

# 2024 Missouri Rice Seeding Rate Trials

Flood-Irrigated and Furrow-Irrigated Production Systems

Conducted by the  
*University of Missouri Rice Agronomy Program*

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By J.L. Chlapecka, M. Johnson, L. Rhodes, C. Hunt, A. Ablao



University of Missouri

Rice Agronomy

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## 2024 Missouri Rice Seeding Rate Trials

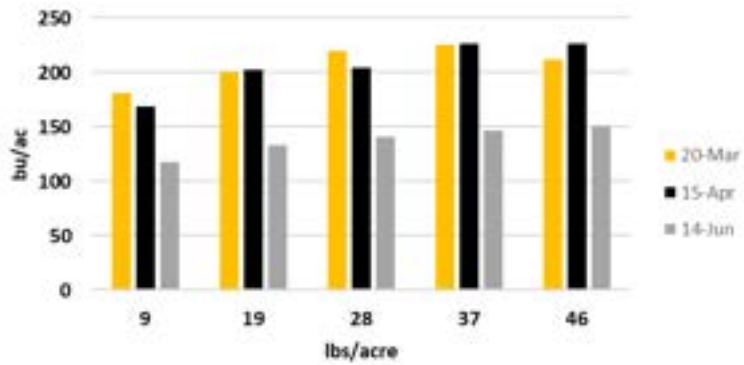
Site	Nearest Town	Planting Date	Emergence Date	Flood Date	Harvest Date	Soil Type	Location Info	Water Management	N Management	N Rate (lbs N/ac)
MRRMC Early	Glennonville, Dunklin County	March 20	April 15	May 23	August 26	Silt Loam	Research Station	Flood	Single Pre-flood	120
MRRMC Normal	Glennonville, Dunklin County	April 15	April 27	May 23	August 27	Silt Loam	Research Station	Flood	Single Pre-flood	120
MRRMC Late	Glennonville, Dunklin County	June 14	June 19	July 15	October 25	Silt Loam	Research Station	Flood	Single Pre-flood	120
FDRC Early	Portageville, Pemiscot County	March 21	April 23	May 23	September 10	Silt Loam	Research Station	Flood	Single Pre-flood	150
FDRC Normal	Portageville, Pemiscot County	May 1	May 8	June 21	September 25	Silt Loam	Research Station	Flood	Single Pre-flood	150
MRRMC FIR Top	Glennonville, Dunklin County	April 5	April 19	June 1	September 9	Silt Loam	Research Station	Non-Flood	3-way split	166
MRRMC FIR Middle	Glennonville, Dunklin County	April 5	April 19	June 1	September 9	Silt Loam	Research Station	Muddy	3-way split	166
MRRMC FIR Bottom	Glennonville, Dunklin County	April 5	April 19	June 1	September 9	Silt Loam	Research Station	Flood	3-way split	166
FDRC FIR Top	Portageville, Pemiscot County	April 24	May 2	June 17	October 8	Clay	Research Station	Non-Flood	3-way split	196
FDRC FIR Middle	Portageville, Pemiscot County	April 24	May 2	June 17	October 8	Clay	Research Station	Muddy	3-way split	196
FDRC FIR Bottom	Portageville, Pemiscot County	April 24	May 2	June 17	October 8	Clay	Research Station	Flood	3-way split	196
Rives FIR Top	Rives, Dunklin County	April 16	N/A	N/A	September 11	Clay	On-Farm	Non-Flood	3-way split	196
Rives FIR Middle	Rives, Dunklin County	April 16	N/A	N/A	September 11	Clay	On-Farm	Muddy	3-way split	196
Rives FIR Bottom	Rives, Dunklin County	April 16	N/A	N/A	September 11	Clay	On-Farm	Flood	3-way split	196
Butler FIR Top	Poplar Bluff, Butler County	April 22	May 2	N/A	August 29	Silt Loam	On-Farm	Non-Flood	3-way split	196
Butler FIR Middle	Poplar Bluff, Butler County	April 22	May 2	N/A	August 29	Silt Loam	On-Farm	Muddy	3-way split	196
Butler FIR Bottom	Poplar Bluff, Butler County	April 22	May 2	N/A	August 29	Silt Loam	On-Farm	Flood	3-way split	196

**Materials & Methods:** Seeding rate trials were planted in flood-irrigated rice on two sites, Portageville (FDRC) and the Rice Farm (MRRMC) and at three planting dates, early, normal and late planted. Furrow-irrigated trials were planted at three sites, FDRC, MRRMC, Rives (on-farm), and Butler County (on-farm southeast of Poplar Bluff) and within three areas of the field: top, middle, and bottom. One hybrid cultivar was utilized, RT7421 FP, and was planted at 4, 8, 12, 16, and 20 seed/ft<sup>2</sup>. Three inbred varieties were also planted, CLL18, Ozark, and DG263L at 10, 20, 30, 40, and 50 seed/ft<sup>2</sup>. Due to seed size differences, the equivalent seeding rate in pounds per acre is included for each treatment in the data tables on the following pages.

