

2022 Missouri Rice Seeding Rate Trials

Flood-Irrigated and Furrow-Irrigated Production Systems

Conducted by the
University of Missouri Rice Agronomy Program

Funding and support provided by the
Missouri Rice Research and Merchandising Council

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University of Missouri

Rice Agronomy

2022 Missouri Rice Seeding Rate Trials

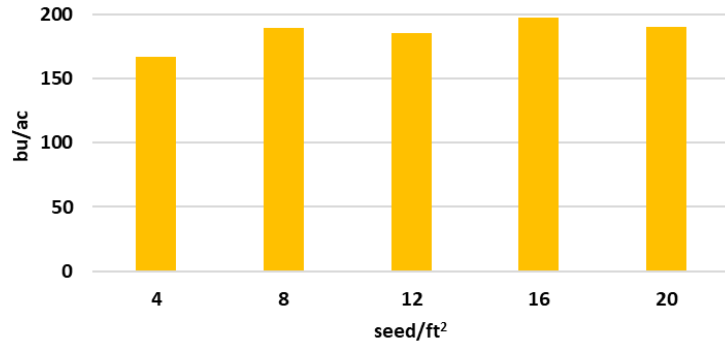
Site	Nearest Town	Planting Date	Emergence Date	Flood Date	Harvest Date	Soil Type	Location Info	Water Management	N Management	N Rate (lbs N/ac)
MRRMC PD1	Glennonville, Dunklin County	March 17	April 22	June 3	September 20	Silt Loam	Research Station	Flood	Single Pre-flood	130
MRRMC PD2	Glennonville, Dunklin County	April 10	April 30	June 3	September 20	Silt Loam	Research Station	Flood	Single Pre-flood	130
FDRC PD1	Portageville, Pemiscot County	May 12	May 22	June 22	October 7	Clay	Research Station	Flood	Single Pre-flood	150
FDRC PD2	Portageville, Pemiscot County	June 3	June 9	July 11	October 24	Clay	Research Station	Flood	Single Pre-flood	150
MRRMC FIR Top	Glennonville, Dunklin County	May 19	May 28	June 21	October 21	Silt Loam	Research Station	Non-Flood	3-way split	130
MRRMC FIR Middle	Glennonville, Dunklin County	May 19	May 28	June 21	October 21	Silt Loam	Research Station	Muddy	3-way split	130
MRRMC FIR Bottom	Glennonville, Dunklin County	May 19	May 28	June 21	October 21	Silt Loam	Research Station	Flood	3-way split	130
FDRC FIR Top	Portageville, Pemiscot County	May 11	May 21	June 23	October 5	Clay	Research Station	Non-Flood	3-way split	150
FDRC FIR Middle	Portageville, Pemiscot County	May 11	May 21	June 23	October 5	Clay	Research Station	Muddy	3-way split	150
FDRC FIR Bottom	Portageville, Pemiscot County	May 11	May 21	June 23	October 5	Clay	Research Station	Flood	3-way split	150

Materials & Methods: Seeding rate trials were planted in flood-irrigated rice on two sites, Portageville (FDRC) and the Rice Farm (MRRMC) and at two planting dates, normal and late planted. Furrow-irrigated trials were planted within the “normal” planting window at two sites, FDRC and MRRMC, and within three areas of the field, top, middle, and bottom. One hybrid cultivar was utilized, RT XP753, and was planted at 4, 8, 12, 16, and 20 seed/ft². Meanwhile, three inbred varieties were also planted, CLL16, Diamond, and DG263L at 10, 20, 30, 40, and 50 seed/ft². 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.

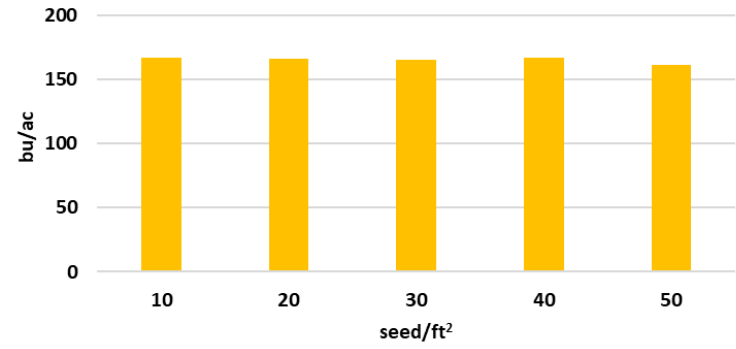
2022 Missouri Flood Rice Seeding Rate Studies Grain Yield

