

## Dryland Grain Sorghum Variety Trial Bushland, TX – 2009

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LOCATION:	Texas AgriLife Research Station, Bushland, TX
SOIL TYPE:	Pullman clay loam
PREVIOUS CROP:	Fallow
ROW WIDTH:	30 inches
PREVIOUS CROP:	Fallow
LAND PREPARATION:	Disked, planted flat
DATE PLANTED:	June 25, 2009 with cones mounted on a four row JD MaxEmerge planter
SEEDING RATE:	30,000 seed per acre
PLOT SIZE:	Two rows 25 ft
FERTILIZER:	50 lbs/acer N and 10 lbs/acer P
HERBICIDE:	June 25, 2009: 1 lb/acre of Atrazine 4EC (applied immediately after planting)
INSECTICIDE:	None
RAINFALL:	6.56 inches
DATE HARVESTED:	Nov. 4, 2009 – Mechanical harvest (Massey Ferguson Plot Combine)
TEST DESIGN:	Randomized complete block
NUMBER ENTRIES:	35
NUMBER REPLICATIONS:	3
NUMBER ROWS/PLOT:	2
TEST MEAN:	1178 lb/acre
TEST YIELD C.V.:	30.28%

### COMMENTS:

This was the third year a dryland grain sorghum variety trial was planted at the Texas AgriLife Research Field Lab, near Bushland, TX. The test was planted on fallowed ground with good deep soil moisture. Growing season rainfall was below average at 6.6 inches and was especially dry from mid-August thru mid-October (Figure 1). Late season dry weather likely led to the significant lodging of several varieties (Table 1). Lodging was not consistent between replications leading to a high CV. Lodging directly affected the yield of some plots causing inconsistent yield between replications of some varieties. Overall, the trial was representative of grain sorghum yields around the area. No insect or significant disease infestations were observed in the trial. Grain moisture was not collected on each individual variety; however, several randomly sampled plots tested at 13% moisture. Yield ranged from 267 lb to 2,212 lb/acre (Figure 2). Six hybrids yielded greater than 1,800 lb/acre. These were DG 658B, Atx399xRTx430, DG 771B, TR 456, DK 44, and NK 638. The same trial was conducted at Lubbock, TX and Clovis, NM. A fourth test near Perryton, TX was not harvested due to poor emergence.

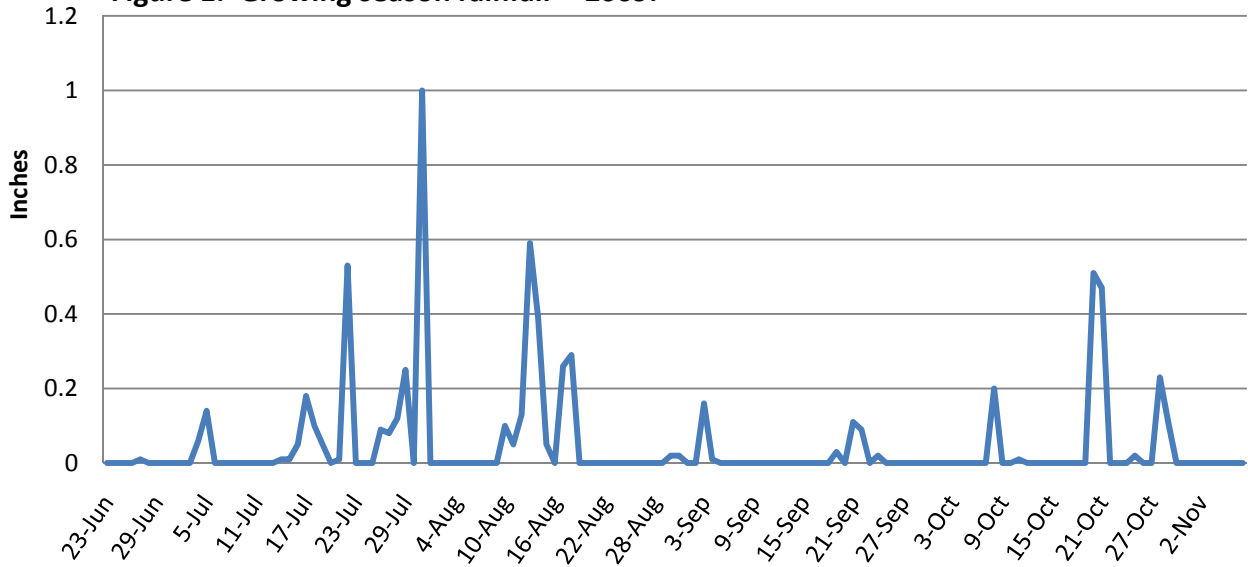
Dryland yields were collected from variety trials at Bushland, TX in 2007 and 2009. Twenty varieties were planted in both trials and the results are summarized in Table 2. Yield was much higher in 2007 due to timely rains, averaging 3,692 lbs/acre compared to an average of 1,226 lbs/acre in 2009. Five varieties yielded in the top 50% both years. These were TR 458, DG 758B, NK 7633, NC+ 7C22, and DK S37-07.

