

Performance of Field Corn Hybrids In Alabama, 2019



Feed grinder in Opelika 1925

Source: Auburn University Library Archives

Dept. Series No. CSES2019: Corn
Dr. John Beasley, Dept. Head
Crop, Soil and Environmental Sciences
Dr. Paul Patterson, Director Ala. Agric. Exp. Station
Auburn University, Auburn AL
November 2019



Performance of Field Corn Hybrids in Alabama, 2019

K. M. Glass, D. P. Delaney, C. D. Monks, and J. Brasher¹

¹Agric. Program Assoc. Advisor III; Ext. Agronomist; Prof. & Crops 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 2019 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) and the southern region at Fairhope (GCREC).

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*

2019 Field Corn Hybrid Yield Performance

Table 1. Locations and cultural practices for the Alabama 2019 field corn hybrid trials.

Northern Region

Table 2. Performance of non-irrigated field corn hybrids in North Alabama, TVREC, Belle Mina

Table 3. Performance of irrigated field corn hybrids in North Alabama, TVREC, Belle Mina

Table 4. Performance of non-irrigated field corn hybrids in Northeast Alabama, SMREC, Crossville

Central Region

Table 5. Performance of no-till field corn hybrids in Central Alabama, EV Smith, Shorter

Table 6. Performance of non-irrigated field corn hybrids in Central Alabama, PARU, Prattville

Table 7. Performance of irrigated field corn hybrids in Central Alabama, PARU, Prattville

Southern Region

Table 8. Performance of non-irrigated field corn hybrids in South Alabama, BARU, Brewton

Table 9. Performance of non-irrigated field corn hybrids in Southwest Alabama, GCREC, Fairhope

Table 10. Performance of irrigated field corn hybrids in Southwest Alabama, GCREC, Fairhope

Table 11. 2019 Rainfall measurements at Alabama research sites

Table 12. Soil types for Alabama field corn trials, 2019

Table 13. Sources of 2019 Field Corn Hybrid Trials

Table 1. Locations and Cultural Practices for the 2019 Corn Hybrid Trials					
Location	Planting date	Nitrogen rate * (lbs/ac)	Plant pop. (seeds/ac)	Date harvested	Herbicides used
North Alabama					
Tennessee Valley REC (Belle Mina)					
Regular test (Non-Irrigated)	March 27	175	28,000	August 30	Atrazine/Dual
Regular test (Irrigated) 6.2 inches total	March 27	250	32,000	September 5	Atrazine/Dual
Sand Mountain REC (Crossville)					
Regular test	May 1	120	28,000	October 1	Atrazine/Dual
Central Alabama					
E.V. Smith Research Center (Shorter)					
No-till test	March 22	140	32,000	August 16	Atrazine/Dual
Prattville Agricultural Res. Unit (Prattville)					
Regular test (Non-Irrigated)	April 3	140	28,000	September 6	Atrazine/Dual
Regular test (Irrigated) 1.86 inches total	April 3	190	32,000	September 13	Atrazine/Dual
South Alabama					
Brewton Agricultural Res. Unit (Brewton)					
Regular test	March 27	175	28,000	August 29	Atrazine/Dual
Gulf Coast REC (Fairhope)					
Regular test (Non-Irrigated)	March 20	140	28,000	August 9	Atrazine/Dual
Regular test (Irrigated) 3.0 inches total	March 20	210	32,000	August 9	Atrazine/Dual

