



# Current Report

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## Grain Sorghum Performance Trials in Oklahoma, 2015

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### Trial Objectives and Procedures

Each year, grain sorghum hybrid performance trials are conducted by the Oklahoma Cooperative Extension Service. These trials provide producers, Extension educators, industry representatives and researchers with information for grain sorghum hybrids marketed in Oklahoma. Five performance trials were conducted at four locations in 2015. Four dry-land trials were planted at Apache, Goodwell, Tipton and Tonkawa, and one irrigated trial at Goodwell. Only full-season trials were planted in 2015. Yields are reported here for the medium-maturity hybrids at Apache, for the medium- and full-maturity hybrids at Goodwell, for medium-maturity hybrids at Tipton, and for all maturity groups at Tonkawa. All locations included early, medium and full-season varieties and all trials and maturity groups were harvested. However, the yields were highly variable in some groups and therefore are not reported.

Grain sorghum hybrids entered (Table 1) were assigned by companies to their respective maturity groups (early- 60 days or less to mid-bloom, medium-60 to 69 days to mid-bloom, and late-70 days and greater to mid-bloom) and trial locations; therefore all hybrids were not entered at all locations. In 2015, all varieties except one were included in all trials. One variety was included only in the irrigated trial. Resistance to greenbug biotypes C, E, I and K were indicated by the companies. Companies submitted all hybrid characteristics presented in Table 1. This information was not determined or verified by Oklahoma State University. Company participation was voluntary and some hybrids marketed in Oklahoma were not included in the trials.

Each maturity group was tested in a randomized complete block design with four replications, except at Apache, where only three replications were harvested. For each hybrid evaluated in the body of the state, and the irrigated trial, two 30-inch rows, 25 feet long were planted, then trimmed to 20 feet prior to harvest. At Goodwells dryland location, two 30-inch rows

### Highlights

The Oklahoma Grain Sorghum performance trials passed through a transition in 2015 with Rick Koche-nower's move to a position in the sorghum industry and Roger Gribble's retirement. The authors thank them for the development of these trials and reports from 1999 through 2014.

Precipitation and soil moisture during the growing season in 2015 were unusually high across the state, compared to 15-year averages. Sugarcane aphids decreased sorghum yields across much of the state. The Tonkawa medium-maturity group was the star of 2015, with an average of 106 bushels per acre while the medium-maturity group in the OPREC dryland trial produced the second-highest average yield at 98 bushels per acre.

35 feet long were planted and harvested. Tractor-powered cone planters were used to plant all trials with seeding rates adjusted for trial location. Trials were harvested with a Kincaid model, 8XP plot combine.

Target populations, cooperating producers, fertilization, cultural practices, soil series and herbicide and insecticide use on all trials are listed individually in the results tables. Rainfall data from the nearest Mesonet sites are also listed. Some trials are long distances from the nearest Mesonet site; therefore rainfall could be greater or less than reported.

### Growing Conditions

The trials across the state may have experienced excess rainfall in 2015, from a low of 17.4 inches during the growing season at Goodwell to a high of 30.0 inches at Apache. Some lower yields, especially at Tipton, may have been influenced by periodically heavy rainfall on silt loam soils and perhaps lower than typical solar radiation. The sandy loam soils at the

Apache trial site may have moderated the high rainfall and resulted in somewhat higher yields.

In 2015, sugarcane aphids were a common pest in grain sorghum in the western two-thirds of Oklahoma, plus Ottawa county in the northeast. By late August, the national sugarcane aphid distribution map<sup>1</sup> indicated eleven Oklahoma counties with sugar-cane aphids at or above treatment thresholds in grain sorghum. Grant, Kay, Garfield and Noble counties had the highest aphid populations in the state. By the end of September, 23 Oklahoma counties had reported occurrences of sugarcane aphids, with 16 counties above the treatment threshold. In 2015, sugar-cane aphids infested grain sorghum in 417 counties across 17 states in the U.S. Refer to OSU Pest E-Alert Volume 14, Number 11 for treatment options<sup>2</sup> and Defense against the Sugarcane Aphid<sup>3</sup> from the United Sorghum Checkoff Program for details on scouting the pest.

## Results

The trials at Tonkawa were the best of 2015, with the highest individual variety yield (135 bu/A) and the highest average yield (106 bu/A). Both of these yields occurred in the medium maturity group. The Tonkawa trials received 25.9 inches of precipitation. Similar yields occurred at the nearby Blackwell trial site with 22.8 inches of precipitation in 2014 and 18.9 inches of precipitation in 2013.