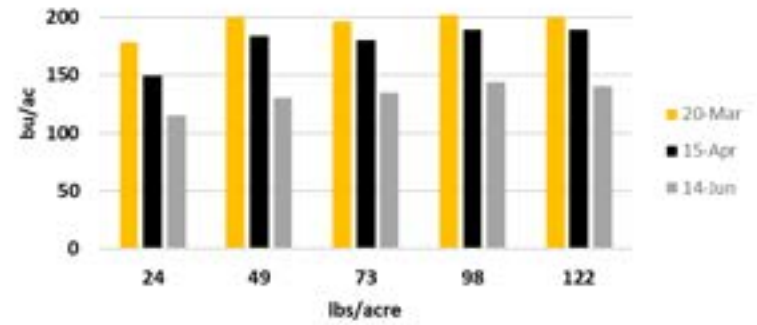
## 2024 Rice Farm Flood Rice Seeding Rate x Plant Date

Cultivar	Seeding Rate		20-Mar		15-Apr		14-Jun		AVERAGE	
	seed/ft <sup>2</sup>	lb/ac	Stand	Yield	Stand	Yield	Stand	Yield	Stand	Yield
RT7421 FP	4	9	2	182	3	169	4	117	3	156
RT7421 FP	8	19	3	201	6	202	7	133	5	179
RT7421 FP	12	28	3	219	9	204	10	141	7	188
RT7421 FP	16	37	5	225	11	226	13	147	10	199
RT7421 FP	20	46	6	212	11	226	15	150	11	196
DG263L	10	24	4	186	8	177	13	121	8	161
DG263L	20	48	8	192	14	182	14	132	12	169
DG263L	30	71	11	191	16	198	16	134	14	174
DG263L	40	95	15	188	18	181	17	136	17	169
DG263L	50	119	18	188	16	179	19	136	18	168
Ozark	10	24	4	178	8	149	16	115	10	148
Ozark	20	49	8	200	11	184	15	130	11	171
Ozark	30	73	9	197	14	180	17	135	14	171
Ozark	40	98	15	202	15	189	15	144	15	178
Ozark	50	122	17	200	17	189	20	140	18	177
CLL18	10	23	5	186	8	173	8	117	7	159
CLL18	20	45	9	201	12	192	10	130	10	174
CLL18	30	68	13	198	15	188	15	128	15	172
CLL18	40	91	15	197	16	184	18	126	16	169
CLL18	50	114	16	197	17	179	22	126	18	167
<b>AVERAGE</b>			<b>9</b>	<b>197</b>	<b>12</b>	<b>188</b>	<b>14</b>	<b>132</b>	<b>12</b>	<b>172</b>

