MP578

2025 Rice Management Guide









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2025 Recommended Rice Cultivars for Arkansas

Based on multiple years of advanced yield testing, below are the recommended rice cultivars for planting in 2025. Just because a cultivar is not listed does not mean it cannot be grown successfully, but testing indicates the cultivars listed to be the highest and most consistent performers in grain yield and milling yield across a wide range of environmental and management conditions.

Conventional Long Grain Varieties	Conventional Long Grain Hybrids	Clearfield Long Grain Varieties	FullPage Long Grain Hybrids	Provisia Long Grain Varieties	MaxAce Long Grain Variety / Hybrid	Conventional Medium Grain Variety/ Hybrid	Clearfield Medium Grain Varieties
DG263L	RT 7302	CLL18	RT 7521 FP	PVL04	RT 7331 MA	RT 3202	CLM05
Ozark	RT XP753	CLL16	RT 7421 FP	DG563PVL*	RTv7231 MA	Taurus	CLM04
RTv7303*		CLL19	RT 7321 FP			ProGold M3	

Cultivars noted with a * have limited testing observations.

2025 Rice Cultivar Characteristics (Long-Grain Varieties)

Cultivar	DG263L	Diamond	Ozark	ProGold L4	RTv7303	CLL16	CLL18	CLL19	DG563PVL	PVL03	PVL04	RTv7231 MA
Agronomic Cha	aracteristi	CS										
Technology ¹						CL	CL	CL	PV	PV	PV	MA
Grain Type ²	LG	LG	LG	LG	LG	LG	LG	LG	LG	LG	LG	LG
2022	185	172	190			173	179	179		163		179
2023	191	173	184			176	187	182		160	162	181
2024	193	181	182	175	189	176	186	175	185	148	171	183
Avg. Yield ³	190	175	185	175	189	175	184	179	185	157	167	181
Days to 50% Heading	84	88	89	85	80	91	89	86	86	88	90	82
Days to Maturity⁴	119	123	124	120	115	126	124	121	121	123	125	117
Height (in)	34	38	37	36	34	38	39	34	34	36	34	35
Lodging	MS	MS	MS	S	MS	MS	MS	MR	MS	MR	MR	MS
Nitrogen Mana	agement⁵ (lb N/acre)										
Preflood N	90	105	105	105	105	105	105	105	105	105	105	105
Midseason N	45	45	45	45	45	45	45	45	45	45	45	45
Boot N	0	0	0	0	0	0	0	0	0	0	0	0
Total N	135	150	150	150	150	150	150	150	150	150	150	150
Disease React	ions ⁶											
Blast	MR	S	S			MS	MS	MS				
Sheath Blight	S	S	S			S	MS	VS		VS	VS	S
Straighthead	MS	MS	S			S				S		
Kernel Smut	MS	S	MS			MS	MS	MS		MS	MS	S
False Smut	S	VS	VS			MS	S	S		MS	S	MS
Cercospora	S	MS	S		MR	MR	S	S		S		S

¹Technology: CL = Clearfield; FP = FullPage; MA = MaxAce; PV = Provisia. ²Grain type: LG = long-grain, MG = medium-grain. ³Yields refer to 2022-2024 results from Arkansas Rice Performance Trials (ARPT) small-plot research. ⁴Days to maturity calculated by adding 35 days for long-grain or 40 days for medium-grain to 50% Heading values. ⁵Recommendations for loam soil following soybean; add 30 lb N/acre to preflood on clay soil. ⁶VS=V. Susceptible; S=Susceptible; MS=Mod. Susceptible; MR=Mod. Resistant; R=Resistant.

2025 Rice Cultivar Characteristics (Long-Grain Hybrids)

Cultivar	RT 7331 MA	RT 7302	RT 7401	RT XP753	RT 7321 FP	RT 7421 FP	RT 7521 FP
Agronomic Character	istics						
Technology ¹	MA				FP	FP	FP
Grain Type ²	LG	LG	LG	LG	LG	LG	LG
2022 2023 2024 Avg. Yield ³	194 210 201 202	196 227 205 209	197 208 205 203	200 214 203 206	177 215 196	183 214 203 200	196 215 196 202
Days to 50% Heading	84	85	86	85	85	86	87
Days to Maturity ⁴	119	120	121	120	120	121	122
Height (in)	38	39	38	38	41	40	40
Lodging	MS	MS	MS	MR	MS	S	S
Nitrogen Managemer	nt⁵ (lb N/acre)						
Preflood N	120	120	120	120	120	120	120
Midseason N	0	0	0	0	0	0	0
Boot N	30	30	30	30	30	30	30
Total N	150	150	150	150	150	150	150
Disease Reactions ⁶							
Blast			MR	R	R		MS
Sheath Blight	S	MS	MS	MS	MS	MS	S
Straighthead				MS	S		MR
Kernel Smut	S	MS	S	MS	S	MS	MS
False Smut	S	S	MS	S	MS	MS	VS
Cercospora	MS	MS		MS	S	S	MR

¹Technology: CL = Clearfield; FP = FullPage; MA = MaxAce; PV = Provisia.²Grain type: LG = long-grain, MG = medium-grain.³Yields refer to 2022-2024 results from Arkansas Rice Performance Trials (ARPT) small-plot research. ⁴Days to maturity calculated by adding 35 days for long-grain or 40 days for medium-grain to 50% Heading values. ⁵Recommendations for loam soil following soybean; add 30 lb N/acre to preflood on clay soil. ⁶VS=V. Susceptible; S=Susceptible; MS=Mod. Susceptible; MR=Mod. Resistant; R=Resistant.



2025 Rice Cultivar Characteristics (Medium-Grains)

Cultivar	CLM04	CLM05	DG353M	ProGold M3	RT 3202	Taurus	Titan
Agronomic Character	istics						
Technology ¹	CL	CL					
Grain Type ²	MG	MG	MG	MG	MG	MG	MG
2021 2022 2023 Avg. Yield ³	158 162 172 164	 178 184 181	151 152 177 160	 183 186 185	 217 200 209	181 186 176 181	156 161 188 168
Days to 50% Heading	89	90	88	88	82	86	84
Days to Maturity ⁴	124	125	123	123	117	121	119
Height (in)	39	36	36	33	38	34	36
Lodging	S	MS	S	MS	MS	MS	MS
Nitrogen Managemer	nt⁵ (lb N/acre)						
Preflood N	105	120	105	105	120	105	105
Midseason N	45	0	45	45	0	45	45
Boot N	0	30	0	0	30	0	0
Total N	150	150	150	150	150	150	150
Disease Reactions ⁶							
Blast	S	MS				MS	MS
Sheath Blight	MS	S	S	S	S	MS	S
Straighthead	MS					MS	MS
Kernel Smut	S	MS	MS	MS	MS	MS	MS
False Smut	S	MS	MS	S	S	MS	MS
Cercospora	MS	MS	S	MR		MS	MS

¹Technology: CL = Clearfield; FP = FullPage; MA = MaxAce; PV = Provisia. ²Grain type: LG = long-grain, MG = medium-grain. ³Yields refer to 2021-2023 results from Arkansas Rice Performance Trials (ARPT) small-plot research. ⁴Days to maturity calculated by adding 35 days for long-grain or 40 days for medium-grain to 50% Heading values. ⁵Recommendations for loam soil following soybean; add 30 lb N/acre to preflood on clay soil. ⁶VS=V. Susceptible; S=Susceptible; MS=Mod. Susceptible; MR=Mod. Resistant; R=Resistant.