The Goodwell dryland site had exceptional yields in 2015, after having a failed crop in 2014 and harvesting 53 bushels per acre in 2013 with only 9.1 inches of precipitation. The highest individual variety yield in 2015 was 131 bushels per acre and the average of the medium-maturity group was 98 bushels per acre. Yields at the Apache and Tipton sites fell somewhat below typical, perhaps due to rainfall, and some pre-harvest lodging. Apache, Tipton and Tonkawa trials were also treated for sugarcane aphids, which may have decreased yields. In 2015, the medium-maturity group average yields were greater than either early or full-season group yields in all trials. Late-season infestations of sugarcane aphids may have prevented full-season varieties from reaching their yield potential, compared to earlier-maturing medium-season varieties.

Grain yields are reported in bushel per acre of threshed grain, adjusted to a moisture content of 14 percent (Tables 2 through 7). Test weight is also reported in pounds per bushel. In some locations, two-year averages of grain yields and test weights are reported, as well as harvest moisture of grain. Bird damage and lodging are reported, when present at a location. Different plant populations at each location prevent accurate comparison between locations. Also, statistical comparisons across maturity groups were not conducted. Producers should note that late-maturing hybrids will generally yield more than early and medium-maturity hybrids. The availability of moisture at critical crop development periods, however, often influences yield more than the yield differences associated with maturity groups. When choosing a maturity group, the type of cropping system, planting date, planting rate, potential moisture and potential pest problems should be taken into consideration. For more information consult Extension Fact Sheet PSS-2113 Grain Sorghum Production Calendar and Four Keys to Reaching Grain Sorghums Yield Potential<sup>4</sup>.

Least Significant Difference (L.S.D.) is a statistical test of yield differences and is shown at the bottom of each table. Unless two hybrids differ by at least the L.S.D shown, little confidence can be placed in one hybrid being superior to another and the difference is probably not real.

The Coefficient of Variation (C.V.) is provided as an estimate of the precision of the data with respect to the mean for that location and maturity group. To provide some indication of yield stability, multiple-year means for yield and test weight are provided where trials have been conducted for more than one year with more than three entries per maturity group. Producers interested in comparing hybrids for consistency of yield in a specific area should consult these entries.

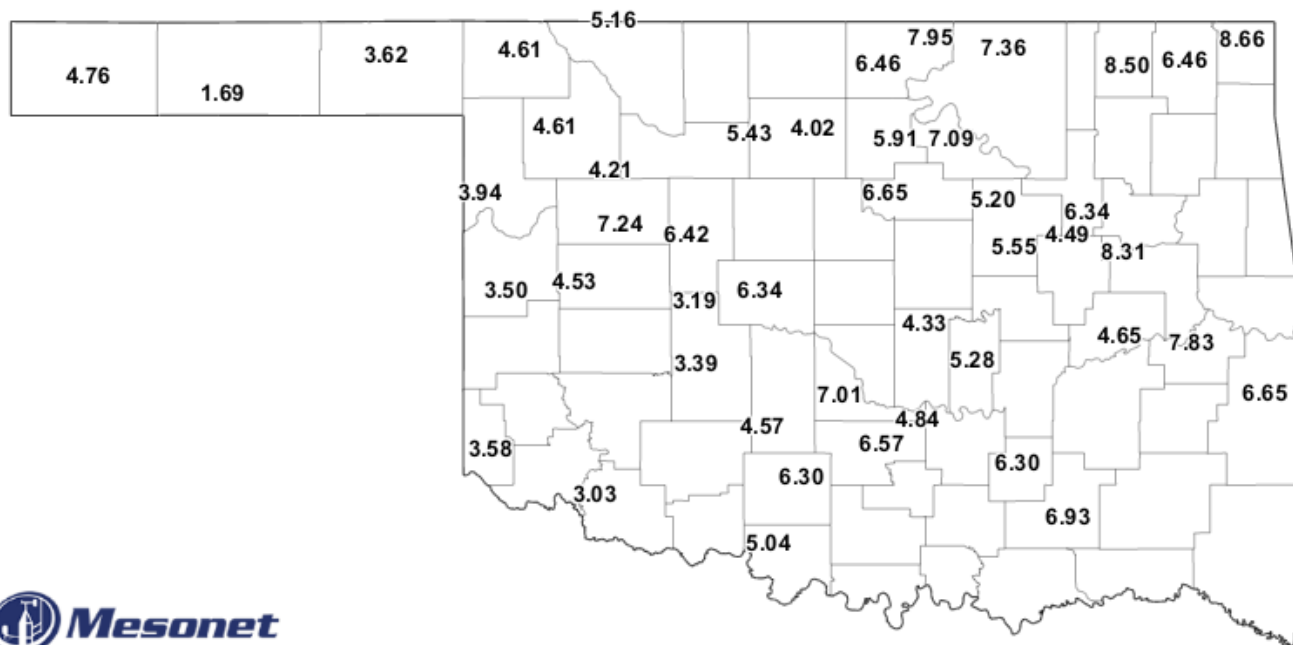
The following people have contributed to this report by assisting in crop production, data collection, and publication: Cameron Nisly, Cameron Murley, Rocky Thacker, Donna George, Alan Mindeman and Marty Williams, Their efforts are greatly appreciated. Also, we would like to thank the Oklahoma Grain Sorghum Commission and the United Sorghum Checkoff Program for their financial support.

