used
NORTHERN ALABAMA					
Tennessee Valley Substation (Belle Mina)					
Regular test (unirrigated)	March 26	145	20,000	September 5	Bicep II
Regular test (irrigated)	March 25	175	25,000	September 5	Atrazine/Surpass
Sand Mountain Substation (Crossville)					
Early corn test	April 3	150	20,000	September 24	Aatrex/Dual
Regular test	April 10	150	20,000	September 23	Aatrex/Dual
Preliminary test	April 3	150	20,000	September 22	Aatrex/Dual
White corn test	April 10	150	20,000	September 23	Aatrex/Dual
Upper Coastal Plain Substation (Winfield)	May 1	120	20,000	October 3	Atrazine/Dual/ Broadstrike
CENTRAL ALABAMA					
E.V. Smith Research Center (Shorter)					
Early corn test	March 27	120	20,000	August 20	Atrazine/Dual
Plant Breeding Unit (Tallassee)	March 20	165	20,000	August 25	Atrazine/Lasso
Prattville Experiment Field (Prattville)	March 17	120	20,000	August 21	None applied
Black Belt Substation (Marion Junction)	March 24	125	20,000	September 8	Atrazine/ Gramoxone
Lower Coastal Plain Substation (Camden)	April 7	100	20,000	August 13	None applied
SOUTHERN ALABAMA					
Brewton Experiment Field (Brewton)	March 25	140	20,000	August 14	Atrazine/Dual
Monroeville Experiment Field (Monroeville)	March 24	140	20,000	August 16	Atrazine/Dual
Wiregrass Substation (Headland)					
Regular test (unirrigated)	March 18	150	20,000	August 27	Atrazine
Regular test (irrigated)	March 18	220	25,000	August 28	Atrazine
Gulf Coast Substation (Fairhope)					
Early corn test	March 5	150	20,000	August 6	Atrazine/Dual
Regular test	March 24	150	20,000	August 6	Atrazine/Dual
Preliminary test	March 24	150	20,000	August 6	Atrazine/Dual

*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,**1995-97

Brand Name-Hybrid	Yield Per Acre, Av.		Lodged Stalks, Av.	
	3-yr. 1995-97	2-yr. 1996-97	3-yr. 1995-97	2-yr. 1996-97
	Bu.	*Bu.*	*Pct.*	*Pct.*
Pioneer 3223	107	118	3.0	2.2
Pioneer 3167 *	106	117	2.7	1.5
Terra TR 1185	106	115	4.6	3.3
Hy Performer HY 9899V	104	112	4.2	3.3
Hy Performer HS9843	104	111	1.9	1.5
Terra TR702E	104	115	3.3	2.2
Pioneer 3163 *	101	110	4.1	2.5
Terra TR 1167	100	110	2.1	1.5
Dekalb DK 683	100	107	2.2	1.7
AgraTech 787 *	100	109	2.3	1.8
Pioneer 3156	98	104	4.7	4.5
Funk's DG 5516	97	103	2.4	1.8
Dekalb DK 706	92	102	4.9	2.8
Pioneer 3260	-	105	-	1.8
Dekalb DK 687	-	105	-	1.3
Funk's DG 5670	-	104	-	4.0

* Standard hybrids for comparison.

** Belle Mina, Crossville, and Winfield.

Table 3. 1997 Yield of Corn Hybrids by Location and Regional Averages of Hybrid Characteristics in Northern Alabama

Brand Name-Hybrid	Belle Mina	Crossville	Winfield	1997 Regional Averages					
				Yield Per Acre	Lodged Stalks	Test Weight	Mid-Silk	Husk** Cover	Harvest Moisture
	Bu.	*Bu.*	*Bu.*	*Bu.*	*Pct.*	*Lb./Bu.*	*Mo.-Da.*	*Rating*	*Pct.*
HyPerformer AP 9707	132	129	112	124	1.7	56.4	7-9	2	16.6
Pioneer 3167 *	121	124	124	123	1.0	58.8	7-10	2	18.5
Funk's 5510A	127	121	119	122	1.0	55.3	7-10	3	17.6
Terra TR 1185	125	122	119	122	2.3	57.3	7-10	2	17.9
Pioneer 3223	136	119	109	121	2.3	58.3	7-8	2	16.3
Funk's DG 5516	135	122	103	120	1.3	56.7	7-9	2	17.0
AgraTech 787 *	131	129	98	119	0.7	57.8	7-11	2	16.6
Pioneer 32K61	144	126	88	119	1.7	60.1	7-8	2	17.1
Pioneer 3163 *	121	126	98	115	2.0	57.1	7-8	3	16.2
Pioneer 3260	135	118	90	114	1.3	59.2	7-9	3	17.8
Hy Performer HY 9899V	130	117	95	114	1.7	57.1	7-9	2	17.9
Terra TR 1167	124	127	90	113	0.7	57.1	7-9	2	17.1
Terra TR702E	125	125	87	112	2.0	57.0	7-10	2	18.0
Dekalb DK 687	125	130	79	111	1.0	58.0	7-9	2	17.2
Hy Performer HS9843	129	130	73	111	1.3	57.0	7-9	2	16.8
Terra E 1176	125	114	93	111	2.0	57.6	7-9	3	16.5
Dekalb DK 683	120	123	86	110	1.0	57.4	7-8	2	17.7
Funk's DG 5670	110	115	99	108	2.0	57.3	7-10	2	18.3
AgraTech ATX721	125	128	63	105	2.0	55.2	7-9	3	15.5
Dekalb DK 706	117	113	85	105	2.3	57.6	7-9	2	17.0
Pioneer 3156	111	103	97	104	3.3	57.7	7-9	2	17.7
Terra TR 1154	121	116	71	103	0.7	56.4	7-8	2	16.4
Test Average	*125.8*	*121.5*	*94.5*						
L.S.D. (.05)	*10.5*	*16.7*	*32.2*						
C.V. (%)	*5.9*	*9.7*	*24.1*						

* Standard hybrids for comparison.