Cultivar	Rice Farm						Portageville					
	Seeding Rate		29-Apr		13-Jun		12-May		2-Jun		AVERAGE	
			Stand	Yield	Stand	Yield	Stand	Yield	Stand	Yield	Stand	Yield
	seed/ft ²	lb/ac	seed/ft ²	bu/ac	seed/ft ²	bu/ac	seed/ft ²	bu/ac	seed/ft ²	bu/ac	seed/ft ²	bu/ac
XP753	4	9	2	201	2	148	1	225	-	95	2	167
XP753	8	18	3	233	2	167	3	231	-	129	3	190
XP753	12	26	3	228	7	169	4	235	-	111	5	186
XP753	16	35	5	223	8	182	8	233	-	151	7	197
XP753	20	44	8	235	12	180	7	234	-	113	9	191
Diamond	10	24	5	201	4	118	4	196	-	90	4	151
Diamond	20	48	6	198	9	119	10	201	-	106	8	156
Diamond	30	73	14	196	13	124	14	198	-	110	14	157
Diamond	40	97	20	191	16	125	16	198	-	104	17	155
Diamond	50	121	22	195	18	126	13	213	-	116	18	163
DG263L	10	25	4	214	6	134	7	219	-	101	6	167
DG263L	20	51	14	194	13	143	11	220	-	109	12	166
DG263L	30	76	16	193	16	141	11	206	-	122	14	165
DG263L	40	101	26	197	23	137	17	210	-	123	22	167
DG263L	50	127	20	190	28	137	19	199	-	120	22	161
CLL16	10	24	3	202	3	105	7	191	-	82	4	145
CLL16	20	48	10	200	7	109	12	197	-	98	10	151
CLL16	30	72	13	199	11	111	15	195	-	90	13	149
CLL16	40	96	20	201	16	108	14	202	-	81	17	148
CLL16	50	120	24	191	17	114	16	203	-	80	19	147
AVERAGE			12	204	12	135	10	210	-	107	11	164