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

Table 2. Performance of Non-Irrigated Corn Hybrids in North Alabama, 2019			
Tennessee Valley Research Center - Belle Mina, AL			
Yield rank	Hybrid	Yield bu/Acre	Test weight
1	Terral REV 25BHR80	183	60.2
2	Local Seed LC1987VT2P	178	60.1
3	Bayer/Dekalb DKC 66-18GENVT2P	178	58.9
4	Terral REV 2858SXE	176	58.4
5	DynaGro D58VC65	174	60.5
6	Local Seed LC1878VT2P	173	60.4
7	AgriGold A645-16VT2PRO	172	58.2
8	Dekalb DKC 70-27GENVT2P	169	60.0
9	Bayer/Dekalb DKC 65-99TRECEPTA	167	58.7
10	Local Seed LC1577VT2P	167	60.9
11	Dyna-Gro D55VC45	166	59.3
12	Local Seed LC1776VT2P	164	60.5
13	Local Seed LC1488VT2P	163	58.8
14	Terral REV 24BHR99	163	59.6
15	Augusta A1367 DC5222 EZ	160	55.2
16	Dyna-Gro D57VC17	160	60.2
17	AgriGold A648-54STX	160	59.6
18	Terral REV 24LPR70	158	59.7
19	Terral REV 26BHR30	158	62.0
20	AgriGold A647-46VT2PRO	157	60.8
21	AgriGold A6659VT2RIB	156	59.2
22	Terral REV 28BHR18	156	60.2
23	Local Seed LC1586TC	155	60.8
24	AgriGold A6544VT2RIB	155	58.7
25	AgriGold A644-32TRCRIB	153	60.1
26	AgriGold A6572VT2RIB	147	60.4
	Grand mean	164	
	CV (%)	14	
	LSD (0.1)	NS*	
	Pr>F	0.8889	

* Due to random variation within test, yields are not statistically different.

Table 3. Performance of Irrigated Corn Hybrids in North Alabama, 2019			
Tennessee Valley Research Center - Belle Mina, AL			
Yield rank	Hybrid	Yield bu/Acre	Test weigh
1	AgriGold A6659VT2RIB	265	59.4
2	Terral REV 25BHR80	258	60.1
3	AgriGold A6572VT2RIB	256	59.7
4	AgriGold A648-54STX	256	58.5
5	AgriGold A645-16VT2PRO	254	58.4
6	AgriGold A6544VT2RIB	253	57.5
7	AgriGold A644-32TRCRIB	251	57.9
8	Bayer/Dekalb DKC 66-18GENVT2P	249	58.9
9	Bayer/Dekalb DKC 65-99TRECEPTA	248	59.0
10	Local Seed LC1577VT2P	247	60.4
11	Augusta A1367 DC5222 EZ	246	58.3
12	Local Seed LC1987VT2P	246	59.1
13	Local Seed LC1776VT2P	244	58.8
14	Dekalb DKC 70-27GENVT2P	244	57.9
15	AgriGold A647-46VT2PRO	243	59.3
16	Terral REV 24BHR99	243	58.8
17	Dyna-Gro D55VC45	241	58.8
18	Terral REV 26BHR30	240	58.9
19	Dyna-Gro D57VC17	239	58.7
20	Local Seed LC1586TC	239	59.6
21	Terral REV 28BHR18	239	58.8
22	Local Seed LC1488VT2P	237	59.2
23	Local Seed LC1878VT2P	236	59.5
24	DynaGro D58VC65	232	60.4
25	Terral REV 2858SXE	226	56.1
26	Terral REV 24LPR70	223	58.2
	Grand mean	245	
	CV (%)	5	
	LSD (0.1)	9	
	Pr>F	0.0012	

Table 4. Performance of Non-Irrigated Corn Hybrids in Northeast Alabama, 2019			
Sand Mountain Research Center - Crossville, AL			
Yield rank	Hybrid	Yield bu/Acre	Test weight
1	AgriGold A647-46VT2PRO	182	59.7
2	AgriGold A644-32TRCRIB	179	59.1
3	Terral REV 2858SXE	178	58.5
4	Local Seed LC1987VT2P	178	58.8
5	AgriGold A6572VT2RIB	175	60.1
6	AgriGold A645-16VT2PRO	173	58.4
7	Dekalb DKC 70-27GENVT2P	171	59.1
8	Dyna-Gro D57VC17	171	59.4
9	Terral REV 28BHR18	169	59.4
10	Local Seed LC1586TC	169	61.3
11	Bayer/Dekalb DKC 66-18GENVT2P	167	58.8
12	Local Seed LC1577VT2P	167	59.4
13	AgriGold A6659VT2RIB	165	59.1
14	Local Seed LC1776VT2P	163	59.2
15	Local Seed LC1878VT2P	162	59.2
16	Terral REV 24BHR99	162	58.7
17	Dyna-Gro D55VC45	162	58.9
18	Bayer/Dekalb DKC 65-99TRECEPTA	161	58.8
19	Augusta A1367 DC5222 EZ	161	55.3
20	AgriGold A6544VT2RIB	160	57.8
21	AgriGold A648-54STX	159	59.1
22	DynaGro D58VC65	155	60.0
23	Terral REV 25BHR80	152	59.7
24	Terral REV 26BHR30	150	59.8
25	Terral REV 24LPR70	149	59.3
26	Local Seed LC1488VT2P	141	56.9
	Grand mean	165	
	CV (%)	10	
	LSD (0.1)	12	
	Pr>F	0.1327	