** 1= Excellent; 5= Very Poor.

Table 4. White Corn Hybrid Test, Northern Alabama,*** 1995-97

Brand Name-Hybrid	Yield Per Acre, Av.			Lodged Stalks, Av.			1997			
	3-yr. 1995-97	2-yr. 1996-97	1997	3-yr. 1995-97	2-yr. 1996-97	1997	Midsilk	Test Weight	Husk** Cover	Harvest Moisture
	Bu.	*Bu.*	*Bu.*	*Pct.*	*Pct.*	*Pct.*	*Mo./Da.*	*Lb./Bu.*	*Rating*	*Pct.*
Zimmerman Z62W	112	126	122	0.7	1.0	1.0	7-13	56.8	2	16.5
Zimmerman Z64W	111	116	118	1.7	1.5	2.0	7-14	56.4	2	17.8
Pioneer 3163 *	-	137	121	-	2.0	3.0	7-12	56.2	2	16.3
Pioneer 3167 *	-	132	123	-	0.5	1.0	7-15	58.2	2	18.8
AgraTech 787 *	-	131	126	-	1.0	1.0	7-15	56.5	2	17.2
Zimmerman Z72W	-	113	111	-	1.0	2.0	7-16	58.1	2	18.2
Funk's 5798W	-	-	101	-	-	1.0	7-12	57.7	2	16.3
Funk's 5122W	-	-	100	-	-	1.0	7-10	57.0	2	19.7
Test Average			*115.2*							
L.S.D. (.05)			*22.4*							
C.V. (%)			*13.2*							

* Yellow Corn Check Hybrid.
** 1= Excellent; 5= Very Poor.
*** Crossville.

Table 5. Early Corn Hybrid Test, Northern Alabama,*** 1995-97

Brand Name-Hybrid	Yield Per Acre, Av.			Lodged Stalks, Av.			1997			
	3-Yr. 1995-97	2-Yr. 1996-97	1997	3-Yr. 1995-97	2-Yr. 1996-97	1997	Midsilk	Test Weight	Husk** Cover	Harvest Moisture
	Bu.	*Bu.*	*Bu.*	*Pct.*	*Pct.*	*Pct.*	*Mo./Da.*	*Lb./Bu.*	*Rating*	*Pct.*
Funk's 5510A	145	158	148	1.7	2.5	4.0	7-9	55.6	2	16.5
AgraTech 787 *	132	141	136	1.3	1.5	2.0	7-9	56.4	2	16.8
Pioneer 3245 *	129	136	135	1.7	2.5	4.0	7-5	57.8	2	15.4
Zimmerman Z41	125	131	134	0.7	1.0	2.0	7-6	55.5	2	15.4
Dekalb DK 626	-	148	151	-	3.5	6.0	7-6	54.6	2	14.0
Zimmerman Z37	-	139	136	-	1.5	3.0	7-10	57.1	2	16.8
Pioneer 3310	-	137	135	-	4.5	8.0	7-3	57.6	2	15.7
Dekalb DK 642	-	130	147	-	2.0	4.0	7-5	55.6	2	14.0
Terra TR 1136	-	-	142	-	-	1.0	7-6	54.9	2	14.5
Zimmerman Z39	-	-	141	-	-	2.0	7-8	55.3	2	17.3
AgraTech ATX721	-	-	136	-	-	3.0	7-7	55.4	2	14.3
Terra TR 1106	-	-	134	-	-	2.0	7-6	54.6	2	14.8
Dekalb DK 618	-	-	119	-	-	8.0	7-3	56.3	2	14.8
Test Average			*137.9*							
L.S.D. (.05)			*16.3*							
C.V. (%)			*8.2*							

* Standard Mid to Late Season Hybrids.
** 1= Excellent; 5= Very Poor.
*** Crossville.

Table 6. Characteristics of Corn Hybrids Tested One Year in Preliminary Test at Crossville in Northern Alabama, 1997

Brand Name-Hybrid	Av. Yield Per Acre	Lodged Stalks	Husk** Cover	Midsilk	Test Weight	Harvest Moisture
	Bu.	*Pct.*	*Rating*	*Mo.-Da.*	*Lb./Bu.*	*Pct.*
Funk's 5688	148	1.0	1	7-12	57.6	21.2
HyPerformer HY 9646	144	3.0	2	7-8	56.2	16.5
AgriPro AP 9909	140	1.0	2	7-7	58.7	18.0
Pioneer 3245 *	140	2.0	2	7-5	58.4	16.7
Terra E 1186	139	3.0	2	7-8	58.1	18.0
AgraTech EX6714	138	0	2	7-6	56.6	15.9
Pioneer 3167 *	136	3.0	1	7-11	58.1	19.9
Mycogen 2815	135	1.0	2	7-6	56.5	15.6
Pioneer 3163 *	127	6.0	2	7-6	56.3	15.3
AgraTech EX6890	116	4.0	2	7-9	56.9	19.3
Test Average	*136.2*					
L.S.D. (.05)	*25.8*					
C.V. (%)	*13.1*					

* Standard Hybrids for Comparison.