Soil Testing Recommendations for Rice

Soil sample depth for phosphorus (P), potassium (K), and zinc (Zn) recommendations is 0 to 4 inches.

Phosphorus (P_2O_5) recommendation							
	Mehlich-3 Soil Test P (ppm)						
рН	< 9	9-16	17-25	26-50			
	lb of P205 per acre						
≥ 6.5	70	60	50	0			
≤ 6.5	50	40	30	0			

Zinc (Zn) recommendation

- Zn deficiency normally occurs on silt or 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.
- Apply Zn seed treatments to supply 0.25 to 0.5 lb of Zn per cwt of seed.
- For salvage of Zn deficiency, apply 1 lb actual Zn per acre as EDTA chelate to drained soil, fertilize with 100 lb ammonium sulfate (AMS), and reflood.

Potassium (K_2^0) recommendation					
Mehlich-3 Soil Test K (ppm)					
< 61	< 61 61-90 91-130 > 130				
––––– Ib of K ₂ 0 per acre –––––					
120	90	60	0		

Potash Rate Calculator

The Potash Rate Calculator (PRC) is an Excel® spreadsheet tool that builds on potassium (K) yield response trials in rice over the past two decades. The tool provides K application rate recommendations based on field yield potential, field soil test K (STK), crop price, and cost of fertilizer. The last two factors often lead to rate recommendations lower than current recommendations targeted at: i) reaching 95-100% of yield potential; and ii) building and maintaining the soil (STK). Using a sufficiency philosophy to manage STK and employing profit-maximizing K rates is expected to lessen nutrient runoff with lesser application rates at minimal yield penalty leading to greater producer profit. Find the PRC Calculator at the link below along with a video tutorial on how to use the software with a Microsoft-based operating system.

Link: <u>https://agribusiness.uark.edu/decision-sup-port-software.php</u>



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	Opti	mum ¹	Recommended Absolute ²		
Region	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	

¹ Seeding during the optimum timeframe does NOT guarantee high yields or suggest that crop failure cannot occur when rice is seeded during these times. ² 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.



Rice Growth Stages and Development



¹ Under warm conditions use the lesser number of days and under cool conditions use the greater number of days. ² The reproductive stage begins with panicle initiation.

³Stage III begins when 50% of the florets are pollinated.

⁴ Variable time – 0 to 25 days (dependent upon cultivar).

Seeding, Emergence, & Plant Stands

Seeding

- Ideally, plant when soil is at least 60°F at a 4-inch depth.
- Good seed-to-soil contact is required.
- Seed depth should be 1/4 to $1\frac{1}{2}$ inches.
- Under favorable conditions, drilled seeding rate should be ~30 seeds per square foot (ft²) for varieties (non-hybrids) and ~10 seeds per ft² 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, consider increasing seeding rate by 10% to achieve faster canopy closure.

Determining Emergence & Final Plant Stands

- DD50 Emergence date when 10 plants/ft² have emerged above soil surface (4-5 plants/ft² for hybrids). <u>https://dd50.uada.edu</u>
- Count the number of plants in one ft² in at least 10 random locations in the field.
- Desired stand is 12 to 18 plants/ft² for varieties (non-hybrids) and 5 to 8 plants/ft² for hybrids.
- Stand uniformity is as important as stand count.

Converting seed counts between seed per square foot and seed per row foot								
Cood nov ft?		Drill Row Width	1	Seed per ft ² Hybrids	Drill Row Width			
Seed per ft ² Varieties	6"	7.5"	8"		6"	7.5"	8"	
Tunouos	S	eed per row fo	ot	nybrida	Seed per row foot			
20	10.0	12.5	13.3	8	4.0	5.0	5.3	
25	12.5	15.6	16.7	9	4.5	5.6	6.0	
30	15.0	18.8	20.0	10	5.0	6.3	6.7	
35	17.5	21.9	23.3	11	5.5	6.9	7.3	
40	20.0	25.0	26.7	12	6.0	7.5	8.0	
45	22.5	28.1	30.0					

2025 Recommended Rice Seeding Rates & Adjustments

All seeding rate recommendations based on use of seed with a full seed treatment package including an insecticide and multiple fungicides. Consider higher seeding rate range if not utilizing seed treatments.

Pounds seed per acre at various seed densities for selected rice cultivars								
				Seeding	Rate (seed	per ft ²)		
Cultivar	Seed per lb	10	12	20	25 ¹	30	35	40
					lb per acre			
ARoma 22	17,716	_	-	-	61	74	86	98
CLL16	18,242	_	_	_	60	72	84	96
CLL18	19,922	_	_	_	55	66	77	87
CLL19	18,739	_	_	_	58	70	81	93
CLM04	18,388	_	_	_	59	71	83	95
CLM05	15,204				72	86	100	115
DG263L	18,069	_	_	48	60	_	-	_
DG353M	16,202	_	_	_	67	81	94	108
DG563PVL	20,026			44	54			
Diamond	18,783	_	_	_	58	70	81	93
Ozark	19,279	_	_	_	56	68	79	90
ProGold1	18,526	_	_	_	59	71	82	94
ProGold L4	18,968	_	_	_	57	69	80	92
ProGold M3	18,220	_	_	_	60	72	84	96
PVL03	17,670	_	_	_	62	74	86	99
PVL04	19,329	_	_	_	56	68	79	90
Taurus	19,073	_	-	-	57	69	80	91
Titan	16,367	_	_	_	67	80	93	106
RT 3202	18,180	24	29	-	-	_	-	—
RT 7302	19,237	23	27	_	_	—	_	—
RT 7321 FP	18,486	24	28	_	-	_	_	_
RT 7331 MA	17,607	25	30					
RT 7401	19,860	22	26	-	-	_	_	—
RT 7421 FP	19,347	23	27	_	_	_	_	_
RT 7521 FP	19,298	23	27	-	-	—	_	—
RT XP753	19,689	22	27	_	_	_	_	_
RTv7231 MA	19,928			44	55			
RTv7303	17,243			51	63			

¹ Only recommended under optimum conditions² with addition of insecticide and fungicide seed treatments.

