

# RICE



**UofA**  
DIVISION OF AGRICULTURE  
RESEARCH & EXTENSION  
University of Arkansas System

INFORMATION

February 2020

# 2020

# Rice Management Guide



ARKANSAS  
**R**  **CE**  
CHECK-OFF



# RICE

## 2020 Rice Cultivars Characteristics

Cultivar	CL151	CL153	CLL15	PVL01	CLM04	Jupiter	Titan	Diamond
<b>Agronomic Characteristics</b>								
<b>Technology</b>	Clearfield	Clearfield	Clearfield	Provisia	Clearfield	—	—	—
<b>Grain Type</b> <sup>1</sup>	LG	LG	LG	LG	MG	MG	MG	LG
<b>Avg. Yield</b> <sup>2</sup>	191	188	198	169	200	208	212	206
<b>Days to 50% Hdg</b> <sup>3</sup>	83	86	86	89	87	87	81	86
<b>Days to Maturity</b> <sup>4</sup>	118	121	121	124	127	127	121	121
<b>Height (in)</b>	34	34	33	33	37	34	34	37
<b>Lodging</b>	S	MR	MR	MS	S	S	MS	MS
<b>Nitrogen Management</b> <sup>5</sup> (Rates in lb N/acre; loam soil following soybean; add 30 lb N/acre to prelood on clay soil)								
<b>Preflood N</b>	75	105	105	105	105	105	105	105
<b>Midseason N</b>	45	45	45	45	45	45	45	45
<b>Boot N</b>	0	0	0	0	0	0	0	0
<b>Total N</b>	120	150	150	150	150	150	150	150
<b>Disease Characteristics</b> <sup>5</sup> (VS=V. Susceptible; S=Susceptible.; MS=Mod. Susceptible; MR=Mod. Resistant; R=Resistant)								
<b>Blast</b>	VS	MS	MS	S	S	S	MS	S
<b>Sheath Blight</b>	S	S	S	S	—	S	S	S
<b>Straighthead</b>	VS	—	—	—	—	S	—	—
<b>Kernel Smut</b>	S	S	S	VS	—	MS	MS	S
<b>False Smut</b>	S	S	S	VS	S	MS	MS	VS
<b>Bacterial Panicle Blight</b>	VS	MS	S	S	S	MR	MS	MS

<sup>1</sup> Grain type: LG = long-grain, MG = medium-grain.

<sup>2</sup> Avg. yield refers to 2017-2019 results from Arkansas Rice Performance Trials (ARPT) and Producer Rice Evaluation Program (PREP) small-plot research.

<sup>3</sup> Days to 50% Hdg as measured in ARPT trials.

<sup>4</sup> Days to maturity calculated by adding 35 days for long-grain or 40 days for medium-grain to 50% Hdg values.

<sup>5</sup> See pages 13-15 for more information on N management; see pages 21-22 for more on disease management.



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## 2020 Rice Cultivars Characteristics (cont.)

Cultivar	LaKast	RT7321 FP	RT7501	RT7521 FP	RT Gemini 214 CL	RT CLXL745	XP753
<b>Agonomic Characteristics</b>							
Technology	—	FullPage	—	FullPage	Clearfield	Clearfield	—
Grain Type <sup>1</sup>	LG	LG	LG	LG	LG	LG	LG
Avg. Yield <sup>2</sup>	197	222	231	225	228	207	235
Days to 50% Hdg <sup>3</sup>	84	79	83	82	85	80	82
Days to Maturity <sup>4</sup>	119	114	118	117	120	115	117
Height (in)	37	38	35	38	39	37	37
Lodging	MS	S	S	S	MS	S	MR
<b>Nitrogen Management <sup>5</sup> (Rates in lb N/acre; loam soil following soybean; add 30 lb N/acre to pre flood on clay soil)</b>							
Preflood N	105	120	120	120	120	120	120
Midseason N	45	0	0	0	0	0	0
Boot N	0	30	30	30	30	30	30
Total N	150	150	150	150	150	150	150
<b>Disease Characteristics <sup>5</sup> (VS=V. Susceptible; S=Susceptible.; MS=Mod. Susceptible; MR=Mod. Resistant; R=Resistant)</b>							
Blast	S	—	—	—	MR	R	R
Sheath Blight	MS	MS	S	S	S	S	MS
Straighthead	MS	—	—	—	—	MR	MR
Kernel Smut	S	S	S	MS	MS	S	MS
False Smut	S	MS	S	VS	VS	S	S
Bacterial Panicle Blight	MS	—	—	—	—	MR	MR

<sup>1</sup> Grain type: LG = long-grain, MG = medium-grain.

<sup>2</sup> Avg. yield refers to 2017-2019 results from Arkansas Rice Performance Trials (ARPT) and Producer Rice Evaluation Program (PREP) small-plot research.

<sup>3</sup> Days to 50% Hdg as measured in ARPT trials.

<sup>4</sup> Days to maturity calculated by adding 35 days for long-grain or 40 days for medium-grain to 50% Hdg values.

<sup>5</sup> See pages 13-15 for more information on N management; see pages 21-22 for more on disease management.



## Soil Testing Recommendations

Soil sample depth for phosphorus (P), potassium (K), and 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
	————— lbs 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

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

### Zinc (Zn) recommendation

- Zn deficiency normally occurs on silt or sandy loam soils or on precision graded fields.
- On these soils when soil-test Zn is < 4.1 ppm and pH is > 6.0, apply 10 lbs of actual Zn per acre as a granular fertilizer before rice emergence.
- Apply Zn seed treatments to supply 0.25 to 0.5 pounds of Zn per cwt of seed.
- For salvage of Zn deficiency, apply 1 pound actual Zn per acre as EDTA chelate to drained soil and fertilize with 100 lbs ammonium sulfate (AMS) and re-flood.



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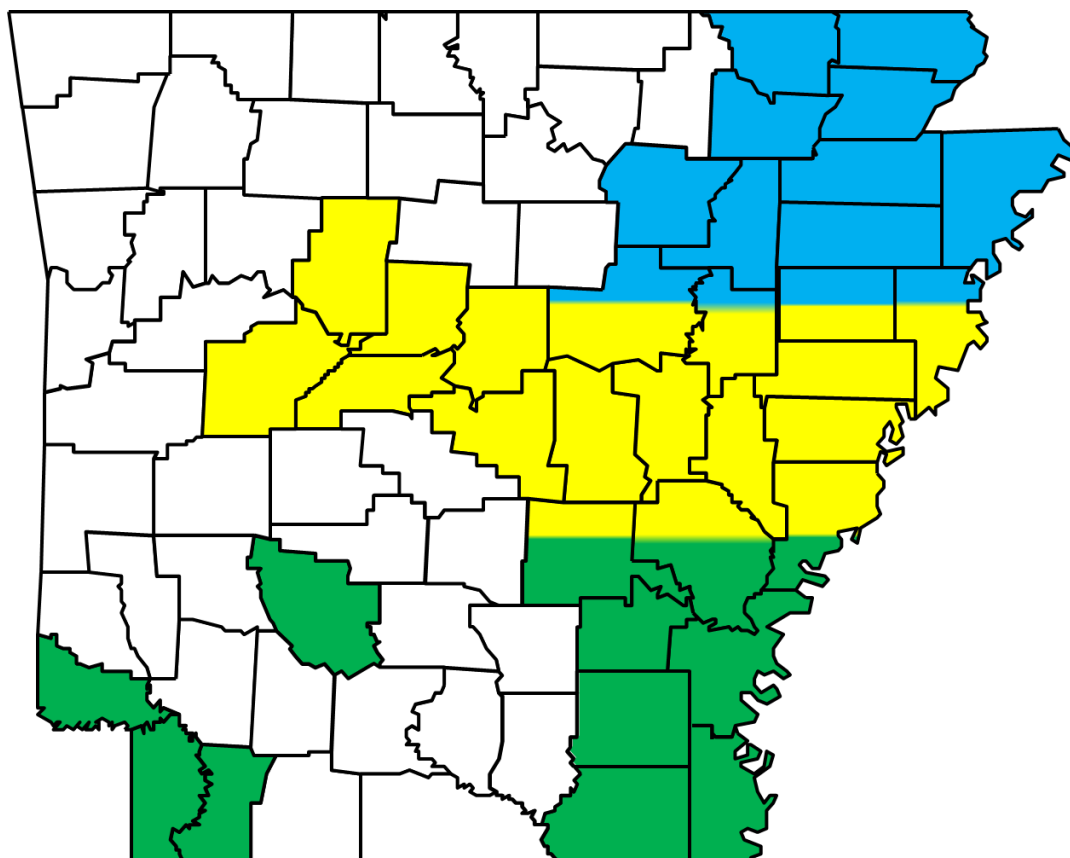
### Recommended Optimum Seeding Date for Rice by Geography

General optimum and absolute recommended seeding dates by geographic region in Arkansas are based on yield potential and management considerations.

