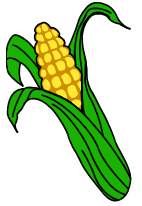




# OKLAHOMA PANHANDLE CORN PERFORMANCE TRIALS, 2006



## *PRODUCTION TECHNOLOGY CROPS*

OKLAHOMA COOPERATIVE EXTENSION SERVICE  
DEPARTMENT OF PLANT AND SOIL SCIENCES  
DIVISION OF AGRICULTURAL SCIENCES & NATURAL RESOURCES  
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### **Rick Kochenower**

Area Research and Extension Specialist  
Plant and Soil Sciences Department

### **Britt Hicks**

Area Extension Livestock Specialist  
Northwest District

## **TRIAL OBJECTIVES AND PROCEDURES**

Each year the Oklahoma Cooperative Extension Service conducts corn performance trials in the Oklahoma panhandle. 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 was not validated by OSU; therefore, we strongly recommend consulting company representatives for more detailed information regarding these traits and disease resistance ratings (Table 2).

Irrigated test plots were established at the Oklahoma Panhandle Research and Extension Center (OPREC), near Goodwell and the Joe Webb farm, near Guymon. Fertility levels, herbicide use, and soil series (when available) are listed with data. Trials were two 25-foot rows seeded at a target population of 32,000 plants/ac. Plots were trimmed to 20 feet prior to being harvested to determine grain yield. The ensilage trial was seeded the same as grain trial with 10 feet of one row harvested to determine yield. The experimental design was a randomized complete block with four replications. Grain yields are reported consistent with U.S. No. 1 grade corn i.e. 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 65.3% and production is reported as tons/ac adjusted to 65% moisture.

## **GROWING CONDITIONS**

The planting period was characterized by a lack of soil moisture due to inadequate rainfall received throughout the winter and spring. Most producers used pre-irrigation to obtain desired surface and subsoil moisture levels. Soil temperature of 61° F on April 1 at the two-inch depth was consistent with observations in previous years. During the growing season rainfall was below the long-term average from April through late July (Table 1), but rainfall in late July and August reduced late season irrigation when compared to 2005. Rainfall at OPREC (10.88 inches) was less than most locations in the panhandle, with rainfall amounts east of Guymon totaling near 19 inches from late June through August. The panhandle region had several yield reducing hailstorms from mid May until early July. The hailstorms in May led to some acres being replanted. OPREC received two hail and windstorms in June which dramatically reduced the yield for corn planted around April 10 (Fig. 1). This is in contrast to previous years data from the planting date experiment, as the highest yields in the previous 6 years were obtained on the April 10 planting date. High moisture corn was cut with short delays due to rainfall in late August and early September, but there were no major delays for dry corn harvested from mid September to mid October.