** 1= Excellent; 5= Very Poor.

Table 7. Irrigated Corn Hybrid Performance and Characteristics, Belle Mina, Alabama, 1997***

Brand Name-Hybrid	Av. Yield Per Acre	Lodged Stalks	Husk** Cover	Midsilk	Test Weight	Harvest Moisture
	Bu.	*Pct.*	*Rating*	*Mo.-Da.*	*Lb./Bu.*	*Pct.*
AgraTech ATX721	214	2.0	3	6-24	57.6	19.1
Pioneer 3245 *	211	1.0	3	6-25	62.1	19.9
Pioneer 3260	211	1.0	3	6-27	61.3	20.6
Pioneer 3163 *	211	3.0	3	6-26	59.9	19.4
Funk's 5510A	209	0	3	6-26	58.2	21.8
Pioneer 32K61	208	0	2	6-26	62.9	20.3
AgraTech 787 *	208	1.0	2	6-26	60.5	20.5
Dekalb DK 706	203	0	2	6-26	61.0	21.5
Dekalb DK 687	201	1.0	2	6-27	60.6	20.1
Terra TR 1154	197	1.0	2	6-24	59.1	18.9
Funk's DG 5516	196	0	2	6-25	59.3	19.1
Pioneer 3223	196	2.0	2	6-27	60.1	20.6
Terra TR 1185	195	2.0	2	6-26	59.7	22.1
Terra E 1176	194	2.0	3	6-24	61.1	20.5
HyPerformer AP 9707	193	2.0	2	6-26	59.6	19.8
Pioneer 3156	192	3.0	2	6-25	60.1	21.4
Terra TR702E	191	1.0	2	6-26	59.9	21.3
Pioneer 3394	191	2.0	3	6-24	60.4	18.7
Hy Performer HS9843	189	2.0	2	6-25	59.7	19.6
Dekalb DK 683	189	1.0	2	6-27	60.1	19.7
Pioneer 3167 *	187	1.0	2	6-27	60.1	23.3
Terra TR 1167	182	0	2	6-24	59.6	19.0
Hy Performer HY 9899V	182	2.0	2	6-27	59.9	22.2
Funk's DG 5670	177	2.0	2	6-26	60.0	22.6
Test Average	*196.8*					
L.S.D. (.05)	*13.8*					
C.V. (%)	*5.0*					

* Standard Hybrids for Comparison.

** 1= Excellent; 5= Very Poor.

***The test received approximately 4.75 inches of irrigation water in 6 applications in June and July.

Table 8. Two- and Three-Year Yield and Lodging Averages for Yellow Corn for Central Alabama,** 1995-97

Brand Name-Hybrid	Yield Per Acre, Av.		Lodged Stalks, Av.	
	3-yr.	2-yr.	3-yr.	2-yr.
	Bu.	*Bu.*	*Pct.*	*Pct.*
Pioneer 3167 *	103	113	2.8	4.0
Terra TR702E	101	111	1.8	2.8
Pioneer 3163 *	97	108	5.3	7.5
Terra TR 1167	90	100	2.5	3.8
Terra TR 1185	89	94	6.7	9.8
Pioneer 3223	84	110	5.3	8.0
Hy Performer HS9843	-	108	-	2.5
Pioneer 3260	-	102	-	3.5
Funk's DG 5670	-	91	-	10.8
AgraTech 888	-	90	-	4.3

* Standard hybrids for comparison.
** Prattville 1995, 1996 & 1997 3-yr averages.
** Camden 1994, 1996 & 1997 3-yr averages.

Table 9. 1997 Yield of Corn Hybrids by Location and Regional Averages of Hybrid Characteristics in Central Alabama

Brand Name-Hybrid	Prattville	Camden	1997 Regional Averages					
			Yield Per Acre	Lodged Stalks	Test Weight	Mid-Silk	Husk** Cover	Harvest Moisture
	Bu.	*Bu.*	*Bu.*	*Pct.*	*Lb./Bu.*	*Mo.-Da.*	*Rating*	*Pct.*
Pioneer 3167 *	153	85	119	2.5	57.5	6-21	1	16.7
Pioneer 3223	168	69	119	1.0	58.2	6-20	2	14.8
Pioneer 32K61	149	86	117	0	60.5	6-21	2	14.8
Terra TR702E	140	86	113	3.0	56.2	6-21	2	16.2
Pioneer 3163 *	154	69	111	0.5	57.4	6-20	2	15.4
Pioneer 3260	154	65	110	1.5	58.4	6-20	2	15.2
Hy Performer HS9843	141	75	108	0.5	57.6	6-20	2	14.4
Terra TR 1185	137	61	99	2.0	53.0	6-20	2	15.9
Funk's DG 5516	142	50	96	1.5	57.7	6-20	2	15.2
Terra TR 1154	143	36	89	0.5	56.4	6-19	2	14.2
Terra TR 1167	128	51	89	1.5	57.2	6-20	2	14.6
Funk's DG 5670	130	44	87	2.5	54.1	6-20	3	15.7
Terra E 1176	129	36	82	2.0	58.0	6-20	2	15.4
AgraTech 888	122	42	82	2.5	57.0	6-20	2	14.5
Test Average	*142.2*	*60.9*						
L.S.D. (.05)	*23.6*	*30.0*						
C.V. (%)	*11.6*	*34.4*						

* Standard hybrids for comparison.
** 1= Excellent; 5= Very Poor.

