OKLAHOMA CORN PERFORMANCE TRIALS, 2009

PRODUCTION TECHNOLOGY CROPS

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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 (Tables 3 and 4).

Irrigated test plots were established at the Oklahoma Panhandle Research and Extension Center (OPREC) near Goodwell and the Joe Webb farm near Guymon. Additionally in 2009 dry-land trials were conducted in north central Oklahoma at Enid, Jet, and Wakita. 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 for irrigated and 23,000 plants/ac for the trials in north central Oklahoma. Plots were trimmed to 20 feet prior to being harvested to determine grain yield. The ensilage trial was seeded the same as 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

North Central Oklahoma

The early part of the planting season was characterized by dry soil in many areas. The trial in Wakita was planted into dry soil, while the trials at Jet and Enid were planted in adequate soil moisture. The trials were planted on March 26, the day before the blizzard that hit northwest and north central Oklahoma. The snow and cold temperatures (a freeze on April 6 and 7 reduced wheat yields) slowed germination and emergence of corn. After the corn emerged, conditions improved until late June. In June lack of precipitation and high temperatures the last two weeks dramatically affected corn, mainly west of I-35 (Table 1). Conditions east of I-35 were almost ideal throughout the growing season and grain yields were considerably higher than west of I-35 with yields over 120 bu/ac reported. The lack of precipitation and high temperatures (8 of last 14 days in June had high temperatures above 100˚F) caused many acres of corn to not be harvested either due to low yields or levels of aflatoxins being too high for grain to be accepted at elevators. The trials at Wakita and Enid were harvested but the data not reported. Deer found the plots at Wakita and caused the data to be to variable to report. Grain yields were severely reduced at the Enid location with yields ranging from 5 to 18 bu/ac, also the yields were so variable they are not reported. Enough grain was harvest at each location to sample for Aflatoxin of four hybrids each location. Aflatoxin was present at each location and ranged from 100 ppb to over 400 from both sites.

Panhandle

The early planting period was delayed due to the blizzard, but after April 10 any delays were minimal. Conditions for germination and emergence were good. Most corn acres were irrigated prior to planting, due to dry conditions from lack of precipitation from November through March. Total precipitation from the period was 1.00 inches compared to the long-term average of 2.79 inches. The growing conditions during the growing season in the panhandle were not as severe as what was observed in the body of the state. Most of the 100 ˚F temperatures were during the middle of July (10 days), and the total number of days was 11 for June through August, which is normal. Although precipitation was limited (Table 2), producers reported the highest yields they have ever obtained. Yields ranged from 190 bu/ac to over 270 bu/ac in the panhandle area as reported by producers. Many producers had the highest average yields on their total farms ever observed. This is partially due to the widespread adoption of strip-till in the last few years. Trials at OPREC were reduced due to sprinkler and irrigation problems in late June and early July, and therefore are not reported here.

RESULTS

Grain yield, test weight, harvest moisture, and plant populations for OPREC and Webb trials are presented (Tables 3-5). 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, Matt LaMar, Eddie Pickard, Wilson Henry, Cameron Murley, and Craig Chesnut. Their efforts are greatly appreciated.

Table 1. Rainfall for selected locations near dry-land corn performance trial locations in north central Oklahoma.

Location	March	April	May	June	July	Total
Long-term mean in Garfield county	2.50	3.20	4.90	4.40	2.80	17.80
Blackwell	2.59	6.52	2.42	4.13	4.80	20.46
Cherokee	1.75	5.04	2.02	2.66	1.86	13.33
Lahoma	1.20	3.54	1.49	2.32	2.57	11.12

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
2009	2.06	0.55	1.74	2.58	1.36	8.29
Irrigation						
Joe Webb	3.0	4.0	6.0	6.0	2.0	21.0

Table 3. Characteristics of Corn Hybrids in Panhandle Corn Performance Trials, 2009

Company Brand Name	Hybrid	Plant Characteristics				Maturity Days
		SV	SS	SG	EP	
Triumph Seed Co. Inc.	1536H	8	7	8	M	115
Triumph Seed Co. Inc.	1706H	8	7	8	MH	117
Triumph Seed Co. Inc.	7514X	7	7	7	M	114
Triumph Seed Co. Inc.	1420V	3	3	3	ML	117
Triumph Seed Co. Inc.	1825V	3	2	2	MH	118
Triumph Seed Co. Inc.	1305V	2	2	3	M	113
Triumph Seed Co. Inc.	2288H	3	2	2	H	122
Mycogen Seeds	F2F 797	7	7	NA	NA	115
Mycogen Seeds	TMF2H918	8	8	NA	NA	123
Mycogen Seeds	TMF 2L844	7	6	NA	NA	119
Mycogen Seeds	TMF2L831	7	6	NA	NA	118
Mycogen Seeds	TMF7Q759	7	7	NA	NA	113
Mycogen Seeds	F2F700	8	8	NA	NA	113
Syngenta Seeds	N78N 3000 GT	2	4	5	MH	115
Syngenta Seeds	82R44 3000 GT	4	3	3	H	117
Syngenta Seeds	N72K GT/CB/LL	NA	NA	NA	NA	115
Syngenta Seeds	N82A CB/LL	4	3	3	M	117
Syngenta Seeds	N83Z	5	5	5	H	118
Syngenta Seeds	N91J	4	5	3	H	124
DEKALB	DKC 64-79	3	5	5	M	114
DEKALB	DKC 61-69 VT3	3	4	3	M	111
Golden Acres	GA 26Y23	1	1	2	M	115
Golden Acres	GA 28V87	2	2	2	M	118
Golden Acres	GA 27Z07	2	3	2	H	117

Table 4. Characteristics of Corn Hybrids in North Central Oklahoma Corn Performance Trials, 2009