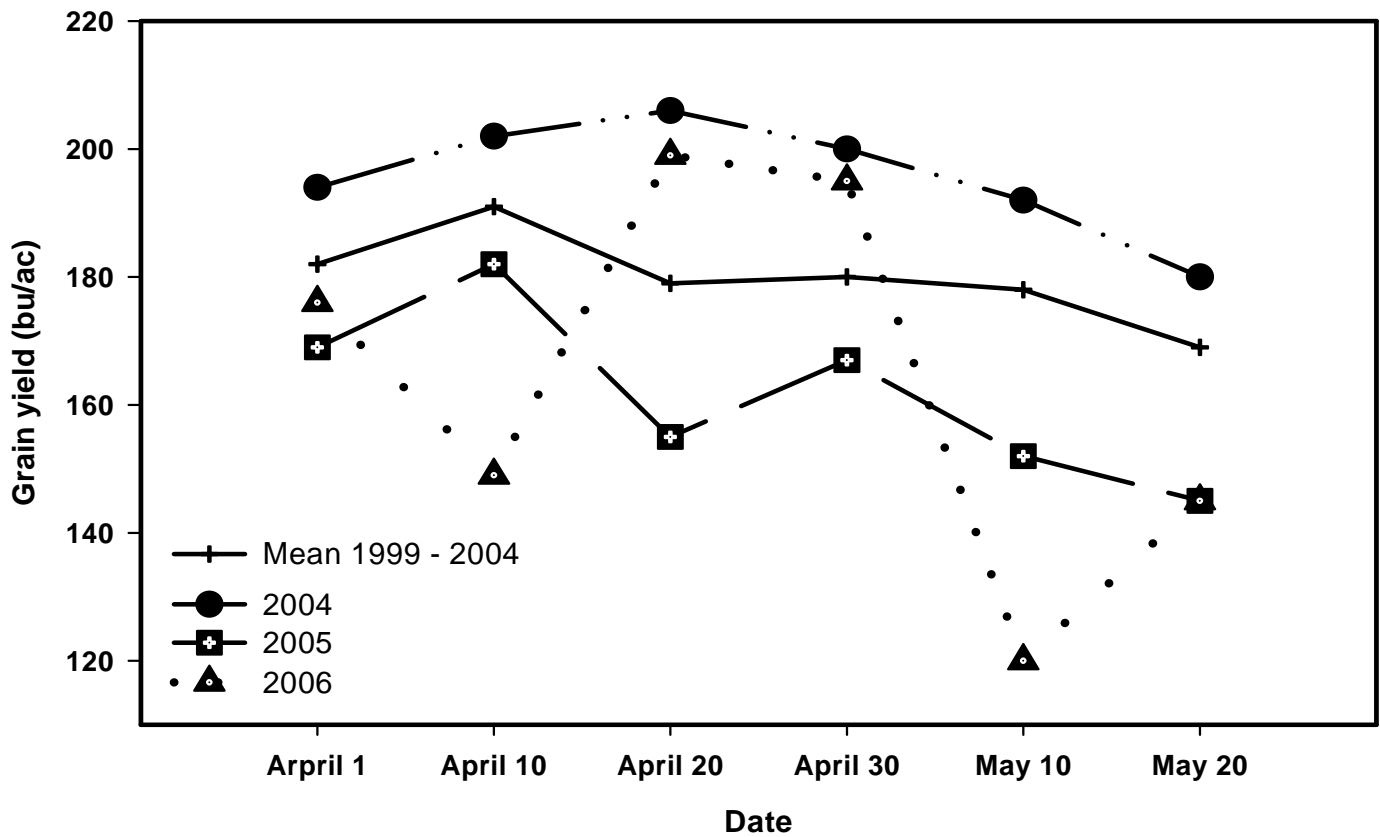
## **RESULTS**

Grain yield, test weight, harvest moisture, and plant populations for OPREC and Webb trials are presented (Tables 3-4). Ensilage yields are reported in Table 5. Acid Detergent Fiber (ADF) and Total Digestible Nutrients (TDN), however are not reported, because no significant differences existed among hybrids. Averages were 33.4, and 64.0%, for ADF and TDN respectively. Similarly, there were no differences among hybrids in net energy values for maintenance, lactation,

and gain values with averages of 0.64, 0.65, and 0.37 MCal/lb respectively. 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; Donna George, Lawrence Bohl, Matt LaMar, Eddie Pickard, Justin Stauffer, Tony Mills, and Craig Chesnut. Their efforts are greatly appreciated.

**Figure 1. Planting date effects on corn grain yields at OPREC from 1999 to 2006. Note the much lower grain yield for the April 10 planting date in 2006 relative to grain yields obtained with the same planting date in 1999 – 2005. Reduced grain yields in 2006 were the result of two hailstorms during the month of June.**



**Table 1. 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
2006	0.24	2.19	2.34	2.05	4.06	10.88
2005	0.93	2.85	2.01	1.40	3.21	10.04
Irrigation						
OPREC	2.5	2.5	5.0	6.25	2.5	18.75
Joe Webb	3.0	3.0	6.0	6.0	2.0	20.00

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**Table 2. Characteristics of Corn Hybrids in Panhandle Corn Performance Trials, 2006.**