Table 10. Early Corn Hybrid Test, Central Alabama,** 1995-97

Brand Name-Hybrid	Yield Per Acre, Av.			Lodged Stalks, Av.			1997		
	3-Yr. 1995-97	2-Yr. 1996-97	1997	3-Yr. 1995-97	2-Yr. 1996-97	1997	Midsilk	Test Weight	Harvest Moisture
	Bu.	*Bu.*	*Bu.*	*Pct.*	*Pct.*	*Pct.*	*Mo./Da.*	*Lb./Bu.*	*Pct.*
Pioneer 3394	118	140	184	0	0	0	6-11	58.7	9.0
Pioneer 3245 *	115	140	189	0	0	0	6-15	60.1	11.8
AgraTech 787 *	113	136	178	1.3	0	0	6-15	57.3	12.0
Funk's 5510A	111	133	179	0.3	0.5	0	6-15	55.1	12.7
Zimmerman Z37	-	141	180	-	0	0	6-14	58.1	10.7
Zimmerman Z41	-	133	167	-	0.5	0	6-13	56.8	9.6
AgraTech ATX721	-	-	186	-	-	0	6-14	55.6	10.2
Terra TR 1136	-	-	178	-	-	0	6-14	55.3	10.8
Zimmerman Z39	-	-	174	-	-	0	6-15	55.2	10.7
Terra TR 1106	-	-	173	-	-	0	6-14	55.5	10.5
Test Average			*178.8*						
L.S.D. (.05)			*15.3*						
C.V. (%)			*5.9*						

* Standard Mid to Late Season Hybrids.
** Shorter.

Table 11. Characteristics of Corn Hybrids Tested One Year in Preliminary Test at Tallassee in Central Alabama, 1997

Brand Name-Hybrid	Av. Yield Per Acre	Lodged Stalks	Husk** Cover	Midsilk	Test Weight	Harvest Moisture
	Bu.	*Pct.*	*Rating*	*Mo.-Da.*	*Lb./Bu.*	*Pct.*
Pioneer 3163 *	240	0	4	6-14	58.1	19.1
Pioneer 3245 *	228	0	2	6-14	60.7	17.8
HyPerformer HY 9646	220	0	2	6-14	56.5	19.1
Funk's 5688	216	0	2	6-16	58.3	22.0
AgriPro AP 9909	209	1.0	3	6-13	58.0	20.2
Mycogen 2815	202	0	2	6-11	58.6	18.2
Terra E 1186	201	1.0	2	6-13	60.1	19.3
Pioneer 3167 *	194	0	1	6-16	58.8	21.6
AgraTech EX6890	174	0	1	6-15	57.8	22.1
AgraTech EX6714	150	0	1	6-14	58.3	18.0
Test Average	*203.2*					
L.S.D. (.05)	*17.3*					
C.V. (%)	*5.9*					

* Standard Hybrids for Comparison.
** 1= Excellent; 5= Very Poor.

Table 12. Black Belt Corn Hybrid/Virus Test, *** 1995-97

Brand Name-Hybrid	Yield Per Acre, Av.			Lodged Stalks, Av.			1997			
	3-yr. 1995-97	2-yr. 1996-97	1997	3-yr. 1995-97	2-yr. 1996-97	1997	Midsilk	Test Weight	Husk** Cover	Harvest Moisture
	Bu.	*Bu.*	*Bu.*	*Pct.*	*Pct.*	*Pct.*	*Mo.-Da.*	*Lb./Bu.*	*Rating*	*Pct.*
Pioneer 3163 *	119	145	127	0.3	0	0	6-19	53.0	-	14.4
Hy Performer HY 9899V	116	130	113	1.3	1.5	1.0	6-20	55.8	-	15.0
Mycogen 8460	115	135	120	2.0	3.0	3.0	6-23	54.3	-	15.9
Dekalb DK 683	114	138	127	0.7	1.0	1.0	6-20	55.5	-	14.6
Hy Performer HY 9919V	112	127	107	0.7	0.5	0	6-20	53.6	-	15.0
Pioneer 3167 *	-	133	107	-	0.5	0	6-22	53.5	-	15.6
Dekalb DK 687	-	-	121	-	-	0	6-20	55.7	-	15.3
Greenwood 830	-	-	118	-	-	0	6-25	55.1	-	16.6
AgraTech 787 *	-	-	114	-	-	1.0	6-21	55.3	-	14.6
Terra E 1186	-	-	113	-	-	1.0	6-17	56.5	-	15.2
Dekalb DK 706	-	-	113	-	-	2.0	6-20	54.8	-	15.5
AgraTech 967	-	-	104	-	-	0	6-17	53.7	-	15.3
Greenwood 810	-	-	96	-	-	1.0	6-25	58.3	-	16.7
Test Average			*113.7*							
L.S.D. (.05)			*17.4*							
C.V. (%)			*10.7*							

* Standard hybrids for comparison.
** 1= Excellent; 5= Very Poor.
*** Marion Junction.