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

<sup>1</sup> Seeding during the optimum time frame does NOT guarantee high yields or suggest that crop failure cannot occur when rice is seeded during these times.

<sup>2</sup> Recommended absolute does NOT mean that a successful rice crop cannot be grown if seeded outside of the dates listed. Success may be evaluated and/or interpreted using various parameters (i.e. cropping system, cash flow, field reclamation, etc.) and may differ among specific cultivars.



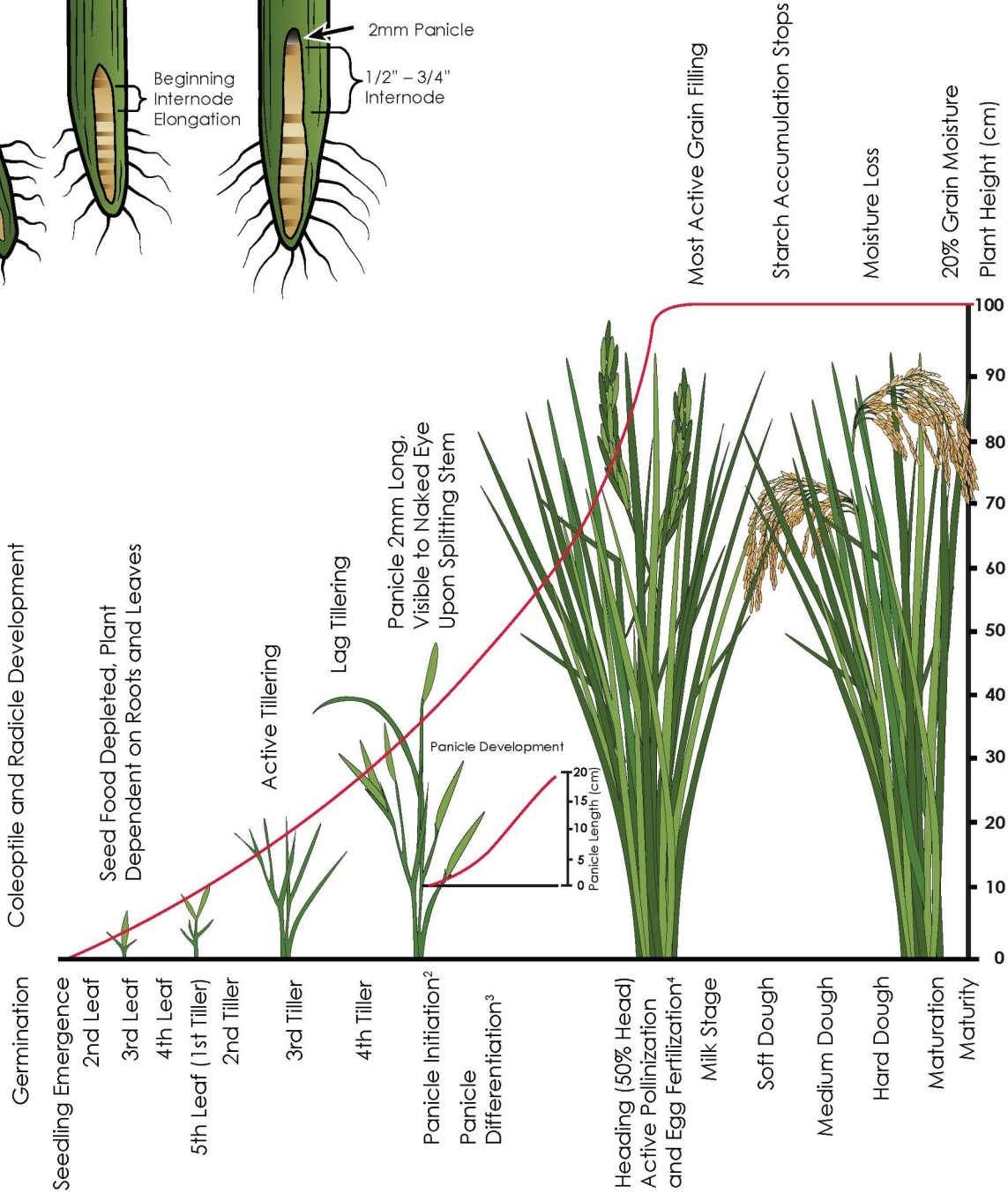
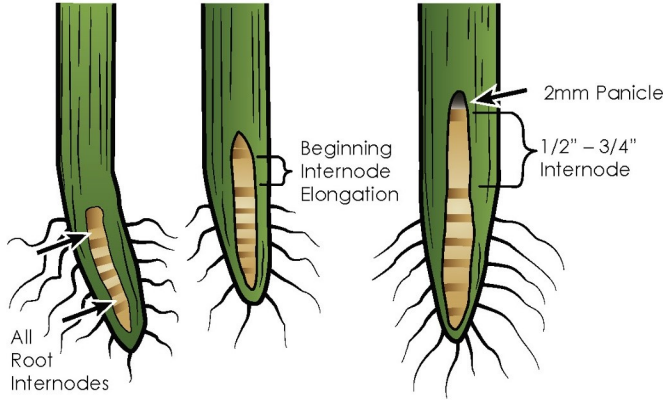
North	
Central	
South	



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### INTERNODE ELONGATION



5-20 Days <sup>1</sup>	15 to 25 Days <sup>1</sup>	24 to 42 Days <sup>1</sup>	Variable <sup>4</sup>	3-5 Days	19 to 25 Days <sup>1</sup>	30 to 45 Days <sup>1</sup>
STAGE I VEGETATIVE					STAGE II REPRODUCTIVE	STAGE III GRAIN FILLING & MATURATION

<sup>1</sup> Under warm conditions use the lesser number of days and under cool conditions use the greater number of days.  
<sup>2</sup> The reproductive stage begins with panicle initiation.  
<sup>3</sup> Stage III begins when 50% of the florets are pollinated.  
<sup>4</sup> Variable time – 0 to 25 days (dependent upon cultivar).



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## Seeding, Emergence, & Plant Stands

### Seeding:

- Ideally, plant when soil is 60°F @ 4 in. depth.
- Good seed-to-soil contact is required.
- Seed depth should be ¼ - 1 ½ in.
- Under favorable conditions, drilled seeding rate should be ~30 seeds per square foot (ft<sup>2</sup>) for conventional, non-hybrid cultivars and ~11 seeds per 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.
- In furrow irrigated rice, increase seeding rate by 10% to achieve faster canopy closure.