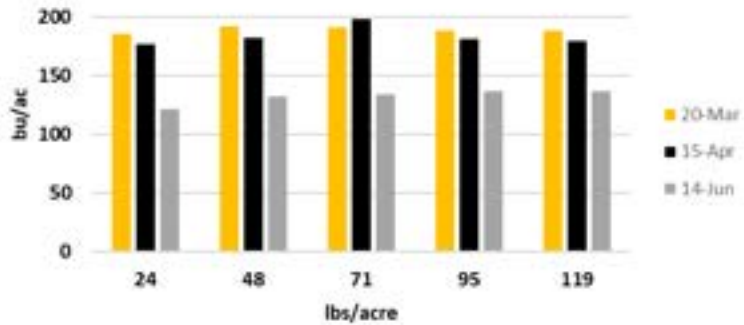
### RT7421 FP



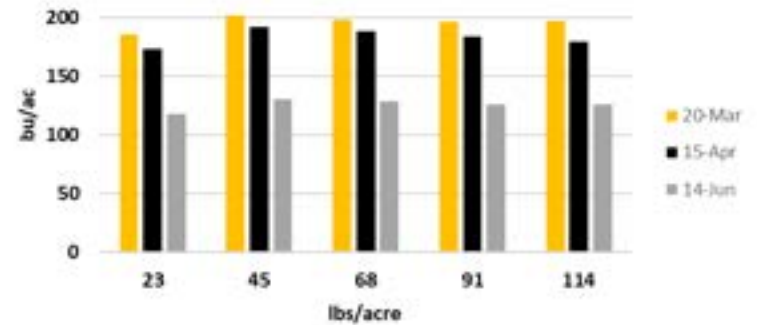
### Ozark



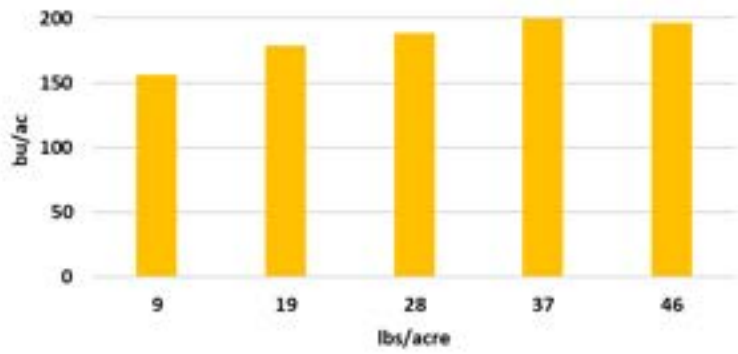
### DG263L



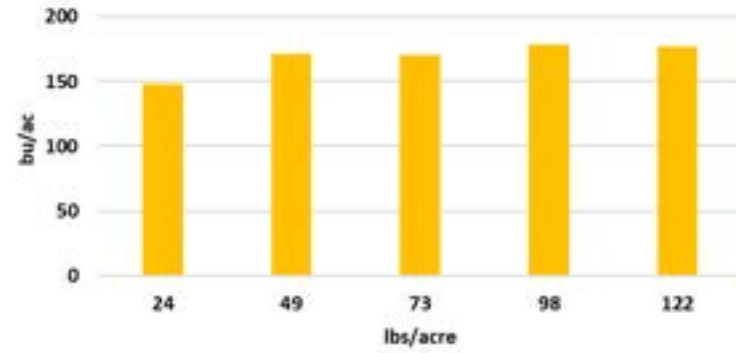
### CLL18



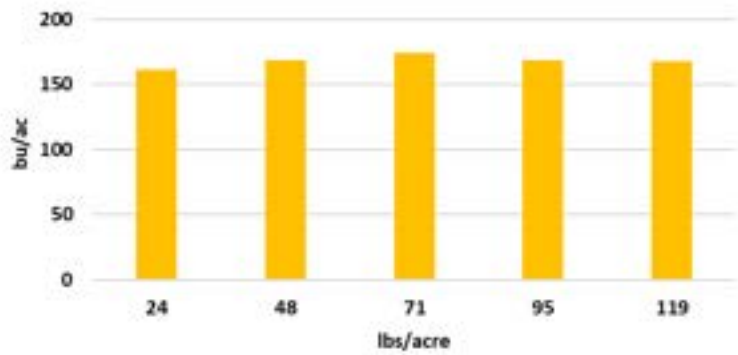
**RT7421 FP**



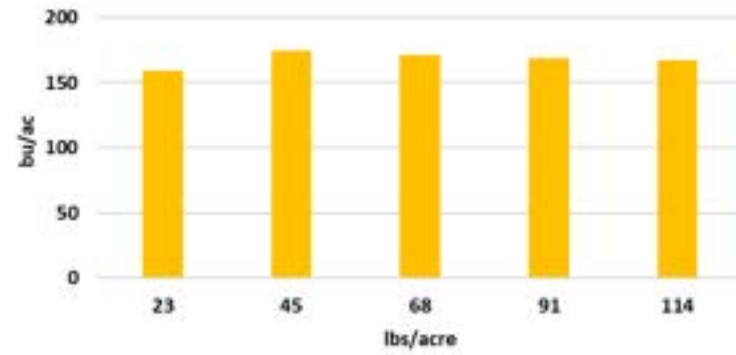
**Ozark**



**DG263L**

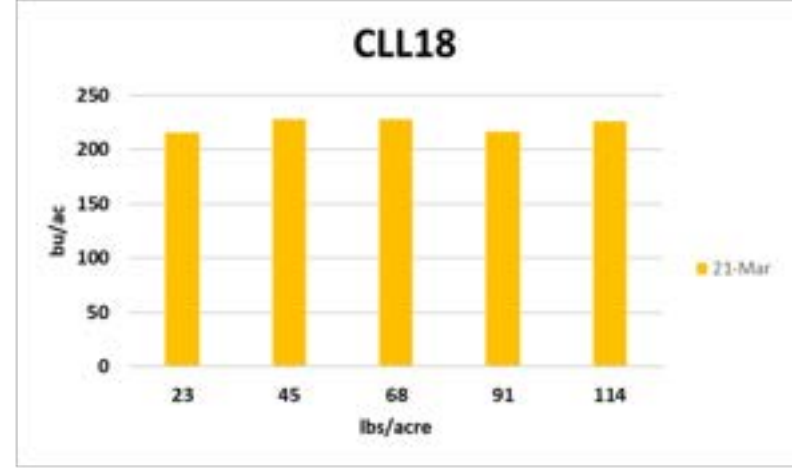
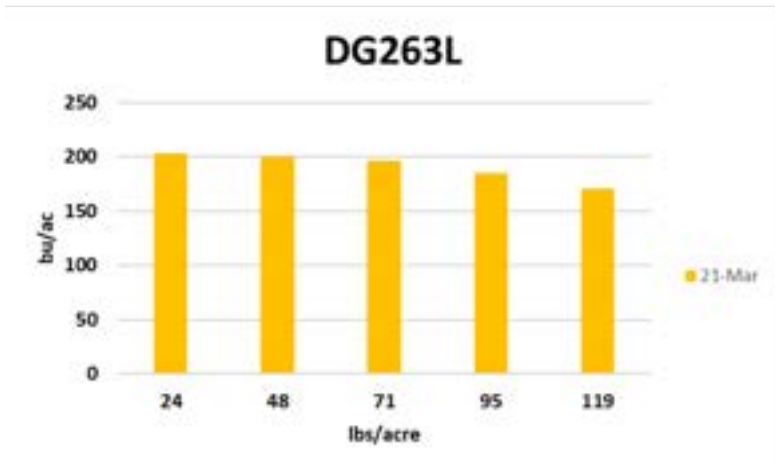
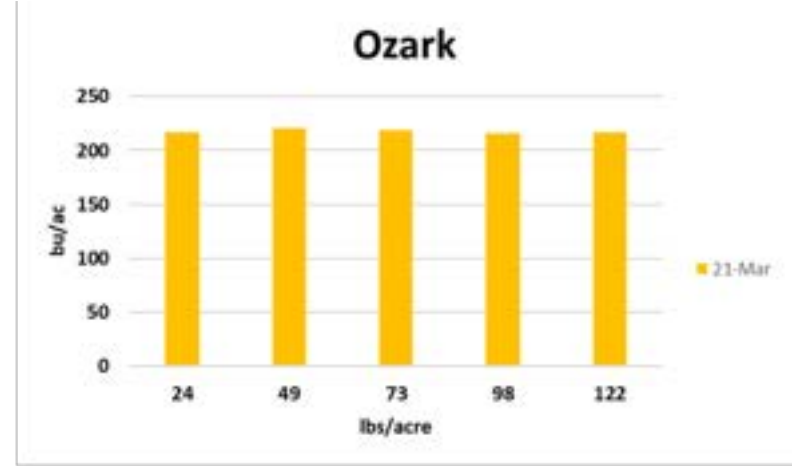
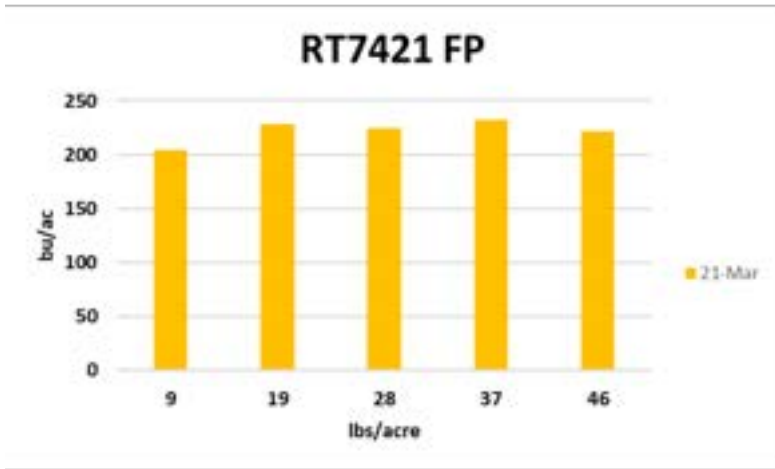


