

# 2024 Arkansas Rice Quick Facts

Dr. Jarrod Hardke – Rice Extension Agronomist  
Ralph Mazzanti – Program Associate, Rice Verification



## 2023 Rice Season Facts:

- 1,417,000 acres harvested
- 167.8 bu/acre (7,550 lb/acre) state average yield
- Average dates in 2023  
Rice Research Verification Program (RRVP)
  - Planting: April 20
  - Emergence: May 4
  - Harvest: Sept. 7
- 45 lb = 1 bu; 100 lb = 1 cwt; 1 cwt = 2.2 bu
- 12% grain moisture is dry

## Growth and Development:

Vegetative stages – Germination to panicle initiation

- Germination – occurs when seed is exposed to moisture, oxygen, and temperatures above 50°F.
- Emergence – occurs in 5 – 28 days depending on the environment.
- Pre-tillering (1<sup>st</sup> to 4<sup>th</sup> leaf stage) – rice generally puts on one leaf per week, can occur in 15 – 25 days.
- Tillering (1<sup>st</sup> to 4<sup>th</sup> tiller) – can occur in 24 – 42 days.

Reproductive stages – Panicle initiation to maturity

- Panicle initiation (PI) – sometimes referred to as “green ring” or beginning internode elongation (BIE).
- Panicle differentiation (PD) – ½ inch to ¾ inch IE.
- 50% heading – time when 50% of panicles begin to exert from the boot.
- Grain fill to maturity – can occur in 30 - 45 days.
- Maturity – approximately 20% grain moisture.

## Seeding:

- Ideally, plant when soil is 60°F @ 4 inch depth.
- Good seed-to-soil contact is required.
- Seed depth should be ¼ - 1 ½ inch.
- Under favorable conditions, drilled seeding rate should be ~30 seeds/ft<sup>2</sup> for varieties and ~10 seeds/ft<sup>2</sup> for hybrids.
- Seeding methods include: dry seeded-drilled, dry seeded-broadcast and water seeded-broadcast.
- Recommended drill row widths are 4 to 10 inches; 7.5-inch drill-row widths are most common.

## General Suggested Recommended Seeding Dates

Geographic Region	Optimum <sup>1</sup>		Absolute <sup>2</sup>	
	Begin	Cut-off	Begin	Cut-off
South	Mar 28	May 20	Mar 20	June 15
Central	April 1	May 15	Mar 25	June 10
North	Apr 10	May 10	April 1	June 5

<sup>1</sup> Seeding during optimum time frame does not guarantee high yields or suggest crop failure cannot occur.

<sup>2</sup> Recommended absolute does NOT mean a successful rice crop cannot be grown if seeded outside of the dates listed.

## Additive Factors Increasing Optimum Seeding Rate<sup>1</sup>

Variable	% Added		% Added
<b>Seeding Method</b>		<b>Seedbed</b>	
Drilled	0	Good	0
Broadcast (dry)	20	Fair	10
Water seeded	30	Poor	20
<b>Seeding Date</b>		<b>Soil Texture</b>	
Early	10	Sand	0
Optimum	0	Silt	0
Late	20	Clay	20

<sup>1</sup> Use of fungicide and/or insecticide seed treatments can increase plant stand and vigor.

Visit <https://riceadvisor.uada.edu/srate/> for help calculating appropriate seeding rates.

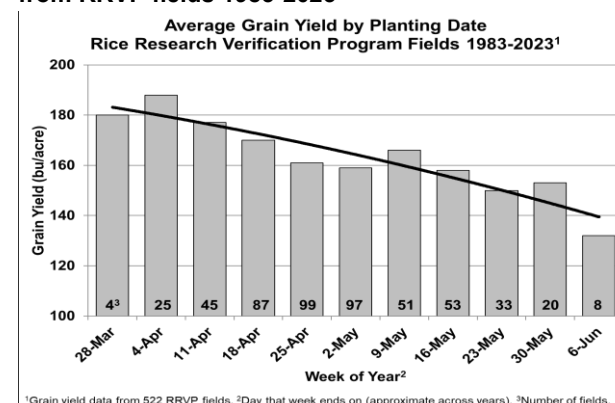
## Seeding Rate Conversions from Seeds/ft<sup>2</sup> to Seed/row ft at Selected Drill Row Spacings