Table 5. Performance of No-Till Corn Hybrids in Central Alabama, 2019

E.V Smith Research Center - Field Crops - Shorter, AL			
Yield rank	Hybrid	Yield bu/Acre	Test weight
1	AgriGold A6572VT2RIB	131	56.9
2	AgriGold A645-16VT2PRO	126	56.5
3	AgriGold A647-46VT2PRO	126	57.9
4	AgriGold A6659VT2RIB	124	55.8
5	Bayer/Dekalb DKC 65-99TRECEPTA	123	56.0
6	AgriGold A644-32TRCRIB	120	57.6
7	Terral REV 26BHR30	120	58.0
8	Local Seed LC1878VT2P	119	56.2
9	Terral REV 24BHR99	119	55.7
10	AgriGold A6544VT2RIB	119	56.5
11	Local Seed LC1776VT2P	118	55.9
12	Bayer/Dekalb DKC 66-18GENVT2P	115	56.7
13	Dyna-Gro D57VC17	115	57.3
14	Terral REV 2858SXE	115	55.3
15	Terral REV 25BHR80	114	57.7
16	Terral REV 28BHR18	114	57.6
17	AgriGold A648-54STX	112	55.5
18	Local Seed LC1577VT2P	109	57.8
19	Local Seed LC1488VT2P	107	56.0
20	Dekalb DKC 70-27GENVT2P	105	56.3
21	DynaGro D58VC65	105	56.2
22	Local Seed LC1586TC	104	58.0
23	Terral REV 24LPR70	101	53.8
24	Local Seed LC1987VT2P	99	56.2
	Grand mean	115	
	CV (%)	13	
	LSD (0.1)	11	
	Pr>F	0.2696	

Table 6. Performance of Non-Irrigated Corn Hybrids in Central Alabama, 2019			
Prattville Agricultural Research Unit - Prattville, AL			
Yield rank	Hybrid	Yield bu/Acre	Test weight
1	Terral REV 26BHR30	110	57.4
2	Terral REV 24LPR70	83	53.0
3	Terral REV 28BHR18	82	55.3
4	Terral REV 24BHR99	80	55.5
5	AgriGold A647-46VT2PRO	71	54.5
6	Terral REV 2858SXE	69	53.6
7	DynaGro D58VC65	64	55.5
8	Bayer/Dekalb DKC 66-18GENVT2P	64	51.9
9	Local Seed LC1488VT2P	62	53.5
10	Local Seed LC1776VT2P	61	53.0
11	AgriGold A648-54STX	61	51.3
12	AgriGold A6572VT2RIB	60	49.5
13	Local Seed LC1577VT2P	59	52.3
14	AgriGold A644-32TRCRIB	58	48.3
15	Local Seed LC1878VT2P	57	53.1
16	AgriGold A6659VT2RIB	55	51.9
17	Dyna-Gro D57VC17	49	52.9
18	Local Seed LC1586TC	47	50.4
19	Terral REV 25BHR80	47	51.6
20	AgriGold A645-16VT2PRO	41	48.6
21	AgriGold A6544VT2RIB	40	53.4
22	Local Seed LC1987VT2P	40	49.2
23	Bayer/Dekalb DKC 65-99TRECEPTA	36	49.3
24	Dekalb DKC 70-27GENVT2P	33	49.3
	Grand mean	59	
	CV (%)	36	
	LSD (0.1)	15	
	Pr>F	0.0010	

