

2016 Arkansas Grain Sorghum Quick Facts

Dr. Jason Kelley – Extension Agronomist – Wheat and Feed Grains
 Kevin Lawson – Program Associate – Corn and Grain Sorghum Verification



2015 Facts:

- 430,000 acres harvested
- 100 bushel per acre state average yield
- Average dates in 2015 GSRVP
 - Planting: May 1
 - Emergence: May 8
 - Harvest: September 6
- 56 lbs = 1 bu
- 14% moisture is dry

[Click here for more information about verification](#)

Growth and Development:

	5 year average from GSRVP 2011-2015		
	Days	Inches	Applications
Planting	0	0	~ April 23
VE	7	0	
V1	10	1	
V2	13	2	
V3	16	3	
V4	20	4	Sidedress Fertilizer
V5	24	5	
V6	28	6	
V7	33	9	Atrazine Cutoff (12 in)
V8	38	13	
Boot	62	35	Scout for Foliar Disease
Heading	69	50	
Flowering	72	55	Scout for Midge
Soft Dough	82	55	Scout for Headworms
Hard Dough	93	55	
Maturity	109	55	
Harvest	129	55	~ August 28

Seeding:

- Seed should be Concep treated to allow the use of metolachlor (Dual) herbicide
- Place seed between 0.75 to 1.5 inches deep

- Plant when ground temp is 65° @ 2 inches deep by 9:00 a.m. for three days
- Irrigated seeding rate should be 90,000 - 100,000 seeds per acre with a final plant population of 75,000 plants per acre assuming 80% germination
- Dryland seeding rate should be 75,000 seeds per acre with a final plant population of 50,000 - 60,000 plants per acre assuming 80% germination
- Consider an insecticide seed treatment such as Cruiser, Poncho, etc. for improving stands

Grain Sorghum Seeding Rates

Seeding Rate (seeds per acre)	Row Spacing (inches)			Final Stand at 80% Germination
	7"	30"	38"	
	Seeds per 10 ft row			
55,000	7.4	31.6	40.0	44,000
60,000	8.0	34.4	43.6	48,000
65,000	8.7	37.3	47.3	52,000
70,000	9.4	40.2	50.9	56,000
75,000	10.0	43.0	54.5	60,000
80,000	10.7	45.9	58.2	64,000
85,000	11.4	48.8	61.8	68,000
90,000	12.1	51.7	65.4	72,000
95,000	12.7	54.5	69.1	76,000
100,000	13.4	57.4	72.7	80,000

Determining Final Plant Populations:

- 30" rows measure 17 ft 5 in
- 38" rows measure 13 ft 9 in

Count plants in that distance and multiply by 1,000. This will equal plants per acre. Do this in at least ten stops in the field to get an accurate count. Example: 30" row, count 80 plants in 17 ft 5 in
 80 X 1000 = 80,000 plants per acre

Seeding Rate in Pounds per acre

Seeds per Acre	Seeds per Pound			
	11,000	13,000	15,000	17,000
	Pounds of Seed per Acre			
60,000	5.5	4.6	4.0	3.5
70,000	6.4	5.4	4.7	4.1
80,000	7.3	6.2	5.3	4.7
90,000	8.2	6.9	6.0	5.3
100,000	9.1	7.7	6.7	5.9
110,000	10.0	8.5	7.3	6.3

Hybrid Selection:

3 Year Average Yields in bu/ac from the Arkansas Grain Sorghum Hybrid Testing Program

Hybrid	Irr Yield ¹ (bu/ac)	Non Irr Yield ² (bu/ac)
DeKalb DKS51-01	147.3	133.7
Pioneer 84P80	145.9	136.3
Pioneer 83P99	142.0	128.4
Dyna-Gro 765B	137.9	127.1
Terral REV 9562	135.3	129.5

¹3 year (2013 – 2015) average from Keiser & Marianna

²3 year (2013 – 2015) average from Keiser

More information on Arkansas Grain Sorghum

Hybrid Yields can be found at:

www.arkansasvarietytesting.com

Fertilization:

Nitrogen (N):

- Apply ¼ to ½ of N immediately before or after planting
- Apply sidedress N between the V4 and V6 stage

N Recommendation

Yield Goal (bu/ac)	Units of N to apply per acre	
	Sandy, Silt Loams	Clay
Dryland	110	150
90	110	150
110	135	175
≥130	160	200

Nitrogen sources:

- 32% UAN (1 gal = 3.5 lbs of N)
- Urea (46-0-0)
- DAP (18-46-0)
- Ammonium Sulfate (21-0-0-24)

Phosphorus (P) and Potassium (K):

P₂O₅ Recommendation

Yield Goal (bu/ac)	Soil Test P (ppm)			
	<16	16-25	26-35	>36
	----- lbs of P ₂ O ₅ per acre -----			
Dryland	90	70	50	0
90	90	70	50	0
110	100	80	60	0
≥130	110	90	70	0

K₂O Recommendation

Yield Goal (bu/ac)	Soil Test K (ppm)				
	<61	61-90	91-130	131-175	>175
	----- lbs of K ₂ O per acre -----				
Dryland	140	90	60	0	0
90	140	90	60	0	0
110	140	100	70	0	0
≥130	150	100	70	40	0

Diseases and Fungicide Timing:

- Fungicides should only be applied when disease is present
- Plant resistant hybrids to help with anthracnose and target leaf spot

- [Check the MP 154 for the latest fungicide recommendations \(click for electronic copy\)](#)

Irrigation:

Potential Yield Reduction from Moisture Stress	
Growth Stage	% Yield Reduction
Emergence to V8	10 – 15
Boot to Flowering	30 – 50
Soft dough to maturity	10 – 20

Estimated Grain Sorghum Water Use	
Days after planting	Inches/day
0-30 (early plant growth)	0.05 – 0.10
30-60 (rapid plant growth)	0.10 – 0.20
60-80 (boot and flowering)	0.25 – 0.30
80-120 (grain fill to maturity)	0.25 – 0.10

Irrigation Termination

- Furrow Irrigation –when >50% of the heads are at hard dough and there is adequate moisture
- Pivot Irrigation –when >75% of the heads are at hard dough and there is adequate moisture

Herbicides:

- Make sure seed is treated with Concep prior to planting
- Apply metolachlor (Dual Magnum) PRE followed by atrazine plus Dual Magnum POST
- 1 qt of atrazine 4L = 1 lb of atrazine
- Do not apply more than 2.5 lb of atrazine in a season
- Do not apply atrazine after 12 inches
- Apply atrazine to healthy and growing grain sorghum to avoid injury
- Apply metolachlor (Dual Magnum) at planting on Concep treated seed ONLY

- There is a 10 month plant back on grain sorghum following fomesafen (Prefix, Flexstar)
- There is a 18 month plantback following Newpath
- [Check the MP 44 for the latest herbicide recommendations \(click for electronic copy\)](#)

Insects:

- [Check the MP 144 for the latest insecticide recommendations \(click for electronic copy\)](#)

Insect	Threshold
Whorl Feeders	3-6 larvae per whorl
Chinch Bug	When stand is threatened
Greenbug	Plants up to 6 inches – visible damage 6 inches to preboot – treat before entire leaves die Preboot to hard dough – treat when 2 or more entire leaves die
Sorghum Midge	1 adult midge per head when 25% - 30% of plants are flowering
Sugarcane Aphid	25% of plants infested with a colony of at least 50 aphids
Headworm Complex (Corn Earworm + Fall Armyworm)	1 larvae ½ inch long or longer per head
Sorghum Webworm	5 to 6 larvae per head
Stink Bug	5 per head from flowering to soft dough 16 per head during hard dough

More information and additional copies of this fact sheet are available at:

www.uaex.edu/grain-sorghum,
www.uaex.edu/verification &
www.arkansascrops.com