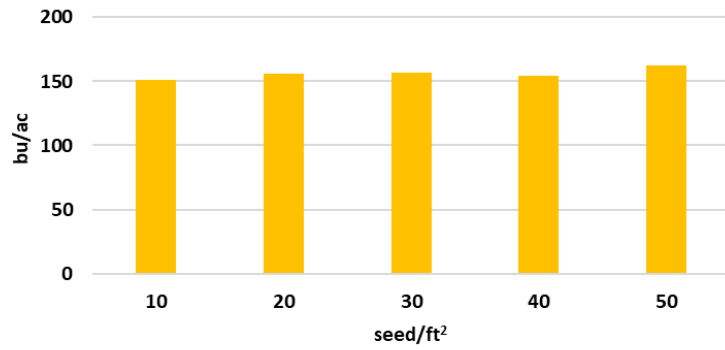
XP753



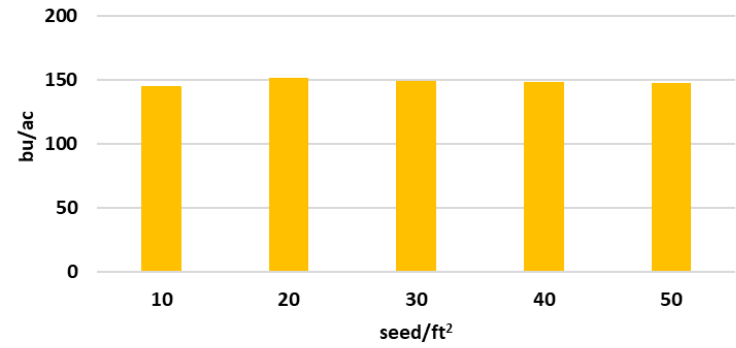
DG263L



Diamond



CLL16

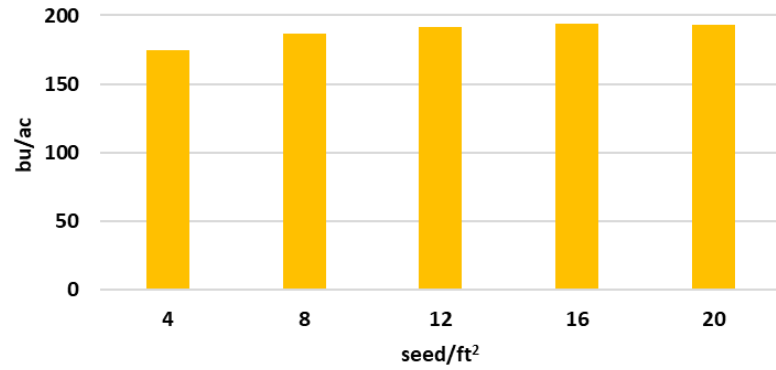


2022 Missouri Furrow-Irrigated Rice Seeding Rate Studies Grain Yield

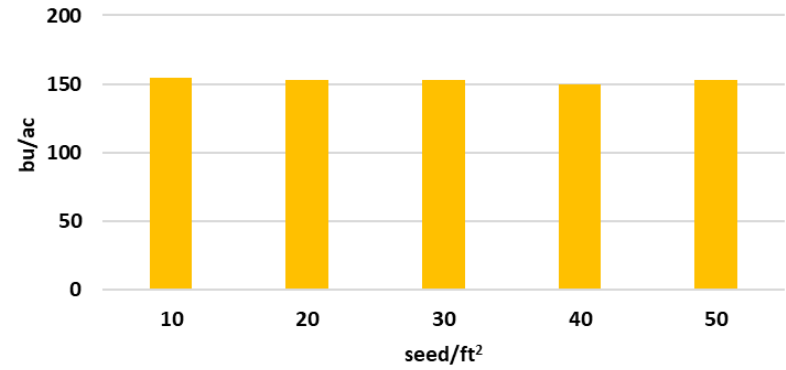
Cultivar	Seeding Rate	Rice Farm						Portageville						AVERAGE	
		Top		Middle		Bottom		Top		Middle		Bottom		Stand	Yield
		Stand	Yield	Stand	Yield	Stand	Yield	Stand	Yield	Stand	Yield	Stand	Yield		
seed/ft ²	seed/ft ²	bu/ac	seed/ft ²	bu/ac	seed/ft ²	bu/ac	seed/ft ²	bu/ac	seed/ft ²	bu/ac	seed/ft ²	bu/ac	seed/ft ²	bu/ac	
XP753	4	2	144	2	177	3	198	3	153	2	162	3	213	2	174
XP753	8	5	172	5	188	3	189	5	158	6	186	5	225	5	186
XP753	12	6	166	6	195	6	205	11	168	9	188	9	226	8	192
XP753	16	8	186	7	203	7	203	12	161	10	187	10	225	9	194
XP753	20	12	163	9	202	9	201	11	170	12	194	12	230	11	193
Diamond	10	4	108	3	157	3	156	6	114	6	131	6	177	5	141
Diamond	20	8	130	10	172	6	170	10	135	10	140	10	183	9	155
Diamond	30	12	145	13	183	10	179	13	154	12	143	14	176	12	163
Diamond	40	12	144	13	178	11	177	14	145	14	141	15	179	13	161
Diamond	50	18	143	16	175	14	175	20	161	19	151	18	172	17	163
DG263L	10	6	141	8	162	4	176	6	126	6	152	4	172	6	155
DG263L	20	9	135	10	162	7	177	12	120	11	154	11	169	10	153
DG263L	30	16	141	10	159	12	181	21	122	19	152	19	163	16	153
DG263L	40	15	146	16	154	14	173	19	132	17	154	17	138	16	150
DG263L	50	21	139	16	155	13	167	22	148	23	162	22	149	20	153
CLL16	10	5	135	4	167	3	161	6	112	7	115	6	157	5	141
CLL16	20	11	150	12	176	9	178	10	112	10	122	10	157	10	149
CLL16	30	19	163	17	185	12	176	14	115	16	113	14	150	15	150
CLL16	40	20	158	18	167	15	170	22	127	22	127	23	148	20	150
CLL16	50	22	152	21	171	15	176	16	121	24	130	22	144	20	149
AVERAGE		12	148	11	174	9	180	13	138	13	150	12	178	11	161

* Furrow-irrigated rice trials were planted at Glennonville on May 19 and Portageville on May 11.