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

Additive factors increasing optimum seeding rate					
Variable	% Added	Variable	% Added		
Seeding Method		Seedbed Preparation			
Dry seeded-drilled	0	Good	0		
Dry seeded-broadcast	20	Fair	10		
Water seeded-broadcast	30	Poor	20		
Soil Texture		Seeding Date			
Sand	0	Early (before April 1)	10		
Silt	0	Optimum	0		
Clay	20	Late (after June 1)	20		

Factors additive to a max of 50% above optimum.

<u>Rice Drill Calibration Worksheet</u>

Number of Drill Rows/Cups (5 recommended)	(A)	rows/cups
Drive Wheel		
Circumference (inches/12)	(B)	feet
Number of turns (minimum of 15)	(C)	turns
Distance covered (A x B x C)	(D)	feet
Calibration by Weight		
Weight of seed caught (grams/454)	(E)	lb
Seeds/lb of lot used (indicated on seed bag)	(F)	seed/lb
Drill row spacing (inches/12)	(G)	feet
Number of seeds per:		
Foot of Row	(E x F) / D	seed/row ft
Square Foot	(E x F) / (D x G)	seed/ft ²
Calibration by Seed Count		
Number of seeds caught	(H)	seed
Number of seed/row foot	(H/D)	seed/row ft

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 from CruiserMaxx and NipsIt diminish 35+ days after planting.

Insecticide seed treatments for rice insect management						
Insecticide	Rate (fl oz) per 100 lb seed	Active Ingredients	Notes			
CruiserMaxx Rice	7.0	thiamethoxam Also contains the fungicides: azoxystrobin fludioxonil mefenoxam	 D0 N0T plant or sow Cruiser-treated seed by aerial application. Cruiser is N0T labeled for use in water- seeded rice. D0 N0T use treated fields for aquaculture of edible fish or crustaceans. D0 N0T exceed 120 lb seed per acre. 			
Dermacor X-100	1.5 - 6.0 (see label)	chlorantraniliprole	 Can be used on dry-seeded rice. Seed treated with Dermacor CANNOT be soaked or pre-germinated before planting. 			
Fortenza	3.47	cyantraniliprole	 Use only on dry-seeded rice. DO NOT use treated fields for aquaculture of edible fish or crustaceans. 			
Nipslt INSIDE	1.92	clothianidin	 Use only on dry-seeded rice. DO NOT spray crop with another neonicotinoid insecticide after using NipsIt INSIDE. DO NOT use near fish or crawfish farms. 			

	Insecticide seed treatments for rice insect management										
Insecticide	Chinch Bug	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	-	8	—	2					
Nipslt INSIDE	6	_	6	7	_	8					

Read and follow all label directions when using these products.

Fungicide Seed Treatments for Rice

Fungicide seed treatments are strongly recommended to manage the seedling disease complex in rice. Treatments provide ~14 days of plant protection. Prolonged cool, wet conditions may allow seedling disease to overcome the seed treatments.

F	ungicide seed tre	atments for rice seed	ing disease management
Insecticide	Rate (fl oz) per 100 lb seed	Active Ingredients	Notes
Pythium diseases			
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.
Rhizoctonia seedlin	ng diseases, general	seed rots	
RTU-Vitavax-Thiram Vitavax 200	6.8 4.0	carboxin + thiram	May use as a pour-on hopper-box treatment.
Maxim 4 FS	0.02 - 0.08	fludioxinil	Use higher rates for severe disease situations.
Vibrance	0.12	sedaxane	Rate is 0.0002-0.002 mg ai/seed (21,000 rice seeds/lb) for control of Rhizoctonia seedling diseases.
Vibrance RST	1.7	azoxystrobin + fludi- oxonil + mefenoxam + sedaxane	
Pythium, Rhizocton	ia, general seed rots	5	
Vitavax 200 + Allegiance FL	4.0 + 0.375	carboxin + thiram + metalaxyl	
Apron XL LS + Maxim 4 FS	0.32 - 0.64 + 0.02 - 0.08	mefenoxam + fludioxinil	Use higher rates for early planting or severe disease situations.
Dynasty	0.153 - 1.53	azoxystrobin	Usually sold with Apron XL and Maxim on rice to improve seedling disease control.
Trilex 2000 1.15 FC	1.0 - 2.0	trifloxystrobin + metalaxyl	See label.
EverGol Energy 1.47 FS	1.0	prothioconazole + penflufen + metalaxyl	
CruiserMaxx Rice	7.0	azoxystrobin + fludioxonil + mefenoxam + thiamethoxam (insecticide)	See insecticide seed treatment table for additional information.

All are commercial seed treatment only.

Read and follow all label directions when using these products.

Plant Populations for Various Rice Row Spacings

	Optimum	plant populat	ions (stand) fo	or various rice	row spacings	
Plants per	6" drill	7" drill	7.5" drill	8" drill	9" drill	10" drill
row ft			Plants	per ft ²		
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

Suggested hybrid final stand Suggested variety final stand

Research suggests final plant stands in the highlighted ranges 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/ft² for hybrids and less than 5 plants/ft² 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.

Plant-Back Recommendations for Burndown Herbicides¹

Herbicide	Rice	Soybean	Corn	Wheat
2,4-D ²	21d	14d	7d	7d
Afforia	30d	l	30d	30d
Dicamba (8 oz)	22d	14d	I	22d
Diuron	6m	6m	l	6m
Elevore	14d	14d	14d	14d
Express	I	14d	14d	I ⁴
FirstShot	l	7d	14d	
Gambit	l	10m	1m	2m
Goal	10m	7d	30d	10m
Glyphosate	l	ļ	l	l
Paraquat	l	ļ	l	l
Glufosinate	l	ļ	l	l
Harmony GT	I	l	I	l
LeadOff/Crusher	10m	30d⁵	I	3m
Metribuzin	12m	I	0-4m ¹	4m
Permit	I	9m	1m	2m
Python	6m			4m
Reviton	120d	0-7d	l	I
Select Max	30d	l	30d	30d
Sharpen	I	1m	I	I
Valor	30d	I	30d	30d
Verdict	FY	I-4m		4m
Zidua (3.25 fl oz)	12m			30d

¹ I = immediately; d = days; m = months; and FY = following year.

² Plant-back days are rate dependent, days presented are for the lowest label rate. Check the online federal label and Arkansas State Plant Board website (<u>www.aad.arkansas.gov</u>) 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	1 hr
Aim	1 hr	Permit / Permit Plus	4 hrs
Basagran	4 hrs	Propanil	6 hrs
Beyond / Postscript	1 hr	Provisia / Highcard	1 hr
Bolero	24 hrs	Regiment	8 hrs
Clincher	1 hr	Ricestar HT	1 hr
Facet	6 hrs	Sharpen	1 hr
Gambit	4 hrs	Storm	8 hrs
Grasp	1 hr	Strada	6 hrs
League	6 hrs	Ultra Blazer	4 hrs
Loyant	2 hrs		

Read and follow all label directions when using these products.