Table 13. Two- and Three-Year Yield and Lodging Averages for Yellow Corn for Southern Alabama,** 1995-97

Brand Name-Hybrid	Yield Per Acre, Av.		Lodged Stalks, Av.	
	3-yr. 1995-97	2-yr. 1996-97	3-yr. 1995-97	2-yr. 1996-97
	Bu.	*Bu.*	*Pct.*	*Pct.*
Pioneer 3223	132	143	4.1	1.1
Dekalb DK 683	128	138	4.1	0.9
Hy Performer HS9843	127	135	4.3	0.3
Pioneer 3163 *	127	142	5.9	1.8
Hy Performer HS 9944	122	134	5.2	1.3
Dekalb DK 706	122	132	4.9	0.4
Funk's DG 5516	121	132	2.7	0.7
AgraTech 888	119	126	4.7	1.1
Terra TR702E	117	128	3.6	0.8
Hy Performer HY 9899V	116	124	7.6	3.0
Terra TR 1185	115	123	7.7	3.7
Pioneer 3167 *	114	125	6.2	1.3
Dekalb DK 687	-	145	-	0.9
Pioneer 3260	-	140	-	1.4
Funk's DG 5670	-	122	-	3.5

* Standard hybrids for comparison.
** Fairhope, Brewton, Monroeville, and Headland.

Table 14. 1997 Yield of Corn Hybrids by Location and Regional Averages of Hybrid Characteristics in Southern Alabama

Brand Name-Hybrid	Fairhope†	Brewton	Monroeville††	Headland	1997 Regional Averages					
					Yield Per Acre	Lodged Stalks	Test Weight	Mid-Silk	Husk** Cover	Harvest Moisture
	Bu.	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Pct.*	*Lb./Bu.*	*Mo.-Da.*	*Rating*	*Pct.*
Dekalb DK 687	144	143	170	191	162	1.3	58.0	6-7	1	19.0
Pioneer 3260	139	133	191	156	155	1.3	59.7	6-6	2	19.7
Pioneer 3223	127	121	179	173	150	1.7	58.9	6-5	2	18.1
AgraTech ATX770	123	121	176	179	150	0.7	56.1	6-7	2	17.9
Funk's DG 5516	118	117	177	182	148	0.3	57.5	6-5	2	17.7
HyPerformer AP 9707	114	129	184	164	148	2.3	58.4	6-6	2	17.3
Dekalb DK 683	104	141	171	175	148	1.0	58.1	6-8	1	18.4
Pioneer 3163 *	113	121	178	176	147	2.3	57.4	6-6	2	18.6
Terra TR 1154	110	130	180	163	146	1.0	56.7	6-4	2	17.3
AgraTech ATX999	123	117	168	167	144	1.7	55.6	6-9	1	19.5
Dekalb DK 706	97	135	176	163	143	0.3	58.9	6-6	2	20.2
Funk's 5510A	115	121	170	164	143	1.7	55.3	6-5	2	19.8
Terra E 1176	119	117	164	164	141	0.7	59.3	6-4	2	18.7
Pioneer 32K61	139	125	154	142	140	0.3	61.1	6-6	2	18.7
Hy Performer HS9843	98	123	174	154	137	0.3	56.8	6-5	2	17.7
Hy Performer HS 9944	73	122	160	177	133	1.7	58.2	6-6	2	19.7
Terra TR702E	79	113	167	165	131	0.7	58.2	6-7	2	20.9
Terra TR 1185	90	101	166	163	130	1.7	57.2	6-6	2	21.1
AgraTech 888	92	121	155	150	129	1.7	58.6	6-7	2	19.9
Pioneer 3167 *	93	98	170	156	129	0.7	57.9	6-8	2	19.8
Mycogen 8460	68	100	169	166	126	3.0	56.1	6-8	2	20.8
Hy Performer HY 9899V	76	110	161	156	126	2.7	57.9	6-5	2	20.5
Funk's DG 5670	70	97	162	158	122	2.7	57.4	6-6	2	21.5
Test Average	*105.3*	*119.8*	*170.5*	*165.1*						
L.S.D. (.05)	*22.4*	*13.5*	*14.7*	*24.1*						
C.V. (%)	*15.0*	*8.0*	*6.1*	*10.3*						

* Standard hybrids for comparison.

** 1= Excellent; 5= Very Poor.

† Fairhope had severe lodging across all plots due to Hurricane Danny. No data was recorded for lodging and husk cover. Combine harvested approximately 80-85% of downed corn. Yields were adversly affected by the storm.

†† Monroeville reported a moderate incidence of "Buggy Whip" in most all plots which may have reduced yields.

