



# OKLAHOMA PANHANDLE CORN PERFORMANCE TRIALS, 2007



## *PRODUCTION TECHNOLOGY CROPS*

OKLAHOMA COOPERATIVE EXTENSION SERVICE  
DEPARTMENT OF PLANT AND SOIL SCIENCES  
DIVISION OF AGRICULTURAL SCIENCES & NATURAL RESOURCES  
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## **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 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. The dryland trial in Garfield county was located on the Rodney Timms farm SE of Enid. 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 22,000 plants/ac for the dryland location at Enid. 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 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 59 % and production is reported as tons/ac adjusted to 65% moisture.

## **GROWING CONDITIONS**

There were two distinct rainfall seasons for Oklahoma in 2007, with wide variation among regions of the state. The body of the state was dry throughout the winter period while the panhandle received record rainfall for the month of December (3.75 inches in 2007 vs. the old record of 2.75, set in 1913). During the growing season, however, the situation was reversed. Near record rainfall was received in the body of the state while the panhandle baked (Tables 1 and 2). The 7.46 inch rainfall total at OPREC was similar to that of 1998 (7.3 inches) and 2000 (7.09 inches) which is below the long-term mean of 12.3 inches. Also the total for 2007 can be somewhat misleading in that the 2 inch total in July was received in one event of approximately 45 minutes; therefore much of that rainfall was not effective.

The OPREC soil temperature of 61° F on April 1 at the two-inch depth was consistent with observations in previous years. A freeze event on Easter weekend, however, cooled soil temperatures for a short period and many producers in the body of the state were forced to replant corn. We followed suit, replanting the trial at Enid on April 27<sup>th</sup>. Growing condition through early July were excellent with almost ideal temperatures for corn. No 100 °F days were recorded in June and the mean high temperature of 85, was 2.8 degrees below the long-term mean at OPREC. Although the temperatures were almost perfect, wind conditions were not. In June the region had two periods when sustained winds were above 50 mph for over an hour with gusts above 70 mph. The June event was early in the month and resulted in green snap of corn in many instances, specifically on the earlier planted corn. The second event was in late August and resulted in significant lodging prior to harvest, again the earlier planted corn at OPREC was affected much more than corn planted later in April. There were no major hailstorms in the region in 2007. Although corn was replanted yields for dryland corn in the body

of the state were excellent due to the large amount of rainfall received, the most limiting factor for corn grain yields for most of Oklahoma was nitrogen fertilizer. Harvesting of corn was not delayed due to weather in any region in 2007.

## RESULTS

Grain yield, test weight, harvest moisture, and plant populations for OPREC and Webb trials are presented (Tables 5-8). Ensilage yields are reported in Table 8. Protein, Acid Detergent Fiber (ADF) and Total Digestible Nutrients (TDN), however are not reported, because no significant differences existed among hybrids. Averages were 7.3, 30.5, and 65.1 %, for Protein, ADF and TDN respectively. Similarly, there were no differences among hybrids in energy values for, maintenance, lactation, and gain values with averages of 0.67, 0.67, and 0.40 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; Roger Gribble, Bart Cardwell, Donna George, Lawrence Bohl, Matt LaMar, Eddie Pickard, Tony Mills, and Craig Chesnut. Their efforts are greatly appreciated.*

**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
2007	2.10	1.48	1.62	2.00	0.26	7.46
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

**Table 2. Rainfall for dryland corn performance trial in Garfield County.**

Location	March	April	May	June	July	Aug	Total
Long-term mean	2.34	2.99	4.86	4.26	2.89	3.35	20.69
2007	6.06	2.92	5.21	12.81	2.92	0.86	30.78

**Table 3. Characteristics of Corn Hybrids in Panhandle Corn Performance Trials, 2007.**

Company Brand Name	Hybrid	Plant Characteristics				Maturity Days
		SV	SS	SG	EP	
Garst Seed Company	8313 CB/LL	1	4	3	M	114
Garst Seed Company	8249 YG1/RR	2	4	3	M	117
DEKALB	DKC 61-73 (RR2/YGCB)	3	4	3	M	111
DEKALB	DKC 62-33 (RR2/YGCB)	3	3	4	M	112
DEKALB	DKC 64 -18 (RR2/YG CB)	3	5	5	M	114
DEKALB	DKC 65 - 47 (RR2)	2	3	3	M	115
DEKALB	DKC 67 - 87 (RR2/YGCB)	2	4	3	MH	117
Triumph Seed Co., Inc	1977 CbRR	3	2	2	H	119
Triumph Seed Co., Inc	1608 VT3	3	4	4	M	115
Triumph Seed Co., Inc	1706VT3	2	2	3	M	117
NC+ Hybrids	5392B	3	4	4	M	112
NC+ Hybrids	5223RBD	3	3	2	M	112
NC+ Hybrids	5453VT3	3	3	2	H	114
NC+ Hybrids	5556HLR	3	3	2	H	115
NC+ Hybrids	5402RB	3	4	3	M	113
NC+ Hybrids	4251RB	3	3	1	M	107
NC+ Hybrids	3611RB	2	4	4	H	105
Triumph Seed Co., Inc	1866Bt	2	2	2	H	116
NC+ Hybrids	6122 RB	2	3	2	M	116