Table 7. Performance of Irrigated Corn Hybrids in Central Alabama, 2019			
	Reps 2 & 3 only		
Prattville Agricultural Research Unit - Prattville, AL			
Yield rank	Hybrid	Yield* bu/Acre	Test weight
1	Terral REV 26BHR30	190	53.9
2	AgriGold A644-32TRCRIB	184	51.4
3	Local Seed LC1776VT2P	184	54.9
4	Terral REV 2858SXE	173	53.7
5	Dyna-Gro D57VC17	162	50.8
6	AgriGold A6659VT2RIB	155	53.9
7	Terral REV 24LPR70	154	49.2
8	AgriGold A647-46VT2PRO	152	52.9
9	Terral REV 28BHR18	150	55.6
10	DynaGro D58VC65	148	53.0
11	Bayer/Dekalb DKC 66-18GENVT2P	143	49.5
12	AgriGold A6572VT2RIB	137	52.6
13	Local Seed LC1586TC	136	51.6
14	AgriGold A648-54STX	130	50.8
15	Local Seed LC1488VT2P	127	50.8
16	Local Seed LC1577VT2P	125	54.6
17	Terral REV 24BHR99	117	51.7
18	Local Seed LC1878VT2P	117	48.5
19	AgriGold A645-16VT2PRO	117	47.4
20	AgriGold A6544VT2RIB	114	48.9
21	Bayer/Dekalb DKC 65-99TRECEPTA	107	41.6
22	Local Seed LC1987VT2P	107	53.3
23	Terral REV 25BHR80	100	52.0
24	Dekalb DKC 70-27GENVT2P	93	49.0
	Grand mean	138	
	CV (%)	23	
	LSD (0.1)	32	
	Pr>F	0.1677	

*** Due to brown marmorated stink bug damage on 2 replications, data from only 2 replications was used.**

Table 8. Performance of Non-Irrigated Field Corn Hybrids in South Alabama, 2019

Brewton Agricultural Research Unit - Brewton, AL			
Yield rank	Hybrid	Yield bu/Acre	Test weight
1	Terral REV 28BHR18	196	59.3
2	Terral REV 25BHR80	188	59.4
3	DynaGro D58VC65	184	57.5
4	Terral REV 26BHR30	176	58.5
5	Terral REV 2858SXE	170	57.6
6	Terral REV 24BHR99	169	59.5
7	Local Seed LC1577VT2P	168	58.9
8	Dyna-Gro D57VC17	168	59.1
9	Local Seed LC1878VT2P	165	59.2
10	Dekalb DKC 70-27GENVT2P	164	58.5
11	Local Seed LC1987VT2P	161	58.2
12	Local Seed LC1488VT2P	157	59.4
13	Local Seed LC1776VT2P	154	59.0
14	Dyna-Gro D55VC45	153	58.7
15	Terral REV 24LPR70	150	59.2
16	Local Seed LC1586TC	129	58.1
17	Bayer/Dekalb DKC 66-18GENVT2P	124	57.5
18	Bayer/Dekalb DKC 65-99TRECEPTA	119	57.1
	Grand Mean	161	
	CV (%)	7	
	LSD (0.1)	8	
	Pr>F	0.0001	

Table 9. Performance of Non-Irrigated Corn Hybrids in Southwest Alabama, 2019			
Gulf Coast Research Center - Fairhope, AL			
Yield rank	Hybrid	Yield bu/Acre	Test weight
1	Terral REV 28BHR18	218	56.9
2	Terral REV 26BHR30	213	57.7
3	Local Seed LC1577VT2P	209	56.9
4	Terral REV 24BHR99	209	57.4
5	Dekalb DKC 70-27GENVT2P	204	55.6
6	Terral REV 25BHR80	204	57.4
7	Local Seed LC1776VT2P	203	57.3
8	Terral REV 2858SXE	200	53.9
9	DynaGro D58VC65	197	56.2
10	Local Seed LC1488VT2P	196	56.8
11	Dyna-Gro D57VC17	196	56.5
12	Local Seed LC1878VT2P	189	55.6
13	Local Seed LC1586TC	185	55.8
14	Dyna-Gro D55VC45	184	54.0
15	Local Seed LC1987VT2P	183	53.2
16	Bayer/Dekalb DKC 65-99TRECEPTA	182	49.6
17	Terral REV 24LPR70	179	56.6
18	Bayer/Dekalb DKC 66-18GENVT2P	171	52.2
	Grand mean	196	
	CV (%)	6	
	LSD (0.1)	9	
	Pr>F	0.0001	