Preemergence Herbicides Weed Response Ratings

			(0= no control, 10 = 100% control)																									
				Gr	asse	es								Br	oadl	leaf	Wee	ds							S	edge	s	
Herbicides	WSSA GROUP #	Barnyardgrass ¹	Broadleaf Signalgrass	Crabgrass	Fall Panicum	Weedy rice	Rice Cutgrass	Sprangletop spp.	Ammania (red stem)	Dayflower	Ducksalad	Eclipta	Gooseweed	Groundcherry	Hemp Sesbania	Indian Jointvetch	Northern Jointvetch	Palmleaf Morningglory	Pigweed, Palmer ²	Pitted Morningglory	Smartweed	Texasweed	Water Hyssop	Flatsedges ³	White-margined flatsedge	Spikerush	Umbrella sedge	Yellow nutsedge
League	2	0	0	0	0	0	0	0	7	-	5	-	-	-	9	8	8	2	0	2	7	8	-	8	5	-	0	8
Prowl delayed PRE	3	8	6	8	7	0	0	6	0	0	4	0	0	-	0	0	0	0	6	0	0	0	0	0	0	0	0	0
Facet	4	9	9	9	9	0	0	0	3	5	3	8	3	8	6	7	7	7	4	7	0	0	6	5	6	-	0	0
Facet + Prowl delayed PRE	4/29, 3	9	9	9	9	0	0	7	3	5	3	8	3	-	7	7	7	8	6	8	0	0	6	5	6	-	0	0
Facet + Bolero delayed PRE	4/29, 15	9	9	9	9	0	0	8	6	7	7	9	5	-	8	8	8	8	5	8	5	-	6	8	8	7	4	0
Quinclorac + clomazone	4/29, 13	10	10	10	10	0	0	9	3	6	3	8	4	8	7	8	8	8	4	8	6	0	6	5	6	7	-	0
Gambit	2	2	0	0	0	0	0	0	-	7	-	7	-	8	7	7	7	5	0	5	8	-	-	8	5	-	-	8
Clomazone	13	9	9	9	9	0	0	9	0	3	3	3	0	-	2	3	3	4	0	3	2	0	0	0	0	0	0	0
Sharpen	14	0	0	0	0	0	0	0	-	-	-	-	-	-	4	4	4	7	9	7	4	-	-	8	7	-	8	2
Bolero delayed PRE	15	7	5	7	7	0	0	7	7	8	7	8	6	-	5	5	5	5	-	5	5	-	7	7	8	7	4	4
Bolero – Water seeded	15	8	7	7	-	8*	0	8	3	6	6	-	6	-	-	-	-	-	-	-	-	-	5	7	8	5	3	3
Prowl + Bolero delayed PRE	3, 15	9	7	8	8	3	0	8	7	7	7	8	6	-	5	5	5	5	6	5	5	-	7	7	8	7	4	4

¹Some biotypes of barnyardgrass in Arkansas are resistant to Command, propanil, Facet or both (Facet + propanil), Newpath, Grasp, Regiment, Clincher, Ricestar, and Loyant. Best barnyardgrass control is achieved through a program approach with overlapped residuals at the front of the season.

²Data from Arkansas resistance screenings has identified WSSA Group 3 (pendimethalin) and Group 14 (saflufenacil) resistant pigweed.

Expect reduced control from herbicides such as Prowl or Sharpen when used alone.

³Data from Arkansas resistance screenings indicates more than 50% of annual flatsedge populations test positive for ALS-inhibitor (Permit) resistance. ⁴Off-types and evolved herbicide resistance would reduce this rating significantly (near 0).

*Water seed pin-point flood culture. **Postemergence control only. ***Only effective on sensitive populations.



Early Postemergence Herbicides Weed Response Ratings

(0 = no control, 10 = 100% control)																												
				G	rass	es								B	road	leaf	Weed	ls							S	edge	es	
Herbicides	WSSA GROUP #	Barnyardgrass ¹	Broadleaf signalgrass	Crabgrass	Fall panicum	Weedy rice	Rice cutgrass	Sprangletop spp.	Ammania (red stem)	Dayflower	Ducksalad	Eclipta	Gooseweed	Groundcherry	Hemp sesbania	Indian jointvetch	Northern jointvetch	Palmleaf momingglory	Pigweed, Palmer ²	Pitted Morningglory	Smartweed	Texasweed	Water hyssop	Flatsedges ³	White-margined flatsedge	Spikerush	Umbrella sedge	Yellow nutsedge
Clincher	1	8	9	5	9	0	2	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Provisia fb Provisia fb Provisia	1	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
Highcard fb Highcard	1	9	9	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	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	7	8	9	8	-	8	8	8	8	4	0	5	7	7	8	8	5	8	0	6
Newpath/Preface fb Newpath/Preface- Beyond Xtra/Postscript	2	9	9	9	9	9 ⁴	9	8	8	5	7	0	5	9	0	0	0	5	0	7	9	5	0	9	5	9	0	8
Permit	2	0	0	0	0	0	0	0	5	8	3	5	4	6	9	3	6	0	0	4	4	5	-	9	5	-	0	9
Permit Plus	2	0	0	0	0	0	0	0	8	9	7	7	4	8	9	5	7	3	0	5	7	5	-	9	5	-	0	9
Gambit	2	0	0	0	0	0	-	0	9	9	8	8	4	8	9	9	7	3	0	6	9	7	-	9	5	-	0	9
Regiment	2	8	0	0	0	0	7	3	6	9	9	7	0	-	8	7	7	4	0	5	9	7	6	4	3	-	3	5
Facet	4	8	9	7	6	0	2	0	3	3	3	9	3	8	8	8	8	8	4	8	0	0	3	5	6	-	0	0
Loyant	4	7	8	0	-	0	-	6	8	10	10	10	9	0	10	10	10	5	9	8	6	•	8	10	9	-	10	7
Grandstand + Permit	4, 2	0	0	0	0	0	0	0	8	8	4	5	-	4	8	9	9	9	4	9	7	9	-	9	5	-	3	9
Facet + propanil	4, 5	9	9	7	9	0	2	4	6	5	6	9	5	8	9	9	9	8	8	8	6	6	8	9	6	9	3	5
Grandstand + propanil	4, 5	9	9	7	9	0	0	4	9	5	8	9	8	4	9	9	9	9	9	9	7	8	8	9	5	9	3	5
Propanil (weeds less than 2")	5	9	9	7	9	0	1	4	6	5	7	8	5	-	9	9	9	4	8	4	6	6	8	9	5	9	5	4
Propanil fb propanil	5	9	9	7	9	0	2	8	6	6	7	9	5	-	9	9	9	5	10	5	8	6	8	10	7	9	6	6
Propanil + Permit	5, 2	9	9	7	9	0	1	4	6	9	7	8	5	6	10	9	9	4	7	4	6	5	8	9	5	9	3	9
Propanil + Prowl	5, 3	9	9	7	9	0	1	9	7	5	7	9	6	-	9**	9**	9**	5	8	5	6	4	7	9	5	7	3	5
Propanil + Bolero	5, 15	9	9	7	9	0	2	9	8	8	8	9	6	-	9**	9**	9**	5	8	5	6	4	9	9	5	9	8	5
Basagran	6	0	0	0	0	0	0	0	8	9	6	8	7	0	3	3	3	8	0	3	7	0	8	8	6	8	7	6
Basagran + propanil	6, 5	9	9	7	9	0	2	5	9	9	7	9	7	4	9	9	9	8	7	5	8	6	9	9	7	9	8	7
Aim	14	0	0	0	0	0	0	0	6	7	5	7	-	8	9	6	6	10	6	10	9	3	7	-	0	0	3	0
Sharpen	14	0	0	0	0	0	0	0	8	7	5	9	7	8	9	9	9	9	7	10	-	8	8	8	4	-	6	6
Ultra Blazer + propanil	14, 5	8	8	7	8	0	1	5	6	5	7	8	5	8	9	6	9	8	9	8	7	3	8	8	5	8	2	5