<sup>1</sup> <http://txscan.blogspot.com/>

<sup>2</sup> <http://entopl.okstate.edu/pddl/pddl/2015/PA14-11.pdf>

<sup>3</sup> <http://sorghumcheckoff.com/wp-content/uploads/2015/06/SugarcaneAphid-PocketBookWeb.pdf>

<sup>4</sup> <http://osunpk.com/2015/03/18/4-keys-to-reaching-grain-sorghums-yield-potential/>

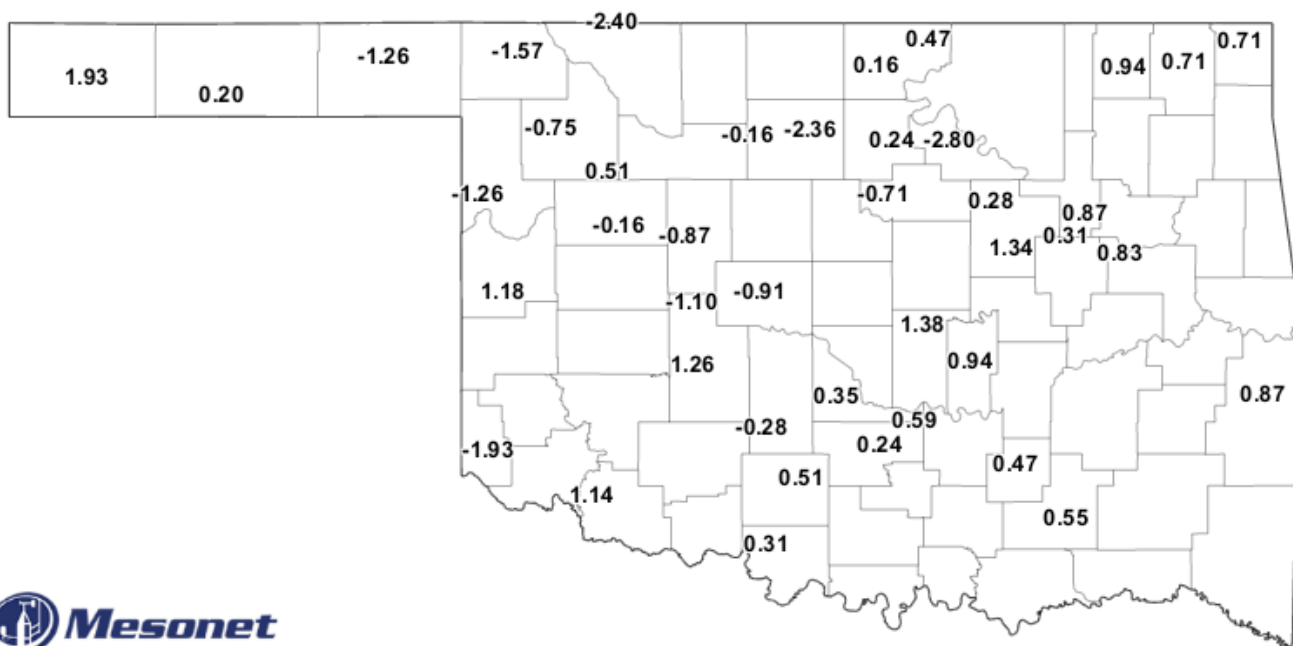


**Average Plant Available Water in Top 32 inches**

April 2000-2014

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Figure 1. 15-year average inches of plant-available water in soil to 32 inches of depth for Oklahoma in the month of April 2015.