### Determining Emergence & Final Plant Stands:

- **DD50** Emergence – date when 10 plants per ft<sup>2</sup> have emerged above soil surface (4-5 plants per ft<sup>2</sup> for hybrids). <http://dd50.uaex.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 per ft<sup>2</sup> for conventional, non-hybrid cultivars and 6 to 10 plants per ft<sup>2</sup> for hybrids.
- Stand uniformity is as important as stand count.

### Converting seed counts between seed per square foot and seed per row foot.

Seed per square foot Varieties	Drill Row Width			Seed per square foot Hybrids	Drill Row Width		
	6"	7.5"	8"		6"	7.5"	8"
	Seed per row foot				Seed per row foot		
24	12.0	15.0	16.0	8	4.0	5.0	5.3
30	15.0	18.8	20.0	9	4.5	5.6	6.0
36	18.0	22.5	24.0	10	5.0	6.3	6.7
42	21.0	26.3	28.0	11	5.5	6.9	7.3
48	24.0	30.0	32.0	12	6.0	7.5	8.0



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### 2020 Recommended Seeding Rates & Adjustments for Rice Cultivars in Arkansas

Pounds seed per acre at various seed densities for selected rice cultivars.

Cultivar	Seed per lb	Seeding Rate (seed/ft <sup>2</sup> )							
		10	12	14	25 <sup>1</sup>	30	35	40	45
		lbs / acre							
ARoma 17	19,213	—	—	—	57	68	79	91	102
CL111	18,515	—	—	—	59	71	82	94	106
CL151	19,357	—	—	—	56	68	79	90	101
CL153	19,400	—	—	—	56	67	79	90	101
CL163	18,771	—	—	—	58	70	81	93	104
CLJ01	20,515	—	—	—	53	64	74	85	96
CLL15	19,447	—	—	—	56	67	78	90	101
CLM04	19,221	—	—	—	57	68	79	91	102
Diamond	18,905	—	—	—	58	69	81	92	104
Jazzman-2	20,497	—	—	—	53	64	74	85	96
Jupiter	17,463	—	—	—	62	75	87	100	112
LaKast	18,283	—	—	—	60	71	83	95	107
MM17	18,160	—	—	—	60	72	84	96	108
PVL01	19,270	—	—	—	57	68	79	90	102
PVL02	20,487	—	—	—	53	64	74	85	96
Titan	16,406	—	—	—	66	80	93	106	119
RT 7301	20,178	22	26	30	—	—	—	—	—
RT 7321 FP	18,482	24	28	33	—	—	—	—	—
RT 7501	20,917	21	25	29	—	—	—	—	—
RT 7521 FP	18,281	24	29	33	—	—	—	—	—
RT CLXL745	19,500	22	27	31	—	—	—	—	—
RT Gemini 214 CL	20,630	21	25	30	—	—	—	—	—
RT XP753	19,584	22	27	31	—	—	—	—	—

<sup>1</sup> Only recommended under optimum conditions<sup>2</sup> with addition of an insecticide/fungicide seed treatment.

<sup>2</sup> Assumes good seedbed, drill-seeded, silt loam, optimum planting date, and conventional tillage.

### Additive factors increasing optimum seeding rate.

Variable	% Added	Variable	% Added
<b>Seeding Method</b>		<b>Seedbed Preparation</b>	
Dry seeded-drilled	0	Good	0
Dry seeded-broadcast	20	Fair	10
Water seeded-broadcast	30	Poor	20
<b>Soil Texture</b>		<b>Seeding Date</b>	
Sand	0	Early (before April 15)	10
Silt	0	Optimum	0
Clay	20	Late (after June 1)	20

Factors additive to a max of 50% above optimum.

Visit the **Seeding Rate Calculator** program (<https://riceadvisor.uaex.uada.edu/srate/>) to calculate appropriate seeding rates.





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### Rice Drill Calibration Worksheet

Number of Cups (5 recommended per section) ..... (A) \_\_\_\_\_

Drive wheel

Circumference (inches/12) ..... (B) \_\_\_\_\_ feet

Number of turns (minimum of 15) ..... (C) \_\_\_\_\_

Distance covered ..... (D) \_\_\_\_\_ feet  
(A x B x C)

#### Calibration by Weight

Weight of seed caught (grams/454) ..... (E) \_\_\_\_\_ lbs

Seeds/lb of lot used (indicated on seed bag) ..... (F) \_\_\_\_\_

Row width (inches/12) ..... (G) \_\_\_\_\_ feet

Number of seeds per:

Foot of Row ..... (E x F) / D \_\_\_\_\_

Square Foot ..... (E x F) / (D x G) \_\_\_\_\_

#### Calibration by Seed Count

Number of seeds caught ..... (H) \_\_\_\_\_

Number of seed/row foot ..... (H / D) \_\_\_\_\_



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## INFORMATION

### Plant Populations for Various Row Spacing

Optimum plant populations (stand) for various row spacings.

Plants per row ft	6" drill	7" drill	7.5" drill	8" drill	9" drill	10" drill
	Plants per square foot					
1	2.0	1.7	1.6	1.5	1.3	1.2
2	4.0	3.4	3.2	3.0	2.7	2.4
3	6.0	5.1	4.8	4.5	4.0	3.6
4	8.0	6.9	6.4	6.0	5.3	4.8
5	10.0	8.6	8.0	7.5	6.7	6.0
6	12.0	10.3	9.6	9.0	8.0	7.2
7	14.0	12.0	11.2	10.5	9.3	8.4
8	16.0	13.7	12.8	12.0	10.7	9.6
9	18.0	15.4	14.4	13.5	12.0	10.8
10	20.0	17.1	16.0	15.0	13.3	12.0
11	22.0	18.9	17.6	16.5	14.7	13.2
12	24.0	20.6	19.2	18.0	16.0	14.4
13	26.0	22.3	20.8	19.5	17.3	15.6
14	28.0	24.0	22.4	21.0	18.7	16.8
15	30.0	25.7	24.0	22.5	20.0	18.0
16	32.0	27.4	25.6	24.0	21.3	19.2
17	34.0	29.1	27.2	25.5	22.7	20.4
18	36.0	30.9	28.8	27.0	24.0	21.6
19	38.0	32.6	30.4	28.5	25.3	22.8
20	40.0	34.3	32.0	30.0	26.7	24.0

**Suggested hybrid final stand**

**Suggested variety final stand**

Research suggests final plant stands in the highlighted ranges are needed to regularly achieve optimum grain yields. However, failure to achieve these stand densities does not mean that a profitable crop cannot be produced at stands less than or greater than these described.

Stand densities less than 3 plants/ft<sup>2</sup> for hybrids and less than 5 plants/ft<sup>2</sup> for varieties may not result in a profitable net return. These situations need to be evaluated on a case-by-case basis to determine the profitability of keeping the existing crop versus replanting.



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### Insecticide Seed Treatments for Rice

Insecticide seed treatments are strongly recommended for rice. Research has shown a positive return 80% of the time when using an insecticide seed treatment. Select the appropriate product based on cost and insect control needs. However, grain yield, stand, and vigor benefits have been repeatedly noted even in the absence of insect pressure. Insect control benefits diminish greatly 35+ days after planting.