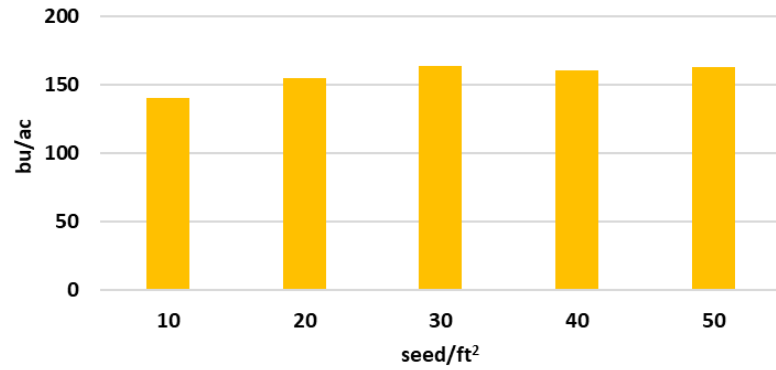
XP753



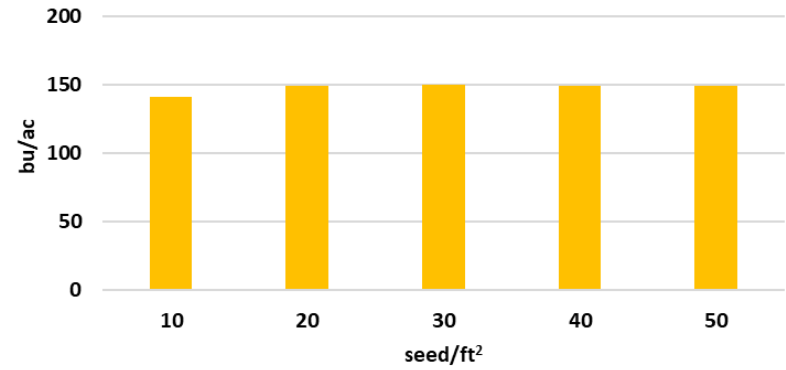
DG263L



Diamond



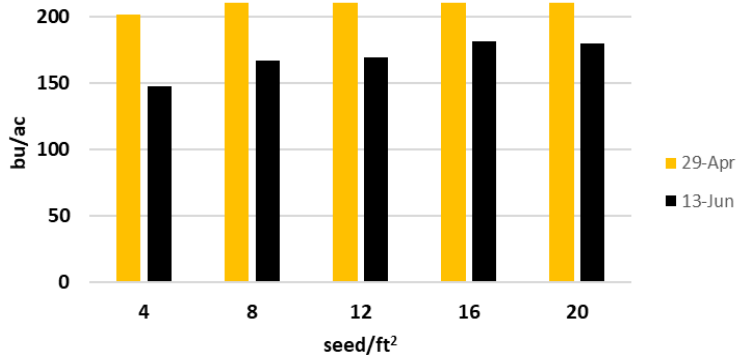
CLL16



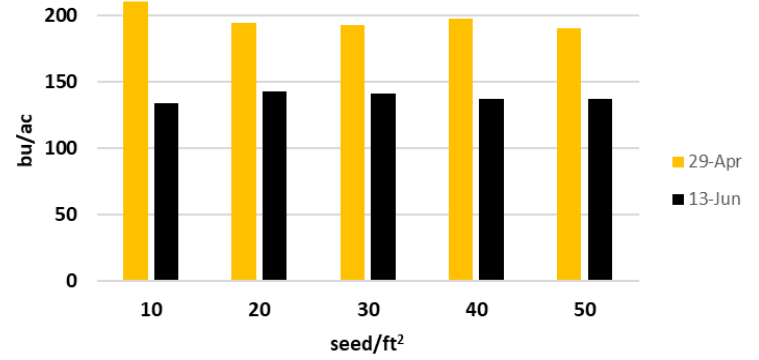
2022 Rice Farm Flood Rice Seed Rate Study

Cultivar	29-Apr						13-Jun			
	Seeding Rate		Stand	Heading	Yield	Milling	Stand	Heading	Yield	Milling
	seed/ft ²	lb/ac	seed/ft ²	days to	bu/ac	HR-TR	seed/ft ²	days to	bu/ac	HR-TR
XP753	4	9	2	88	201	60-72	2	87	148	58-69
XP753	8	18	3	87	233	60-70	2	86	167	49-68
XP753	12	26	3	87	228	61-71	7	85	169	55-68
XP753	16	35	5	87	223	61-72	8	84	182	56-70
XP753	20	44	8	87	235	61-72	12	83	180	54-69
Diamond	10	24	5	93	201	63-71	4	91	118	40-61
Diamond	20	48	6	94	198	63-70	9	92	119	41-61
Diamond	30	73	14	93	196	62-70	13	92	124	42-61
Diamond	40	97	20	93	191	62-70	16	91	125	45-62
Diamond	50	121	22	93	195	62-70	18	90	126	42-61
DG263L	10	25	4	89	214	64-70	6	89	134	49-62
DG263L	20	51	14	87	194	63-70	13	87	143	53-64
DG263L	30	76	16	87	193	63-69	16	85	141	52-64
DG263L	40	101	26	87	197	63-70	23	85	137	53-64
DG263L	50	127	20	87	190	63-70	28	84	137	49-66
CLL16	10	24	3	96	202	60-69	3	95	105	25-52
CLL16	20	48	10	95	200	60-69	7	94	109	23-49
CLL16	30	72	13	97	199	62-71	11	93	111	29-54
CLL16	40	96	20	96	201	61-70	16	93	108	27-51
CLL16	50	120	24	95	191	61-70	17	93	114	32-56
AVERAGE			12	91	204	62-70	12	89	135	44-62