**Table 4. Characteristics of Corn Hybrids in the Enid Corn Performance Trials, 2007.**

Company Brand Name	Hybrid	Plant Characteristics				Maturity Days
		SV	SS	SG	EP	
DEKALB	DKC 51 - 39 (RR2/YGPL)	2	3	3	M	101
DEKALB	DKC 52 - 63 (RR2/YGCB)	2	4	3	M	102
NC+ Hybrids	1773RB	2	3	4	M	97
NC+ Hybrids	3611RB	2	4	4	H	105
NC+ Hybrids	4251RB	3	3	1	M	107
NC+ Hybrids	4947RB	2	3	4	M	110
NC+ Hybrids	6122 RB	2	3	2	M	116
DEKALB	DKC 61-73 (RR2/YGCB)	3	4	3	M	111

\* 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 5 . Grain Yield and Harvest Parameters Enid location, Oklahoma Corn Performance Trials, 2007.**

<b>Company Brand Name</b>	<b>Entry Designation</b>	<b>Grain Yield bu/ac 2007</b>	<b>Test weight Lb/bu 2007</b>	<b>Plant Population plants/ac</b>	<b>Harvest Moisture</b>
NC+ Hybrids	1773RB	148.1	58.8	16,300	13.0
NC+ Hybrids	6122 RB	137.8	54.2	15,500	17.6
DEKALB	DKC 61-73 (RR2/YGCB)	137.1	55.7	16,100	13.8
DEKALB	DKC 52 - 63 (RR2/YGCB)	132.3	56.9	15,100	13.4
NC+ Hybrids	4251RB	132.1	56.2	15,800	13.6
DEKALB	DKC 51 - 39 (RR2/YGPL)	130.0	56.8	17,100	12.6
NC+ Hybrids	3611RB	119.9	57.3	16,600	13.6
NC+ Hybrids	4947RB	105.4	56.6	14,500	15.7
	Mean	129.2	56.6	15,900	14.2
	C.V.%	10.3	2.1	11.8	7.1
	L.S.D.	19.6	1.7	NS	1.5

Cooperator: Rodney Timms

Soil Series: Bethany Silt Loam

Forage sorghum in 2006

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

Fertilizer: N: 135 lbs/ac P: 20 lbs/ac P<sub>2</sub>O<sub>5</sub> 5 gal 10-34-0 K: 0

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

Planting Date: March 16, 2007 replanted April 27, 2007

Harvest Date: August 27, 2007

**Table 6. Grain Yield and Harvest Parameters Joe Webb location, Oklahoma Corn Performance Trials, 2007.**

Company Brand Name	Entry Designation	Grain Yield Bu/ac	Test Weight Lb/bu	Harvest Moisture	Plant Population plants/ac	Lodging %
Garst Seed Company	8313 CB/LL	213.5	58.2	15.6	29,200	0
DEKALB	DKC 67 - 87 (RR2/YGCB)	205.8	59.5	16.2	32,000	10
NC+ Hybrids	5556HLR	203.6	57.8	15.5	31,000	10
Garst Seed Company	8249 YG1/RR	200.7	58.9	17.2	30,400	0
NC+ Hybrids	5453VT3	197.6	59.4	15.1	31,600	0
DEKALB	DKC 65 - 47 (RR2)	197.1	59.4	16.2	31,600	10
Triumph Seed Co., Inc	1608 VT3	194.1	57.4	14.5	31,200	0
DEKALB	DKC 62-33 (RR2/YGCB)	193.6	59.3	15.7	31,600	0
NC+ Hybrids	6122 RB	187.0	57.5	15.2	30,700	10
NC+ Hybrids	5402RB	180.6	58.7	15.7	32,600	10
Triumph Seed Co., Inc	1706VT3	172.5	55.6	12.3	30,200	0
Triumph Seed Co., Inc	1866Bt	166.7	58.6	15.6	35,500	10
NC+ Hybrids	5392B	164.8	58.4	14.2	32,400	10
NC+ Hybrids	3611RB	163.4	60.0	13.8	29,000	0
NC+ Hybrids	4251RB	155.4	58.9	14.2	32,500	10
DEKALB	DKC 64 -81 (RR2/YG CB)	154.2	59.3	15.0	32,000	0
NC+ Hybrids	5223RBD	153.3	59.1	15.8	30,500	20
DEKALB	DKC 61-73 (RR2/YGCB)	139.0	58.4	15.1	30,500	10
Triumph Seed Co., Inc	1977 CbRR	137.2	57.6	16.2	30,600	20
	Mean	177.9	58.5	15.2	31,300	
	CV%	15.7	2.1	6.1	6.9	
	L.S.D.	39.6	1.8	1.3	3,000	