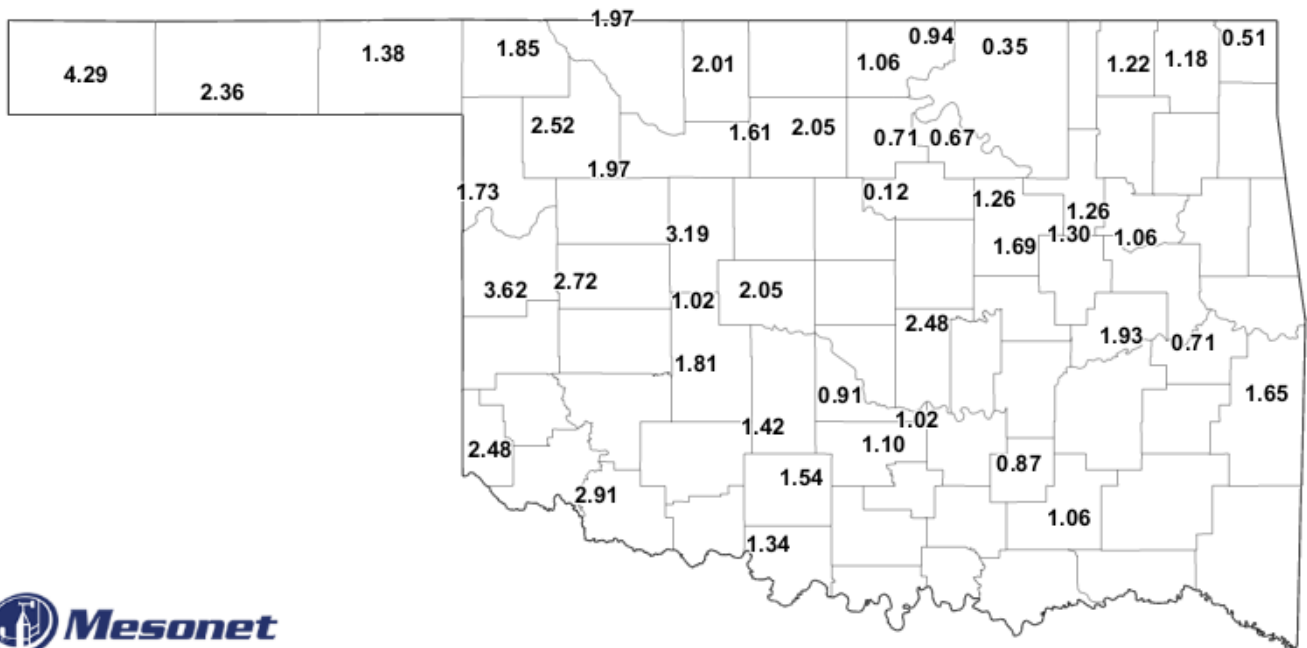


**Average Plant Available Water in Top 32 inches**

Departure from Average, April 2015

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Figure 2. Departure from average for plant-available water in soil to 32 inches of depth for Oklahoma in the month of April 2015.

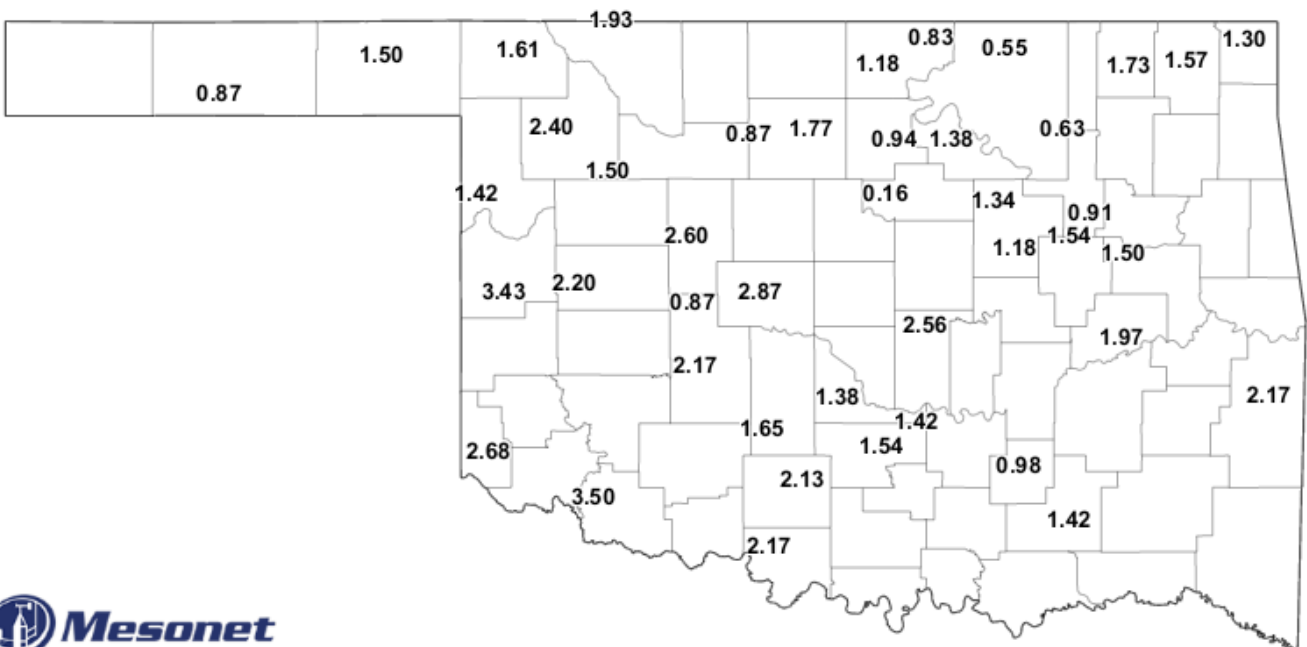


**Average Plant Available Water in Top 32 inches**

Departure from Average, May 2015

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Figure 3. Departure from average for plant-available water in soil to 32 inches of depth for Oklahoma in the month of May 2015.