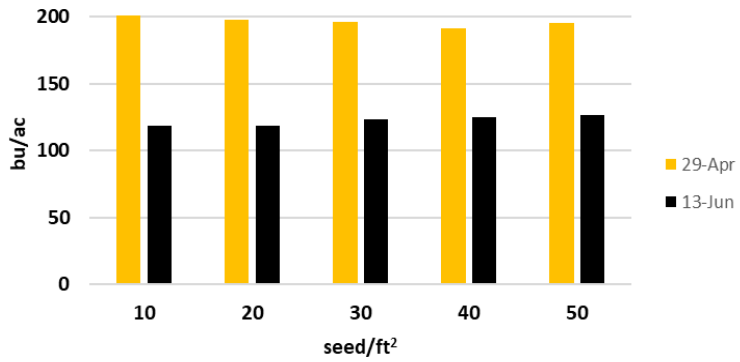
XP753



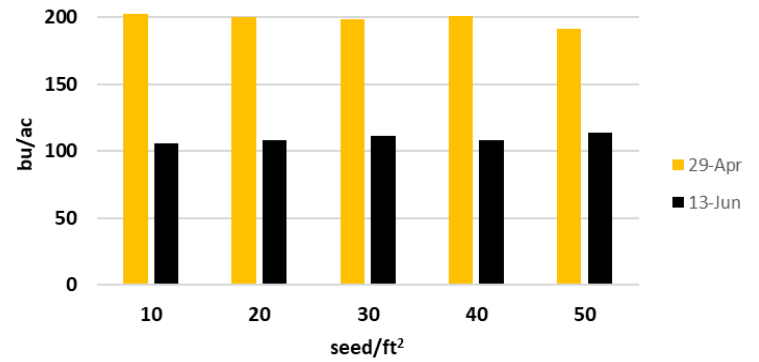
DG263L



Diamond



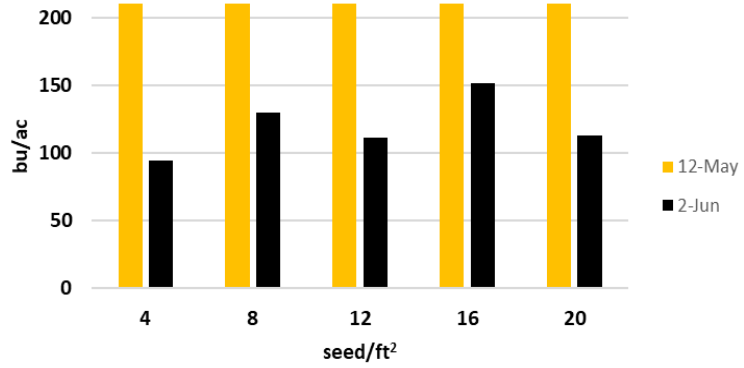
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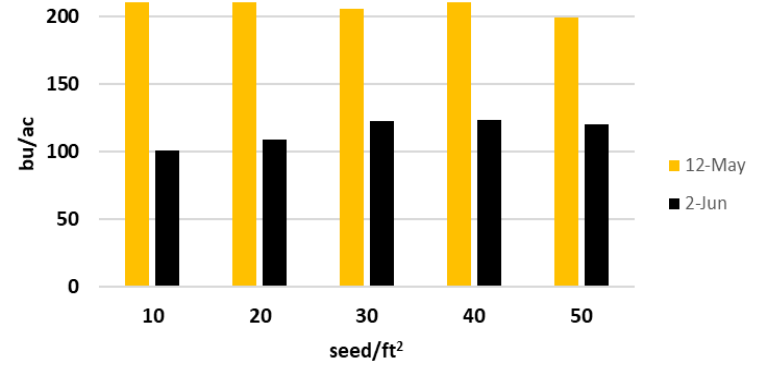
2022 Portageville Flood Rice Seed Rate Study

Cultivar	12-May						2-Jun				
	Seeding Rate		Stand	Heading	Yield	Milling	Stand	Heading	Yield	Milling	
	seed/ft ²	lb/ac	seed/ft ²	days to	bu/ac	HR-TR	seed/ft ²	days to	bu/ac	HR-TR	
XP753	4	9	1	86	225	62-71	-	88	95	50-67	
XP753	8	18	3	86	231	62-71	-	81	129	54-68	
XP753	12	26	4	85	235	62-72	-	88	111	47-65	
XP753	16	35	8	84	233	63-72	-	88	151	54-68	
XP753	20	44	7	84	234	62-71	-	88	113	47-65	
Diamond	10	24	4	92	196	60-70	-	89	90	46-66	
Diamond	20	48	10	91	201	60-70	-	90	106	33-59	
Diamond	30	73	14	90	198	60-69	-	91	110	30-58	
Diamond	40	97	16	89	198	60-70	-	90	104	38-62	
Diamond	50	121	13	89	213	60-70	-	89	116	44-65	
DG263L	10	25	7	84	219	59-69	-	92	101	32-59	
DG263L	20	51	11	84	220	59-70	-	91	109	30-55	
DG263L	30	76	11	83	206	59-70	-	89	122	42-64	
DG263L	40	101	17	82	210	58-69	-	89	123	41-63	
DG263L	50	127	19	82	199	58-69	-	89	120	37-61	
CLL16	10	24	7	95	191	55-68	-	95	82	16-48	
CLL16	20	48	12	96	197	56-69	-	95	98	35-60	
CLL16	30	72	15	95	195	57-69	-	95	90	20-52	
CLL16	40	96	14	95	202	57-68	-	95	81	28-56	
CLL16	50	120	16	94	203	59-69	-	95	80	24-55	
AVERAGE			10	88	210	59-70		90	107	37-61	