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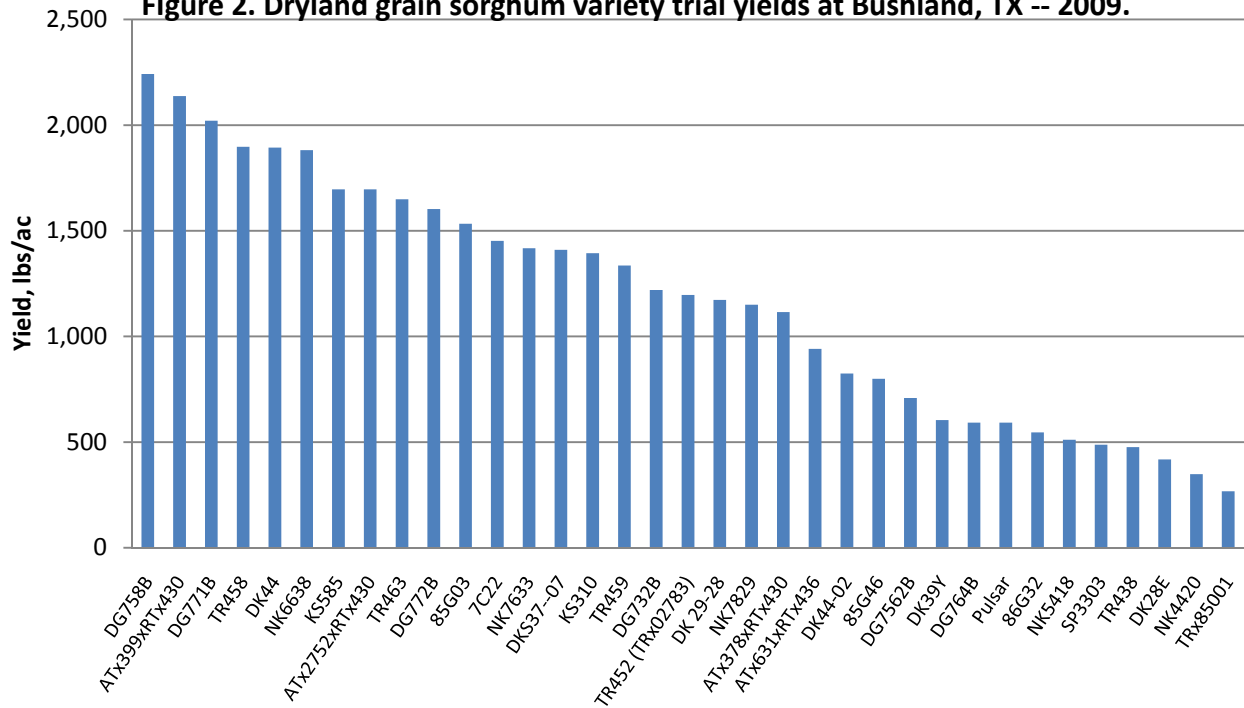
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**Figure 1. Growing season rainfall -- 2009.**