Table 10. Performance of Irrigated Corn Hybrids in Southwest Alabama, 2019			
Gulf Coast Research Center - Fairhope, AL			
Yield rank	Hybrid	Yield bu/Acre	Test weight
1	Local Seed LC1488VT2P	265	57.6
2	Local Seed LC1776VT2P	261	57.8
3	Local Seed LC1577VT2P	255	57.2
4	Terral REV 25BHR80	254	58.9
5	Terral REV 28BHR18	252	54.5
6	DynaGro D58VC65	245	56.9
7	Terral REV 26BHR30	245	58.1
8	Dekalb DKC 70-27GENVT2P	244	56.1
9	Terral REV 24BHR99	242	56.8
10	Dyna-Gro D57VC17	235	57.9
11	Local Seed LC1987VT2P	227	54.6
12	Local Seed LC1586TC	225	56.5
13	Bayer/Dekalb DKC 65-99TRECEPTA	223	54.7
14	Local Seed LC1878VT2P	222	57.8
15	Bayer/Dekalb DKC 66-18GENVT2P	221	55.6
16	Terral REV 2858SXE	220	53.7
17	Terral REV 24BHR70	217	58.2
18	Dyna-Gro D55VC45	216	56.2
	Grand mean	237	
	CV (%)	6	
	LSD (0.1)	11	
	Pr>F	0.0001	

Table 11. 2019 Rainfall measurements at Alabama research sites

----- Monthly rainfall in inches -----									
Location	Year	Mar.	Apr.	May	June	July	Aug.	Sept.	7-month total
Belle Mina									
	2019	3.9	6.3	4.3	4.4	4.7	2.6	0.8	27.0
	2018	4.9	9.2	3.8	5.1	2.5	4.9	3.5	33.9
	2017	6.0	3.9	6.8	7.4	6.8	2.7	4.6	38.2
Crossville									
	2019	3.5	6.6	4.8	4.4	1.9	9.5	0.1	30.8
	2018	6.5	7.3	2.4	6.0	4.3	4.1	6.2	36.8
	2017	6.8	5.3	10.2	8.4	7.3	2.4	6.4	46.8
Shorter									
	2019	3.2	6.9	5.7	4.3	2.0	1.4	0.1	23.6
	2018	5.0	3.5	4.7	5.0	3.1	4.6	5.5	31.4
	2017	5.2	5.2	8.7	10.1	6.0	2.8	4.2	42.2
Prattville									
	2019	3.5	5.1	2.8	7.0	3.6	6.0	0.0	28.0
	2018	4.3	3.8	8.3	3.7	6.4	5.5	6.5	38.5
	2017	3.5	1.6	10.0	16.0	7.6	4.4	2.3	45.4
Brewton									
	2019	3.9	11.0	5.0	2.0	8.9	5.7	0.9	37.4
	2018	5.0	5.5	6.0	9.6	6.2	9.9	7.9	50.1
	2017	4.6	2.9	12.7	18.0	7.6	10.3	4.1	60.2
Fairhope									
	2019	1.6	5.2	3.3	13.3	8.4	3.8	0.1	35.7
	2018	2.5	5.3	6.4	5.2	6.7	10.2	12.7	49.0
	2017	2.3	4.3	10.8	11.8	7.9	13.1	0.9	51.1

Table 12. Soil Types for Corn trials, 2019	
Trial Location	Soil Type
North	
Belle Mina	Decatur silt loam
Crossville	Wynnvillev 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 2019 Corn Hybrid Trial Seed			
Seed Company	Brand	Seed Company	Brand
AgriGold Hybrids	AgriGold	Local Seed Company	Local Seed
5381 Akin Road		802 Rozelle Street	
St. Francisville, IL 62460		Memphis, TN 38104	
Augusta Seed	Augusta	Bayer Crop Science	Bayer/Dekalb
P.O. Box 899		800 N. Lindbergh Blvd	
Verona, VA 24482		St. Louis, MO 63167	
Nutrien Ag Solution	Dyna-Gro	Terral Seed, Inc.	REV
25624 Huntsville Brownsferry Rd		117 Ellington Dr.	
Madison, AL 35756		Rayville, LA 71269	

Acknowledgements

We would like to express our appreciation for the work and dedication of the supervisory and staff personnel of the Alabama Agricultural Experiment Station outlying units without whom this work would not be possible. Thanks are also expressed to the producers and citizens of Alabama for supporting research on the production of food and fiber across our state.

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 (retired)

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 (retired)