Seeds/ft <sup>2</sup>	7.5-inch	9-inch	10-inch
	Seeds/row foot		
	Hybrids		
8	5.0	6.0	6.7
9	5.6	6.8	7.5
10	6.3	7.5	8.3
11	6.9	8.3	9.2
12	7.5	9.0	10.0
Varieties			
25	15.6	18.8	20.8
30	18.8	22.5	25.0
35	21.9	26.3	29.2
40	25.0	30.0	33.3

## Determining Emergence & Final Plant Stands:

- **DD50** Emergence – date when 10 plants/ft<sup>2</sup> have emerged above soil surface (4-5 plants/ft<sup>2</sup> for hybrids). <http://dd50.uada.edu>
- Count the number of plants in one ft<sup>2</sup> in at least 10 random locations in the field.
- Desired stand is 12 to 18 plants/ft<sup>2</sup> for varieties and 6 to 10 plants/ft<sup>2</sup> for hybrids.
- Stand uniformity is as important as stand count.

## Average Grain Yield by Planting Date (Week of Year) – from RRVP fields 1983-2023



## Fertilization:

Soil Sample depth for phosphorus (P), potassium (K), & Zinc (Zn) recommendations is 0 to 4 inches.

### Phosphorus (P<sub>2</sub>O<sub>5</sub>) recommendation

pH	Mehlich-3 Soil Test P (ppm)			
	< 9	9-16	17-25	26-50
	----- lb of P <sub>2</sub> O <sub>5</sub> per acre -----			
≥ 6.5	70	60	50	0
< 6.5	50	40	30	0

### Potassium (K<sub>2</sub>O) recommendation

pH	Mehlich-3 Soil Test K (ppm)			
	< 61	61-90	91-130	> 130
	----- lb of K <sub>2</sub> O per acre -----			
≥ 6.5	120	90	60	0
< 6.5	120	90	60	0

### Nitrogen (N):

- Refer to 2024 Rice Management Guide for specific cultivar recommendations.
- For hybrids: utilize 120-150 lb N/acre pre-flood followed by 30 lb N/acre at late boot.
- For varieties: utilize either a single pre-flood option (100% N applied pre-flood on dry soil followed by timely flood) or two-way split option (~70% N applied pre-flood on dry soil and 45 lb N /acre at least 4 weeks after pre-flood N **AND** internode elongation started).
- Treat pre-flood urea with NBPT-containing urease inhibitor if timely flooding is a concern (> 2 days for silt loam soils, > 7 days for clay soils) or use ammonium sulfate (AMS). Do not treat urea if applying into flood.
- N-STaR or Nitrogen Soil Test for Rice provides field-specific N rates for silt loam (18-in. sample depth) and clay soils (12-in. sample depth). For more information: [nstarlab@uark.edu](mailto:nstarlab@uark.edu).
- Use GreenSeeker handheld and reference plot to determine midseason N needs.
  - Reference plot value divided by average field value: > 1.15 apply midseason; < 1.15 **NO** midseason.

### Sulfur (S):

- Rice does not normally require sulfur fertilizer to produce high yields in Arkansas.
- Sulfur is most likely to be needed on sandy soils.
- Sulfur may be needed when the SO<sub>4</sub>-S soil test value is < 5 ppm or past deficiency has occurred.
- 100 lb of AMS provides 24 lb of plant available S.