#### Insecticide seed treatments for rice insect management.

Insecticide	Rate (fl oz) per 100 lbs seed	Active Ingredients	Notes
CruiserMaxx Rice	7.0	thiamethoxam  Also contains the Fungicides: azoxystrobin fludioxonil mefenoxam	<ul style="list-style-type: none"> <li>DO NOT plant or sow Cruiser-treated seed by aerial application.</li> <li>Cruiser is NOT labeled for use in water-seeded rice.</li> <li>DO NOT use treated fields for aquaculture of edible fish or crustaceans.</li> <li>DO NOT exceed 120 lb seed per acre.</li> </ul>
Dermacor X-100	1.5 - 6.0 (see label)	chlorantraniliprole	<ul style="list-style-type: none"> <li>Can be used on dry-seeded rice.</li> <li>Seed treated with Dermacor CANNOT be soaked or pre-germinated before planting.</li> </ul>
Fortenza	3.47	cyantraniliprole	<ul style="list-style-type: none"> <li>Use only on dry-seeded rice. DO NOT use treated fields for aquaculture of edible fish</li> </ul>
NipsIt INSIDE	1.92	clothianidin	<ul style="list-style-type: none"> <li>Use only on dry-seeded rice.</li> <li>DO NOT spray crop with another neonicotinoid insecticide after using NipsIt INSIDE.</li> <li>DO NOT use near fish or crawfish farms.</li> </ul>

#### Rice insecticide seed treatment performance ratings.

Insecticide	Chinch Bug	True Armyworm	Rice Water Weevil (adult)	Rice Water Weevil (larva)	Rice Stalk Borer	Grape Colaspis
CruiserMaxx Rice	6	2	6	7	—	8
Dermacor X-100	1	8	1	8	8	2
Fortenza	—	—	—	8	—	—
NipsIt INSIDE	6	—	6	7	—	8

Read and follow all label directions when using these products.



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### Fungicide Seed Treatments for Rice

It is strongly recommended that fungicide seed treatments be used to manage the seedling disease complex in rice. These seed treatments generally provide ~14 days of protection to enable plants to “outrun” seedling disease issues. Prolonged cool, wet conditions may allow seedling disease to overcome the seed treatments.

#### Fungicide seed treatments for rice seedling disease management.

Insecticide	Rate (fl oz) per 100 lbs seed	Active Ingredients	Notes
<b>Pythium diseases</b>			
Allegiance FL	0.75 - 1.5	metalaxyl	
Apron XL	0.32 - 0.64	mefenoxam	• Use higher rates for early planting or other severe disease situations.
<b>Rhizoctonia seedling diseases, general seed rots</b>			
RTU-Vitavax-Thiram	6.8	carboxin + thiram	• May use as a pour-on hopper-box treatment.
Vitavax 200	4.0		
Maxim 4 FS	0.08 - 0.16	fludioxinil	• Use higher rates for severe disease situations.
Vibrance	0.03	sedaxane	
<b>Pythium, Rhizoctonia, general seed rots</b>			
Vitavax 200	4.0	carboxin + thiram	
+ Allegiance FL	+ 0.375	+ metalaxyl	
Apron XL LS	0.32 - 0.64	mefenoxam	• Use higher rates for early planting or severe disease situations.
+ Maxim 4 FS	+ 0.08 - 0.16	+ fludioxinil	
Dynasty	0.153 - 1.53	azoxystrobin	• Usually sold with Apron XL and Maxim on rice to improve seedling disease control.
Trilex 2000	1.0 - 2.0	trifloxystrobin + metalaxyl	• See label.
EverGol Energy	1.0	prothioconazole + penflufen + metalaxyl	
CruiserMaxx Rice	7.0	azoxystrobin + fludioxonil + mefenoxam + thiamethoxam (insecticide)	• See in insecticide seed treatment table for additional information.

All are commercial seed treatment only.

Read and follow all label directions when using these products.



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## 2020 Recommended Nitrogen Rates & Distribution for Rice Cultivars in Arkansas

Cultivars	Single Preflood N Rate <sup>z</sup>	Rates and Distribution for 2-way Split Application			
		Total N Rate	Preflood N Rate <sup>y</sup>	Midseason N Rate <sup>x</sup>	Late Boot N Rate <sup>w</sup>
		lbs N / Acre			
CL151 <sup>v</sup>	100	120	75	45	—
Della-2, Jazzman-2, Roy J	115	135	90	45	—
CL111, CL153, CL163, CLL15, CLM04, Diamond, Jupiter, LaKast, PVL01, PVL02, Titan	130	150	105	45	—
RT 7301, RT 7321 FP, RT 7501, RT 7521 FP, RT CLXL745, RT Gemini 214 CL, RT XP753	—	150	120	—	30

<sup>z</sup> Conditions required for use of optimum single preflood N rate: 1) field can be flooded timely (<7 days); 2) preflood urea is treated with a recommended urease inhibitor that includes NBPT; or ammonium sulfate is used as the N source; 3) can maintain a 2- to 4-inch flood depth for at least 3 weeks following flood establishment, and 4) the pre-flood N must be applied uniformly across the field (no streaking).

<sup>y</sup> N rate for rice on silt loam soils following soybean in rotation. Rates may need adjustment based on factors below.

<sup>x</sup> Apply midseason N in one application a minimum of 3 weeks after the preflood N application AND internode elongation has started; both conditions must be met to receive maximum benefit from the midseason N.

<sup>w</sup> Hybrids receive additional N at late boot rather than midseason. Refer to DD50 for proper timing of this application.

<sup>v</sup> Total of 120 but may be split 75-45 or 90-30.

### Early N Rate Adjustments

INCREASE 30 lbs N/A on CLAY SOIL	DECREASE 10 lbs N/A following FALLOW
INCREASE 20 lbs N/A following RICE Or stand <10 plants/ft <sup>2</sup> for varieties or <3 plants/ft <sup>2</sup> for hybrids	OMIT early N rate following FISH, LONG-TERM PASTURE, or FIRST YEAR AFTER CLEARING
INCREASE 10 lbs N/A following SORGHUM, WHEAT, CORN, COTTON	

**Nitrogen Conversions: Urea needed (lbs) = [lbs N recommended x 100] / 46**



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## 2020 Recommended Urease Inhibitors for Rice in Arkansas

List of tested and recommended NBPT-containing urease inhibitors and suggested application rates for urea in rice.

Product Name	Recommended Volume qt per ton urea	NBPT Concentration %	Weight lb per gallon	Manufacturer
Agrotain Advanced	2.0	30.0	8.87	Koch Fertilizer, LLC
Agrotain Ultra	3.0	26.7	8.84	Koch Fertilizer, LLC
ANVOL <sup>¶</sup>	1.5	16	9.26	Koch Fertilizer, LLC
Arborite AG-NT	3.0	24.0	9.15	Weyerhaeuser NR Co.†
Contain	4.0	unknown‡	8.50	AgXplore
Factor	3.25	24.5	9.09	Rosen's, Inc.
Limus	3.0	16.88 <sup>#</sup>	9.06	BASF
N-Fixx PF	3.0 - 4.0	unknown‡	8.50	Helena Chemical
Nitrain	3.0	26.7	8.93	Loveland Products
Nitrain Express	3.0	24.8	8.99	Loveland Products
N-Veil	3.0 - 4.0	26.7	8.92	Invictus Crop Care, LLC
PinnitMax	1.5	50.0	9.26	Corteva Agriscience

† Arborite AG-NT (Nitrolock Technology) distributed by Gavilon Fertilizer.

‡ Unknown, the product label does not specify the concentration of NBPT in the product.

¶ ANVOL contains 16% NBPT and 27% duromide which has also been shown to reduce ammonia volatilization loss.

# Limus contains 16.88% NBPT and 5.63% NPPT, which is a proprietary inhibitor owned by BASF.

## N-STaR or Nitrogen Soil Test for Rice

- N-STaR provides field-specific N rates for silt loam and clay soils.
- Silt loam soils (CEC less than 25) should be sampled to a depth of 18 inches.
- Clay soils (CEC greater than 25) should be sampled to a depth of 12 inches.
- Depth of sampling is extremely important - samples deeper or shallower than the prescribed depth can affect N recommendations.
- 10 samples are recommended per field, but a single sample should represent no more than 10 acres (e.g. a 50 acre field will need ten samples, but a 150 acre field should have at least 15 samples).
- Each individual sample is kept separate - do not aggregate!
- Cost is \$10 per sample for analysis.
- For more information: [nstarlab@uark.edu](mailto:nstarlab@uark.edu)





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### Determining Rice Midseason N Needs Using Trimble® GreenSeeker® Handheld

Guide to rice midseason N applications using GreenSeeker (GS).