**Average Plant Available Water in Top 32 inches**

Departure from Average, June 2015

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Figure 4. Departure from average for plant-available water in soil to 32 inches of depth for Oklahoma in the month of June 2015.

**Table 1. Seed source and hybrid characteristics of grain sorghums in the Oklahoma Grain Sorghum Performance Trials, 2015. All hybrids are susceptible to birds and are single cross.**

<i>Company Brand Name</i>	<i>Hybrid</i>	<i>Seed Color<sup>1</sup></i>	<i>Endosperm<sup>2</sup></i>	<i>Days to Mid-bloom</i>	<i>Greenbug Resistance<sup>3</sup></i>	<i>Trial Location<sup>4</sup></i>
Richardson Seeds Ltd.	99773	R	----	52-57	C,E	1
Richardson Seeds Ltd.	11043	R	----	53-57	C,E	1
Johnston Seed Co.	JSG-55DC	Bz	HY	55	C,E	1
DeKalb Brand	DKS 28-05	Bz	HY	58	----	1
DeKalb Brand	DKS 37-07	Bz	HY	60	C,E,I	1
DeKalb Brand	DKS 38-88	Bz	----	64	I	1
DeKalb Brand	DKS 41-50	Bz	Hy	67	E,I	1
Richardson Seeds Ltd.	92123	R	----	60-62	C,E	1
Richardson Seeds, Ltd.	941531	R	W	66-69	C,E	1
Sorghum Partners LLC	SP3425	Bz	HY	60	C,E	1
Sorghum Partners LLC	NK5418	Bz	HY	67	C,E	1
Sorghum Partners LLC	KS 585	Bz	HY	67	C, E	1
NuTech Seed, LLC	GS623	R	W	62	C,E	1
NuTech Seed, LLC	GS693	R	W	69	C,E	1
Mycogen Seeds	737	Bz	W	63-73	----	1
Mycogen Seeds	1G741	Bz	W	69-79	----	1
Alta Seeds	AG 2115	R	W	64-69	----	1
Alta Seeds	AG 1203	Bz	HY	64-67	----	1
Alta Seeds	XG30003	R	W	64-67	----	1
Alta Seeds	AG 3101	R	W	67-70	----	1
Alta Seeds	AG 2105	R	----	67	----	1
Alta Seeds	AG 3201	Bz	----	68	----	1
Alta Seeds	XG02008	R	----	67-69	----	1
Alta Seeds	XG30001	R	----	63	----	1
Alta Seeds	XG3002	R	----	68	----	1
DuPont Pioneer	86G32	R	W	65	----	1
DuPont Pioneer	85P05	Bz	Y	68	----	1
DuPont Pioneer	86P20	R	W	64	----	1
Johnston Seed Co.	JSG-65D	Bz	Hy	65	C,E	1
Johnston Seed Co.	JSG-65	Bz	Hy	65	C,E	1
Gayland Ward Seed Co.	GW 1160	Bz	Hy	66	C	1
Gayland Ward Seed Co.	GW 9460	Bz	----	65-69	----	1
Dupont Pioneer	84P80	R	W	70	----	1
Dupont Pioneer	86P72	R	W	71	----	1
DeKalb Brand	DKS 53-67	Bz	HY	71	C,E,I	4
NuTech Seed, LLC	GS715	R	----	71	----	1
NuTech Seed, LLC	GS725	R	----	72	----	1
Sorghum Partners LLC	SP6929	Bz	----	70-74	C	1
Gayland Ward Seed Co.	GW 9417	R	Hy	75	C,E	1
Gayland Ward Seed Co.	GW 9320	R	Hy	79	C,E	1
Richardson Seeds Ltd.	96173	R	W	73-78	C,E	1

<sup>1</sup> Seed Color: Br – Brown; W – White; Y – Yellow; Bz – Bronze; R – Red; C – Cream

<sup>2</sup> Endosperm: HW – heterowaxy; W – waxy; HY – Heteroyellow; Y – Yellow; N – Non-waxy

<sup>3</sup> Greenbug Resistance: biotypes

<sup>4</sup> Trial locations: 1 – all; 2 – panhandle only; 3 – (Apache, Tipton); 4 – irrigated only (OPREC)