¹Some biotypes of barnyardgrass in Arkansas are resistant to Command, propanil, Facet or both (Facet + propanil), Newpath, Grasp, Regiment, Clincher, Ricestar, and Loyant. **Best barnyardgrass control is achieved through a program approach with overlapped residuals at the front of the season.** ²Data from Arkansas resistance screenings has identified WSSA Group 3 (pendimethalin) and Group 14 (saflufenacil) resistant pigweed.

Expect reduced control from herbicides such as Prowl or Sharpen when used alone.

³Data from Arkansas resistance screenings indicates more than 50% of annual flatsedge populations test positive for ALS-inhibitor

(Permit) resistance.

⁴Off-types and evolved herbicide resistance would reduce this rating significantly (near 0).

*Water seed pin-point flood culture. **Postemergence control only. ***Only effective on sensitive populations.

Early Postflood Herbicides Weed Response Ratings

								(0	= no	con	trol,	10 =	= 10	0% c	onti	rol)												
				G	rass	es								B	road	leaf	Wee	ds							S	edge	s	
Herbicides	WSSA GROUP #	Barnyardgrass ¹	Broadleaf Signalgrass	Crabgrass	Fall Panicum	Weedy rice	Rice Cutgrass	Sprangletop spp.	Ammania (red stem)	Dayflower	Ducksalad	Eclipta	Gooseweed	Groundcherry	Hemp Sesbania	Indian Jointvetch	Northern Jointvetch	Palmleaf Morningglory	Pigweed, Palmer ²	Pitted Morningglory	Smartweed	Texasweed	Water Hyssop	Flatsedges ³	White-margined flatsedge	Spikerush	Umbrella sedge	Yellow nutsedge
Ricestar + Regiment	1, 2	8	5	5	4	0	4	6	4	6	6	5	0	-	6	5	5	2	0	3	7	5	4	1	1	-	1	2
Ricestar + Beyond Xtra	1, 2	8	8	8	8	6 ⁴	6	8	6	2	4	0	3	6	0	0	0	2	0	4	6	4	0	6	3	6	0	5
Novixid ⁶	2, 4	7	5	0	0	0	3	4	6	8	9	8	8	5	9	9	9	2	8	6	4	4	8	8	3	7	8	6
Rogue	27	5	3	-	-	8***	8	9	0	-	10	-	6	-	6	6	6	-	-	-	3	-	-	10	7	-	10	6

¹Some biotypes of barnyardgrass in Arkansas are resistant to Command, propanil, Facet or both (Facet + propanil), Newpath, Grasp, Regiment, Clincher, Ricestar, and Loyant. **Best barnyardgrass control is achieved through a program approach with overlapped residuals at the front of the season.** ²Data from Arkansas resistance screenings has identified WSSA Group 3 (pendimethalin) and Group 14 (saflufenacil) resistant pigweed.

Expect reduced control from herbicides such as Prowl or Sharpen when used alone.

³Data from Arkansas resistance screenings indicates more than 50% of annual flatsedge populations test positive for ALS-inhibitor

(Permit) resistance.

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Midseason Herbicides Weed Response Ratings

								(0=	no c	ontr	ol, 1	0 =	100	% co	ontro	ol)												
				G	rass	es								Bi	road	leaf	Wee	ds							S	edge	es	
Herbicides	WSSA GROUP #	Barnyardgrass ¹	Broadleaf Signalgrass	Crabgrass	Fall Panicum	Weedy rice	Rice Cutgrass	Sprangletop spp.	Ammania (red stem)	Dayflower	Ducksalad	Eclipta	Gooseweed	Groundcherry	Hemp Sesbania	Indian Jointvetch	Northern Jointvetch	Palmleaf Morningglory	Pigweed, Palmer ²	Pitted Morningglory	Smartweed	Texasweed	Water Hyssop	Flatsedges ³	White-margined flatsedge	Spikerush	Umbrella sedge	Yellow nutsedge
2,4-D	4	0	0	0	0	0	0	0	9	9	9	9	6	5	9	5	5	9	8	9	6	0	9	8	7	8	3	5
Grandstand + propanil	4, 5	4	4	4	4	0	0	0	9	-	6	6	7	3	9	8	9	9	7	9	5	0	8	5	5	8	5	3
Propanil	5	4	4	4	4	0	0	0	4	0	3	4	0	4	8	5	5	3	6	0	3	0	8	5	5	7	5	3
Propanil + Ultra Blazer	5, 14	5	5	5	5	0	0	0	5	2	4	5	2	5	9	6	6	7	7	8	7	0	8	6	5	7	5	4
Ultra Blazer	14	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	0

¹Some biotypes of barnyardgrass in Arkansas are resistant to Command, propanil, Facet or both (Facet + propanil), Newpath, Grasp, Regiment, Clincher, Ricestar, and Loyant. Best barnyardgrass control is achieved through a program approach with overlapped residuals at the front of the season.

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Expect reduced control from herbicides such as Prowl or Sharpen when used alone.

³Data from Arkansas resistance screenings indicates more than 50% of annual flatsedge populations test positive for ALS-inhibitor (Permit) resistance.

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*Water seed pin-point flood culture. **Postemergence control only. ***Only effective on sensitive populations.

