



OKLAHOMA CORN PERFORMANCE TRIALS, 2011



PRODUCTION TECHNOLOGY CROPS

OKLAHOMA COOPERATIVE EXTENSION SERVICE
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TRIAL OBJECTIVES AND PROCEDURES

Each year the Oklahoma Cooperative Extension Service conducts corn performance trials in Oklahoma. These trials provide producers, extension educators, industry representatives, and researchers with information on corn hybrids marketed in Oklahoma. Company participation was voluntary, so some hybrids marketed in Oklahoma were not included in the test. Company or brand name, entry designation, plant characteristics, and maturity information, were provided by the companies and were not validated by OSU; therefore, we strongly recommend consulting company representatives for more detailed information regarding these traits and disease resistance ratings (Table 1).

Irrigated test plots were established at the Oklahoma Panhandle Research and Extension Center (OPREC) near Goodwell and the Joe Webb farm near Guymon. Three rainfed trials were also planted in north central Oklahoma but due to drought they were not harvested. Fertility levels, herbicide use, and soil series (when available) are listed with data. Individual plots were two 25-foot rows seeded at a target population of 32,000 plants/ac at the Joe Webb location and silage trial at OPREC. Due to more limited irrigation at OPREC the grain trial was seeded at a target population of 28,000 plants/ac. Plots were trimmed to 20 feet prior to being harvested to determine grain yield. The ensilage trial was seeded the same as the grain trial with 10 feet of one row harvested to determine yield. Experimental design for all locations was a randomized complete block with four replications. Grain yield is reported consistent with U.S. No. 1 grade corn (56 lbs/bu and adjusted to moisture content of 15.5%). Corn ensilage was harvested at the early dent stage with average moisture content of 69% and production is reported as tons/ac adjusted to 65% moisture.

GROWING CONDITIONS

Drought affected corn state-wide. Corn planting started in early April and continued without interruption until completed for most producers. Pre-irrigation was required for irrigated corn in the panhandle for emergence due to lack of rainfall from September 2010 until planting. Many producers applied 5 to 7 inches of pre-irrigation, others applied enough for emergence and started sprinklers and never shut them off until August. Fluctuating air temperatures reduced soil temperatures and slowed emergence in April and early May (Fig. 1). Temperatures during the growing season ranged from cool in late April and early May to hot from late May till maturity in September. Corn yield was severely reduced on June 26th for most of the high plains when temperatures were above 110 degree F° with wind speeds above 30 mph. Corn leaves were turning gray from the heat and wind stress the next day. Corn that was planted on lower volume wells never recovered from this day. Rainfall for the period was below the long-term mean (Table 2). Irrigation well volume was the critical factor for the yields in the region. From conversations with producers grain yield for 500 gpm wells ranged from 0 to 90 bu/ac, 600 gpm well yields ranged from 90 to 140 bu/ac, and 700 gpm or higher yields ranged from 170 to 240 bu/ac. The harvest period had no major delays due to weather.

RESULTS

Grain yield, test weight, harvest moisture, and plant populations for OPREC and Webb trials are presented in tables 3, 4, and 5. Least Significant Differences (L.S.D.) are shown at the bottom of each table. Unless two entries differ by at least the L.S.D. shown, little confidence can be placed in one being superior to another. The coefficient of variation (C.V.) is provided as an estimate of the precision of the data with respect to the mean. To provide some indication of yield stability, 2-year means are also provided in tables. Producers interested in comparing hybrids for consistency of yield should consult these.

The following people have contributed to this report by assisting in crop production, data collection, and publication; Roger Gribble, Jeff Bedwell, Tommy Puffinbarger, Donna George, Lawrence Bohl, Jake Baker, Josh Moe, Wilson Henry, Cameron Murley, and Craig Chesnut. Their efforts are greatly appreciated.

Figure 1. Soil and air temperature at OPREC for selected dates in 2011.