**Table 2. Results from Apache grain sorghum performance trial, 2015.**

Company Brand Name	Hybrid	Grain Yield bu/ac		Test weight lb/bu	
		2015	2-year	2015	2-year
<i>Medium, 60-69 days to mid-bloom</i>					
Alta Seeds	AG 3201	106		53	
Sorghum Partners LLC	KS 585	104		53	
Dupont Pioneer	86G32	98	100	53	55
Alta Seeds	AG1203	92	89	51	55
Alta Seeds	AG 2105	91		53	
Alta Seeds	XG30001	90		53	
Alta Seeds	AG 2115	90	97	53	55
Richardson Seeds Ltd.	92123	89	92	53	56
DeKalb Brand	DKS 38-88	88	114	52	57
Johnston Seed Co.	JSG-65D	87	95	52	55
Dupont Pioneer	86P20	86		52	
Sorghum Partners LLC	NK5418	85		52	
Johnston Seed Co.	JSG-65	85		53	
NuTech Seed, LLC	GS693	81		53	
Alta Seeds	AG 3101	80	102	53	56
Dupont Pioneer	85P05	75		54	
Alta Seeds	AG2103	75	90	52	56
Alta Seeds	XG30002	74		53	
Mycogen Seeds	737	73	95	52	55
Alta Seeds	XG02008	69		52	
NuTech Seed, LLC	GS623	66	72	52	54
DeKalb Brand	DKS 41-50	58		49	
	Mean	84	95	52	55
	CV %	19	15	3	2.3
	L.S.D.	26	17	3	1.5

Cooperator: Alan Mindemann

Soil Series: Pond Creek Fine Sandy Loam

Tillage Practices: No-till

Soil Test:

Fertilizer: N: 100 lbs/ac P: 0 K: 0 plus 5 gallons/ac. 10-34-0 at planting

Seeding rate: 56,000 seeds/ac

Target population 45,000 plants/ac

Planting Date: April 10, 2014

Harvest Date: August 28, 2015

Herbicide: 2.7 qt/ac Lumax EZ

Pre-emergence + 1 qt glyphosate

Insecticide: Sivanto (4 oz/ac) July 17, 2015

Monthly Rainfall (in.)	Apr.	May	June	July	Aug	Total
2015:	2.78	19.46	3.57	2.57	1.60	29.98
Long term mean:	3.25	4.52	4.29	2.52	2.70	17.28

Early and full-season varieties were also tested at this location, but the yields were highly variable and are not reported.

**Table 3. Results from OPREC dry-land grain sorghum performance trial, 2015.**

<i>Company Brand Name</i>	<i>Hybrid</i>	<i>Grain Yield bu/ac</i>	<i>Test weight lb/bu</i>	<i>Harvest Moisture %</i>
<i>Medium, 60-69 days to mid-bloom</i>				
Alta Seeds	AG3201	131	57	13.1
Alta Seeds	XG02008	124	58	12.7
Mycogen Seeds	737	122	59	12.8
DeKalb Brand	DKS 38-88	121	56	13.8
DeKalb Brand	DKS 41-50	117	59	13.1
Alta Seeds	AG2115	109	59	12.4
Sorghum Partners LLC	KS 585	108	60	13.4
Dupont Pioneer	86G32	106	57	13.6
Johnston Seed Co.	JSG-65	105	60	12.8
Alta Seeds	AG2103	102	60	13.0
Alta Seeds	AG3101	101	59	13.2
NuTech Seed, LLC	GS693	98	60	13.1
Alta Seeds	XG30001	98	58	13.3
Richardson Seeds Ltd.	92123	95	61	12.5
Sorghum Partners LLC	NK5418	92	60	12.2
Dupont Pioneer	85P05	92	62	14.0
Alta Seeds	AG1203	89	61	12.8
NuTech Seed, LLC	GS623	86	57	13.3
Johnston Seed Co.	JSG-65D	81	59	13.3
Alta Seeds	AG2105	80	61	13.8
Dupont Pioneer	86P20	67	60	13.1
Alta Seeds	XG30002	41	59	16.2
	Mean	98	59	13.2
	CV %	18	4	6.0
	L.S.D.	25	3	1.1

Cooperator: OPREC	Soil Series: Gruver Clay Loam (formerly Richfield)
Tillage Practices: No-till following wheat	Soil Test: N: 177 P: 24 K: 1054 pH: 7.3
Herbicide: April: Cinch ATZ Lite (1 lb/ac)+ 1qt Roundup+ 3oz Huskie June: 1pt Huskie	Fertilizer: 5 gallons/ac 10-34-0 with planter
Seeding rate 31,000 seeds/ac	Target Population: 25,000 plants/ac
Planting Date: May 1, 2015	Harvest Date: October 15, 2015

Monthly Rainfall (in.)	Apr	May	June	July	Aug	Total
2014:	1.87	6.37	1.83	4.11	3.22	17.40
Long term mean:	1.43	1.92	2.27	2.25	2.73	10.60

Early hybrids were also tested at this location, but CV values prevent confident comparisons between hybrids