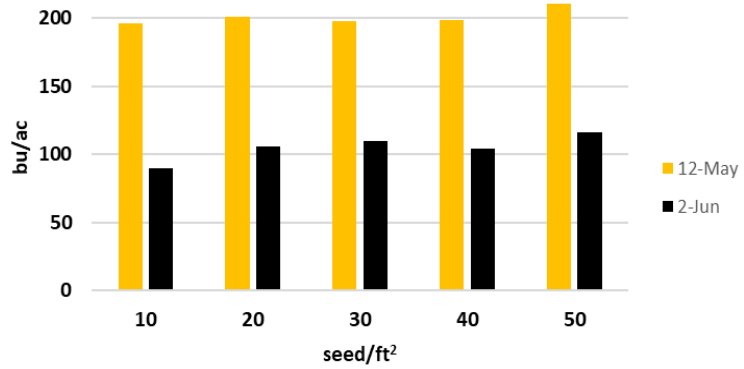
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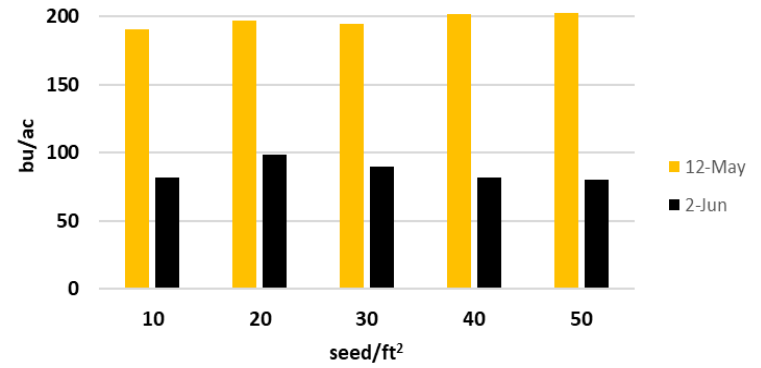
DG263L



Diamond



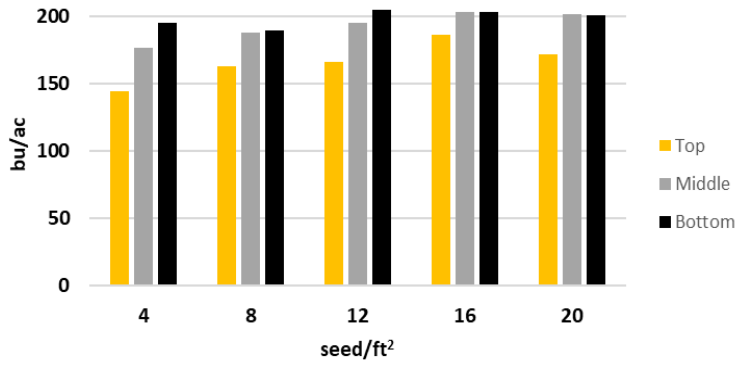
CLL16



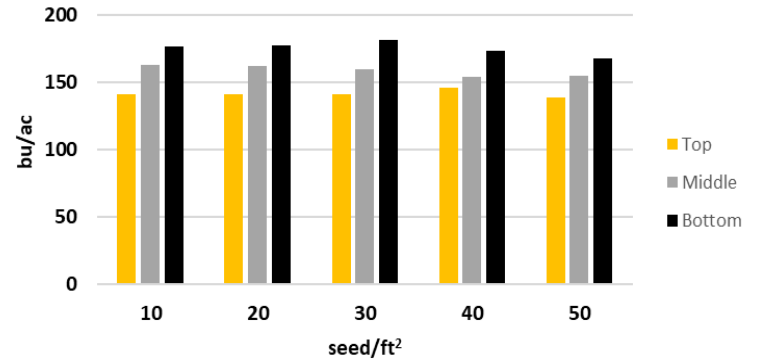
2022 Rice Farm Furrow-Irrigated Rice Seed Rate Study

Cultivar	Seeding Rate		Top			Middle			Bottom		
	seed/ft ²	lb/ac	Stand seed/ft ²	Yield bu/ac	Milling HR-TR	Stand seed/ft ²	Yield bu/ac	Milling HR-TR	Stand seed/ft ²	Yield bu/ac	Milling HR-TR
XP753	4	9	5	144	51-71	6	176	52-71	8	195	56-71
XP753	8	18	12	163	52-72	11	188	55-71	9	189	58-71
XP753	12	26	13	166	53-72	12	195	54-71	12	205	58-71
XP753	16	35	14	186	52-72	13	203	54-71	13	203	59-71
XP753	20	44	17	172	52-72	15	202	54-71	15	201	58-71
Diamond	10	24	10	108	53-70	9	154	53-69	9	156	52-68
Diamond	20	48	14	123	53-70	16	172	54-69	12	170	52-68
Diamond	30	73	17	145	56-71	18	183	55-69	16	179	52-68
Diamond	40	97	17	144	55-70	18	177	56-70	17	177	53-68
Diamond	50	121	20	136	57-71	19	175	55-68	18	175	52-67
DG263L	10	25	13	141	54-70	14	162	55-68	10	176	55-67
DG263L	20	51	15	141	52-70	16	162	52-68	13	177	55-68
DG263L	30	76	19	141	51-70	16	159	51-69	17	181	54-67
DG263L	40	101	19	146	50-69	19	154	50-68	18	173	56-69
DG263L	50	127	21	139	51-70	19	155	50-68	18	167	54-68
CLL16	10	24	11	134	54-70	10	167	50-68	8	161	42-64
CLL16	20	48	16	150	57-71	17	176	52-70	15	178	45-65
CLL16	30	72	20	163	53-70	19	185	48-68	17	175	45-65
CLL16	40	96	21	166	57-71	20	167	52-69	19	170	46-66
CLL16	50	120	21	152	54-69	21	171	53-69	19	176	45-66
AVERAGE			16	148	53-71	15	174	53-69	14	179	53-71