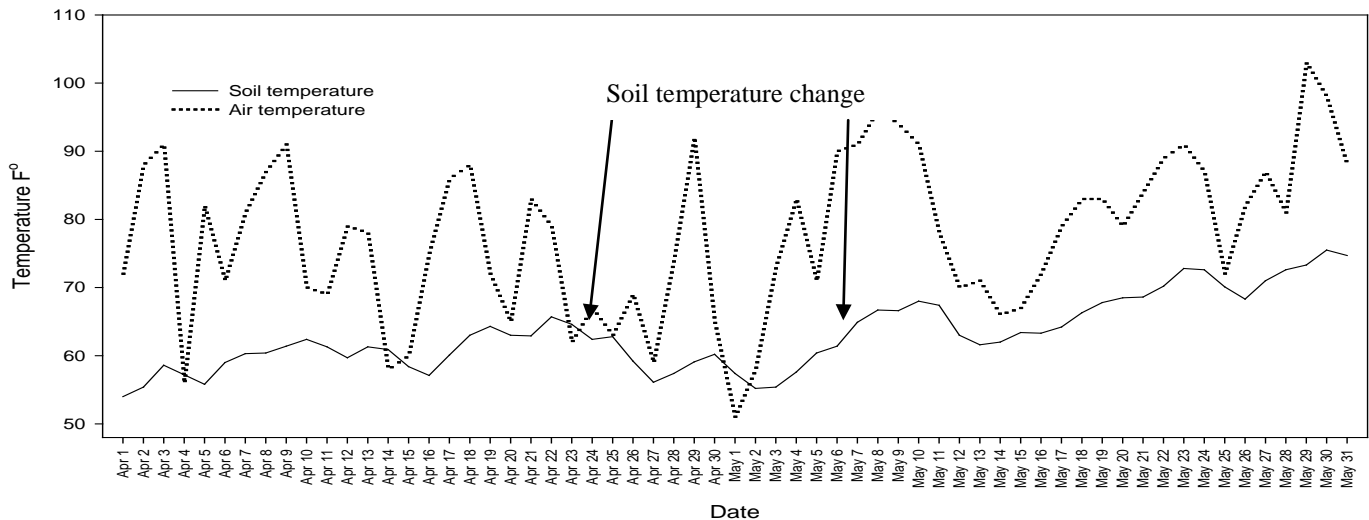


Table 1. Characteristics of Corn Hybrids in Panhandle Corn Performance Trials, 2011.

Company Brand Name	Hybrid	Plant Characteristics				Maturity Days
		SV	SS	SG	EP	
Terral Seed, Inc	Rev® 25HR39™	2	7	5	MH	115
Terral Seed, Inc	Rev™ 28HR20™	7	7	7	MH	118
Terral Seed, Inc	Rev® 28HR30™	7	7	8	MH	118
Terral Seed, Inc	Rev® 28R10™	7	7	7	MH	118
Terral Seed, Inc	Rev® 25HR49™	2	3	5	M	115
Terral Seed, Inc	Rev® 26NR50™	3	3	3	MH	116
Terral Seed, Inc	Rev® 27HR52™	NA	NA	NA	NA	117
Terral Seed, Inc	Rev® 26HR82™	NA	NA	NA	NA	116
Terral Seed, Inc	Rev® 26HR22™	NA	NA	NA	NA	116
Terral Seed, Inc	Rev® 27HR32™	NA	NA	NA	NA	117
Terral Seed, Inc	Rev® 25R19™	8	7	5	MH	115
Terral Seed, Inc	Rev® 26R60™	7	6	7	M	116
Golden Acres	GA 28V81	2	2	2	M	118
Golden Acres	GA 27V01	2	2	2	High	118
Golden Acres	GA 24V61	1	1	2	M	111
Triumph Seed Co. Inc.	1217X	2	3	4	M	112
Triumph Seed Co. Inc.	1157X	2	4	4	M	111
Triumph Seed Co. Inc.	1725H	3	3	3	MH	117
Triumph Seed Co. Inc.	1956H	3	3	3	M	119
Triumph Seed Co. Inc.	1334X	3	3	3	M	113
Triumph Seed Co. Inc.	7514S	3	3	3	M	114
Triumph Seed Co. Inc.	2288H	3	2	2	H	122

* Plant Characteristics: SV - Seedling Vigor; SS - stalk strength; SG - stay green; EP - ear placement (Low, Medium, High)
Rating scale for above characteristics except ear placement 1 = excellent - 9 = poor

Table 2. Rainfall and irrigation for irrigated corn performance trial locations in Texas County.

