Performance of Field Corn Hybrids

In Alabama, 2016

Feed grinder in Opelika 1925
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Dr. John Beasley, Dept. Head

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Dr. Paul Patterson, Director Ala. Agric. Exp. Station

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Performance of Field Corn Hybrids in Alabama, 2016

K. M. Glass, C. D. Monks, D. P. Delaney, and J. Brasher[1]

[1]Agric. Program Assoc.; Prof. & Crops Agronomist; Ext. Agronomist; and Field & Media Research Coordinator II, resp.

Dept. of Crop, Soil & Environmental Sciences, Auburn University, AL 36849

"The mission of the Alabama Variety Testing Program is to provide research-based, unbiased results on the performance of various crop hybrids, cultivars, and varieties to the agricultural community in our state. We are intent on conducting these trials in a manner that will result in maximum biological yield through methods common to the top-producing farms in Alabama. We are committed to providing this information in a rapid, timely manner for its use during the decision-making process. The success of the program rests upon our ability to help Alabama producers provide a safe, dependable source of food and fiber for all families as well as economic sustainability for theirs."

Field corn hybrids were evaluated in 2016 by the Alabama Agricultural Experiment Station as a service to producers, crop advisors, and industry. Field trials on corn hybrid performance were conducted on experiment stations throughout the state to evaluate yield performance under different climatic factors and soil types. Non-irrigated, conventional tillage trials were conducted at two locations in the northern region, two locations in the central region, and two locations in the southern region. The non-irrigated location at E.V. Smith Field Crops Unit in central Alabama was "no-till". In addition, an irrigated, conventional tillage corn hybrid test was conducted in the northern region at Belle Mina (TVREC), and in the central region at Prattville (PARU).

Methods

Field trials at all locations were conducted with hybrids arranged in a "randomized complete block design" with four replications. Plots were 2, 30- or 36-inch wide rows that were 20 to 30 feet long, according to the location (Table 1). Planting rate was 28,000 or 32,000 seeds/acre. The entire plot was machine-harvested for yield and grain moisture content recorded. Grain yields were adjusted to 15.5% moisture and converted to yield (bushels/acre). No significant lodging was noted at any location.

Tables

Abbreviations: REC, Research and Extension Center; ARU, Agricultural Research Unit

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2016 Field Corn Hybrid Yield Performance

Table 1. Locations and Cultural Practices for the 2016 Corn Hybrid Trials

Location	Planting date	Nitrogen rate *	Plant pop.	Date harvested	Herbicides used
		(lbs/ac)	(seeds/ac)		
North Alabama					
Tennessee Valley REC (Belle Mina)					
Regular test (Non-Irrigated)	April 5	175	28,000	September 6	Atrazine/Dual
Regular test (Irrigated) 8.9 inches total	April 5	250	32,000	September 12	Atrazine/Dual
Sand Mountain REC (Crossville)					
Regular test	April 19	120	28,000	September 14	Atrazine/Dual
Central Alabama					
E.V. Smith Research Center (Shorter)					
No-till test	April 11	140	32,000	August 29	Atrazine/Dual
Prattville Agricultural Res. Unit (Prattville)					
Regular test (Non-Irrigated)	April 5	120	28,000	Not harvested	Atrazine/Dual
Regular test (Irrigated) 3.1 inches total	April 5	250	32,000	September 8	Atrazine/Dual
South Alabama					
Brewton Agricultural Res. Unit (Brewton)					
Regular test	April 6	180	28,000	August 26	Atrazine/Dual
Gulf Coast REC (Fairhope)					
Regular test (Non-Irrigated)	April 6	150	28,000	August 22	Atrazine/Dual
Regular test (Irrigated) 4.0 inches total	April 6	200	32,000	August 22	Atrazine/Dual

* Lime, phosphorus, potassium, zinc, and sulfur were applied according to soil test recommendations.