**CLL18**



## 2024 Portageville Flood Rice

Cultivar	Seeding Rate		21-Mar	
	seed/ft <sup>2</sup>	lb/ac	Stand seed/ft <sup>2</sup>	Yield bu/ac
RT7421 FP	4	9	4	<b>205</b>
RT7421 FP	8	19	4	<b>228</b>
RT7421 FP	12	28	3	<b>224</b>
RT7421 FP	16	37	6	<b>232</b>
RT7421 FP	20	46	7	<b>222</b>
DG263L	10	24	7	<b>203</b>
DG263L	20	48	8	<b>200</b>
DG263L	30	71	13	<b>196</b>
DG263L	40	95	15	<b>185</b>
DG263L	50	119	17	<b>171</b>
Ozark	10	24	3	<b>217</b>
Ozark	20	49	7	<b>221</b>
Ozark	30	73	9	<b>218</b>
Ozark	40	98	13	<b>216</b>
Ozark	50	122	15	<b>216</b>
CLL18	10	23	4	<b>215</b>
CLL18	20	45	7	<b>228</b>
CLL18	30	68	12	<b>228</b>
CLL18	40	91	13	<b>216</b>
CLL18	50	114	14	<b>226</b>
<b>AVERAGE</b>			<b>9</b>	<b>213</b>

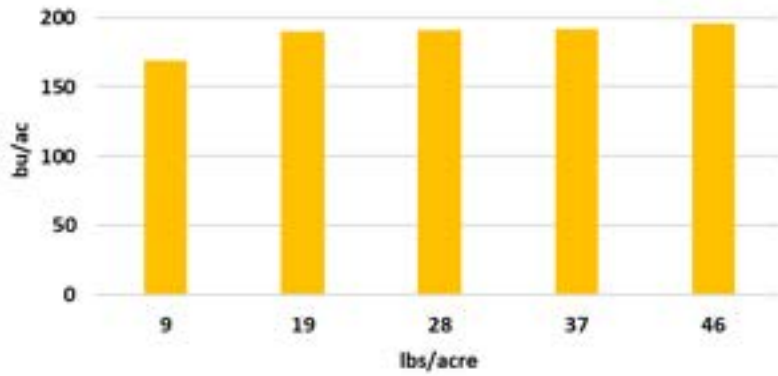




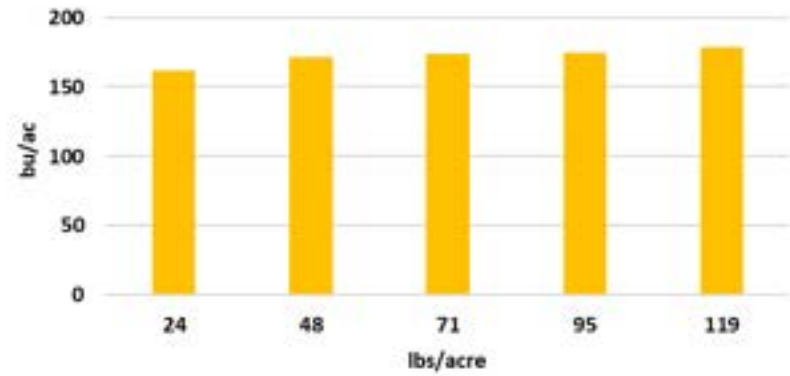
## 2024 Missouri Furrow-Irrigated Rice Seeding Rate Studies