Reference Plot GS Average	Apply Midseason N if Field GS Reading <u>Less</u> Than
0.80	0.70
0.75	0.65
0.70	0.61
0.65	0.56

Application recommendation based on greater than 50% chance of response to midseason nitrogen application. Valid for both varieties and hybrids.

Using GreenSeeker allows for making objective decisions on midseason N management in rice. Follow these steps to successfully use GreenSeeker in Rice:

- A **Reference Plot** (minimum 5' x 5' area) must be present in EVERY INDIVIDUAL FIELD. This **Reference Plot** should have 50-100 units of N more than the producer's pre-flood N rate (only 30-60 grams needed or 1/4 - 1/3 of a standard measuring cup). The **Reference Plot** allows for a GreenSeeker reading to be taken in an area with maximum fertilizer N uptake. The larger the field, the more **Reference Plots** needed - i.e., one **Reference Plot** per 50 acres.
- GreenSeeker readings should be taken after Green Ring AND no earlier than 3 weeks following pre-flood N incorporation.
- GreenSeeker readings should be taken throughout the field – preferably a minimum of 10 readings – with each reading being an average of 10 steps (depress trigger while walking the 10 steps - resulting number will be an average of area covered).
- GreenSeeker readings are no longer valid once plants reach the late boot stage (flag leaf fully exerted).
- The average GreenSeeker reading from the **Reference Plot** is then divided by the average readings from the field. If the resulting value is greater than 1.15 then there is more than a 50% chance of a response to midseason N.

**Example** – a **Reference Plot** value of 0.8 divided by a field average value of 0.69 = 1.16. Since 1.16 is greater than 1.15, a response to midseason N will occur more than 50% of the time. The higher the ratio, the greater the chance of a response to midseason N applications.

**Note:** GreenSeeker responses may vary in furrow-irrigated rice due to different plant growth habit and changes in N fertilization strategies.



# RICE

## INFORMATION

### Irrigation Recommendations

#### Recommended pumping rates for different soil textural groups

Soil Textural Group	Gallons per Minute (GPM) per Acre	
	Minimum	Desired
Silt loam - with pan	10	10
Sandy loam	15	25
Silt loam - no pan	10	15
Clay and silty clay	15	20

Apply permanent flood ~ the 5<sup>th</sup> leaf or 1<sup>st</sup> tiller stage.

#### Multiple Inlet Rice Irrigation (MIRI)

- MIRI reduces cold water effect and time and energy cost to flood up on precision and contour fields.
- Use 2.5" blue gates so adjustments can be made & all levees flood up evenly. Flow rate is 75 GPM.
- Measure flow with a meter or plumb bob:
  - Divide GPM by number of acres; then multiply by number of levees per acre; then divide by 75 GPM (flow rate per blue gate) to determine number of blue gates needed in each levee.
  - Ex. 1200 GPM / 42 A = 28 x 6 A per levee = 168 GPM needed / 75 GPM = 2.2 blue gates.
- To design MIRI use the mobile app (Rice Irrigation) or use Pipe Planner ([www.pipeplanner.com](http://www.pipeplanner.com)).
- Use 9 mil or 10 mil pipe. Flow < 1200 GPM use 12-inch, Flow 1200 - 2200 GPM use 15-inch, Flow >2200 GPM use 18-inch.
- Use a wire to punch holes in pipe to prevent air entrapment. Set levee gates with 1-2 inch freeboard.
- Use 4" pipe about 3 feet long in bar ditches for multiple inlet (no pipe needed for side inlet).
- Do not overbuild levees where poly pipe will cross, pressure drop will prevent water from getting to end.

#### Alternate Wetting & Drying (AWD / Intermittent Flooding) Recommendations:

- Establish permanent flood as normal and maintain for 21 days.
- Keep soil wet or damp at top of paddy and bottom of paddy still flooded.
- Ensure adequate moisture at (1) internode elongation and (2) flowering and grain fill.

#### Furrow-Irrigated Rice (FIR) or Row Rice Recommendations:

- Construct a shallow bed, tall beds may require excessive irrigation. Prefer that space between furrows not exceed 30 inches for loam soils or 38 inches for clay soils.
- Begin irrigation and fertilization at the 5-leaf stage.
- End blocking can reduce water use and management time, but flooding should be kept very shallow and increased as rice height increases. This can be done by shutting off irrigation sets earlier.
- Soil moisture monitoring has been used successfully to assist in scheduling FIR irrigation. Place sensors shallow (surface or 4" to 8" depth) up to 18" depth. Couple with visual plant stress.
- Without sensors, producers generally have been successful with 3-5 days on soils that seal and longer (5-7 days) on soils that do not.





# RICE

## Plant-Back Recommendations for Burndown Herbicides

Herbicide	Rice	Soybean	Corn	Wheat
2,4-D	21d <sup>1</sup>	14d	7d	7d
Dicamba <sup>2</sup>	22d	14d	I	22d
Elevore	14d	14d	14d	14d
FirstShot	I	7d	14d	I
Goal	10m	7d	30d	10m
Glyphosate	I	I	I	I
Glufosinate	I	I	I	I
Harmony GT	I	I	I	I
LeadOff	10m	30d	I	3m
Python	6m	I	I	4m
Sharpen	I	1m	I	I
Valor/Afforia	30d	I	30d	30d
Verdict	FY	I-4m	I	4m
Zidua (2 oz)	12m	I	I	30d

<sup>1</sup> I = immediately; d = days; m = months; and FY = following year.

<sup>2</sup> Plant-back days are rate dependent, days presented are for the lowest label rate. The burndown and row crop cutoff date for dicamba applications is May 25. Check the Arkansas State Plant Board website ([www.aad.arkansas.gov](http://www.aad.arkansas.gov)) for updated regulations on dicamba.

## Rainfall-free Periods for Postemergence Rice Herbicides

Herbicide	Time Before Rainfall	Herbicide	Time Before Rainfall
2,4-D	6 hrs	Newpath / Preface	4 hrs
Aim	1 hr	Permit / Permit Plus	4 hrs
Basagran / Broadloom	8 hrs	Propanil	6 hrs
Beyond / Postscript	4 hrs	Provisia	1 hr
Bolero	Nothing on label	Regiment	8 hrs
Clincher	1 hr	Ricestar HT	1 hr
Facet	Nothing on label	Sharpen	1 hr
Grasp	1 hr	Storm	8 hrs
League	6 hrs	Strada	6 hrs
Loyant	2 hrs	Ultra Blazer	4 hrs