Table 2. Performance of Non-Irrigated Field Corn Hybrids in North Alabama, 2016

Tennessee Valley Research & Extension Center - Belle Mina, AL

Yield rank	Hybrid	Yield bushels/acre	Test weight
1	Mycogen 2D848	66	61.4
2	Mycogen X14730VH	59	60.6
3	Mycogen X13813VH	57	58.5
4	AgriGold A6572VT2PRO	56	61.3
5	Terral REV 18BHR84	52	58.7
6	Dekalb DKC 64-35	52	61.1
7	Augusta 7766VT2PRO	50	59.7
8	DynaGro D 54DC94	50	60.2
9	DynaGro D54VC52	49	60.3
10	Dekalb DKC 67-44	49	60.6
11	TA 787-30	47	59.5
12	Mycogen 2C786	44	57.0
13	AgriGold A6719VT2PRO	44	62.6
14	Augusta A7767VT2PRO	43	60.3
15	Augusta A7768GT3110	42	58.3
16	AgriGold A6711VT2PRO	41	61.5
17	DynaGro D 57VP51	40	59.4
18	Dekalb DKC 66-75	38	59.9
19	Mycogen 2C797	38	59.8
20	AgriGold A6659VT2RIB	38	60.1
21	Mycogen X13823S3	37	59.2
22	TA 774-22DPRIB	36	60.4
23	DynaGro D 57VP75	36	60.0
24	AgriGold A6559VT2RIB	35	59.9
25	AgriGold A6499VT2RIB	35	60.8
26	Dekalb DKC 70-27	34	61.1
27	Mycogen X14677S2	34	58.7
28	AgriGold A6652VT2PRO	34	59.7
29	Syngenta NK N68K-3111A	33	53.8
30	Terral REV 24BHR93	32	61.7
31	Terral REV 25BHR26	32	62.4
32	Terral REV 26BHR50	32	61.7
33	Syngenta NK N69D-3000GT	30	58.9
34	Terral REV 23BHR55	30	59.8
35	AgriGold A6687VT2PRO	29	61.1
36	AgriGold A6544VT2PRO	28	59.3
37	Terral-REV 28HR20	27	61.8
38	TA 765-30	15	60.7
	Grand mean	**40**	
	CV (%)	**21**	
	Pr>F	**0.0001**	
	LSD (0.10)	**10**	

Table 3. Performance of Irrigated Field Corn Hybrids in North Alabama, 2016

Tennessee Valley Research & Extension Center - Belle Mina, AL

Yield rank	Hybrid	Yield bushels/acre	Test weight
1	Dekalb DKC 67-44	255	62.0
2	Terral REV 25BHR26	247	62.6
3	DynaGro D 54DC94	241	59.8
4	Dekalb DKC 66-75	241	60.2
5	Augusta A7767VT2PRO	238	60.6
6	AgriGold A6719VT2PRO	238	62.2
7	AgriGold A6652VT2PRO	237	59.1
8	TA 787-30	236	60.6
9	Terral REV 26BHR50	231	63.5
10	Augusta A7768GT3110	231	61.1
11	AgriGold A6559VT2RIB	229	61.8
12	AgriGold A6659VT2RIB	229	61.6
13	AgriGold A6544VT2PRO	229	60.4
14	AgriGold A6572VT2PRO	228	62.2
15	Syngenta NK N69D-3000GT	228	61.2
16	DynaGro D 57VP51	227	61.6
17	Terral REV 23BHR55	224	60.1
18	Mycogen X13813VH	222	59.2
19	Terral REV 24BHR93	221	61.4
20	Mycogen X14730VH	221	60.3
21	TA 765-30	220	62.5
22	Terral REV 18BHR84	220	60.0
23	Mycogen X14677S2	220	59.5
24	AgriGold A6711VT2PRO	220	61.3
25	Dekalb DKC 64-35	219	61.3
26	AgriGold A6499VT2RIB	214	62.1
27	Augusta 7766VT2PRO	212	60.0
28	Mycogen 2C797	212	60.0
29	Mycogen 2C786	211	59.6
30	TA 774-22DPRIB	209	60.7
31	Terral-REV 28HR20	205	62.2
32	Dekalb DKC 70-27	204	61.4
33	DynaGro D 57VP75	204	60.0
34	Mycogen 2D848	204	61.5
35	DynaGro D54VC52	202	61.1
36	AgriGold A6687VT2PRO	198	61.7
37	Mycogen X13823S3	196	61.2
38	Syngenta NK N68K-3111A	192	55.6
	Grand mean	**222**	
	CV (%)	**9.3**	
	Pr>F	**0.0020**	
	LSD (0.10)	**24**	

Table 4. Performance of Non-Irrigated Field Corn Hybrids in Northeast Alabama, 2016