Cultivar	Seeding Rate		Top		Middle		Bottom		AVERAGE	
			Stand	Yield	Stand	Yield	Stand	Yield	Stand	Yield
	seed/ft <sup>2</sup>	lb/ac	seed/ft <sup>2</sup>	bu/ac	seed/ft <sup>2</sup>	bu/ac	seed/ft <sup>2</sup>	bu/ac	seed/ft <sup>2</sup>	bu/ac
RT7421 FP	4	9	6	162	4	178	4	167	5	169
RT7421 FP	8	19	8	175	5	193	6	202	6	190
RT7421 FP	12	28	10	174	8	196	7	203	8	191
RT7421 FP	16	37	11	178	9	192	9	204	10	191
RT7421 FP	20	46	13	189	10	195	11	202	12	195
DG263L	10	24	7	167	7	182	7	180	7	176
DG263L	20	48	10	169	12	181	10	196	11	182
DG263L	30	71	14	171	15	181	13	194	14	182
DG263L	40	95	17	176	17	173	17	181	17	177
DG263L	50	119	15	167	15	174	17	183	16	175
Ozark	10	24	8	157	9	171	7	158	8	162
Ozark	20	49	11	162	12	174	11	177	11	171
Ozark	30	73	15	164	14	175	14	183	14	174
Ozark	40	98	14	168	16	175	16	181	15	175
Ozark	50	122	16	171	18	180	19	184	18	179
CLL18	10	23	9	151	8	158	8	158	9	156
CLL18	20	45	10	159	12	166	11	172	11	166
CLL18	30	68	12	164	15	166	12	178	13	169
CLL18	40	91	13	165	17	170	15	184	15	173
CLL18	50	114	19	164	18	172	18	177	18	171
<b>AVERAGE</b>			<b>12</b>	<b>168</b>	<b>12</b>	<b>178</b>	<b>12</b>	<b>183</b>	<b>12</b>	<b>176</b>

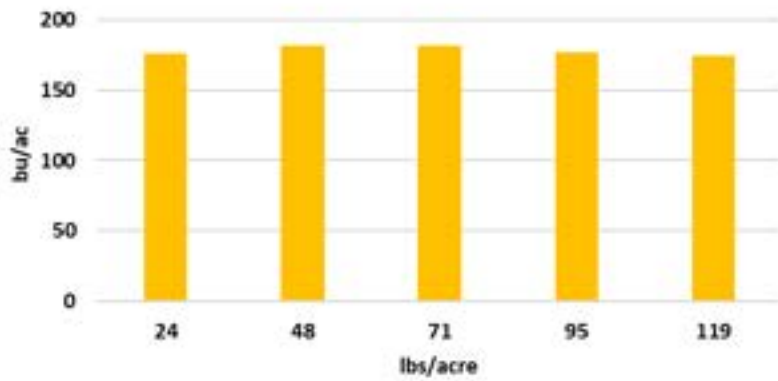
### RT7421 FP



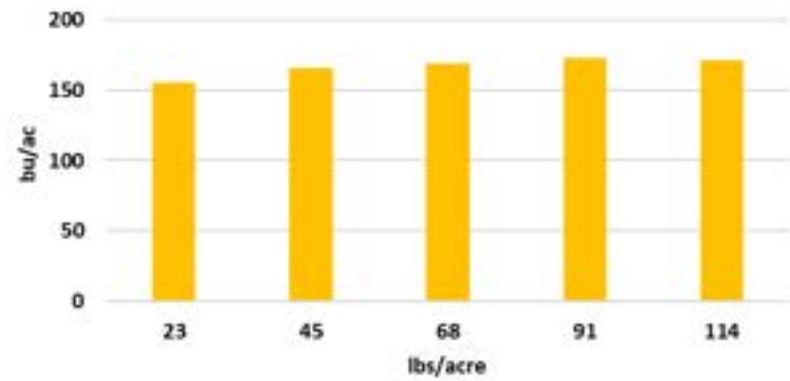
### Ozark



### DG263L



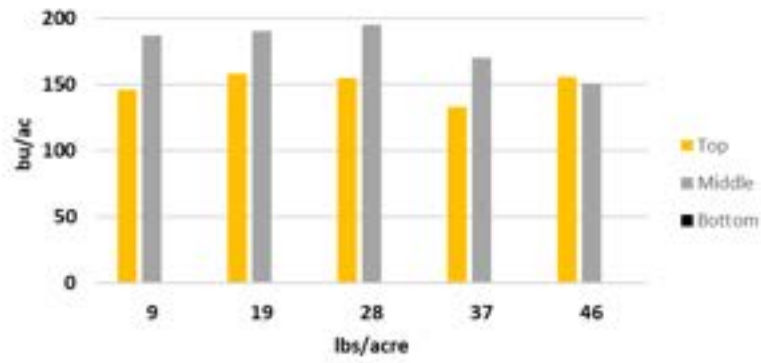
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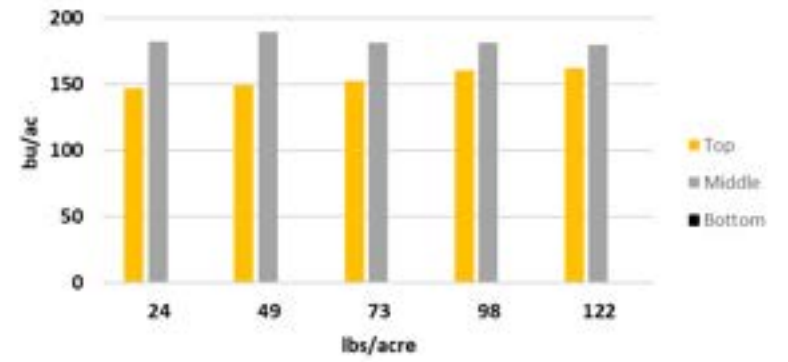
## 2024 Portageville Furrow-Irrigated Rice Seed Rate Study

