2018 Arkansas Wheat Quick Facts

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2017 Facts:

- 133,000 acres harvested
- 55 bushel per acre state average
- Average dates in 2016-17 WRVP
  - Planting: October 22
  - Emergence: October 26
  - Harvest: June 8
- 60 lbs = 1 bu, 13.5% moisture is dry

Growth and Development:

Description of Vegetative Stages		
Stage	Feekes GS #	Description
Germination and seedling	1	Emergence through 3-leaf stage
Tillering	2 – 4	Tillering begins. 4th leaf is on first tiller.
	5	Tillering ends, plants start upright growth.
Jointing	6	First node visible at base of stem.
	7	Second node visible
	8	Flag leaf visible, still rolled up. Spike beginning to swell.
Description of Reproductive Stages		
Stage	Feekes GS #	Description
Boot	9	Ligule of flag leaf just visible.
	10	Flag leaf sheath completely out. Spike swollen but not visible (full boot).
Heading	10.1 – 10.5	First spikes just visible to all spikes out of sheath (full heading).
	10.5.1	Beginning of flowering.
	10.5.4	Flowering over, kernel watery ripe.
Ripening	11.1 – 11.3	Grain progresses from milk to soft dough to hard dough.
	11.4	Ripe for cutting, straw dead.

Seeding:

- Plant seed between 1 to 1.5 inches deep
- Seeding rate should be 26 seeds per ft² with grain drill under ideal conditions. Increase seeding rate if planting no-till, late, or broadcast.
- 26 seeds per ft² = 1.13 million seeds per acre.

Pounds of Seed Planted – Seed Rate by Seed Size

	Seeds per Square Foot			
Seeds/lb	25	30	35	40
	Pounds of Seed/Acre			
10,000 (large seed)	109	131	152	174
12,000	91	109	127	145
14,000 (average size)	78	93	109	124
16,000	68	82	95	109
18,000	61	73	85	97
20,000 (small seed)	54	65	76	87

Grain Drill Calibration - Seeds per foot of row

Grain Drill Row Width	Seeds per Square Foot			
	25	30	35	40
	-----Seeds per Drill Row Foot Needed-----			
6 inches	13	15	18	20
7.5 inches	16	19	22	25
8 inches	17	20	23	27
10 inches	21	25	29	33

Recommended Planting Dates for Arkansas

Region	Planting Date
North Arkansas	October 1 – November 1
Central Arkansas	October 10 – November 10
South Arkansas	October 15 – November 20

Determining Final Plant Stands:

- Count the number of plants in one ft² in at least 10 random locations in the field.
- Desired stand is 26 plants per ft².
- With good tillering and uniform stand, 10 plants per ft² can give optimum yields.

Seed Treatments:

- Systemic seed insecticides for control of Hessian fly and aphids to control Barley Yellow Dwarf Virus are generally not recommended.
- Systemic seed applied fungicides applied are recommended to control loose smut and seedling pathogens.

Weed Control:

- Resistant ryegrass infestations may require program approach. This may include tillage/herbicide of first "flush" of ryegrass followed be sequential program of Axiom or Axiom + Prowl or Zidua/Anthem Flex in fall followed by Axial in spring. One year fallowing without allowing seed production will typically reduce soil seed bank 95%.
- Refer to MP 44 for latest herbicide recommendations.

Timing for Common Wheat Herbicides

Herbicide	Timing	Remarks
Finesse 75 DF	Immediately after planting for ryegrass	Only follow with STS soybeans.
Finesse Grass and Broadleaf 70 DF	2-leaf wheat to prior to jointing	Same as above.
Axiom 68 DF	Spike to 2-leaf wheat.	Apply to metribuzin tolerant variety. Seed wheat 1 inch deep or more. No aerial applications
Axial XL 0.42 EC	2-leaf wheat to pre-boot. 1-leaf to 2-tiller ryegrass.	60 day PHI. Do not tank mix with 2,4-D
Osprey 4.5 WDG	Emergence to jointing on wheat. 1-leaf to 2-tiller ryegrass	See label for N restrictions.
Prowl H_2O 3.8 CS	1-leaf wheat to 4 tillers.	Plant seed 0.5 to 1.0 inch deep
PowerFlex HL 0.13	3-leaf wheat to jointing.	See label for N restrictions.
2,4-D amine or LV esters	In late winter between tiller completion and jointing stage	Apply when temperatures are above 60°F and no rain for 12 hours.
Harmony Extra 50 SG	2-leaf to prior to flag leaf emergence	Wild garlic 6"-12" tall.
Zidua 0.85 WG	Delayed PRE to 4 tiller wheat	Seed wheat >0.5 inch deep
Anthem Flex 4.0SE	Delayed PRE to 4 tiller wheat	Seed wheat 1 inch deep

Diseases and Disease Control:

- Fungicides should be applied when disease is present or weather conditions favor disease development. The most important times for applications are usually between Feekes GS 8 and 10.5.1
- Leaf rust, stripe rust, septoria tritici blotch, glume blotch, bacterial leaf streak, powdery and downy mildew, tan spot, and fusarium head blight (scab) are diseases commonly found in Arkansas wheat.
- Varieties with resistance to fusarium head blight and stripe rust should be planted.
- Refer to MP 154 Arkansas Plant Disease Control products guide for the latest disease recommendations.

