

2015 Tennessee Grain Sorghum Quick Facts

Angela Thompson McClure, Associate Professor, Department of Plant Sciences
Hailey Holcomb, Student, Department of Plant Sciences

Notes:

- 56 lbs = 1 bu
- No. 1 grade test weight is 56-57 lbs per bu
- 14 percent moisture is dry
- 12 percent moisture for long-term storage
- June 10 final plant date for full coverage insurance
- Medium to Full hybrid for best yields

Growth and Development

Five-year Average From University of Arkansas Data
2010-2014

	Days	Inches	Applications
Planting	0	0	~ April 17
VE	7	0	
V1	10	1	
V2	13	2	
V3	16	2	Sidedress Fertilizer
V4	20	3	
V5	25	4	
V6	30	6	
V7	36	9	Atrazine Cutoff (12 in)
V8	41	13	
Boot	64	36	Scout for Foliar Disease
Heading	71	49	
Flowering	74	55	Scout for Midge
Soft Dough	83	55	Scout for Headworms
Hard Dough	93	55	
Maturity	110	55	
Harvest	131	55	~ August 24

Planting

- Seed should be Concep treated to allow the use of metolachlor herbicide.
- An insecticide seed treatment such as Cruiser or Poncho may improve stand.
- Plant when ground temp is 65 degrees at 2 inches deep by 9 a.m. for three days.
- Place seed 1 to 1.5 inches deep.
- Irrigated seeding rate should be 90,000-100,000 seeds per acre for final stand of around 75,000 plants per acre assuming 80 percent germination.
- Dryland seeding rate should be 80,000 seeds per acre for final stand of around 64,000 plants per acre assuming 80 percent germination.

Grain Sorghum Seeding Rates

Seeding Rate (seeds per acre)	Row Spacing (inches)		Final Stand at 80% Germination
	15"	30"	
	Seeds per 10 ft row		
55,000	15.8	31.6	44,000
60,000	17.2	34.4	48,000
65,000	18.7	37.3	52,000
70,000	20.1	40.2	56,000
75,000	21.5	43.0	60,000
80,000	23.0	45.9	64,000
85,000	24.4	48.8	68,000
90,000	25.9	51.7	72,000
95,000	27.3	54.5	76,000
100,000	28.7	57.4	80,000

Determining Final Plant Stands

- 15-inch rows measure 34 ft 10 in
- 20-inch rows measure 26 ft 2 in
- 30-inch rows measure 17 ft 5 in
- 38-inch 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 10 stops in the field to get an accurate count. (Example: 30-inch row, count average of 80 plants in 17 ft 5 in, 80 x 1,000 = 80,000 plants per acre final stand.)

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

More information and additional copies of this fact sheet are available at utcropl.com and extension.tennessee.edu/publications.

Hybrid Selection

Select hybrids based on yield, standability and disease traits from seed company and university results.

Some Commonly Planted Grain Sorghum Hybrids

Hybrid	Maturity
Pioneer 83P99	Full
Pioneer 84P80	Med/Full
Pioneer 84G62	Med/Full
Dekalb DKS51-01	Med/Full
Dekalb DKS54-00	Med/Full

Soil Fertility

Nitrogen (N):

- Apply 1/3 to 1/2 of N at planting.
- Sidedress N between V3 and V6.
- Broadcast Urea causes less leaf burn.

Nitrogen sources:

- 32% UAN (1 gal = 3.5 lbs of N).
- Urea (46-0-0).
- DAP (18-46-0).
- Ammonium Nitrate (34-0-0).

Fertilizer Recommendations

	Nitrogen (lbs N/A)	P205 and K20 (lbs P205 or K20 per acre)		
		Low test soil	Medium test soil	High test soil
Dryland	60-90*	60	30	0
Irrigated	120	60	30	0

*Higher N in clay soils, no-till production or following corn.

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*

Approx. Days After Planting	Inches/week
0-30 (early plant growth)	0.35 – 0.70
30-60 (rapid plant growth)	0.70 – 1.4
60-80 (boot and flowering)	1.75 – 2.1
80-120 (grain fill to maturity)	1.75 – 0.70

*Based on University of Arkansas recommendations.

Irrigation Termination

- When more than 75 percent of the heads are at hard dough and there is adequate moisture.

Insects

- Late planted sorghum is more likely to have worm, aphid and midge pests.
- Check PB 1768 for the latest insecticide recommendations and thresholds.

Insect	Threshold
Greenbug	Seedling plants – visible damage and 1 or 2 present per plant Preboot to hard dough – treat when 2 or more entire leaves die
Sorghum Midge	1 adult midge per head; Check from exsertion through bloom twice a week
Corn Earworm	1 larvae per head
Fall Armyworm	1 larvae per head
Sorghum Webworm	3 to 4 larvae per head
Sugarcane Aphid	Invasive insect treated when aphids are present on most plants and occasional leaves have 100 or more aphids present or if honeydew is easily found

Diseases and Fungicide Timing

- Plant resistant hybrids to help manage stalk rots, Anthracnose and Target leaf spot.
- Fungicides should be applied at early onset of disease when conditions are favorable in higher yield potential fields.
- Approach, Headline, Quadris, Quilt Xcel and Priaxor are labeled in sorghum in Tennessee.

Weed Control

- Make sure seed is treated with Concep prior to planting if using metolachlor products.
- Must use PRE herbicide for grass control.
- POST grass options: Atrazine + Oil; Facet; Zest in ALS tolerant INZEN-Z cultivars.
- 1 qt of atrazine 4L = 1 lb of atrazine.
- Apply up to 2.5 lb of atrazine in a season up to 12 inch grain sorghum.
- Apply POST herbicides to ≥V3 grain sorghum to minimize crop injury.
- Wait at least 10 months following fomesafen (Prefix, Flexstar, Reflex) to plant sorghum.
- Refer to PB1580 for the latest weed control recommendations and rate information.

Desiccants

- Dries up green vegetation and shuts down the crop but usually does not impact seed moisture.
- Sodium chlorate and glyphosate are labeled.
- Aim can be used to desiccate morningglory vines.
- Apply 7 to 10 days before scheduled harvest when most heads are past black layer and moisture is running 25% or less.