Cultivar	Top					Middle			Bottom		
	Seeding Rate		Stand	Yield	Lodging	Stand	Yield	Lodging	Stand	Yield	Lodging
	seed/ft <sup>2</sup>	lb/ac	seed/ft <sup>2</sup>	bu/ac	1-9	seed/ft <sup>2</sup>	bu/ac	1-9	seed/ft <sup>2</sup>	bu/ac	1-9
RT7421 FP	4	9	3	146	5	4	187	3	3	N/A	N/A
RT7421 FP	8	19	6	158	6	7	190	5	7	N/A	N/A
RT7421 FP	12	28	9	155	7	8	195	6	7	N/A	N/A
RT7421 FP	16	37	10	133	6	12	170	6	9	N/A	N/A
RT7421 FP	20	46	11	156	7	13	151	7	11	N/A	N/A
DG263L	10	24	7	135	3	7	171	1	7	N/A	N/A
DG263L	20	48	12	136	2	14	172	1	8	N/A	N/A
DG263L	30	71	17	142	2	19	166	1	16	N/A	N/A
DG263L	40	95	18	157	1	21	156	1	19	N/A	N/A
DG263L	50	119	20	140	2	18	152	1	22	N/A	N/A
Ozark	10	24	6	147	4	10	182	4	7	N/A	N/A
Ozark	20	49	11	149	6	10	190	3	11	N/A	N/A
Ozark	30	73	17	153	6	18	181	3	15	N/A	N/A
Ozark	40	98	11	160	6	16	181	4	14	N/A	N/A
Ozark	50	122	18	162	7	21	180	3	21	N/A	N/A
CLL18	10	23	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CLL18	20	45	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CLL18	30	68	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CLL18	40	91	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CLL18	50	114	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<b>AVERAGE</b>			<b>12</b>	<b>148</b>	<b>5</b>	<b>13</b>	<b>175</b>	<b>3</b>	<b>12</b>	<b>N/A</b>	<b>N/A</b>

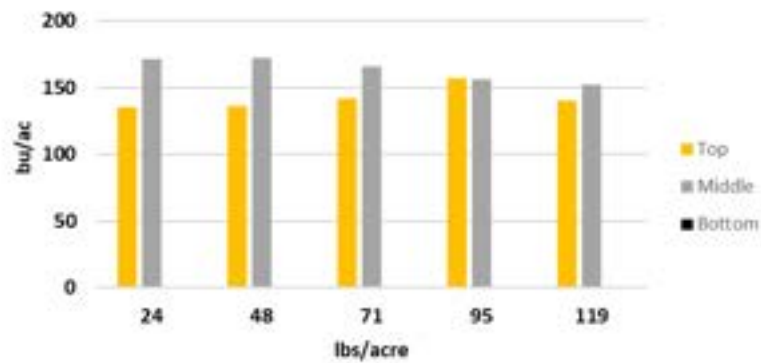
### RT7421 FP



### Ozark



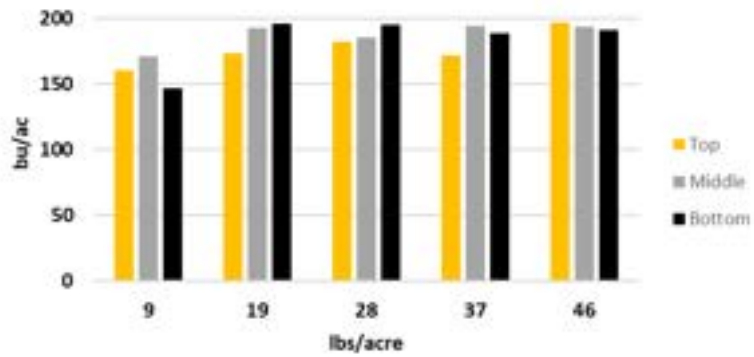
### DG263L



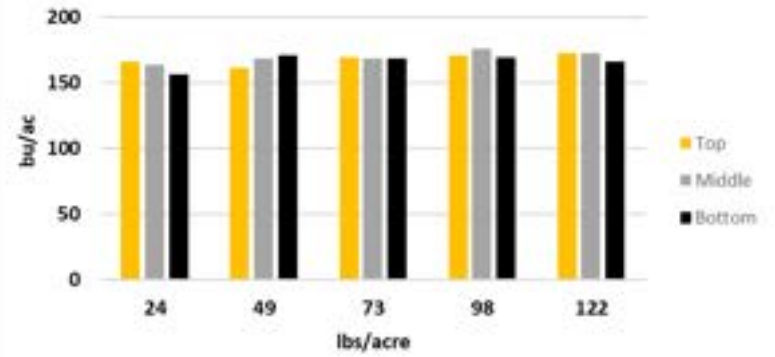
## 2024 Rives Furrow-Irrigated Rice Seed Rate Study