Timing for Common Wheat Fungicides

Fungicide	Timing	Remarks
Tilt, Propimax, Bumper	Not after Feekes GS 10.5 (full heading).	Apply no more than 8 oz/acre per year.
Quadris	Not after Feekes GS 10.5.4 (flowering over).	Apply prior to disease development.
Caramba	30 day PHI. Early flowering for head blight suppression.	Typically used for fusarium head blight suppression.
Twinline	Not after Feekes GS 10.5.	High rate for stripe rust.
Quilt, Quilt Xcel	Not after Feekes GS 10.5.4 (flowering over).	See label for tank mixing herbicides or fertilizer.
Stratego 250EC, Stratego YLD	Not after Feekes GS 10.5 (full heading).	35 day PHI.
Headline	Not after Feekes GS 10.5 (full heading).	Only effective as preventative treatment for stripe rust.
Prosaro	30 day PHI. Early flowering for head blight suppression.	Typically used for fusarium head blight suppression
Absolute 500SC	35 day PHI.	Apply no more than 5 oz/acre per year
Folicur, Orius, Tebustar, Muscle	30 day PHI.	Apply no more than 4 oz/acre per year.
Priaxor	Not after Feekes GS 10.5. (full heading).	Apply no more than 16 oz/acre per year
Trivapro	Not after Feekes GS 10.5.4 (flowering over). 14 day PHI.	Apply no more than 27.4 oz/acre per year.

Insect Control:

Treatment Levels

- Armyworm:
  - 6/ft² in fall
  - Present and head cutting in spring.
- Grasshopper – When damage is occurring.
- Cereal Leaf Beetle – 1 per stem.
- Aphids – Plant height dependent. Refer to MP 144 Insecticide Recommendations for Arkansas for latest insecticide recommendations and thresholds.

Drainage:

- Field surface should be as smooth and uniform as possible.
- Install drain furrows with or at a slight angle to field slope.
- Avoid berm on up-slope side of furrow.
- End furrows at an unrestricted outlet.

Fertility:

Nitrogen (N) Recommendations:

Soil Texture	Previous crop	Fall-N rate	Late-winter N rate[1]	Total-N rate
		--------- lb N/acre ---------		
Silt and sandy loams	Fallow	0	90	90
	Rice	45	120	165
	All other[2]	0	120	120
Clay and Clay loams	Fallow	0	140	140
	Rice	45	140	185
	All other[2]	0	140	140

[1]Topdress late-winter N in one or two (3-4 weeks after first application) split applications beginning in early to mid-February.

[2] All other crops include corn, cotton, grain sorghum and soybeans.

Pre-plant N Considerations:

Fall seeded wheat generally does not require N fertilizer for establishment. However, there are situations where fall applied N should be considered:

1. Late-planted wheat – consider 30 lb N/acre regardless of previous crop if planted after;
   • November 1 for northern Arkansas (north of Hwy 64).
   • November 10 for central Arkansas.
   • November 20 for southern Arkansas (south of Pine Bluff).
2. Wheat following flood-irrigated rice – Should receive 45 lb N/acre pre-plant or shortly after planting or crop emergence.

Phosphorus (P) and Potassium (K) commendations:

Nutrient	Soil Test Level	Soil Test Value	Production System	
			Winter Wheat	Wheat and Double-Crop Soybeans*
		ppm P	-------- lb P_2O_5/acre -------	
Phosphorus	Very Low	≤15	100	120
	Low	16–25	70	90
	Medium	26–35	50	50
	Optimum	36–50	0	0
	Above Optimum	≥51	0	0
		ppm K	-------- lb K_2O/acre --------	
Potassium	Very Low	≤60	140	180
	Low	61–90	90	120
	Medium	91 - 130	60	80
	Optimum	131-175	0	60
	Above Optimum	≥176	0	0

*Double-crop wheat P and K fertilizer recommendations include the recommendations for soybeans. The cumulative fertilizer rate can be applied in the fall.

Sulfur (S):

If a field has a history of sulfur deficiency, 20 lbs S/ac should be applied in initial late-winter N application.

Additional wheat production information and copies of this fact sheet are available at:

http://www.uaex.edu/wheat
http://www.uaex.edu/verification
http://www.arkansascrops.com