Sand Mountain Research & Extension Center - Crossville, AL

Yield rank	Hybrid	Yield bushels/acre	Test weight
1	Mycogen X14730VH	155	55.7
2	AgriGold A6711VT2PRO	140	57.7
3	TA 787-30	138	58.3
4	AgriGold A6572VT2PRO	134	59.7
5	DynaGro D 54DC94	132	57.3
6	Mycogen 2D848	132	58.5
7	Dekalb DKC 66-75	131	58.1
8	TA 774-22DPRIB	131	58.5
9	AgriGold A6499VT2RIB	129	58.7
10	DynaGro D 57VP51	129	57.6
11	Mycogen 2C786	129	55.9
12	AgriGold A6544VT2PRO	128	57.5
13	Augusta 7766VT2PRO	127	57.3
14	Dekalb DKC 70-27	127	58.5
15	Mycogen X13813VH	126	55.9
16	Augusta A7768GT3110	126	57.2
17	Dekalb DKC 67-44	126	59.0
18	AgriGold A6719VT2PRO	126	58.9
19	Dekalb DKC 64-35	125	59.1
20	Terral REV 25BHR26	122	59.9
21	AgriGold A6659VT2RIB	122	57.8
22	DynaGro D 57VP75	122	58.0
23	Mycogen X13823S3	120	57.1
24	Mycogen 2C797	120	56.6
25	Mycogen X14677S2	120	54.6
26	DynaGro D54VC52	119	58.5
27	AgriGold A6687VT2PRO	118	59.1
28	Augusta A7767VT2PRO	118	58.6
29	Terral REV 18BHR84	117	55.5
30	Syngenta NK N68K-3111A	116	51.5
31	AgriGold A6652VT2PRO	110	55.8
32	Terral REV 26BHR50	109	59.7
33	Terral REV 23BHR55	107	56.9
34	AgriGold A6559VT2RIB	107	58.1
35	Terral-REV 28HR20	103	59.7
36	Terral REV 24BHR93	103	58.2
37	TA 765-30	103	59.9
38	Syngenta NK N69D-3000GT	96	56.5
	Grand mean	**122**	
	CV (%)	**9.7**	
	Pr>F	**0.0001**	
	LSD (0.10)	**14**	

Table 5. Performance of Non-Irrigated Field Corn Hybrids in Central Alabama, 2016

E.V. Smith Research & Extension Center - Shorter, AL

There was no data reported for this location in the non-irrigated test due to poor yields resulting from drought conditions.

Table 6. Performance of Non-Irrigated Field Corn Hybrids in Central Alabama, 2016

Prattville Agricultural Research Unit - Prattville, AL

There was no data reported for this location in the non-irrigated test due to poor stand and drought conditions.

Table 7. Performance of Irrigated Field Corn Hybrids in Central Alabama, 2016

Prattville Agricultural Research Unit - Prattville, AL

Yield rank	Hybrid	Yield bushels/acre	Test weight
1	AgriGold A6711VT2PRO	192	57.3
2	AgriGold A6499VT2RIB	190	59.1
3	Mycogen X14730VH	186	54.5
4	Terral REV 23BHR55	183	54.0
5	Mycogen 2D848	174	57.8
6	DynaGro D 54DC94	174	55.8
7	Augusta A5565VT2PRO	169	57.9
8	TA 765-30	168	57.8
9	Syngenta NK N68K-3111A	168	51.1
10	TA 774-22DPRIB	167	56.2
11	DynaGro D 57VP75	167	55.3
12	Augusta A7768GT3110	167	57.1
13	AgriGold A6544VT2PRO	166	56.8
14	AgriGold A6572VT2PRO	165	55.8
15	AgriGold A6652VT2PRO	165	55.3
16	Terral REV 26BHR50	164	58.2
17	DynaGro D 57VP51	162	55.6
18	AgriGold A6559VT2RIB	161	58.2
19	AgriGold A6687VT2PRO	161	57.0
20	Dekalb DKC 66-75	161	55.0
21	Mycogen X13813VH	161	52.6
22	Syngenta NK N69D-3000GT	160	55.5
23	Mycogen 2C797	160	57.0
24	Augusta 7766VT2PRO	159	57.1
25	Dekalb DKC 64-35	158	57.7
26	Mycogen X13823S3	157	54.0
27	Mycogen 2C786	156	55.1
28	Terral REV 25BHR26	155	58.1
29	DynaGro D54VC52	149	55.6
30	AgriGold A6719VT2PRO	142	55.1
31	Dekalb DKC 67-44	142	56.4
32	AgriGold A6659VT2RIB	141	55.6
33	Dekalb DKC 70-27	140	55.5
34	Terral-REV 28HR20	139	55.8
35	TA 787-30	129	57.6
36	Mycogen X14677S2	128	52.5
	Grand mean	**161**	
	CV (%)	**16.4**	
	Pr>F	**0.1533**	
	LSD (0.10)	**31**	

Table 8. Performance of Non-Irrigated Field Corn Hybrids in South Central Alabama, 2016