Application Rate Range and Notes for Common Rice Herbicides

Herbicide	Rate per Acre	Notes
Basagran	1.5 - 2.0 pt/A	If not mixing with propanil, add $1\% v/v$ COC; Do not apply more than 4 pt/A per season.
Beyond 1 AS	5 oz/A	Use only on Clearfield varieties. Surfactant or crop oil required; Cutoff: PI+14 days; Do not apply more than 15 oz/A in-season.
Bolero 8E	4 pt/A	Delayed PRE; Rice seed must have imbibed germination water prior to app.
Brake	12-16 oz/A	Do not apply PRE or DPRE, or to cut ground as severe injury is likely; Provides only residual weed control, there is no POST activity; Best fit is in a row rice system in areas where no flood occurs.
Clearpath	0.5 lb/A	Use only on Clearfield varieties; Add 1% v/v crop oil concentrate.
Clincher 2.38 EC	15 oz/A	Add 1 qt/A COC; Excellent soil moisture needed for good activity; avoid drift to corn.
Clomazone 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.
Facet L Quinstar 4L	22 - 43 oz/A 8-16 oz/A	Rice seed exposed to spray may be severely injured; Tomatoes & cotton extremely sensitive; Apply prior to 7 days before PI or yield loss may occur.
Gambit 79 WDG	1 - 2 oz/A	Add 1% COC or MSO.
Grasp 2 EC	2 - 2.3 oz/A	Add 1 qt/A COC or MSO.
Highcard	15.5 oz/A followed by 15.5 oz/A	Add 1% v/v COC; Sequential program: 2-3 leaf FB 4-5 leaf (preflood); Use resid- uals 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-MA rice, corn, sorghum; For use on MaxAce rice only.
League	6.4 oz/A	May carry over to soybean on very high pH soils.
Loyant	8 - 12 oz/A (pigweed, rice flatsedge)	Add MSO; No more than 7 days prior to flooding; Avoid soybean; Best in program with multiple residual herbicides; Injury has been observed on some cultivars; Risk for injury increases with sequential applications; Increased injury observed on hybrids when following PRE or early POST applications of quinclorac.
Newpath 2 AS	4.0 - 6.0 oz/A	Do not exceed 6 oz/A per application on CL varieties.
Novixid	27.4 oz/A	2-If rice prior to PI or yield loss may occur; Visit <u>www.novixidtankmix.com</u> for approved tank mixtures; Rice injury may occur – see precautions on Loyant; option available to coat on urea fertilizer (200 lbs/A) for postflood applications
Permit 75 WG	1 oz/A	Add NIS or COC.
Permit Plus 75 WG	0.75 oz/A	Add 1% COC or MSO.
Postscript	5 oz/A	Surfactant or COC required; Use only on FullPage hybrids; Cutoff: PI+14 days for Full- Page hybrids; Can be applied without Preface first; Do not exceed 15 oz/A in a season.
Preface	4.0 - 6.0 oz/A	Add 0.25% v/v NIS; Use only on FullPage hybrids.
Propanil (4 lb form.)	3 - 4 qt/A	Two applications 5-7 days apart for hard-to-kill weeds.
Provisia 0.88 EC	10 oz/A followed by 10 oz/A followed by 11 oz/A	Add 1% v/v COC; Sequential program: 2-3 leaf FB 4-5 leaf (preflood) FB postflood; Use residuals at planting; Broadleaf tank mixes with 1st and 2nd applications, avoid tank mixes with 3rd (final) application; Do not mix with propanil or Grand- stand; Avoid drift to non-PV rice, corn, sorghum; For use on Provisia rice only.
Prowl H20 3.8 CS	2.1 pt/A	Delayed PRE; Rice seed must have imbibed germination water prior to app.
Regiment 80 WP	0.4 - 0.63 oz/A	From 4-leaf rice to joint movement; Use proper adjuvants.
RiceBeaux 6 SC	4 qt/A	Apply to sealed soil; Rice must have imbibed germination water.
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; avoid drift to corn.
Rogue	8.4 - 12.6 oz/A	Add 1% v/v MSO; Apply immediately after permanent flood established prior to 2-tiller rice; Zero-grade & straight levee fields only; Best control achieved when weeds are 70% submerged; option available to coat on urea fertilizer (150 lbs/A) for postflood application.
Sharpen	2-3 oz/A (PRE) 1 oz/A (POST)	PRE: prior to rice emergence; if existing vegetation, add 1% v/v MSO. POST: Add 1% v/v COC. 2-3 leaf rice. Up to PI. Do not apply before 2-leaf.

Read and follow all label directions when using these products.

Insecticide Rates & Thresholds for Insect Management in Rice

	Insect	ticides for rice stink	bug management
Insecticide	Min-Max Rate	Active Ingredients	Notes
Tenchu 20 SG	7.5 - 10.5 oz	Dinotefuran	 Check infestation levels weekly following 75% panicle emergence using a 15-inch diameter sweep net.
Malathion 57% EC	1 - 1.5 pt	Malathion	Treat when 10 or more stink bugs per 10 sweeps are present after fields reach 75% panicle emergence until
Declare 1.25 CS	1.28 - 2.05 oz	Gamma-cyhalothrin	 Sampling stink bugs should be conducted between 8-10 a.m. and 6-8 p.m. to get the best estimate of the
Proaxis 0.5 CS	3.2 - 5.12 oz	Gamma-cyhalothrin	population. Repeat treatment as necessary to maintain control.
Warrior II 2.08 CS	1.6 - 2.56 oz	Lambda-cyhalothrin	 Acephate is not labeled in rice. Use of acephate in rice ieopardizes the whole rice industry.
Mustang Maxx	2.64 - 4.0 oz	Zeta-cypermethrin	 Poor control has been observed with lambda- cyhalothrin. Do not expect more than 50% control with this product, especially later in the season.

	Thresholds for additional insec	t pests of rice
Insect	Threshold	Scouting Procedure
Chinch Bug	Treat when bugs are causing stand reduction.	Check seedling rice, particularly fields bordering wheat.
Fall Armyworm, True Armyworm	No treatment for rice between seedling & 2-3 tiller, unless feeding on growing point. For May & June plantings, treat when defoliation exceeds 40% at 5-6 tiller and 20% at green ring. Late- season treat when head cutting occurs.	Early season watch rice bordering wheat for migration of true armyworms into field (damage can occur quickly when armyworms move in).
Grasshopper	Treat when damage is evident.	Watch field borders, particularly near grassy areas.
Greenbug	2 to 3 greenbugs per plant on 1- to 2-leaf stage rice.	General visual observation.
Rice Water Weevil	See MP144 for details.	Inspect the youngest leaf on 40 rice plants at each stop for adult feeding scars. Avoid areas with thin stands. DO NOT count older leaves with scars.

Read and follow all label directions when using these products.



2025 Nitrogen Rates & Distribution for Rice Cultivars

	Single	Rates and I	Distribution fo	or 2-way Split	Application
Cultivars	Preflood	Total N Rate	Preflood N Rate ²	Midseason N Rate ³	Late Boot N Rate⁴
	N Rale-		lb N p	er Acre	
DG263L, Lynx	115	135	90	45	_
ARoma 22, CLL16, CLL18, CLL19, CLM04, DG353M, Diamond, Jupiter, Ozark, ProGold1, ProGold2, ProGold M3, PVL03, PVL04, Taurus, Titan	130	150	105	45	_
RT 7302, RT 7321 FP, RT 7331 MA, RT 7401, RT 7421 FP, RT 7521 FP, RT XP753	_	150	120	_	30

¹Conditions 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 preflood N must be applied uniformly across the field (no streaking).