Company Brand Name	Hybrid	Plant Characteristics				Maturity Days
		SV	SS	SG	EP	
Dyna Gro Seeds	55V71	NA	NA	NA	NA	105
Dyna Gro Seeds	55B31	NA	NA	NA	NA	105
Dyna Gro Seeds	57V15	NA	NA	NA	NA	110
Dyna Gro Seeds	57V07	NA	NA	NA	NA	112
Dyna Gro Seeds	57V40	NA	NA	NA	NA	111
DEKALB	DKC 52 59 (VT3)	2	4	3	M	111
DEKALB	DKC 61-69 (VT3)	3	3	2	M	109
Syngenta Seeds	N69L GT	NA	NA	NA	NA	111
Syngenta Seeds	N77P 3000 GT	3	2	3	H	114
Syngenta Seeds	84A53 GT/CB/LL	NA	NA	NA	NA	112
Syngenta Seeds	N73V 3000 GT	3	3	2	MH	113
NuTech Seed LLC.	3T-603 VT3	2	3	4	L	103
NuTech Seed LLC.	3T-706 VT3	2	3	4	M	106
G2 Genetics	1H-005 HX/LL	2	1	4	M	105
G2 Genetics	5H-506 RR/HXT	2	1	5	L	106
G2 Genetics	5H-911 RR/HX	2	3	4	H	111

Table 5. Grain Yield and Harvest Parameters Joe Webb location, Oklahoma Corn Performance Trials, 2009.

Company Brand Name	Hybrid	Grain Yield Bu/ac	Test Weight Lb/bu	Harvest Moisture	Plant Population plants/ac
Triumph Seed Co. Inc.	1536H	255	55	19.6	34,300
Triumph Seed Co. Inc.	7514X	252	56	19.1	34,400
Triumph Seed Co. Inc.	1420V	252	55	20.1	35,400
Triumph Seed Co. Inc.	1825V	252	56	19.4	35,800
Mycogen Seeds	TMF2L831	251	55	20.1	37,700
Golden Acres	GA 28V87	242	56	18.1	30,600
Golden Acres	GA 27Z07	239	54	20.1	33,400
Golden Acres	GA 26Y23	238	55	19.5	34,300
Syngenta Seeds	N78N 3000 GT	235	54	21.5	25,900
Triumph Seed Co. Inc.	1706H	235	55	20.1	36,900
DEKALB	DKC 64-79	230	58	18.2	28,400
Syngenta Seeds	82R44 3000 GT	222	54	21.4	25,900
Mycogen Seeds	TMF7Q759	212	54	20.2	37,400
Triumph Seed Co. Inc.	2288H	211	56	22.8	33,400
DEKALB	DKC 61-69 VT3	200	56	17.1	26,400
Syngenta Seeds	N72K GT/CB/LL	195	55	19.0	29,400
Triumph Seed Co. Inc.	1305V	186	56	19.5	26,100
Mycogen Seeds	F2F700	158	58	19.3	33,500
	Mean	226	551	19.7	32,200
	CV%	9.1	2.3	6.5	8.7
	L.S.D.	29	2	1.8	4,000

Cooperator: Joe Webb
Soil Series: Richfield Clay Loam
Strip-Till: Following wheat and sunflowers in 2008
Soil Test: N: NA P: NA K: NA pH: NA
Fertilizer: N: 230 lbs/ac P: 50 lbs P_2O_5/ac K: 0
Herbicide: 1.5qt/ac Harness Extra (Preemergence) + 3/4 oz/ac Balance
Planting Date: April 22, 2009
Harvest Date: September 24, 2009

Table 6. Grain Yield and Harvest Parameters Alfalfa Country rain-fed location, Oklahoma Corn Performance Trials, 2009.

Company Brand Name	Hybrid	Grain Yield Bu/ac	Test Weight Lb/bu	Harvest Moisture	Plant Population plants/ac	Aflatoxin Level ppb
Dyna-Gro Seeds	57V40	81	55	17.7	16,200	0
DEKALB	DKC 52 59 (VT3)	76	56	15.2	18,600	0
Syngenta Seeds	84A53 GT/CB/LL	71	56	17.2	16,400	8
DEKALB	DKC 61-69 (VT3)	71	56	17.8	18,500	67
G2 Genetics	5H-911 RR/HX	69	58	17.6	12,700	10
Syngenta Seeds	N77P 3000 GT	67	56	18.1	18,500	15
Dyna-Gro Seeds	55B31	66	59	15.0	15,800	51
Dyna-Gro Seeds	57V07	63	55	18.6	19,000	140
NuTech Seed LLC.	3T-706 VT3	63	58	15.1	14,900	0
Dyna Grow Seeds	55V71	59	56	15.5	13,800	64
Syngenta Seeds	N69L GT	59	57	16.4	16,600	48
G2 Genetics	1H-005 HX/LL	56	55	17.1	10,200	78
NuTech Seed LLC.	3T-603 VT3	56	59	14.0	15,200	17
G2 Genetics	5H-506 RR/HXT	52	56	13.7	8,000	60
Syngenta Seeds	N73V 3000 GT	51	57	16.7	11,400	5
	Mean	63.9	57	16.4	15,000	38
	CV%	16.1	1.4	3.5	19.1	----
	L.S.D.	14.7	1	0.8	4,100	----

Cooperator: Troy Campbell
Soil Series: Pond Creek Silt Loam
No-Till: Following double crop soybean and wheat in 2008
Soil Test: N: NA P: NA K: NA pH: NA
Fertilizer: N: 120 lbs/ac P: 50 lbs P2O5/ac K: 0
Herbicide: 1 lb/ac Atrazine (preplant) + 1 qt/ac Dual (preemergent)
Planting Date: March 24, 2009
Harvest Date: September 2, 2009