**Figure 2. Dryland grain sorghum variety trial yields at Bushland, TX -- 2009.**



**Table 1. Grain sorghum yield and key characteristics, Bushland, TX -- 2009.**

Entry No.	Hybrid Name	Company Brand Name	Plants/ Acre	Tillers/ Acre	Flower Date	% Lodged	Plant Hgt(ft)	Peduncle Lth (in)	Yield lbs/ac
1	DG764B	DynaGro Seeds	18,005	71,632	23-Aug	68 abc	3.0 abc	0.4 bc	592 e-j
2	DG758B	DynaGro Seeds	26,717	59,048	26-Aug	2 f	3.3 abc	0.0 c	2,242 a
3	DG7562B	DynaGro Seeds	26,717	54,208	22-Aug	42 a-f	3.3 abc	0.8 bc	709 d-j
4	DG732B	DynaGro Seeds	22,651	30,008	21-Aug	28 c-f	3.1 abc	2.0 abc	1,220 a-j
5	DG771B	DynaGro Seeds	23,813	38,720	29-Aug	0 f	3.3 abc	0.0 c	2,021 ab
6	DG772B	DynaGro Seeds	23,232	77,440	27-Aug	4 f	3.4 ab	1.1 bc	1,603 a-f
7	DK28E	DeKalb	20,328	65,824	15-Aug	82 a	2.9 abc	4.5 a	418 hij
8	DKS29-28	DeKalb	26,717	58,080	15-Aug	38 b-f	2.7 c	4.4 a	1,173 a-j
9	DK39Y	DeKalb	20,328	59,048	16-Aug	58 a-e	2.8 abc	2.4 abc	604 e-j
10	Pulsar	Asgrow	22,651	52,272	17-Aug	65 a-d	2.8 bc	3.4 ab	592 e-j
11	DKS37-07	DeKalb	25,555	57,112	22-Aug	18 ef	3.0 abc	0.0 c	1,410 a-i
12	DK44	DeKalb	26,717	46,464	21-Aug	8 f	3.0 abc	0.4 bc	1,893 abc
13	86G32	Pioneer Hi-Bred Int, Inc.	30,202	67,760	18-Aug	83 a	2.8 abc	3.3 abc	546 f-j
14	85G46	Pioneer Hi-Bred Int, Inc.	23,813	65,824	22-Aug	63 a-d	2.8 abc	0.9 bc	800 d-j
15	85G03	Pioneer Hi-Bred Int, Inc.	21,490	53,240	26-Aug	14 f	2.9 abc	1.3 bc	1,533 a-g
16	KS310	Sorghum Partners, Inc.	19,166	53,240	16-Aug	18 ef	2.8 abc	3.3 abc	1,394 a-i
17	KS585	Sorghum Partners, Inc.	26,717	58,080	21-Aug	10 f	3.3 abc	2.3 abc	1,696 a-d
18	NK4420	Sorghum Partners, Inc.	30,202	67,760	19-Aug	78 ab	3.1 abc	1.1 bc	348 ij
19	NK5418	Sorghum Partners, Inc.	20,328	68,728	18-Aug	57 a-e	2.8 bc	3.2 abc	511 g-j
20	NK6638	Sorghum Partners, Inc.	26,136	68,728	29-Aug	5 f	3.3 abc	0.8 bc	1,882 abc
21	NK7633	Sorghum Partners, Inc.	21,490	48,400	24-Aug	7 f	3.2 abc	2.1 abc	1,417 a-i
22	NK7829	Sorghum Partners, Inc.	14,520	41,624	31-Aug	3 f	3.3 abc	0.5 bc	1,150 b-j
23	SP3303	Sorghum Partners, Inc.	26,717	59,048	17-Aug	70 abc	3.0 abc	2.7 abc	488 g-j
24	TR458	Triumph Seed Co., Inc.	30,202	60,984	23-Aug	25 def	3.3 abc	0.8 bc	1,897 abc
25	TR463	Triumph Seed Co., Inc.	13,358	30,976	26-Aug	4 f	3.3 abc	0.0 c	1,649 a-e
26	TR452	Triumph Seed Co., Inc.	20,328	52,272	19-Aug	10 f	3.1 abc	1.8 abc	1,196 a-j
27	TR438	Triumph Seed Co., Inc.	18,005	56,144	19-Aug	73 ab	3.3 abc	3.1 abc	476 g-j
28	TR459	Triumph Seed Co., Inc.	28,459	47,432	24-Aug	9 f	2.9 abc	1.1 bc	1,336 a-j
29	TRx85001	Triumph Seed Co., Inc.	29,621	51,304	21-Aug	0 f	3.2 abc	0.0 c	267 j
30	ATx399xRTx430	Texas AgriLife Research	35,429	54,208	28-Aug	13 f	3.5 a	0.0 c	2,137 ab
31	ATx378xRTx430	Texas AgriLife Research	24,974	84,216	28-Aug	23 def	3.4 ab	0.0 c	1,115 b-j
32	ATx2752xRTx430	Texas AgriLife Research	23,813	76,472	1-Sep	7 f	3.2 abc	0.0 c	1,696 a-d
33	ATx631xRTx436	Texas AgriLife Research	20,328	39,688	30-Aug	1 f	3.2 abc	0.3 bc	941 c-j
34	7C22	NC +	22,070	40,656	24-Aug	12 f	3.2 abc	0.8 bc	1,452 a-h
35	DK44-02*	DeKalb	25,555	41,624	23-Aug	31 c-f	2.8 abc	0.5 bc	825 c-j
Mean			23,896	55,950		29	3.1	1.4	1,178
LSD (P=.05)			NS	NS		25.6	0.4	1.8	582.5
Standard Deviation			7395	18046		15.7	0.2	1.1	356.7
CV			31	32		53.2	7.55	78.3	30.3
Treatment Prob(F)			0.2662	0.0738		0.0001	0.0002	0.0001	0.0001