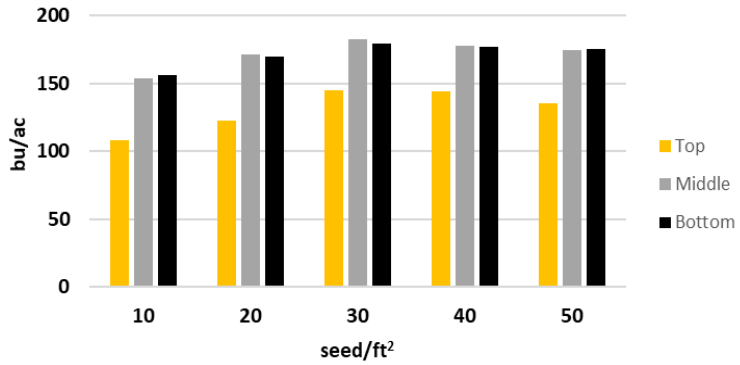
XP753



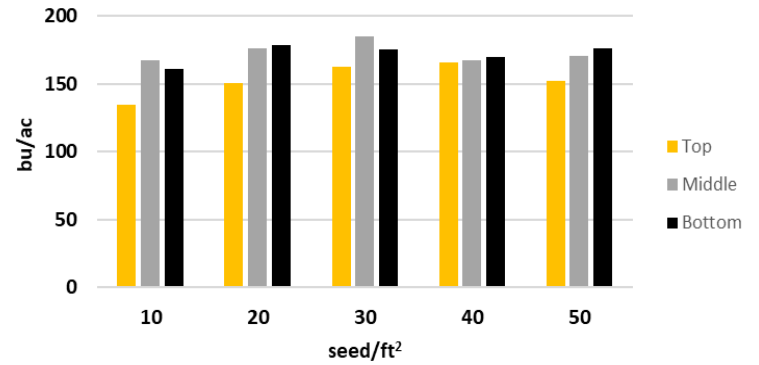
DG263L



Diamond

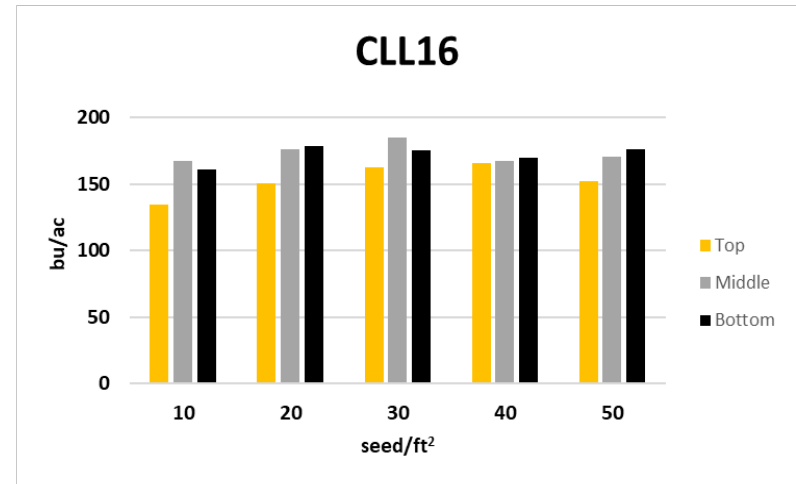
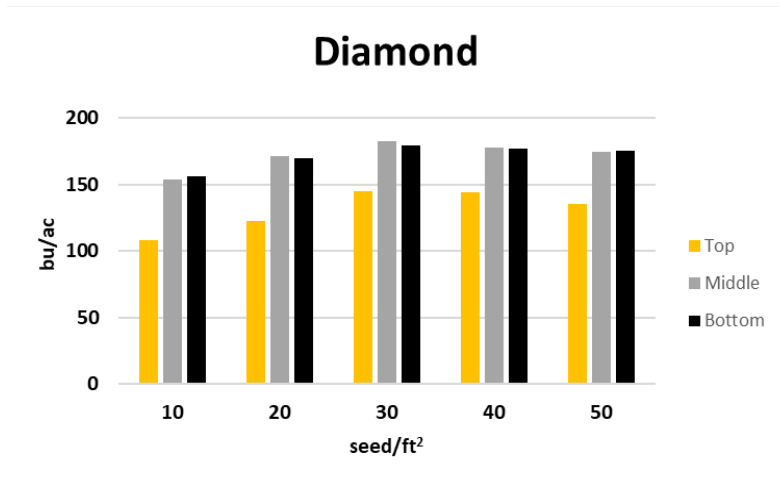
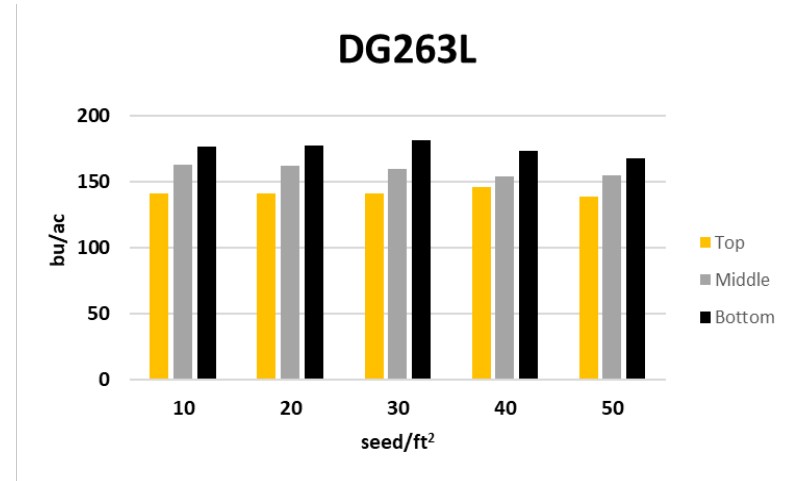
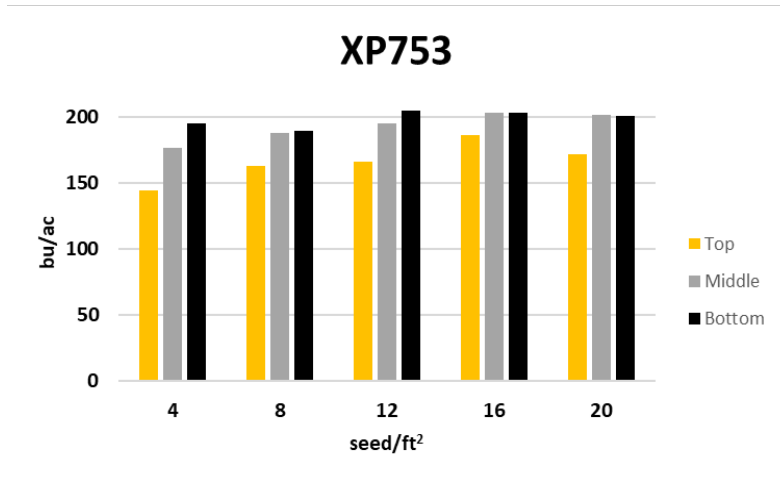