Table 15. Irrigated Corn Hybrid Performance and Characteristics, Headland, Alabama, 1995-97***

Brand Name-Hybrid	Yield Per Acre, Av.			Lodged Stalks, Av.			1997			
	3-yr. 1995-97	2-yr. 1996-97	1997	3-yr. 1995-97	2-yr. 1996-97	1997	Midsilk	Test Weight	Husk** Cover	Harvest Moisture
	Bu.	*Bu.*	*Bu.*	*Pct.*	*Pct.*	*Pct.*	*Mo.-Da.*	*Lb./Bu.*	*Rating*	*Pct.*
Pioneer 3223	183	181	179	2.0	2.5	2.0	5-27	57.0	2	13.4
Funk's DG 5516	182	176	185	1.3	1.5	3.0	5-30	57.9	3	13.4
Dekalb DK 683	181	181	184	1.7	2.5	3.0	6-4	57.3	2	13.4
Hy Performer HS9843	180	174	166	2.0	2.0	4.0	5-30	57.7	2	13.4
Hy Performer HY 9899V	177	179	162	2.3	2.0	4.0	5-25	57.7	3	13.4
Dekalb DK 706	177	173	172	2.7	2.0	3.0	6-1	59.3	3	13.4
AgraTech 888	176	176	187	1.3	1.0	2.0	6-6	59.4	2	13.4
Terra TR702E	175	174	169	2.0	3.0	2.0	5-30	58.1	3	13.4
Pioneer 3163 *	175	175	173	2.0	1.0	1.0	6-2	56.5	3	13.4
Terra TR 1185	173	172	154	2.0	1.0	2.0	5-29	56.4	2	13.4
Hy Performer HS 9944	170	166	178	2.3	2.5	3.0	6-2	58.3	2	13.4
Pioneer 3167 *	161	151	157	2.3	1.0	2.0	6-4	58.1	2	13.4
Dekalb DK 687	-	174	176	-	0.5	0	6-2	56.9	2	13.4
Funk's DG 5670	-	163	137	-	4.0	7.0	6-6	57.1	2	13.4
Pioneer 3260	-	162	168	-	2.0	3.0	5-27	58.0	2	13.4
HyPerformer AP 9707	-	-	188	-	-	2.0	5-30	56.4	3	13.4
Terra TR 1154	-	-	179	-	-	6.0	5-26	56.7	2	13.4
AgraTech ATX770	-	-	169	-	-	1.0	5-27	56.4	2	13.4
Pioneer 32K61	-	-	169	-	-	2.0	5-26	59.2	3	13.4
Funk's 5510A	-	-	164	-	-	2.0	5-30	55.2	2	13.4
Terra E 1176	-	-	161	-	-	4.0	5-26	57.4	2	13.4
AgraTech ATX999	-	-	156	-	-	2.0	6-4	55.9	2	13.4
Mycogen 8460	-	-	145	-	-	0	6-6	55.4	3	13.4
Test Average			*168.5*							
L.S.D. (.05)			*28.3*							
C.V. (%)			*11.9*							

* Standard hybrids for comparison.

** 1= Excellent; 5= Very Poor.

*** The test received approximately 5.0 inches of irrigation water in 4 applications in May and June.

Table 16. Early Corn Hybrid Test, Southern Alabama,*** 1995-97

Brand Name-Hybrid	Yield Per Acre, Av.			Lodged Stalks, Av.			1997			
	3-yr. 1995-97	2-yr. 1996-97	1997	3-yr. 1995-97	2-yr. 1996-97	1997	Midsilk	Test Weight	Husk** Cover	Harvest Moisture
	Bu.	*Bu.*	*Bu.*	*Pct.*	*Pct.*	*Pct.*	*Mo./Da.*	*Lb./Bu.*	*Rating*	*Pct.*
Zimmerman Z41	139	145	149	-	-	-	5-22	53.7	-	18.9
AgraTech 787 *	137	128	125	-	-	-	5-25	52.7	-	20.6
Funk's 5510A	137	141	142	-	-	-	5-26	50.9	-	24.7
Pioneer 3245 *	135	122	116	-	-	-	5-25	56.6	-	24.8
Pioneer 3394	135	135	136	-	-	-	5-22	53.5	-	19.1
Zimmerman Z37	-	146	155	-	-	-	5-24	55.8	-	22.3
Zimmerman Z39	-	-	150	-	-	-	5-23	53.2	-	21.3
Terra TR 1136	-	-	142	-	-	-	5-23	52.0	-	19.8
Terra TR 1106	-	-	136	-	-	-	5-23	52.5	-	19.0
AgraTech ATX721	-	-	130	-	-	-	5-23	51.9	-	18.5
Test Average			*137.8*							
L.S.D. (.05)			*18.4*							
C.V. (%)			*9.2*							

* Standard Mid to Late Season Hybrids.

** 1= Excellent; 5= Very Poor.

*** Fairhope. Severe lodging across all plots due to Hurricane Danny. No data recorded for lodging and husk cover. Combine harvested approximately 80-85% of downed corn. Yields were adversly affected by the storm.