Cultivar	Seeding Rate		Top			Middle			Bottom		
	seed/ft <sup>2</sup>	lb/ac	Stand seed/ft <sup>2</sup>	Yield bu/ac	Lodging 1-9	Stand seed/ft <sup>2</sup>	Yield bu/ac	Lodging 1-9	Stand seed/ft <sup>2</sup>	Yield bu/ac	Lodging 1-9
RT7421 FP	4	9	3	161	4	5	171	1	9	147	1
RT7421 FP	8	19	6	173	4	6	193	2	5	196	2
RT7421 FP	12	28	6	182	5	6	186	2	6	195	1
RT7421 FP	16	37	3	172	4	5	194	2	8	188	3
RT7421 FP	20	46	12	197	3	5	193	2	14	191	1
DG263L	10	24	5	178	1	9	185	1	10	167	2
DG263L	20	48	10	175	3	10	176	1	15	181	2
DG263L	30	71	7	175	3	10	170	2	5	179	1
DG263L	40	95	19	172	2	14	162	2	11	157	2
DG263L	50	119	18	165	2	17	164	2	19	163	3
Ozark	10	24	6	166	1	6	164	2	5	156	1
Ozark	20	49	13	161	3	6	168	1	10	171	2
Ozark	30	73	14	169	2	9	168	1	12	168	1
Ozark	40	98	25	171	2	11	175	2	10	169	1
Ozark	50	122	11	172	2	16	172	4	11	166	3
CLL18	10	23	12	149	4	12	157	2	9	155	1
CLL18	20	45	14	169	5	9	163	4	7	161	2
CLL18	30	68	14	157	5	10	157	2	14	165	2
CLL18	40	91	13	163	4	13	163	4	13	167	2
CLL18	50	114	N/A	156	5	N/A	167	5	21	159	3
<b>AVERAGE</b>			<b>11</b>	<b>169</b>	<b>3</b>	<b>9</b>	<b>172</b>	<b>2</b>	<b>11</b>	<b>170</b>	<b>2</b>

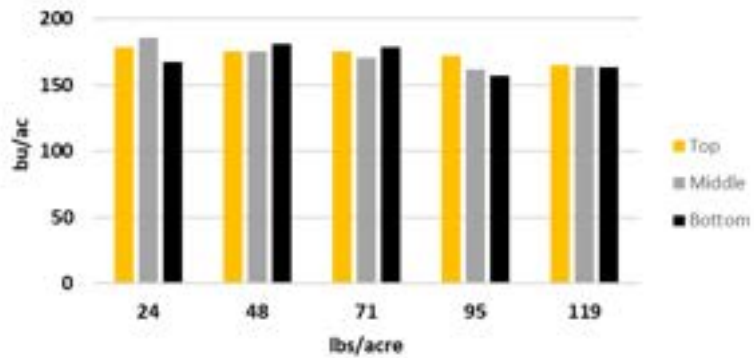
### RT7421 FP



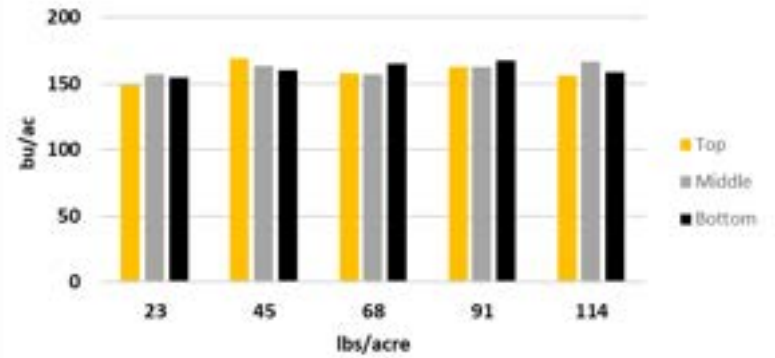
### Ozark



### DG263L



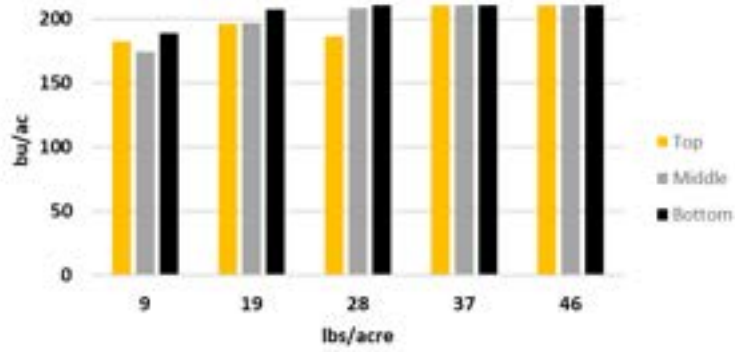
### CLL18



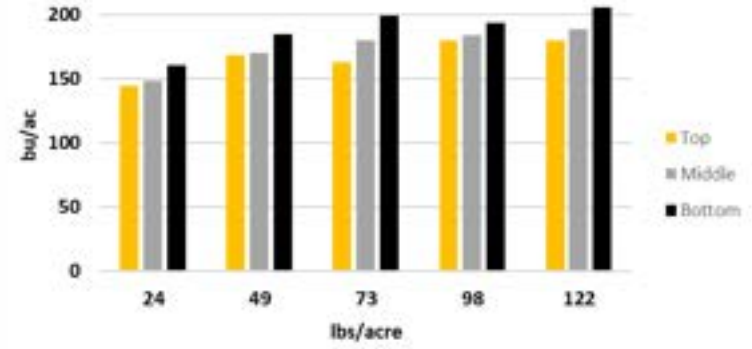
## 2024 Butler Co. Furrow-Irrigated Rice Seed Rate Study