Location	April	May	June	July	Aug	Total
Long-term mean	1.33	3.25	2.86	2.58	2.28	12.30
2011	0.94	0.51	0.53	0.17	2.05	4.20
Irrigation						
Joe Webb	3	4	6.5	6.5	4	24
OPREC	3.3	3.3	5.5	5.5	3.3	21

Table 3. Grain Yield and Harvest Parameters for the Joe Webb location, Oklahoma Corn Performance Trials, 2011.

Company Brand Name	Hybrid	Grain Yield bu/ac		Test Weight Lb/bu		Harvest Moisture	Plant Population plants/ac
		2011	2-year	2011	2-year		
Golden Acres	GA 28V81	96	172	56	58	16.2	29,300
Terral Seed, Inc	Rev® 28R10™	125	165	58	59	18.4	30,800
Triumph Seed Co. Inc.	2288H	129	157	57	58	21.3	28,000
Terral Seed, Inc	Rev™ 28HR20™	110	153	58	59	20.3	31,700
Terral Seed, Inc	Rev® 28HR30™	106	149	58	59	19.0	28,900
Golden Acres	GA 27V01	136	143	58	57	12.5	30,900
Terral Seed, Inc	Rev® 25HR39™	88	134	59	60	17.1	27,600
Terral Seed, Inc	Rev® 26R60™	141	----	58	----	17.8	26,500
Terral Seed, Inc	Rev® 27HR32™	134	----	61	----	15.5	29,100
Golden Acres	GA 24V61	134	----	58	----	12.9	21,200
Terral Seed, Inc	Rev® 26NR50™	133	----	60	----	17.5	28,600
Triumph Seed Co. Inc.	1157X	132	----	56	----	20.3	25,300
Terral Seed, Inc	Rev® 26HR22™	125	----	59	----	16.2	27,700
Triumph Seed Co. Inc.	1217X	124	----	57	----	17.0	32,000
Terral Seed, Inc	Rev® 27HR52™	121	----	59	----	15.9	30,700
Triumph Seed Co. Inc.	1725H	111	----	57	----	15.5	26,600
Triumph Seed Co. Inc.	1956H	108	----	57	----	16.1	28,100
Triumph Seed Co. Inc.	7514S	105	----	58	----	17.8	28,700
Terral Seed, Inc	Rev® 25R19™	94	----	59	----	14.6	30,100
Triumph Seed Co. Inc.	1334X	78	----	59	----	17.7	28,200
Terral Seed, Inc	Rev® 26HR82™	72	----	59	----	17.5	29,100
Terral Seed, Inc	Rev® 25HR49™	53	----	56	----	19.7	31,500
	Mean	112	153	58	58	17.1	28,700
	CV %	15.6	10.4	1.6	2.4	5.8	9.4
	L.S.D.	25	16	1	1	1.4	3,800

Cooperator: Joe Webb

Soil Series: Richfield Clay Loam

Strip-Till: Following wheat in 2010

Soil Test: N: NA P: NA K: NA pH: NA

Fertilizer: N: 230 lbs/ac, P: 50 lbs P2O5/ac, K: 0, 5 gal 10-34-0 in row with planter

Herbicide: 1.5qt/ac Harness Extra (Preemergence) + 3/4 oz/ac Balance

Target population: 32,000 plants/ac

Planting Date: April 16, 2011

Harvest Date: September 26, 2011

Table 4. Grain Yield and Harvest Parameters for the OPREC location, Oklahoma Corn Performance Trials, 2011.