CLL16



2022 Portageville Furrow-Irrigated Rice Seed Rate Study

Cultivar	Seeding Rate		Top			Middle			Bottom		
	seed/ft ²	lb/ac	Stand seed/ft ²	Yield bu/ac	Milling HR-TR	Stand seed/ft ²	Yield bu/ac	Milling HR-TR	Stand seed/ft ²	Yield bu/ac	Milling HR-TR
XP753	4	9	5	144	52-71	6	176	58-72	8	195	57-70
XP753	8	18	12	163	47-71	11	188	54-71	9	189	59-71
XP753	12	26	13	166	45-71	12	195	55-71	12	205	59-71
XP753	16	35	14	186	42-71	13	203	54-70	13	203	61-71
XP753	20	44	17	172	46-71	15	202	52-71	15	201	55-71
Diamond	10	24	10	108	53-71	9	154	59-70	9	156	58-69
Diamond	20	48	14	123	54-70	16	172	59-70	12	170	58-69
Diamond	30	73	17	145	56-71	18	183	59-71	16	179	60-70
Diamond	40	97	17	144	57-71	18	177	60-71	17	177	60-70
Diamond	50	121	20	136	52-70	19	175	60-70	18	175	61-70
DG263L	10	25	13	141	49-69	14	162	58-69	10	176	58-69
DG263L	20	51	15	141	55-71	16	162	56-69	13	177	56-69
DG263L	30	76	19	141	53-69	16	159	57-69	17	181	59-70
DG263L	40	101	19	146	50-70	19	154	53-69	18	173	57-69
DG263L	50	127	21	139	50-69	19	155	59-70	18	167	59-69
CLL16	10	24	11	134	55-70	10	167	57-69	8	161	55-68
CLL16	20	48	16	150	57-70	17	176	59-70	15	178	57-68
CLL16	30	72	20	163	58-71	19	185	60-70	17	175	55-68
CLL16	40	96	21	166	56-71	20	167	57-69	19	170	54-67
CLL16	50	120	21	152	56-71	21	171	59-70	19	176	56-67
AVERAGE			16	148	52-71	15	174	57-70	14	179	58-69



Results: Results from the seeding rate studies suggest that recommended seeding rates are still in the correct ballpark for most cultivars in both production systems. One cultivar that shows promise for a lower seeding rate is DG263L. Maximum yields were obtained at all sites other than late-planted with the lowest seeding rate tested, near 25 lb/ac. The 2022 data also suggest that a slightly higher seeding rate may be beneficial in furrow-irrigated rice, but that will inherently vary based on factors such as planting style, drill setup, and how furrows are created.