Cultivar	Seeding Rate		Top		Middle		Bottom	
	seed/ft <sup>2</sup>	lb/ac	Stand	Yield	Stand	Yield	Stand	Yield
	seed/ft <sup>2</sup>	lb/ac	seed/ft <sup>2</sup>	bu/ac	seed/ft <sup>2</sup>	bu/ac	seed/ft <sup>2</sup>	bu/ac
RT7421 FP	4	9	10	182	4	174	4	189
RT7421 FP	8	19	11	196	3	196	5	207
RT7421 FP	12	28	13	186	8	208	8	211
RT7421 FP	16	37	16	224	8	215	10	221
RT7421 FP	20	46	16	220	11	221	11	213
DG263L	10	24	9	191	6	188	7	194
DG263L	20	48	9	202	10	196	10	212
DG263L	30	71	15	202	15	209	12	210
DG263L	40	95	14	201	16	205	18	208
DG263L	50	119	17	206	20	206	21	206
Ozark	10	24	8	144	6	149	7	160
Ozark	20	49	9	168	11	170	11	184
Ozark	30	73	15	163	14	180	14	199
Ozark	40	98	15	180	17	184	15	194
Ozark	50	122	13	180	19	189	17	205
CLL18	10	23	10	170	7	163	7	161
CLL18	20	45	12	167	11	172	11	185
CLL18	30	68	11	190	15	179	14	191
CLL18	40	91	14	188	18	184	18	203
CLL18	50	114	19	193	19	183	19	198
<b>AVERAGE</b>			<b>13</b>	<b>188</b>	<b>12</b>	<b>188</b>	<b>12</b>	<b>198</b>

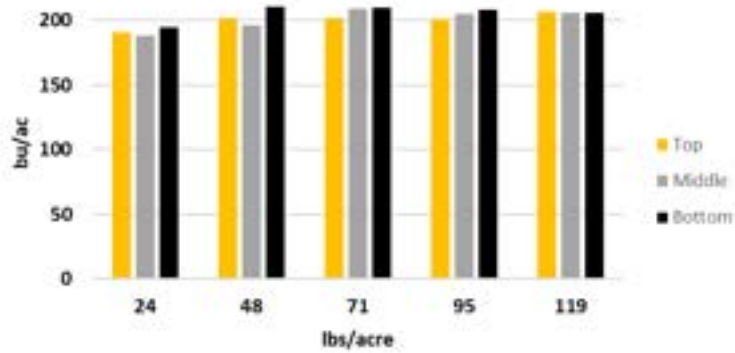
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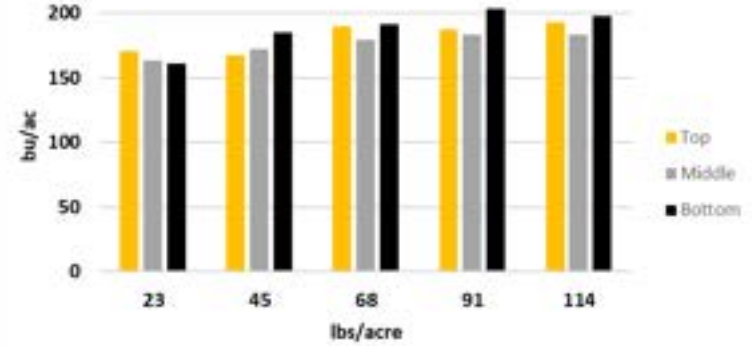
### Ozark



### DG263L



### CLL18





## **Results:**

**Flood-Irrigated Rice:** Results from the seeding rate studies suggest that seeding rate could potentially be lowered while maintaining yield potential. We've known all along that with modern-day cultivars and seeding equipment, seeding rate can likely be lowered. The reason seeding rate recommendations remain where they are (around 60-65 lbs/acre for most varieties and 23 lbs/acre for hybrids) is due to variability across a field as well as among rice drills, whereas an optimal stand will not always be achieved. Keep in mind that these studies are on a small-plot basis, where plots are just over 100 square feet as opposed to acres. This does show that the seeding rate can be bumped down in certain situations without loss of yield.

**Furrow-Irrigated Rice:** Furrow-irrigated rice results suggest for the third year that areas of the field where water is not backed up (upper ½ to 2/3) may benefit from an increased seeding rate. For the hybrid, RT7421 FP, an average of 1.6 bushels per acre were gained for every additional seed per square foot over 4 in the upper 2/3 of the field. For comparison, that's an additional 7 bushels per acre for every additional 10 pounds per acre seeding rate. There were mixed results for inbred varieties. CLL18 benefited from increasing the seeding rate up to near 70 pounds per acre, while DG263L and Ozark yields were not heavily influenced by a higher seeding rate. In fact, DG263L yield trends lower with higher seeding rates above recommended (40 pounds per acre).