²N rate for rice on silt loam soils following soybean in rotation. Rates may need adjustment based on factors below.

³Apply 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.

⁴ Hybrids receive additional N at late boot rather than midseason. Refer to DD50 for proper timing of this application.

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

Early N Rate Adjustments

- INCREASE 30 lb N/ac on CLAY SOIL
- · INCREASE 20 lb N/ac following RICE
- INCREASE 20 lb N/ac if stand <10 plants/ft² for varieties or <3 plants/ft² for hybrids
- · INCREASE 10 lb N/ac following SORGHUM
- DECREASE 10 lb N/ac following FALLOW
- $\cdot\,$ OMIT early N rate following FISH, LONG-TERM PASTURE, or FIRST YEAR AFTER CLEARING

Additional Notes

Alternate wetting and drying (AWD; intermittent flooding) · Preflood N application rates and timings are responsible for does not change N fertilizer recommendations. the majority of yield potential in both varieties and hybrids and must be managed properly. See Furrow-Irrigated Rice Handbook for detailed notes on N management. Midseason N applications are only recommended for varieties or when confirmed severe deficiencies are Urea (46-0-0) is the preferred N source for preflood, identified in hybrids. midseason, and boot application timings as it is an ammonium forming granular fertilizer with high N analysis. The window to apply midseason N to varieties is long and should not begin until at least 3 weeks following preflood Ammonium sulfate (AMS; 21-0-0-24S) is an adequate application and BIE, but it is preferred to wait at least 4 N source which is not prone to losses via ammonia weeks after preflood. volatilization, but is limited by the low N analysis especially when sulfur is not needed. Boot N applications to hybrid rice may increase grain yield and milling yield and has consistently shown to reduce Urease inhibitors block the urease enzyme activity and are lodging which often results in increased harvestability, only effective on urea fertilizer and should never be applied higher overall yield, and rice quality. to AMS. When using a urease inhibiotr for blended urea and AMS, always treat the urea with a recommended urease inhibiotr prior to blending with AMS. Properly managed single or optimum preflood N application strategy followed by monitoring with tissue testing or GreenSeeker is the preferred method for varieties.

2025 Recommended Urease Inhibitors for Rice

List of tested and reco	ommended NBPT-contain	ning urease inhibitors a	nd suggested applicatio	on rates for urea in rice
Product Name	Recommended Volume qt per ton urea	NBPT Concentration %	Weight Ib 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¶	1.5	16.0	9.26	Koch Fertilizer, LLC
Arborite AG-NT	3.0	24.0	9.15	Weyerhauser NR Co.†
ContaiN	4.0	unknown‡	8.50	AgXplore
Factor	3.25	24.5	9.09	Rosen's, Inc.
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.

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: <u>nstarlab@uark.edu</u>

Determining Rice Midseason N Needs Using Trimble® GreenSeeker® Handheld

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 ft x 5 ft area) must be present in EVERY INDIVIDUAL FIELD. This Reference Plot should have 50-100 lb of N more than the producer's preflood N rate (only 30-60 grams needed or 1/4 - 1/3

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.

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 (internode elongation) AND no earlier than three weeks following preflood 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 the 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 exserted).
- 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 habits and changes in N fertilization strategies.

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-inch adjustable gates to flood all levees evenly. Flow rate is 75 GPM per fully open gate.
- To determine number of holes to punch and gate setting, measure flow with a meter or plumb bob:
 - 1. Divide GPM (flow) by total fields acres;
 - 2. multiply by acres in each paddy;
 - 3. divide by 75 GPM per gate, this is the number of holes needed in paddy; 4. repeat for each paddy.

Ex. 1200 GPM / 42 Acres = 28 x 6 Acres per paddy = 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).
- Use 9-10 mil pipe. Flow <1200 GPM use 12-inch; 1200-2200 GPM use 15-inch; >2200 GPM use 18inch.
- Use a wire to punch holes in pipe to prevent air entrapment. Set levee gates with 1-2 inch freeboard.
- Use a 4-inch pipe about 3 ft long in bar ditches under polypipe on deep water side of paddy for multiple inlet (not needed for side inlet) to equalize water.
- Do not overbuild levees where polypipe will cross, if water does not get to end before pipe bursts. This is the most common reason for polypipe failures. The only solution is to reduce levee height.

Recomme differen	nded pumping rates It soil textural group	s for s
Soil Toytural Crown	Gallons per Minute	(GPM) per Acre
Soli lextural Group	Minimum	Desired
Silt loam - with pan	10	10
Sandy loam	15	25
Silt loam - no pan	10	15
Clay and silty clay	15	20

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; keep bottom of paddy flooded. Only necessary to let water subside to the soil surface for effective AWD. If using a pani pipe, place in top of paddy, and do not exceed 2 inches below the soil surface for reflooding.
- Ensure adequate moisture during both internode elongation and flowering and grain fill.

Furrow-Irrigated Rice (FIR) or Row Rice Recommendations

- Construct a shallow bed, tall beds may require excessive irrigation. It's best that space between furrows not exceed 30 inches for loam soils or 38 inches for clay soils. Furrow integrity near tubing can cause significant maintenance early season on certain soils.
- Begin irrigation and fertilization at the 5- to 6-leaf stage or just prior to the DD50 final recommended time to apply preflood N. Applying N prior to the 5-leaf stage may result in increased N loss potential.
- End blocking can reduce water use and management time, but keep flooding shallow relative to rice height and increase as appropriate. This can be done by shutting off irrigation sets earlier.
- Soil moisture monitoring is strongly encouraged in FIR. Place sensors at 4 or 6, 8, 12 and 18-inch depth. Use up to a 40% allowable depletion and a 12-18-inch effective rooting depth. Use the Arkansas Watermark Tool to schedule irrigations.
- Without sensors, researchers and producers generally have been successful with three- to five-day intervals and even up to seven to 10 days without significant yield penalty. Verify sensor info with crop observations. During periods of peak water demand and high temperatures, expect to irrigate FIR more frequently.

Fungicide Rates & Timings for Disease Management in Rice

	Fu	ngicides for sheath blight manageme	ent
Fungicide	Rate per Acre fl oz	Active Ingredients	Notes
Quadris	8.5 - 12.5	azoxystrobin	• Apply fungicides when scouting indi-
Stratego	16.0 - 19.0	trifloxystrobin + propiconazole	cultivars rated S or VS; or when more
GEM	3.8 - 4.7	trifloxystrobin	rated MS.
Quilt Xcel	14.0 - 27.0	azoxystrobin + propiconazole	and early heading.
Elegia	32.0	flutolanil	Maximum benefit from a single fungi- cide application achieved when made
Amistar Top	10.0 - 15.0	azoxystrobin + difenconazole	before the disease has damaged the upper 3 leaves of the canopy.