Note: Means followed by same letter do not significantly differ (P=.05, Student-Newman-Keuls).

**Table 2. 2-YR Dryland grain sorghum yield average at Bushland, TX.**

Variety	Company	2007		2009		2-Yr Avg Yield
		lb/ac	Rank	lb/ac	Rank	lb/ac
TR458	Triumph Seed	4,660	2	1,897	2	3,279
DG 758B	DynaGro Seed	4,032	6	2,242	1	3,137
NK7633	Sorghum Partners	4,685	1	1,417	8	3,051
7C22	NC+ Hybrids	4,249	3	1,452	7	2,851
DK44	DeKalb	3,785	11	1,893	3	2,839
DKS37-07	DeKalb	4,153	4	1,410	9	2,782
TR459	Triumph Seed	4,087	5	1,336	11	2,712
KS585	Sorghum Partners	3,482	13	1,696	5	2,589
NK7829	Sorghum Partners	3,909	8	1,150	13	2,530
NK6638	Sorghum Partners	3,103	16	1,882	4	2,493
KS310	Sorghum Partners	3,283	14	1,394	10	2,339
Pulsar	Asgrow	3,950	7	592	16	2,271
TR463	Triumph Seed	2,884	20	1,649	6	2,267
NK5418	Sorghum Partners	3,850	9	511	17	2,181
TR438	Triumph Seed	3,795	10	476	19	2,136
SP3303	Sorghum Partners	3,654	12	488	18	2,071
DKS29-28	DeKalb	2,936	19	1,173	12	2,055
85G46	Pioneer Hi-Bred	3,272	15	800	14	2,036
DG 762B	DynaGro Seed	3,083	17	709	15	1,896
NK4420	Sorghum Partners	2,994	18	348	20	1,671
<b>Mean</b>		<b>3,692</b>		<b>1,226</b>		<b>2,459</b>