Table 17. Characteristics of Corn Hybrids Tested One Year in Preliminary Test at Fairhope in Southern Alabama†, 1997

Brand Name-Hybrid	Av. Yield Per Acre	Lodged Stalks	Husk** Cover	Midsilk	Test Weight	Harvest Moisture
	Bu.	*Pct.*	*Rating*	*Mo.-Da.*	*Lb./Bu.*	*Pct.*
HyPerformer HY 9646	126	-	-	6-9	50.1	21.9
Pioneer 3163 *	97	-	-	6-9	51.3	26.5
Terra E 1186	97	-	-	6-9	51.8	22.9
Greenwood 4701	96	-	-	6-16	48.2	27.7
Pioneer 3245 *	94	-	-	6-8	52.0	25.7
AgriPro AP 9909	91	-	-	6-9	54.1	24.0
Funk's 5688	90	-	-	6-11	49.8	29.5
Greenwood 835	88	-	-	6-16	50.2	29.6
Mycogen 2815	85	-	-	6-6	52.7	22.3
AgraTech EX6890	80	-	-	6-9	50.2	28.8
AgraTech EX6714	79	-	-	6-10	50.0	24.3
Pioneer 3167 *	74	-	-	6-10	49.4	21.2
Test Average	*91.1*					
L.S.D. (.05)	*19.1*					
C.V. (%)	*14.5*					

* Standard Hybrids for Comparison.

** 1= Excellent; 5= Very Poor.

† Fairhope had severe lodging across all plots due to Hurricane Danny. No data was recorded for lodging and husk cover. Combine harvested approximately 80-85% of downed corn. Yields were adversly affected by the storm.

TABLE 18. GROWING SEASON RAINFALL, 1995-97

Test location	Year	Monthly rainfall (inches)							7-month total
		Mar.	Apr.	May	June	July	Aug.	Sept.	
Belle Mina	1997	5.4	4.0	3.6	6.5	1.7	4.0	5.9	31.1
	1996	7.1	5.5	1.7	3.3	4.3	4.7	8.1	34.7
	1995	3.6	4.8	1.8	2.7	3.0	3.7	7.6	27.2
Crossville	1997	6.6	5.4	8.6	8.3	3.3	2.4	7.5	42.1
	1996	8.5	4.2	2.8	2.3	5.6	6.6	6.3	36.3
	1995	4.4	4.2	1.5	3.4	2.5	7.8	4.1	27.9
Winfield	1997	3.8	3.9	11.7	10.2	4.4	3.6	1.5	39.1
	1996	4.8	6.4	1.9	3.8	10.4	3.9	7.6	38.8
	1995	6.2	9.2	1.9	1.7	7.8	4.8	2.4	34.0
Tallassee	1997	1.5	7.7	5.2	8.7	2.1	3.4	4.5	33.1
	1996	8.7	3.6	3.3	1.8	7.6	5.8	7.5	38.3
	1995	3.7	3.6	1.3	1.8	1.9	2.7	4.4	19.4
Shorter	1997	2.2	7.0	3.5	5.5	2.4	3.9	3.3	27.8
	1996	8.6	4.6	4.4	2.4	8.9	6.4	7.4	42.7
	1995	4.6	4.2	1.2	1.8	1.5	1.9	6.3	21.5
Prattville	1997	3.0	6.0	3.3	6.8	3.0	3.4	2.2	27.7
	1996	11.1	3.6	5.1	3.3	8.0	7.3	7.4	45.8
	1995	4.0	4.3	2.0	2.2	1.4	2.3	2.8	19.0
Marion Junction	1997	2.5	7.8	4.8	12.5	5.2	1.6	4.3	38.7
	1996	10.3	2.7	2.7	6.4	8.3	3.3	4.4	38.1
	1995	5.9	5.4	1.3	1.4	1.4	5.3	6.4	27.1
Camden	1997	2.5	8.5	7.9	1.8	2.8	2.0	0.2	25.7
	1996	12.3	3.8	3.9	4.7	10.3	6.0	3.0	44.0
	1995	4.9	4.2	4.3	1.0	3.6	6.3	1.4	25.7
Monroeville	1997	2.5	6.0	7.6	5.5	2.7	1.7	0.8	26.8
	1996	7.8	5.7	2.3	4.1	4.7	5.5	7.2	37.3
	1995	4.2	5.1	4.4	1.0	7.4	10.2	0.8	32.4
Brewton	1997	4.1	7.3	4.2	6.1	2.5	2.6	1.8	28.6
	1996	11.1	8.9	1.6	8.0	9.1	12.0	5.4	56.1
	1995	8.3	7.5	8.3	2.9	7.9	10.1	1.9	46.8
Fairhope	1997	3.8	6.3	8.0	5.9	28.6	1.3	1.3	55.2
	1996	10.2	11.7	0.5	7.4	6.6	6.0	7.7	50.1
	1995	10.0	6.7	6.0	4.5	8.7	9.6	3.1	48.6
Headland	1997	2.6	5.2	4.1	5.6	4.8	2.3	3.3	27.9
	1996	6.9	4.7	2.2	2.9	3.6	13.3	11.6	45.2
	1995	5.2	4.5	2.8	3.8	5.3	5.2	1.7	28.5

TABLE 19. SOIL TYPES FOR CORN TRIALS, 1997

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 *1997* CORN HYBRID TEST SEED