Brewton Agricultural Research Unit - Brewton, AL

Yield rank	Hybrid	Yield bushels/acre	Test weight
1	Mycogen 2D848	174	54.3
2	Dekalb DKC 67-44	171	56.3
3	Mycogen X13813VH	164	55.3
4	Augusta A7768GT3110	158	54.5
5	TA 765-30	158	55.4
6	Augusta 7766VT2PRO	157	55.6
7	Dekalb DKC 70-27	156	54.1
8	Mycogen X14730VH	155	55.2
9	TA 774-22DPRIB	155	55.1
10	DynaGro D 57VP51	155	55.2
11	Terral REV 26BHR50	152	55.0
12	DynaGro D58VC65	152	55.7
13	Mycogen X14677S2	152	56.3
14	Mycogen 2C797	151	56.0
15	Dekalb DKC 66-75	150	55.8
16	Terral-REV 28HR20	149	54.3
17	Mycogen 2C786	144	55.9
18	Terral REV 25BHR26	140	55.7
19	Mycogen X13823S3	140	54.6
20	Terral REV 23BHR55	140	56.3
21	TA 787-30	139	54.0
22	Dekalb DKC 64-35	135	56.2
23	Syngenta NK N69D-3000GT	135	55.8
24	Syngenta NK N68K-3111A	130	55.8
	Grand mean	**151**	
	CV (%)	**9.4**	
	Pr>F	**0.0020**	
	LSD (0.10)	**17**	

Table 9. Performance of Non-Irrigated Field Corn Hybrids in Southwest Alabama, 2016

Gulf Coast Research & Extension Center - Fairhope, AL

Yield rank	Hybrid	Yield bushels/acre	Test weight
1	Mycogen X13813VH	199	56.2
2	Dekalb DKC 67-44	197	55.8
3	DynaGro D 57VP51	197	56.6
4	DynaGro D58VC65	199	55.8
5	Mycogen X14730VH	195	55.7
6	Dekalb DKC 66-75	192	56.5
7	Dekalb DKC 70-27	192	55.3
8	Augusta A7768GT3110	185	56.7
9	Terral REV 23BHR55	185	57.2
10	TA 774-22DPRIB	184	56.2
11	Terral-REV 28HR20	184	55.9
12	Augusta 7766VT2PRO	188	56.0
13	Mycogen X14677S2	185	57.2
14	Mycogen X13823S3	183	56.4
15	Terral REV 26BHR50	181	55.9
16	Mycogen 2D848	184	54.9
17	Mycogen 2C797	180	56.6
18	TA 765-30	177	56.8
19	Terral REV 25BHR26	172	57.2
20	Syngenta NK N68K-3111A	177	56.7
21	TA 787-30	173	53.8
22	Mycogen 2C786	171	56.7
23	Dekalb DKC 64-35	164	57.0
24	Syngenta NK N69D-3000GT	159	57.7
	Grand mean	**184**	
	CV (%)	**5**	
	Pr>F	**0.0001**	
	LSD (0.10)	**13**	

Table 10. Performance of Irrigated Field Corn Hybrids in Southwest Alabama, 2016

Gulf Coast Research & Extension Center - Fairhope, AL

Yield rank	Hybrid	Yield bushels/acre	Test weight
1	Terral REV 26BHR50	257	55.1
2	Dekalb DKC 70-27	251	55.1
3	Dekalb DKC 67-44	249	56.6
4	Terral-REV 28HR20	246	55.8
5	DynaGro D58VC65	242	56.9
6	DynaGro D 57VP51	239	56.2
7	TA 765-30	239	56.2
8	Augusta 7766VT2PRO	239	55.8
9	Terral REV 25BHR26	236	56.5
10	Mycogen X14730VH	236	55.3
11	Terral REV 23BHR55	234	56.5
12	Mycogen 2D848	233	54.9
13	Mycogen X13813VH	232	55.8
14	Mycogen 2C797	231	56.2
15	Mycogen X14677S2	228	56.7
16	Dekalb DKC 66-75	228	56.4
17	Dekalb DKC 64-35	220	56.9
18	TA 787-30	217	54.5
19	Syngenta NK N69D-3000GT	215	56.1
20	Mycogen X13823S3	214	55.9
21	TA 774-22DPRIB	211	56.4
22	Mycogen 2C786	206	56.4
23	Syngenta NK N68K-3111A	206	56.5
24	Augusta A7768GT3110	201	54.9
	Grand mean	**230**	
	CV (%)	**8.1**	
	Pr>F	**0.0008**	
	LSD (0.10)	**22**	