Cooperator: Joe Webb

Soil Series: Richfield Clay Loam

Strip-Till: Following wheat and sunflowers in 2006

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 24, 2007

Harvest Date: September 7, 2007

**Table 7. Grain Yield and Harvest Parameters OPREC location, Oklahoma Corn Performance Trials, 2007.**

<b>Company Brand Name</b>	<b>Entry Designation</b>	<b>Grain Yield Bu/ac</b>	<b>Test Weight Lb/bu</b>	<b>Harvest Moisture</b>	<b>Plant Population plants/ac</b>	<b>Lodging %</b>
Garst Seed Company	8313 CB/LL	180.8	59.1	13.2	29,900	40
NC+ Hybrids	4251RB	179.8	58.4	12.2	28,800	30
Triumph Seed Co., Inc	1866Bt	177.7	59.5	13.3	30,300	60
NC+ Hybrids	5453VT3	177.2	60.2	12.8	32,900	30
Triumph Seed Co., Inc	1706VT3	176.8	57.9	13.1	33,600	60
Garst Seed Company	8249 YG1/RR	174.9	58.4	14.3	28,000	30
DEKALB	DKC 64 -81 (RR2/YG CB)	174.2	59.7	12.7	32,400	40
DEKALB	DKC 61-73 (RR2/YGCB)	163.7	58.6	12.5	30,300	10
NC+ Hybrids	5402RB	163.6	61.0	13.0	30,600	30
DEKALB	DKC 65 - 47 (RR2)	161.7	60.5	13.7	30,200	20
NC+ Hybrids	6122 RB	160.2	57.9	13.3	31,600	50
DEKALB	DKC 62-33 (RR2/YGCB)	159.7	59.3	13.3	32,600	40
NC+ Hybrids	5392B	158.0	58.4	12.6	32,600	70
NC+ Hybrids	5556HLR	157.3	58.7	12.7	32,700	70
DEKALB	DKC 67 - 87 (RR2/YGCB)	155.3	58.9	13.7	30,600	40
Triumph Seed Co., Inc	1608 VT3	152.1	59.0	12.8	28,700	70
Triumph Seed Co., Inc	1977 CbRR	149.3	57.4	12.7	32,800	30
NC+ Hybrids	3611RB	148.3	59.8	12.2	30,400	60
NC+ Hybrids	5223RBD	143.6	60.8	12.9	30,800	40
	Mean	163.9	59.1	13	31000	43
	CV%	14.9	0.9	2.3	10.3	
	L.S.D.	NS	0.7	0.4	NS	

Cooperator: OPREC

Soil Series: Richfield Clay Loam

Strip-till: wheat double crop sunflower in 2006

Soil Test: N: 41 P: 18 K: 890 pH: 7.8

Fertilizer: N: 180 lbs/ac P: 50 lbs/ac P<sub>2</sub>O<sub>5</sub> K: 0

Herbicide: 1.5 qt/ac Cinch ATZ Lite (Preemergence) + .75 oz Balance

Planting Date: April 11 2007

Harvest Date: September 12, 2007

**Table 8. Ensilage Yields and Quality Panhandle Corn Performance Trial, 2007.**

<b>Company Brand Name</b>	<b>Entry Designation</b>	<b>YIELD Tons/ac</b>	<b>Plant Population plants/ac</b>	<b>Harvest Moisture %</b>
Triumph Seed Co., Inc	1706VT3	34.2	31,500	60
NC+ Hybrids	5453VT3	30.4	32,600	55
NC+ Hybrids	6122 RB	30.4	30,000	61
Triumph Seed Co., Inc	1866Bt	29.5	31,800	59
NC+ Hybrids	5402RB	28.1	31,800	60
NC+ Hybrids	5556HLR	27.8	29,700	60
Triumph Seed Co., Inc	1608 VT3	27.4	29,800	53
Garst Seed Company	8249 YG1/RR	26.9	29,000	60
DEKALB	DKC 61-73 (RR2/YGCB)	26.7	29,200	57
NC+ Hybrids	5392B	26.2	31,900	57
DEKALB	DKC 64 -81 (RR2/YG CB)	26.1	31,100	64
Garst Seed Company	8313 CB/LL	25.8	30,100	61
DEKALB	DKC 62-33 (RR2/YGCB)	25.7	33,200	58
DEKALB	DKC 67 - 87 (RR2/YGCB)	25.3	32,900	58
NC+ Hybrids	5223RBD	25.2	32,600	59
DEKALB	DKC 65 - 47 (RR2)	24.6	30,600	62
Triumph Seed Co., Inc	1977 CbRR	22.1	28,400	59
	Mean	27.2	31,000	59
	CV%	12.5	9	9
	L.S.D.	5.7	NS	NS

Cooperator: OPREC

Soil Series: Richfield Clay Loam

Strip-tillage wheat double crop sunflower in 2006

Soil Test: N: 41 P: 18 K: 890 pH: 7.8

Fertilizer: N: 180 lbs/ac P: 50 lbs/ac P<sub>2</sub>O<sub>5</sub> K: 0

Herbicide: 1.5 qt/ac Cinch ATZ Lite (Preemergence) + .75 oz Balance

Planting Date: April 11 2007

Harvest Date: August 14, 2007