**Table 4. Results from OPREC dryland grain sorghum performance trial, 2015.**

<i>Company Brand Name</i>	<i>Hybrid</i>	<i>Grain Yield bu/ac</i>	<i>Test weight lb/bu</i>	<i>Harvest Moisture %</i>
<i>Full, 70 days or greater to mid-bloom</i>				
Mycogen Seeds	1G741	108	58	13.6
Dupont Pioneer	84P80	99	62	13.7
Pioneer Hi-Bred Int.	84P72	99	62	14.6
Richardson Seeds Ltd.	941531	93	62	14.2
NuTech Seeds, LLC	GS 725	88	59	13.7
Alta Seeds	XG30003	86	58	17.1
NuTech Seeds, LLC	GS 715	82	61	14.2
Richardson Seeds Ltd.	96173	78	61	14.3
Gayland Ward Seed Co.	GW-9417	73	61	13.8
Gayland Ward Seed Co.	GW-9320	69	63	14.6
Gayland Ward Seed Co.	GW-9460	67	61	14.7
Sorghum Partners LLC	SP6929	67	62	14.8
	Mean	84	60	14.4
	CV %	16	5.8	5.2
	L.S.D.	20	5.0	1.1



**Table 5. Results from Tipton grain sorghum performance trial, 2015.**

Company Brand Name	Hybrid	Grain Yield bu/ac		Test weight lb/bu	
		2015	2-year	2015	2-year
<i>Medium, 60-69 days to mid-bloom</i>					
Dupont Pioneer	86G32	108	92	53	52
Dupont Pioneer	86P20	88		55	
NuTech Seed, LLC	GS623	86	99	55	55
Alta Seeds	AG1203	73	83	53	54
Mycogen Seeds	737	72	87	53	54
Dupont Pioneer	85P05	71		54	
Alta Seeds	AG 3201	71		52	
DeKalb Brand	DKS 41-50	67	64	55	54
Sorghum Partners LLC	KS 585	66	71	54	54
Johnston Seed Co.	JSG-65D	66	76	54	52
NuTech Seed, LLC	GS693	64	71	54	53
Johnston Seed Co.	JSG-65	63	76	54	54
Alta Seeds	AG2103	63	71	55	53
Alta Seeds	AG 2115	61	63	52	52
Sorghum Partners LLC	NK5418	57	62	52	51
Alta Seeds	XG30001	55		52	
Alta Seeds	XG30002	55		52	
DeKalb Brand	DKS 38-88	53	53	50	50
Alta Seeds	AG 2105	53		53	
Richardson Seeds Ltd.	92123	53	66	52	52
Alta Seeds	XG02008	43		52	
Alta Seeds	AG 3101	42	49	53	53
	Mean	64	72	53	53
	CV %	20	28	1	4.1
	L.S.D.	19	20	1	2.2

Cooperator: Tipton Valley Research Center  
 Conventional Tillage Practices, Sorghum-fallow-sorghum rotation  
 Fertilizer: N: 74 lbs/ac  
 Seeding rate: 56,000 seeds/ac  
 Planting Date: April 10, 2015  
 Herbicide: Glyphosate Aug. & Sept. 2014 +  
 Cinch ATZ Lite @ 2.0 qts/ac at planting

Soil Series: Tipton Silt Loam

Soil Test: N:56 P: 68 K: 673 pH: 6.7  
 P: 8 lbs/ac K: 0, plus 5 gallons/ac. 10-34-0 at planting  
 Target population 45,000 plants/ac  
 Harvest Date: August 28, 2015

Insecticide: Sivanto (4 oz/ac) July 17, 2015

Monthly Rainfall (in.)	Apr	May	June	July	Aug	Total
2015	3.56	12.71	3.34	1.30	1.58	22.49
Long-term mean	2.54	3.20	3.31	2.30	2.03	13.38

Early and full-season hybrids were also tested at this location, but CV values prevent confident comparisons between hybrids

**Table 6. Results from Tonkawa grain sorghum performance trial, 2015.**

<i>Company Brand Name</i>	<i>Hybrid</i>	<i>Grain Yield bu/ac</i>	<i>Test weight lb/bu</i>	<i>Harvest Moisture</i>
<i>Early, less than 60 days to mid-bloom</i>				
DeKalb Brand	DKS 37-07	112	56	9.6
DeKalb Brand	DKS 28-05	96	55	8.1
Gayland Ward	GW-1160	88	53	10.6
Richardson Seeds Ltd.	11043	86	56	8.4
Sorghum Partners LLC	SP3425	84	56	8.8
Richardson Seeds Ltd.	99773	75	54	8.5
Johnston Seed Co.	JSG-55DC	73	54	8.4
	Mean	87	54	8.9
	CV %	10	1	6.0
	L.S.D.	14	1	0.8