Company Brand Name	Entry Designation	Plant Characteristics				MATURITY Days
		SV	SS	SG	EP	
Asgrow Seed	RX 674 RR 2	3	4	2	M	109
Asgrow Seed	RX 752 RR2/YGPL	3	4	5	M	112
Dekalb Genetics	DKC 60-18 (RR2/YGPL)	3	3	5	ML	110
Dekalb Genetics	DKC 66-23 (RR2/YGCB)	3	4	4	M	116
Dekalb Genetics	DKC 64-81 (YGCB)	3	5	5	M	114
Garst Seed Company	8295 YG1/RR	2	3	2	H	117
Garst Seed Company	8247 YG1	2	2	2	M	117
Garst Seed Company	8313 CB/LL	1	4	3	M	114
Garst Seed Company	8377YGI/RR	2	4	3	M	115
Garst Seed Company	8378 YG1	2	4	3	M	114
Garst Seed Company	8270 RR	3	2	2	H	118
Triumph Seed Co., Inc	1756 CbRR				M	116
Triumph Seed Co., Inc	1866Bt	2	2	2	H	116
Triumph Seed Co., Inc	1536 CbRR	2	2	2	M	112
Triumph Seed Co., Inc	1416 Bt	2	2	2	M	114
NC+ Hybrids	6122 RB	2	3	2	M	116
NC+ Hybrids	6361 RB	2	3	3	M	116
NC+ Hybrids	7373 RB	4	1	2	H	120
NC+ Hybrids	7402 R	4	2	2	H	120

\* 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 3. Grain Yield and Harvest Parameters OPREC location, Oklahoma Corn Performance Trials, 2006.**

Company Brand Name	Entry Designation	Grain Yield bu/ac		Test Weight lb/bu		Harvest Moisture	Plant Population plants/ac
		2006	Two year	2006	Two year		
Triumph Seed Co., Inc	1866Bt	206.5	188.7	56.6	56.7	22.2	31,100
Garst Seed Company	8313 CB/LL	185.9	185.5	57.2	55.8	18.7	29,800
Triumph Seed Co., Inc	1416 Bt	165.6	184.6	56.3	56.6	18.9	31,900
Garst Seed Company	8270 RR	174.7	179.7	56.4	56.3	21.0	28,700
Triumph Seed Co., Inc	1536 CbRR	167.9	179.3	57.0	56.1	18.5	21,900
Garst Seed Company	8377YGI/RR	155.9	170.3	56.5	56.1	17.7	30,600
Garst Seed Company	8378 YG1	206.0	----	57.5	----	19.6	29,600
Triumph Seed Co., Inc	1756 CbRR	197.6	----	55.0	----	19.3	28,400
NC+ Hybrids	6122 RB	197.4	----	55.5	----	20.1	28,700
Dekalb Genetics	DKC 64-81 (YGCB)	190.5	----	58.7	----	18.0	27,800
Dekalb Genetics	DKC 66-23 (RR2/YGCB)	180.8	----	57.7	----	19.0	31,200
Garst Seed Company	8247 YG1	177.5	----	26.1	----	21.5	28,800
NC+ Hybrids	6361 RB	172.4	----	57.2	----	16.7	27,500
Dekalb Genetics	DKC 60-18 (RR2/YGPL)	161.0	----	57.0	----	17.3	29,500
Garst Seed Company	8295 YG1/RR	153.3	----	56.2	----	21.2	29,800
Asgrow Seed	RX 752 RR2/YGPL	152.9	----	56.6	----	19.7	29,000
Asgrow Seed	RX 674 RR 2	142.5	----	57.5	----	16.8	29,300
	Mean	175.8	181.3	56.8	56.3	19.2	29,600
	CV%	12.2	13.6	1.3	2.0	6.0	10.3
	L.S.D.	30.5	NS	1.1	NS	1.6	4,300

Cooperator: OPREC

Soil Series: Richfield Clay Loam

Strip-tillage wheat double crop sunflower in 2005

Soil Test: N: 38 P: 14 K: 936 pH: 7.6

Fertilizer: N: 200 lbs/ac P: 50 lbs/ac P<sub>2</sub>O<sub>5</sub> K: 0

Herbicide: 2 qt/ac Cinch ATZ Lite (Preemergence)