### Zinc (Zn):

- Zinc deficiency normally occurs on silt and sandy loam soils or on precision graded fields.
- Apply 10 lb of Zn per acre as a granular fertilizer before emergence on silt and sandy loam soils when:
  - Soil-test Zn is < 4.1 ppm and pH is > 6.0
  - Soil-test Zn is < 1.6 ppm and pH is < 6.0
- For salvage of Zn deficiency, apply 1 lb actual Zn per acre as EDTA chelate to drained soil and fertilize with 100 lb/acre AMS and re-flood.
- Zinc-treated seed should contain 0.25 to 0.50 lb Zn per hundredweight (cwt) of seed following treatment.

### Weed Control:

- Biotypes of barnyardgrass have been identified with resistance to Command, Propanil, Facet, Newpath/Preface, Grasp, Regiment, Clincher, Ricestar, & Loyant. Best control is achieved using a program approach with overlapped residuals at the front of the season including Command + Facet PRE and Prowl + Bolero Delayed PRE to early POST.
- Rice flatsedge, umbrella sedge, and white-margined flatsedge resistance to ALS chemistry is common. Control options should start with RiceBeaux/Bolero or Sharpen early followed by Basagran + Propanil early post, Loyant pre-flood, or Rogue postflood.
- Recommend Sharpen (3 oz/acre) PRE for broadleaf & sedge residual control and use ALS such as Gambit (1-2 oz/acre) pre-flood for both POST and residual control of broadleaves and yellow nutsedge (use caution with Gambit to avoid drift / carryover to soybean).
- Do not plant Provisia/MaxAce or non-herbicide tolerant rice the year following Newpath/Preface applications to avoid injury from herbicide carryover.
- Provisia herbicide can only be sprayed on Provisia rice cultivars. Highcard herbicide can only be sprayed on MaxAce rice cultivars.
- Do not plant rice of any type following Provisia / MaxAce, rotate to soybean for weedy rice control.
- Refer to 'MP44 Recommended Chemicals for Weed and Brush Control' for herbicide recommendations.

### Diseases:

- Rice disease development factors: susceptible variety, virulent pathogen, and favorable environment.
- Treat based on proper scouting, field history, and environmental conditions, as appropriate.
- Fungicides for sheath blight control: Apply when scouting indicates >35% positive stops in Very Susceptible (VS) or Susceptible (S) cultivars or >50% positive stops in Moderately Susceptible (MS) cultivars from PD to early heading AND disease threatening upper canopy.
- Refer to 'MP154 Ark. Plant Disease Control Products Guide' for current fungicide recommendations.

### Insects:

- Scout on a regular basis to avoid insect problems.
- Insecticide seed treatments strongly recommended for rice water weevil and grape colaspis.
- Following 75% heading, rice stink bug (RSB) treatment threshold for the first two weeks is ≥ 5 RSB per 10 sweeps. Treatment threshold after the first two weeks until maturity is ≥ 10 RSB per 10 sweeps.
- Refer to 'MP144 Insecticide Recommendations for Arkansas' for the latest insecticide recommendations.

### Irrigation:

Minimum pump capacity needed for rice.

Soil Textural Group	GPM <sup>1</sup> per acre
Silt Loam – with pan	10
Silt Loam – no pan	15
Clay and Silty Clay	20
Sandy Loam	25

<sup>1</sup> GPM = gallons per minute.

- Use blue gates with poly pipe, set levee gates high enough to store rainfall but still prevent washouts.
- Use UA "Rice Irrigation" or Delta Plastics "Pipe Planner" to design Multiple Inlet Rice Irrigation (MIRI).
- Apply permanent flood ~ the 5<sup>th</sup> leaf or 1<sup>st</sup> tiller stage.

Drain rice based on two conditions, time AND maturity:

- Rice crop should be 25-30 days past 50% heading (25 days for long-grain, 30 days for medium grain).
- AND have 2/3 straw-colored kernels (silt loam soils) or 1/3 straw-colored kernels (clay soils) prior to draining.

For more information visit our web sites:

<http://www.uaex.uada.edu/rice>

<http://riceadvisor.uada.edu>

<http://dd50.uada.edu/>

<http://www.arkansasvarietytesting.com>

<http://arkansascrops.uada.edu>