Company Brand Name	Hybrid	Grain Yield bu/ac	Test Weight lb/bu	Harvest Moisture	Plant Population plants/ac
Golden Acres	GA 27V01	146	58	12.4	25,600
Triumph Seed Co. Inc.	1217X	117	56	15.2	27,000
Triumph Seed Co. Inc.	2288H	114	58	20.5	24,500
Terral Seed, Inc	Rev [®] 27HR32 [™]	111	60	13.8	21,800
Terral Seed, Inc	Rev [®] 26R60 [™]	107	59	15.5	24,900
Golden Acres	GA 24V61	105	57	11.2	15,900
Triumph Seed Co. Inc.	1725H	103	55	12.2	22,900
Triumph Seed Co. Inc.	1157X	101	55	20.4	24,700
Terral Seed, Inc	Rev [®] 26NR50 [™]	94	58	17.3	23,300
Terral Seed, Inc	Rev [®] 27HR52 [™]	92	58	13.8	24,800
Golden Acres	GA 28V81	92	56	13.3	25,200
Terral Seed, Inc	Rev [®] 28R10 [™]	89	60	15.5	26,100
Triumph Seed Co. Inc.	1956H	82	58	12.9	16,700
Terral Seed, Inc	Rev [®] 26HR22 [™]	75	58	13.8	27,300
Terral Seed, Inc	Rev [®] 25R19 [™]	74	58	12.6	24,700
Terral Seed, Inc	Rev [®] 26HR82 [™]	72	57	15.4	25,100
Terral Seed, Inc	Rev [™] 28HR20 [™]	68	59	17.7	27,200
Terral Seed, Inc	Rev [®] 28HR30 [™]	59	57	18.6	22,000
Terral Seed, Inc	Rev [®] 25HR39 [™]	58	58	13.3	24,800
Triumph Seed Co. Inc.	7514S	54	59	14.3	27,100
Terral Seed, Inc	Rev [®] 25HR49 [™]	39	58	15.7	25,600
Triumph Seed Co. Inc.	1334X	25	56	12.6	21,200
	Mean	85	58	14.9	24,000
	CV %	22	6.5	1.8	9.3
	L.S.D.	27	2	1.4	3,200

Cooperator: OPREC

Soil Series: Richfield Clay Loam

Strip-Till: Following wheat in 2010

Soil Test: N: 12 P: 14 K: 583 pH: 8.3

Fertilizer: N: 230 lbs/ac, P: 50 lbs P₂O₅/ac, K: 0, 5 gal 10-34-0 in row with planter

Herbicide: 2.0qt/ac Cinch ATZ Lite (Preemergence) + 1 oz/ac Balance pro

Target population: 28,000 plants/ac for grain and 32,000 plants/ac for ensilage

Planting Date: April 14, 2011

Harvest Date: September 28, 2011

Table 5. OPREC Ensilage Yields for Panhandle Corn Performance Trial, 2011.

Company Brand Name	Hybrid	YIELD Tons/ac		Plant Population plants/ac	Harvest Moisture %
		2011	2-year		
Golden Acres	GA 28V81	16.8	22.7	28,100	68
Triumph Seed Co. Inc.	2288H	17.4	22.0	24,800	67
Golden Acres	GA 27V01	18.5	21.8	27,300	57
Terral Seed, Inc	Rev™ 28HR20™	19.1	19.4	25,300	68
Terral Seed, Inc	Rev® 28R10™	15.4	18.9	28,600	65
Terral Seed, Inc	Rev® 28HR30™	12.1	16.8	28,700	70
Terral Seed, Inc	Rev® 25HR39™	12.7	16.7	28,300	69
Golden Acres	GA 24V61	19.7	----	25,900	58
Terral Seed, Inc	Rev® 26R60™	18.8	----	24,000	61
Terral Seed, Inc	Rev® 27HR32™	17.5	----	26,200	62
Terral Seed, Inc	Rev® 26HR82™	17.2	----	29,800	66
Triumph Seed Co. Inc.	1725H	17.2	----	25,200	59
Terral Seed, Inc	Rev® 26HR22™	17.0	----	27,400	61
Triumph Seed Co. Inc.	1157X	16.8	----	19,400	63
Terral Seed, Inc	Rev® 25R19™	16.4	----	26,200	58
Triumph Seed Co. Inc.	1217X	16.3	----	29,600	65
Triumph Seed Co. Inc.	1956H	16.2	----	28,500	68
Terral Seed, Inc	Rev® 27HR52™	15.7	----	26,200	66
Triumph Seed Co. Inc.	7514S	15.5	----	28,500	64
Terral Seed, Inc	Rev® 26NR50™	14.7	----	27,900	67
Triumph Seed Co. Inc.	1334X	13.7	----	28,500	69
Terral Seed, Inc	Rev® 25HR49™	11.1	----	23,700	71
	Mean	16.2	19.8	26,700	65
	CV %	14.5	16.5	12.5	8.7
	L.S.D.	3.3	3.5	4,700	8