	Fungicide	s for prevention of kernel smut and f	alse smut
Fungicide	Rate per Acre fl oz	Active Ingredients	Notes
Tilt 3.6 EC	6.0	propiconazole	Apply at early to late boot but before heading begins to SUPPRESS kernel smut and/or false smut
Stratego	19.0	trifloxystrobin + propiconazole	Applications made after heading starts will be INEFFECTIVE. Fields made tikely to benefit will be
Quilt Xcel	15.75 - 27.0	azoxystrobin + propiconazole	those planted to a susceptible cultivar and using excessive nitrogen.
Amistar Top	10.0 - 15.0	azoxystrobin + difenconazole	 Fungicides may not give desired suppression of false smut in late- plantings.

	ŀ	ungicides for prevention of neck blas	st
Fungicide	Rate per Acre fl oz	Active Ingredients	Notes
Quadris	12.5	azoxystrobin	· Keep flood depth at least 4 inches to
Frontier	3.1 - 4.7	trifloxystrobin	 suppress early leaf blast & neck blast. Fungicides for prevention of neck blast
Stratego	19.0	trifloxystrobin + propiconazole	 work best if applied twice: First application at late boot
Quilt Xcel	21.0 - 27.0	azoxystrobin + propiconazole	 Second application when panicles of main tillers are 50-75% emerged but
Amistar Top	10.0 - 15.0	azoxystrobin + difenconazole	the neck is still in the boot.

Read and follow all label directions when using these products.

For prevention of Cercospora, apply Tilt (propiconazole) at 6 - 10 fl oz. between early and late boot. May tank mix with other fungicides for management of other rice diseases.

Arkansas Rice Cultivar Disease Ratings & Lodging

Cultivar	Sheath Blight	Blast	Straighthead	Bacterial Panicle Blight	Cercospora	Kernel Smut	False Smut	Lodging
ARoma 22	MS	MS		MS	MS		MS	MS
CLHA03*	S							MR
CLL16	S	MS	S	S	MR	MS	MS	MS
CLL18	MS	MS			S	MS	S	MS
CLL19	VS	MS		MS	S	MS	S	MR
CLM04	MS	S	MS	S	MS	S	S	S
CLM05	S	MS			MS	MS	MS	MR
DG263L	S	MR	MS		S	MS	S	MS
DG353M	S				S	MS	MS	MS
DG563PVL*								MS
Diamond	S	S	MS	MS	MS	S	VS	MS
Ozark	S	S	S		S	MS	VS	MS
ProGold1	S	MS	MS	S	MS		S	MS
ProGold L4*								S
ProGold M3	S				MR	MS	S	MR
PVL03	VS		S		S	MS	MS	MR
PVL04	VS					MS	S	MR
RT 3202	S					MS	S	MS
RT 7302	MS				MS	MS	S	MS
RT 7321 FP	MS	R	S		S	S	MS	MS
RT 7331 MA	S				MS	S	S	MS
RT 7401	MS	MR				S	MS	S
RT 7421 FP	MS				S	MS	MS	S
RT 7521 FP	S	MS	MR		MR	MS	VS	S
RT XP753	MS	R	MS	MR	MS	MS	S	MR
RTv7231 MA	S				S	S	MS	MS
RTv7303*					MR			MS
Taurus	MS	MS	MS	S	MS	MS	MS	MS
Titan	S	MS	MS	MS	MS	MS	MS	MR

* Ratings based on limited data.

¹Cercospora is referred to as the disease in general, encompassing all three symptom types: Narrow Brown Leaf Spot (NBLS) on the leaves, Cercospora Net Blotch (CNT) on the sheaths, and Cercospora Panicle Blight (CPB) on the panicle rachis and branches.

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.

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.
- For furrow-irrigated rice, irrigate at or slightly past typical drain timing for flooded rice to ensure adequate soil moisture to full maturity. Under dry environmental conditions, irrigate at least one additional time past typical drain timing.

Harvest Aids

Use harvest aids on rice when:

- Varieties are between 25 and 18% grain moisture based on combine sample.
- Hybrids are between 23 and 18% grain moisture based on combine sample.
- * Hand samples collected can often be 2% lower than actual grain moisture

Additional tips:

- Apply sodium chlorate at 3-6 lb a.i. per acre.
- Harvest within five days of application.
- Used to desiccate foliage but also reduces grain moisture.
- When used properly, does not reduce head rice yields.
- When applications are made within recommended moisture range and harvested in less than five days, generally no grain yield or milling yield losses are observed.

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

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

Conversio	n Factors
1 g = 0.0022 lb	1 ha = 2.471 Acre
454 g = 1 lb	0.405 ha = 1 Acre
1 kg = 2.2 lb	1 kg/ha = 0.893 lb/Acre
1 m = 3.283 ft	1 bu/ha = 0.405 bu/Acre
2.54 cm = 1 in	1 bu/A = 45 lb/Acre
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
acre-inch = 27,154 gal	

GPM		GPA x mph x W
(per nozzle)	_	5,940
	5 0/	10 v CDM (por pozzla)

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

Additional Resources

Publications

- MP192 Arkansas Rice Production Handbook: <u>https://www.uaex.uada.edu/publications/mp-192.aspx</u>
- Arkansas Furrow-Irrigated Rice Handbook: <u>https://www.uaex.uada.edu/farm-ranch/</u> <u>crops-commercial-horticulture/rice/Arkansas-</u> <u>FurrowIrrigatedRiceHandbook.pdf</u>
- MP44 Recommended Chemicals for Weed and Brush Control: <u>https://www.uaex.uada.edu/pub-</u> <u>lications/pdf/mp44/mp44.pdf</u>
- MP144 Insecticide Recommendations for Arkansas: <u>https://www.uaex.uada.edu/publica-</u> <u>tions/mp-144.aspx</u>
- MP154 Arkansas Plant Disease Control Products Guide: <u>https://www.uaex.uada.edu/publica-</u> tions/mp-154.aspx

Online Tools

- Extension rice page: <u>http://www.uaex.uada.edu/</u> rice
- Rice Advisor Fertilizer Calculator: <u>https://</u> <u>riceadvisor.uada.edu/fcalc/</u>
- Rice Advisor Seeding Rate Calculator: <u>https://</u> <u>riceadvisor.uada.edu/srate/</u>
- Rice Advisor Drill Calibration Tool: <u>https://</u> <u>riceadvisor.uada.edu/drill/</u>
- Rice Advisor Nitrogen Rate Calculator: <u>https://</u> riceadvisor.uada.edu/nrate/









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