# RICE

## Preemergence Herbicides Weed Response Ratings (0= no control, 10 = 100% control)

Herbicides	Herbicide MOA	Grasses								Broadleaf Weeds													Sedges						
		Barnyardgrass <sup>1</sup>	Broadleaf signalgrass	Crabgrass	Fall panicum	Red rice	Rice cutgrass	Sprangletop (bearded)	Sprangletop (Amazon)	Ammania (red stem)	Dayflower	Ducksalad	Eclipta	False Pimpernel	Gooseweed	Groundcherry	Hemp sesbania (cofficebean)	Indian jointvetch	Northern jointvetch (curly indigo)	Palmetto morningglory	Pigweed, Palmer	Pitted Morningglory	Smartweed	Texasweed	Water hyssop	Flatsedges	Spikerush	Umbrella sedge	Yellow nutsedge
League	2	0	0	0	0	0	0	0	0	7	-	5	-	-	-	9	8	8	2	0	2	7	8	-	8	-	0	8	
Prowl <sup>2</sup>	3	8	6	8	7	0	0	6	6	0	0	4	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	
Facet <sup>4</sup>	4	9	9	9	9	0	0	0	0	3	5	3	8	3	3	8	6	7	7	7	4	7	0	0	6	5	-	0	0
Facet+Prowl <sup>2</sup>	4,3	9	9	9	9	0	0	7	7	3	5	3	8	3	3	-	7	7	7	8	6	8	0	0	6	5	-	0	0
Facet +Bolero <sup>2</sup>	4,8	9	9	9	9	0	0	8	8	6	7	7	9	7	5	-	8	8	8	8	5	8	5	-	6	8	7	4	0
Command + Facet	13,4	10	10	10	10	0	0	9	9	3	6	3	8	3	4	8	7	8	8	8	4	8	6	0	6	5	7	-	0
Bolero <sup>2</sup>	8	7	5	7	7	0	0	7	7	7	8	7	8	8	6	-	5	5	5	5	-	5	5	-	7	7	7	4	4
Bolero <sup>3</sup>	8	8	7	7	-	8*	0	8	8	3	6	6	-	5	6	-	-	-	-	-	-	-	-	-	5	7	5	3	3
Command <sup>4</sup>	13	9	9	9	9	0	0	9	9	0	3	3	3	-	0	-	2	3	3	4	0	3	2	0	0	0	0	0	0

<sup>1</sup> Some biotypes of barnyardgrass are resistant to Command, propanil, Facet, Newpath, Grasp, Regiment, Clincher, Ricestar, & Loyant. Best barnyardgrass control is achieved through a program approach with overlapped residuals at the front of the season.

<sup>2</sup> Delayed PRE. <sup>3</sup> Water seeded. <sup>4</sup> PRE/delayed PRE. \* Water seed pinpoint flood culture.

The above ratings are assuming activation by rainfall with no weeds emerged at time of application.

Read and follow all label directions when using these products.

## Midseason Herbicides Weed Response Ratings (0= no control, 10 = 100% control)

Herbicides	Herbicide MOA	Grasses								Broadleaf Weeds													Sedges						
		Barnyardgrass <sup>1</sup>	Broadleaf signalgrass	Crabgrass	Fall panicum	Red rice	Rice cutgrass	Sprangletop (bearded)	Sprangletop (Amazon)	Ammania (red stem)	Dayflower	Ducksalad	Eclipta	False Pimpernel	Gooseweed	Groundcherry	Hemp sesbania (cofficebean)	Indian jointvetch	Northern jointvetch (curly indigo)	Palmetto morningglory	Pigweed, Palmer	Pitted Morningglory	Smartweed	Texasweed	Water hyssop	Flatsedges	Spikerush	Umbrella sedge	Yellow nutsedge
2,4-D	4	0	0	0	0	0	0	0	0	9	9	9	9	9	6	5	9	5	5	9	8	9	6	0	9	8	8	3	5
2,4-D + Propanil	4,7	6	6	2	6	0	0	6	6	9	9	8	9	9	8	5	9	8	8	8	9	9	7	0	9	8	8	3	6
Grandstand + propanil	4,7	4	4	4	4	0	0	0	0	9	-	6	6	8	7	3	9	8	9	9	7	9	5	0	8	5	8	5	3
Propanil	7	4	4	4	4	0	0	0	0	4	0	3	4	4	0	4	8	5	5	3	6	0	3	0	8	5	7	5	3
Propanil + Ultra Blazer	7, 14	5	5	5	5	0	0	0	0	5	2	4	5	5	2	5	9	6	6	7	7	8	7	0	8	6	7	5	4
Ultra Blazer	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	9	0	0	3	6	3	6	0	0	0	0	0	0

<sup>1</sup> Some biotypes of barnyardgrass are resistant to Command, propanil, Facet, Newpath, Grasp, Regiment, Clincher, Ricestar, & Loyant.

Read and follow all label directions when using these products.



# RICE

## Early Postemergence Herbicides Weed Response Ratings (0= no control, 10 = 100% control)

Herbicides	Herbicide MOA	Grasses									Broadleaf Weeds														Sedges				
		Barnyardgrass <sup>1</sup>	Broadleaf signalgrass	Crabgrass	Fall panicum	Red rice	Rice cutgrass	Sprangletop (bearded)	Sprangletop (Amazon)	Ammania (red stem)	Dayflower	Ducksalad	Eclipta	False Pimpernel	Gooseweed	Groundcherry	Hemp sesbania	Indian jointvetch	Northern jointvetch (curly indigo)	Palmleaf morningglory	Pigweed, Palmer	Pitted Morningglory	Smartweed	Texasweed	Water hyssop	Flatsedges	Spikerush	Umbrella sedge	Yellow nutsedge
Clincher	1	8	9	5	9	0	2	9	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Provisia fb Provisia	1	10	10	10	10	10	10	10	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ricestar HT	1	9	9	8	7	0	2	9	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grasp	2	8	0	0	0	0	6	0	0	7	8	9	8	-	-	8	8	8	8	4	0	5	7	7	8	9	8	0	6
Londax	2	0	0	0	0	0	0	0	0	9	7	9	8	9	9	0	6	6	6	5	0	5	6	0	9	8	8	0	6
Newpath fb Newpath	2	9	9	9	9	9.5	9	8	7	8	5	7	0	0	5	9	0	0	0	5	0	7	9	5	0	9	9	0	8
Permit	2	0	0	0	0	0	0	0	0	5	8	3	5	-	4	6	9	3	6	0	0	4	4	5	-	8	-	0	9
Permit Plus	2	0	0	0	0	0	0	0	0	8	9	7	7	-	4	8	9	5	7	3	0	5	8	5	-	8	-	0	9
Gambit	2	0	0	0	0	0	-	0	0	9	9	8	8	-	4	8	9	9	7	3	0	6	8	7	-	8	-	0	9
Regiment	2	8	0	0	0	0	7	3	2	6	9	9	7	-	0	-	8	7	7	4	0	5	10	7	6	8	-	3	5
Strada	2	0	0	0	0	0	0	0	0	8	7	6	7	-	-	4	9	8	9	3	0	4	5	6	-	9	-	0	7
Facet	4	8	9	7	6	0	2	0	0	3	3	3	9	3	3	8	8	8	8	8	4	8	0	0	3	5	-	0	0
Loyant <sup>2</sup>	4	7	8	0	-	0	-	6	6	10	10	10	10	10	9	-	10	10	10	5	9	8	6	-	8	10	-	10	7
Grandstand + Permit	4,2	0	0	0	0	0	0	0	0	8	8	4	5	-	-	4	8	9	9	9	4	9	7	9	-	9	-	3	9
Facet + propanil	4,7	9	9	7	9	0	2	4	5	6	5	6	9	7	5	8	9	9	9	8	8	8	6	6	8	9	9	3	5
Grandstand + propanil	4,7	9	9	7	9	0	0	4	5	9	5	8	9	8	8	4	9	9	9	9	9	9	7	8	8	9	9	3	5
Basagran	6	0	0	0	0	0	0	0	0	8	9	6	8	7	7	0	3	3	3	8	0	3	7	0	8	8	8	7	6
Basagran + propanil	6,7	9	9	7	9	0	2	4	5	9	9	7	9	8	7	4	9	9	9	8	7	5	8	6	9	9	9	8	7
Propanil	7	9	9	7	9	0	1	4	5	6	5	7	8	7	5	-	9	9	9	4	7	4	6	6	8	9	9	5	4
Propanil fb propanil	7	9	9	7	9	0	2	7	8	6	6	7	9	7	5	-	9	9	9	5	9	5	8	6	8	9	9	6	6
Propanil + Londax	7,2	9	9	7	9	0	2	4	5	9	8	7	9	8	9	0	9	9	9	9	7	9	8	5	8	9	9	6	8
Propanil + Permit	7,2	9	9	7	9	0	1	4	5	6	9	7	8	7	5	6	10	9	9	4	7	4	6	5	8	9	9	3	9
Propanil + Prowl	7,3	9	9	7	9	0	1	9	9	7	5	7	9	7	6	-	9†	9†	9†	5	7	5	6	4	7	9	7	3	5
Propanil + Bolero	7,8	9	9	7	9	0	2	9	9	8	8	8	9	9	6	-	9†	9†	9†	5	0	5	6	4	9	9	9	8	5
Aim	14	0	0	0	0	0	0	0	0	6	7	5	7	-	-	8	9	6	6	10	6	10	9	3	7	-	0	3	0
Sharpen	14	0	0	0	0	0	0	0	0	8	7	5	9	-	7	8	9	9	9	9	9	10	-	8	8	8	-	6	6
Ultra Blazer + propanil	14,7	8	8	7	8	0	1	4	5	6	5	7	8	7	5	8	9	6	9	8	9	8	7	3	8	8	8	2	5

<sup>1</sup> Some biotypes of barnyardgrass are resistant to Command, propanil, Facet, Newpath, Grasp, Regiment, Clincher, Ricestar, & Loyant.