Planting Date: April 14, 2006

Harvest Date: September 20, 2006

**Table 4. Grain Yield and Harvest Parameters Joe Webb location, Oklahoma Corn Performance Trials, 2006.**

Company Brand Name	Entry Designation	Grain Yield bu/ac		Test Weight lb/bu		Harvest Moisture	Plant Population plants/ac
		2006	Two year	2006	Two year		
Garst Seed Company	8313 CB/LL	214.7	206.8	58.9	57.8	17.0	26,200
Triumph Seed Co., Inc	1866Bt	176.8	198.1	59.5	58.7	17.4	26,500
Garst Seed Company	8270 RR	184.2	190.4	58.7	57.3	16.9	24,300
Garst Seed Company	8377YGI/RR	166.9	184.7	58.5	57.7	16.3	28,400
Triumph Seed Co., Inc	1416 Bt	166.7	182.0	58.1	57.5	17.3	27,500
Triumph Seed Co., Inc	1536 CbRR	155.5	174.4	59.0	57.7	16.8	28,400
Dekalb Genetics	DKC 64-81 (YGCB)	220.6	----	59.6	----	16.1	27,800
Garst Seed Company	8295 YG1/RR	216.8	----	58.3	----	19.0	29,200
NC+ Hybrids	6122 RB	211.7	----	56.2	----	16.7	27,900
Garst Seed Company	8247 YG1	210.7	----	59.1	----	18.1	31,400
Triumph Seed Co., Inc	1756 CbRR	207.6	----	56.5	----	17.0	29,400
Dekalb Genetics	DKC 60-18 (RR2/YGPL)	189.5	----	59.3	----	15.9	28,000
Garst Seed Company	8378 YG1	189.3	----	59.3	----	16.9	31,000
NC+ Hybrids	6361 RB	173.4	----	57.9	----	15.7	28,500
Dekalb Genetics	DKC 66-23 (RR2/YGCB)	160.7	----	58.8	----	16.2	32,000
Asgrow Seed	RX 752 RR2/YGPL	136.4	----	59.5	----	15.9	25,000
Asgrow Seed	RX 674 RR 2	121.7	----	58.4	----	15.5	28,600
	Mean	182.5	189.4	58.6	57.7	16.7	28,200
	CV%	14.4	14.5	1.1	1.1	2.9	10.1
	L.S.D.	37.2	NS	0.9	0.7	0.7	4,000

Cooperator: Joe Webb

Soil Series: Richfield Clay Loam

Strip-Till: Following wheat and sunflowers in 2005

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

Fertilizer: N: 230 lbs/ac P: 50 lbs P2O5/ac K: 0

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

Planting Date: April 12, 2006

Harvest Date: September 20, 2006

**Table 5. Ensilage Yields and Quality Panhandle Corn Performance Trial, 2006.**

Company Brand Name	Entry Designation	YIELD Tons/ac		Plant Population plants/ac	CP%
		2006	Two-year		
Triumph Seed Co., Inc	1866Bt	24.6	25.1	29,500	7.9
Triumph Seed Co., Inc	1536 CbRR	24.8	24.7	31,600	9.8
Garst Seed Company	8377YGI/RR	25.0	24.5	30,500	8.4
Triumph Seed Co., Inc	1416 Bt	25.0	24.3	30,200	8.2
Garst Seed Company	8270 RR	22.6	23.1	30,400	9.8
Garst Seed Company	8313 CB/LL	23.6	21.4	32,400	7.5
Dekalb Genetics	DKC 64-81 (YGCB)	27.4	----	31,200	8.2
NC+ Hybrids	7402 R	27.2	----	27,000	7.9
Triumph Seed Co., Inc	1756 CbRR	25.6	----	29,500	9.6
Asgrow Seed	RX 674 RR 2	25.1	----	30,300	9.8
NC+ Hybrids	6361 RB	23.7	----	30,600	8.9
Garst Seed Company	8247 YG1	23.0	----	31,200	10.0
Garst Seed Company	8295 YG1/RR	22.1	----	30,200	8.4
Asgrow Seed	RX 752 RR2/YGPL	21.9	----	30,200	8.0
Dekalb Genetics	DKC 60-18 (RR2/YGPL)	21.8	----	33,000	7.5
NC+ Hybrids	7373 RB	21.3	----	28,600	8.8
Dekalb Genetics	DKC 66-23 (RR2/YGCB)	20.1	----	28,700	8.7
NC+ Hybrids	6122 RB	19.9	----	23,400	7.8
Garst Seed Company	8378 YG1	18.6	----	28,600	9.4
	Mean	23.3	23.8	29,800	8.7
	CV%	14.2	11.0	10.1	9.5
	L.S.D.	NS	NS	NS	1.7

Cooperator: OPREC

Soil Series: Richfield Clay Loam

Strip-tillage wheat double crop sunflower in 2005

Soil Test: N: 38 P: 14 K: 936 pH: 7.6

Fertilizer: N: 200 lbs/ac P: 50 lbs/ac P<sub>2</sub>O<sub>5</sub> K: 0

Herbicide: 2 qt/ac Cinch ATZ Lite (Preemergence)

Planting Date: April 14, 2006

Harvest Date: August 25, 2006