AgraTech Seed, Inc.
5559 N. 500 W.
McCordsville, IN 46055
AgraTech

DEKALB Genetics Corp.
3100 Sycamore Road
DeKalb, IL 60115
Dekalb

Dixie Ag. Supply
P.O. Box 534
Athens, AL 35611
Funk's

Greenwood Hybrids
8431 Davis Road
Laurel Hill, FL 32567
Greenwood

Hy Performer Seed Co.
One HY Crop Row
Memphis, TN 38120
Hy Performer
AgriPro

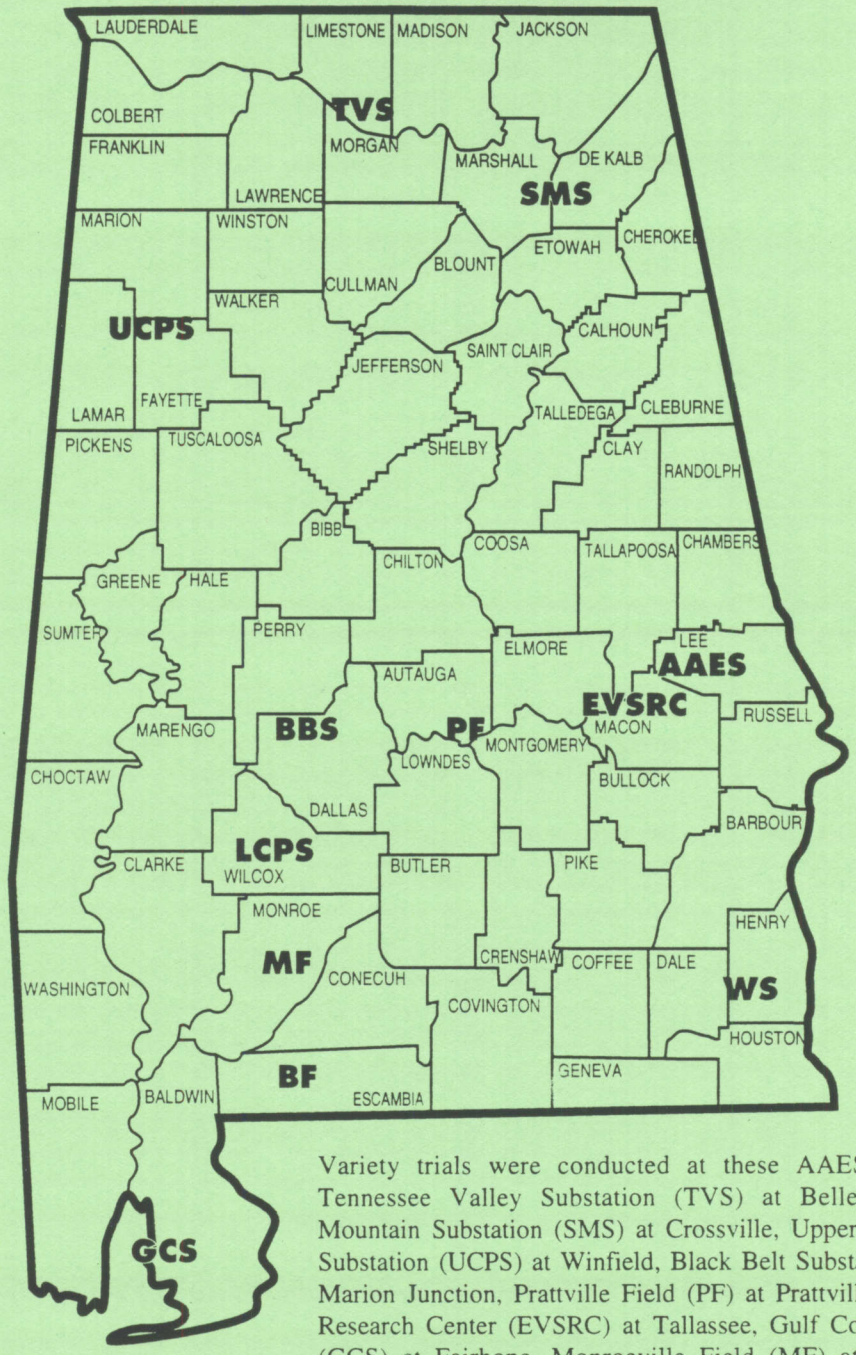
Mycogen Plant Sciences
3600 N. Columbia
Plainview, TX 79072
Mycogen

Pioneer Hi-Bred Int.
6767 Old Madison Pike
Huntsville, AL 35806
Pioneer

Terra International, Inc.
P.O. Box 6000
Sioux City, IA 51102
Terra

Zimmerman Hybrids, Inc.
5147 W. Franklin Rd.
Evansville, IN 47712
Zimmerman

Location of Participating Research Units



Variety trials were conducted at these AAES substations: Tennessee Valley Substation (TVS) at Belle Mina, Sand Mountain Substation (SMS) at Crossville, Upper Coastal Plain Substation (UCPS) at Winfield, Black Belt Substation (BBS) at Marion Junction, Prattville Field (PF) at Prattville, E.V. Smith Research Center (EVSRC) at Tallassee, Gulf Coast Substation (GCS) at Fairhope, Monroeville Field (MF) at Monroeville, Wiregrass Substation (WS) at Headland, Brewton Experiment Field (BF) at Brewton, and Lower Coastal Plain Substation (LCPS) at Camden. Without the commitment of the substation personnel, results presented in this report would not have been presented in a timely manner.