<sup>2</sup> Inconsistent results with Loyant on barnyardgrass have been observed; additionally, multiple populations have shown increased tolerance.

<sup>†</sup> Postemergence control only.

**Read and follow all label directions when using these products.**



# RICE

**U of A** DIVISION OF AGRICULTURE  
RESEARCH & EXTENSION  
University of Arkansas System

## INFORMATION

### Application Rate Range and Notes for Common Rice Herbicides

Herbicide	Rate per Acre	Notes
Newpath 2 AS	4.0 - 6.0 oz/A	Do not exceed 6 oz/A per application on CL varieties and 4 oz/A per application on CL hybrids.
Clearpath	0.5 lb/A	Add 1% v/v crop oil concentrate.
Beyond 1 AS	5 oz/A	Surfactant or crop oil required. Cutoff: PI+14 days for CL varieties and PI for CL hybrids.
Provisia 0.88 EC	15.5 oz/A followed by 15.5 oz/A	Add 1% v/v COC. Sequential program: 1-2 leaf FB 4-5 leaf (preflood). Use residual program at planting. Broadleaf tank mixes with 1st application, avoid tank mixes with 2nd application. Do not mix with propanil or Grandstand. Avoid drift to non-PV rice.
Preface	4.0 - 6.0 oz/A	Add 0.25% v/v NIS. Use only on FullPage hybrids. 4 oz/A at 1-2 lf rice followed by 4 oz/a 14 d later.
Postscript	5 oz/A	Surfactant or COC required. After Preface has been applied. Use only on FullPage hybrids. Cutoff: PI.
Facet L	22 - 43 oz/A	Rice seed exposed to spray may be severely injured. Tomatoes & cotton extremely sensitive.
Loyant	1 pt/A	Add MSO. No more than 7 days prior to flooding. Do not get on soybean. Best in program with multiple residual herbicides. Injury has been observed on hybrid and medium-grain cultivars and Diamond. Risk for injury increases when sequential application are made. See MP44 for additional notes.
Command 3 ME	0.8 - 1.6 pt/A (12.8 - 25.6 oz/A)	Injury may increase with low seeding rates. 0.8 to 1.1 pt/A on silt loam and 1.3 to 1.6 pt/A on clay soils.
League	6.4 oz/A	May carry over to soybean on very high pH soils.
Bolero 8E	4 pt/A	Delayed PRE. Rice seed must have imbibed its germination water prior to application.
Prowl H <sub>2</sub> O 3.8 CS	2.1 pt/A	Delayed PRE. Rice seed must have imbibed its germination water prior to application.
Propanil (4 lb form.)	3 - 4 qt/A	Two applications 5-7 days apart for hard-to-kill weeds.
Ricestar HT 0.58 EC	24 oz/A	Excellent soil moisture critical for good activity. Tank mixing with broadleaf & sedge herbicides can cause loss of grass activity.
Clincher 2.38 EC	15 oz/A	Add 1 qt/A COC. Excellent soil moisture needed for good activity.
Permit 75 WG	1 oz/A	Add NIS or COC.
Permit Plus 75 WG	0.75 oz/A	Add 1% COC.
RiceBeaux 6 SC	4 qt/A	Apply to sealed soil. Rice must have imbibed germination water.
Regiment 80 WP	0.4 - 0.63 oz/A	From 4-leaf rice to joint movement. Use proper adjuvants.
Grasp 2 EC	2 - 2.3 oz/A	Add 1 qt/A COC or MSO.
Sharpen	1 oz/A	Add 1% v/v COC. 2- to 3-leaf rice. Up to PI. Do not apply before full 2nd leaf.
Gambit 79 WDG	1 - 2 oz/A	Add NIS or COC.

Consult the MP44 - Recommended Chemicals for Weed and Brush Control for more details.  
Read and follow all label directions when using these products.



# RICE

## INFORMATION

### Fungicide Rates & Timings for Disease Management in Arkansas Rice

#### Fungicides for sheath blight management.

Fungicide	Rate per Acre fl oz	Active Ingredients	Notes
Quadris	8.5 – 12.5	azoxystrobin	<ul style="list-style-type: none"> <li>Fungicides to control sheath blight should be applied when scouting indicates more than 35% positive stops in cultivars rated S or VS; or when more than 50% positive stops in cultivars rated MS.</li> <li>Scout between panicle differentiation and early heading.</li> <li>Maximum benefit from a single fungicide application achieved when made before the disease has damaged the upper 3 leaves of the canopy.</li> </ul>
Stratego	16.0 – 19.0	trifloxystrobin + propiconazole	
GEM	3.8 – 4.7	trifloxystrobin	
Quilt Xcel	14.0 – 27.0	azoxystrobin + propiconazole	
Elegia	32.0	flutolanil	
Amistar Top	10.0 – 15.0	azoxystrobin + difenconazole	

#### Fungicides for prevention of kernel smut and false smut.

Fungicide	Rate per Acre fl oz	Active Ingredients	Notes
Tilt 3.6 EC	6.0	propiconazole	<ul style="list-style-type: none"> <li>Apply at early to late boot but before heading begins to SUPPRESS kernel smut and/or false smut.</li> <li>Applications made after heading starts will be INEFFECTIVE.</li> <li>Fields most likely to benefit will be those planted to a susceptible cultivar and using excessive nitrogen.</li> </ul>
Propimax	6.0	propiconazole	
Stratego	19.0	trifloxystrobin + propiconazole	
Quilt Xcel	21.0	azoxystrobin + propiconazole	
Amistar Top	10.0 - 15.0	azoxystrobin + difenconazole	

#### Fungicides for prevention of neck blast.

Fungicide	Rate per Acre fl oz	Active Ingredients	Notes
Quadris	10.0 - 12.5	azoxystrobin	<ul style="list-style-type: none"> <li>Keep flood depth at least 4 inches to suppress early leaf blast &amp; neck blast.</li> <li>Fungicides for prevention of neck blast work best if applied <b>twice</b>: <ul style="list-style-type: none"> <li>◇ First application at late boot</li> <li>◇ Second application when panicles of main tillers are 50-75% emerged but the neck is still in the boot.</li> </ul> </li> </ul>
GEM	3.1 – 4.7	trifloxystrobin	
Stratego	19.0	trifloxystrobin + propiconazole	
Quilt Xcel	21.0 – 27.0	azoxystrobin + propiconazole	
Amistar Top	15.0	azoxystrobin + difenconazole	

\* 21 oz of Quilt Xcel contains 6 oz of Tilt equivalent and 12 oz of Quadris equivalent.

\* 19 oz of Stratego contains 5.5 oz of Tilt equivalent and 4.7 oz of GEM equivalent.