<i>Company Brand Name</i>	<i>Hybrid</i>	<i>Grain Yield bu/ac</i>	<i>Test weight lb/bu</i>	<i>Harvest Moisture</i>
<i>Full, 70 days or greater to mid-bloom</i>				
Mycogen Seeds	1G741	112	56	8.3
Dupont Pioneer	84P80	104	57	9.9
Pioneer Hi-Bred Int.	84P72	100	57	9.6
Richardson Seeds Ltd.	941531	99	58	8.7
Richardson Seeds Ltd.	96173	94	42	8.8
Gayland Ward Seed Co.	GW-9320	91	44	8.9
Sorghum Partners LLC	SP6929	90	55	10.8
Gayland Ward Seed Co.	GW-9460	89	56	9.8
Gayland Ward Seed Co.	GW-9417	82	44	8.5
NuTech Seeds, LLC	GS 725	81	58	9.3
Alta Seeds	XG30003	80	56	10.4
NuTech Seeds, LLC	GS 715	71	56	9.4
	Mean	91	55	9.3
	CV %	20	15	20.2
	L.S.D.	27	12	2.7

Cooperator: Marty Williams  
 Tillage Practices: no-till  
 Fertilizer: N: 150 lb plus 5 gallons/ac 10-34-0 at planting  
 Seeding rate: 56,000  
 Planting Date: April 24, 2015  
 Herbicide: 2.5 qt/ac Degree Extra pre plant

Soil Series: Ashport silt Loam  
 Soil Test:  
 Target population : 45,000  
 Harvest Date: August 9, 2015  
 Insecticide: 2.5 oz Transform, July 15th

Monthly Rainfall (in.)	Apr.	May	June	July	Aug	Total
2015	3.08	10.73	1.52	6.47	4.12	25.92
Long-term mean	4.36	4.58	5.57	4.44	3.52	22.47

**Table 7. Tonkawa continued**

<i>Company Brand Name</i>	<i>Hybrid</i>	<i>Grain Yield bu/ac</i>	<i>Test weight lb/bu</i>	<i>Harvest Moisture</i>
<i>Medium, 60-69 days to mid-bloom</i>				
Mycogen Seeds	737	135	55	9.7
Dupont Pioneer	85P05	128	57	9.6
DeKalb Brand	DKS 41-50	124	57	8.9
DeKalb Brand	DKS 38-88	120	56	9.1
Dupont Pioneer	86G32	115	55	8.4
Alta Seeds	AG 2105	113	57	9.0
Alta Seeds	AG 3201	112	56	8.6
NuTech Seed, LLC	GS693	109	57	8.4
Alta Seeds	AG2103	107	57	9.9
Alta Seeds	XG30001	107	41	10.6
Johnston Seed Co.	JSG-65	105	58	8.3
Johnston Seed Co.	JSG-65D	104	56	8.5
Sorghum Partners LLC	KS 585	102	57	8.7
Sorghum Partners LLC	NK5418	102	55	9.0
Alta Seeds	AG1203	101	57	9.4
Alta Seeds	XG02008	97	54	9.3
Alta Seeds	XG30002	96	56	12.7
NuTech Seed, LLC	GS623	95	57	8.1
Richardson Seeds Ltd.	92123	94	57	8.7
Alta Seeds	AG 2115	94	55	8.4
Dupont Pioneer	86P20	93	56	8.3
Alta Seeds	AG 3101	92	58	9.0
	Mean	106	56	9.1
	CV %	14	1	0.9
	L.S.D.	21	1	1.3

## **The Oklahoma Cooperative Extension Service**

### ***Bringing the University to You!***

The Cooperative Extension Service is the largest, most successful informal educational organization in the world. It is a nationwide system funded and guided by a partnership of federal, state, and local governments that delivers information to help people help themselves through the land-grant university system.

Extension carries out programs in the broad categories of agriculture, natural resources and environment; family and consumer sciences; 4-H and other youth; and community resource development. Extension staff members live and work among the people they serve to help stimulate and educate Americans to plan ahead and cope with their problems.

Some characteristics of the Cooperative Extension system are:

- The federal, state, and local governments cooperatively share in its financial support and program direction.
- It is administered by the land-grant university as designated by the state legislature through an Extension director.
- Extension programs are nonpolitical, objective, and research-based information.
- It provides practical, problem-oriented education for people of all ages. It is designated to take the knowledge of the university to those persons who do not or cannot participate in the formal classroom instruction of the university.
- It utilizes research from university, government, and other sources to help people make their own decisions.
- More than a million volunteers help multiply the impact of the Extension professional staff.
- It dispenses no funds to the public.
- It is not a regulatory agency, but it does inform people of regulations and of their options in meeting them.
- Local programs are developed and carried out in full recognition of national problems and goals.
- The Extension staff educates people through personal contacts, meetings, demonstrations, and the mass media.
- Extension has the built-in flexibility to adjust its programs and subject matter to meet new needs. Activities shift from year to year as citizen groups and Extension workers close to the problems advise changes.

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