Table 11. 2016 Rainfall Measurements at Alabama Research Sites

		Monthly rainfall in inches							7-month
Location	Year	Mar.	Apr.	May	June	July	Aug.	Sept.	total
Belle Mina									
	2016	3.2	3.8	1.6	1.9	3.1	6.6	0.2	20.4
	2015	5.7	8.4	5.0	4.1	4.7	7.9	1.6	37.4
	2014	2.7	6.1	2.7	6.9	4.6	2.1	1.3	26.4
Crossville									
	2016	4.0	3.6	2.9	3.0	4.7	2.7	1.2	22.1
	2015	3.9	8.3	2.4	1.5	4.9	7.7	1.9	30.6
	2014	3.9	8.9	3.7	5.8	6.8	1.8	1.6	32.5
Shorter									
	2016	5.6	8.6	1.7	2.6	4.4	3.9	1.2	28.0
	2015	1.7	4.9	8.0	4.5	4.8	4.4	1.4	29.7
	2014	6.0	9.6	6.2	6.0	3.9	2.5	2.0	36.2
Prattville									
	2016	3.2	12.1	2.1	4.2	1.3	5.3	1.4	29.6
	2015	4.2	5.5	4.6	6.8	7.9	3.0	3.1	35.1
	2014	6.8	8.0	5.2	4.2	4.4	4.1	2.5	35.2
Brewton									
	2016	8.2	11.2	3.9	3.9	7.4	5.8	2.9	43.3
	2015	2.4	5.9	5.6	2.9	7.9	4.9	3.9	33.5
	2014	9.3	11.9	8.1	8.3	7.5	6.7	4.4	56.2
Fairhope									
	2016	10.1	6.7	2.9	4.4	5.1	7.9	4.1	41.2
	2015	7.2	10.5	2.7	4.9	6.7	5.4	3.6	41.0
	2014	8.5	27.0	8.2	8.7	6.4	1.7	5.8	66.3

Table 12. Soil Types for Corn trials, 2016

Trial Location	Soil Type
North	
Belle Mina	Decatur silt loam
Crossville	Wynnville fine sandy loam
Central	
Shorter	Norfolk sandy loam
Prattville	Lucedale fine sandy loam
South	
Brewton	Benndale fine sandy loam
Fairhope	Malbis fine sandy loam

Table 13. Sources of 2016 Corn Hybrid Trial Seed

Seed Company	Brand	Seed Company	Brand
AgriGold Hybrids	AgriGold	Mycogen Seeds	Mycogen
5381 Akin Road		253 Avondale Road	
St. Francisville, IL 62460		Greenville, MS 38703	
Augusta Seed	Augusta	Syngenta NK Brand Seed	NK
P.O. Box 899		215 Seville Place	
Verona, VA 24482		Starkville, MS 39756	
Crop Production Services	DynaGro	T.A. Seeds	TA
720 Hwy 52 South		39 Seeds Lane	
Kinston, AL 36453		Jersey Shore, PA 17740	
Monsanto Company	Dekalb DKC	Terral Seed, Inc.	REV
800 N. Lindbergh Blvd		117 Ellington Dr.	
St. Louis, MO 63167		Rayville, LA 71269	

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Alabama Agricultural Experiment Station Outlying Units Conducting Row Crop Variety Trials

Northern Region

Sand Mountain Research and Extension Center, Crossville

William Clements, Director

Clint McElmoyl, Assoc. Director

Tennessee Valley Research and Extension Center, Belle Mina

Chet Norris, Director

David Harkins, Assoc. Director

♦ ♦

Central Region

Black Belt Research and Extension Center, Marion Junction

Jamie Yeager, Director

Gene Pegues, Assoc. Director

E.V. Smith Research and Extension Center, Field Crops & Plant Breeding Unit, Tallassee

Greg Pate, Director

Shawn Scott, Assoc. Director

Jason Burkett, Assoc. Director

Prattville Agricultural Research Unit, Prattville

Don Moore, Director

♦ ♦

Southern Region

Brewton Agricultural Research Unit, Brewton

Malcomb Pegues, Director

Brad Miller, Assoc. Director

Gulf Coast Research and Extension Center, Fairhope

Malcomb Pegues, Director

Jarrod Jones, Assoc. Director

Wiregrass Research and Extension Center, Headland

Larry Wells, Director

Brian Gamble, Assoc. Director

Issued in cooperation with the Alabama Cooperative Extension System, Dr. Gary Lemme, Director