*Read and follow all label directions when using these products.*



# RICE

## INFORMATION

### Arkansas Rice Cultivar Reactions to Common Diseases and Lodging

Cultivar	Sheath Blight	Blast	Straight-head	Bacterial Panicle Blight	Stem Rot	Kernel Smut	False Smut	Lodging
ARoma 17	MS	MS	—	MS	—	S	S	MR
CL111	VS	MS	S	VS	VS	S	S	MS
CL151	S	VS	VS	VS	VS	S	S	S
CL153	S	MS	—	MS	—	S	S	MR
CL163	VS	S	—	MS	—	MS	—	MS
CLL15	S	MS	—	S	—	S	S	MR
CLM04	—	S	—	S	—	—	S	S
Della-2	S	R	MR	MS	—	—	—	—
Diamond	S	S	—	MS	S	S	VS	MS
Jazzman-2	S	MS	VS	VS	—	S	S	MS
Jupiter	S	S	S	MR	VS	MS	MS	S
LaKast	MS	S	MS	MS	S	S	S	MS
PVL01	S	S	—	S	—	VS	VS	MS
PVL02	MS	MS	—	S	—	—	—	S
Titan	S	MS	—	MS	—	MS	MS	MS
RT 7301	MS	MR	—	MR	—	—	—	MR
RT 7321 FP	MS	—	—	—	—	S	MS	S
RT 7501	S	—	—	—	—	S	S	S
RT 7521 FP	S	—	—	—	—	MS	VS	S
RT CLXL745	S	R	MR	MR	—	S	S	S
RT Gemini 214 CL	S	MR	—	—	—	MS	VS	MS
RT XP753	MS	R	MR	MR	—	MS	S	MR

Reaction: R = Resistant; MR = Moderately Resistant; MS = Moderately Susceptible; S = Susceptible; VS = Very Susceptible  
Cells with no values indicate no definitive Arkansas disease rating information is available at this time. Reactions were determined based on historical and recent observations from test plots and grower fields across Arkansas and other rice states in southern USA. In general, these ratings represent expected cultivar reactions to disease under conditions that most favor severe disease development.



# RICE

## Insecticide Rates & Thresholds for Insect Management in Arkansas Rice

### Insecticides for rice stink bug management.

Insecticide	Min-Max Rate	Active Ingredients	Notes
Sevin 80 S	1.25 - 1.875 lb	Carbaryl	<ul style="list-style-type: none"> <li>• Check infestation levels weekly or bi-weekly following 75% panicle emergence using a 15-inch diameter sweep net.</li> <li>• Apply insecticide when 5 or more stink bugs per 10 sweeps are present during the first 2 weeks after fields initially reach 75% panicle emergence; or when 10 stink bugs per 10 sweeps are present thereafter.</li> <li>• Sampling stink bugs should be conducted between 8-10 a.m. and 6-8 p.m. to get the best estimate of the population. Repeat treatment as necessary to maintain control.</li> </ul>
Sevin XLR or 4 F	2 - 3 pt	Carbaryl	
Tenchu 20 SG	7.5 - 10.5 oz	Dinotefuran	
Malathion 57% EC	1 - 1.5 pt	Malathion	
Prolex, Declare 1.25 CS	1.28 - 2.05 oz	Gamma-cyhalothrin	
Proaxis 0.5 CS	3.2 - 5.12 oz	Gamma-cyhalothrin	
Warrior II 2.08 CS	1.6 - 2.56 oz	Lambda-cyhalothrin	
Mustang Maxx	2.64 - 4.0 oz	Zeta-cypermethrin	

### Thresholds for additional insect pests of rice.

Insect	Threshold	Scouting Procedure
Chinch Bug	Treat when bugs are causing stand reduction	<ul style="list-style-type: none"> <li>• Check seedling rice, particularly fields bordering wheat.</li> </ul>
Fall Armyworm, True Armyworm	Treat when 6 or more armyworms per square foot early season. Late season treat when fall armyworms are damaging flag leaf.	<ul style="list-style-type: none"> <li>• Early season watch rice bordering wheat for migration of true armyworms into field (damage can occur quickly when armyworms move in).</li> </ul>
Grasshopper	Treat when damage is evident.	<ul style="list-style-type: none"> <li>• Watch field borders, particularly near grassy areas.</li> </ul>
Greenbug	2 to 3 greenbugs per plant on 1- to 2-leaf stage rice.	<ul style="list-style-type: none"> <li>• General visual observation.</li> </ul>
Rice Water Weevil	See MP144 for details.	<ul style="list-style-type: none"> <li>• Inspect the youngest leaf on 40 rice plants at each stop for adult feeding scars. Avoid areas with thin stand. DO NOT count older leaves with scars.</li> </ul>

Read and follow all label directions when using these products.



# RICE

## INFORMATION

### Drain Timing and Harvest

#### Drain Timing Recommendations

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 on silt loam soils panicles should have 2/3 straw-colored kernels; or on clay soils panicles should have 1/3 straw-colored kernels prior to draining.

#### Harvest Aids

Only use harvest aids when grain moisture is BELOW 25% and ABOVE 18%.

- Sodium chlorate at 3-6 lb a.i. per acre.
- Harvest within 5 days after application.
- Used to desiccate foliage but also reduces grain moisture.
- When used properly, does not reduce head rice yields.
- Hybrids may have a reduced window of safe application.

#### Harvest Timing and Grain Moisture

- Optimal harvest grain moisture for Long Grain Cultivars is 19 to 21 percent.
- Optimal harvest grain moisture for Medium Grain Cultivars is 22 to 24 percent.

#### Estimated Drying Costs Based on Grain Moisture Content

Moisture Content (%)	Cost (\$ per bushel)
< 13.5	0.30
13.6 - 18.9	0.36
19.0 - 21.9	0.43
> 22.0	0.60





# RICE

## INFORMATION

### Calibration and Conversion Factors

GPM = gallons per minute

GPA = gallons per acre

mph = miles per hour

W = nozzle spacing (in.) for broadcast spraying

= spray width (in.) for single nozzle, banded or boomless spraying

= row spacing (in.) divided by nozzles per row for directed spray

#### Formulas:

$$\text{GPM (per nozzle)} = \frac{\text{GPA} \times \text{mph} \times \text{W}}{5,940}$$

$$\text{GPA} = \frac{5,940 \times \text{GPM (per nozzle)}}{\text{Mph} \times \text{W}}$$

#### Conversion Factors

1 g	=	0.0022 lb	1 ha	=	2.471 A
454 g	=	1 lb	0.405 ha	=	1 A
1 kg	=	2.2 lb	1 kg/ha	=	0.893 lb/A
1 m	=	3.283 ft	1 bu/ha	=	0.405 bu/A
2.54 cm	=	1 in	1 bu/A	=	45 lb/A
1 yd	=	3 ft	3.6 bu/A	=	1 barrel
1 L	=	0.265 gal	g/L	=	Parts per thousand
3.785 L	=	1 gal	mg/L	=	Parts per million
1 gal	=	4 qt / 8 pt / 128 fl oz	mg/kg	=	Parts per million

# RICE



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I N F O R M A T I O N

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For more information please visit the Extension rice page at [uaex.uada.edu/rice](http://uaex.uada.edu/rice).

Additional information on topics throughout this publication may be found in:  
Arkansas Rice Production Handbook,  
MP44 - Recommended Chemicals for Weed and Brush Control,  
MP144 - Insecticide Recommendations for Arkansas, and  
MP154 - Arkansas Plant Disease Control Products Guide.

The information given herein is supplied with the understanding that no discrimination is intended and no endorsement by the University of Arkansas System Division of Agriculture is implied. The agrichemical recommendations herein are consistent with current federal and state pesticide labeling as of the date of this publication. Revisions in labels can occur at any time. For your safety before using any recommended product, ALWAYS READ THE PRODUCT LABEL.

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