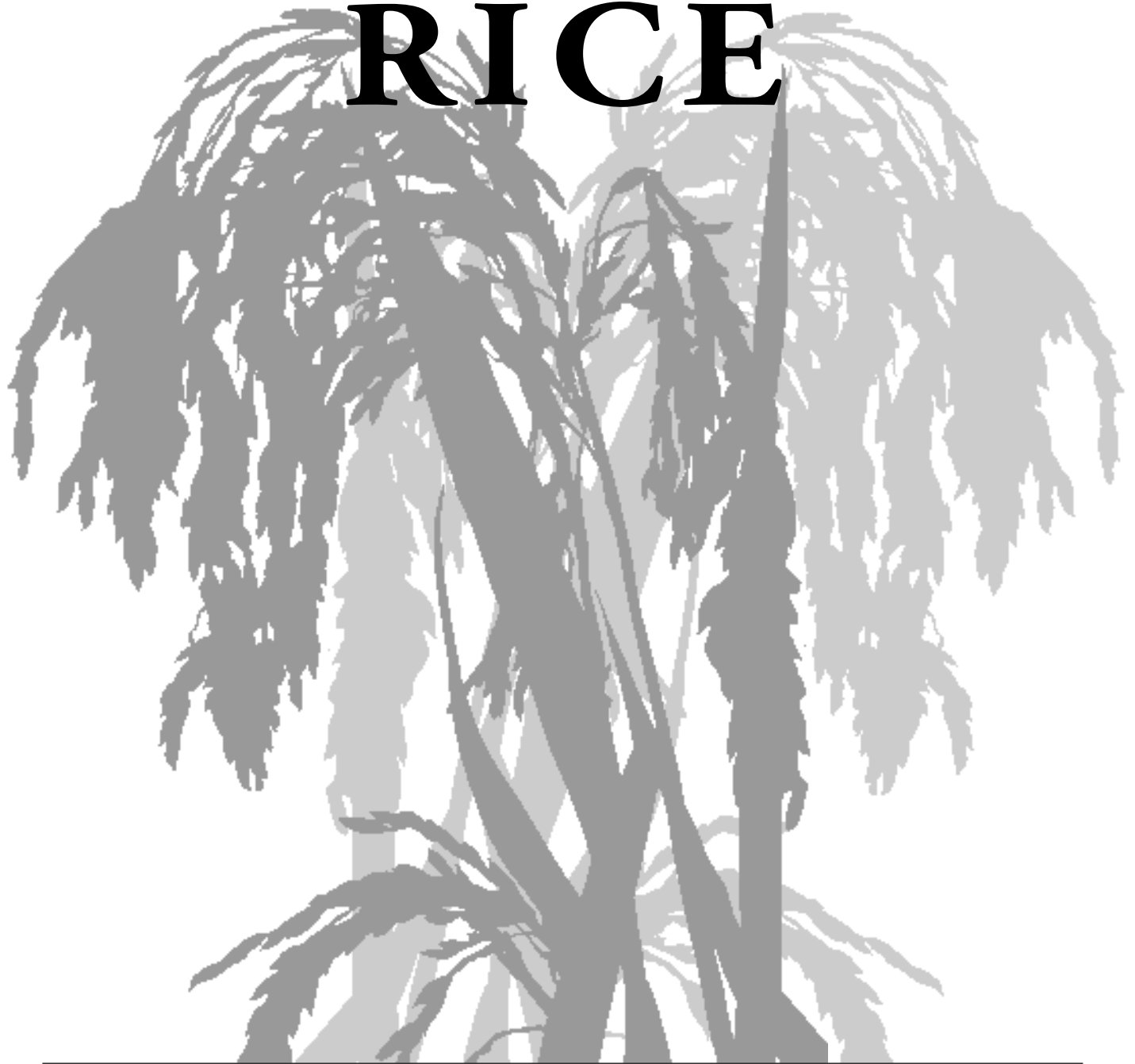


MISSISSIPPI RICE



VARIETY TRIALS, 2005



Experiment Station
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Mississippi Agricultural & Forestry Experiment Station

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NOTICE TO USER

This Mississippi Agricultural and Forestry Experiment Station Information Bulletin is a summary of research conducted under project number MIS-1530 at the Delta Research and Extension Center in Stoneville, Mississippi, and several other locations shown on the map on the second page. It is intended for colleagues, cooperators, and sponsors. The interpretation of data presented in this publication may change after additional experimentation. This information is not to be construed either as a recommendation for use or as an endorsement of a specific variety or product by Mississippi State University or the Mississippi Agricultural and Forestry Experiment Station.

This report contains data generated as part of the Mississippi Agricultural and Forestry Experiment Station research program. Joint sponsorship by the Mississippi Rice Promotion Board is gratefully acknowledged.

Trade names of commercial products used in this research project are included only for clarity and understanding. All available names (i.e., trade names, chemical names, experimental product code names or numbers, etc.) of products used in this research project are listed in the tables and footnotes contained in this report.

Mississippi Rice Variety Trials, 2005

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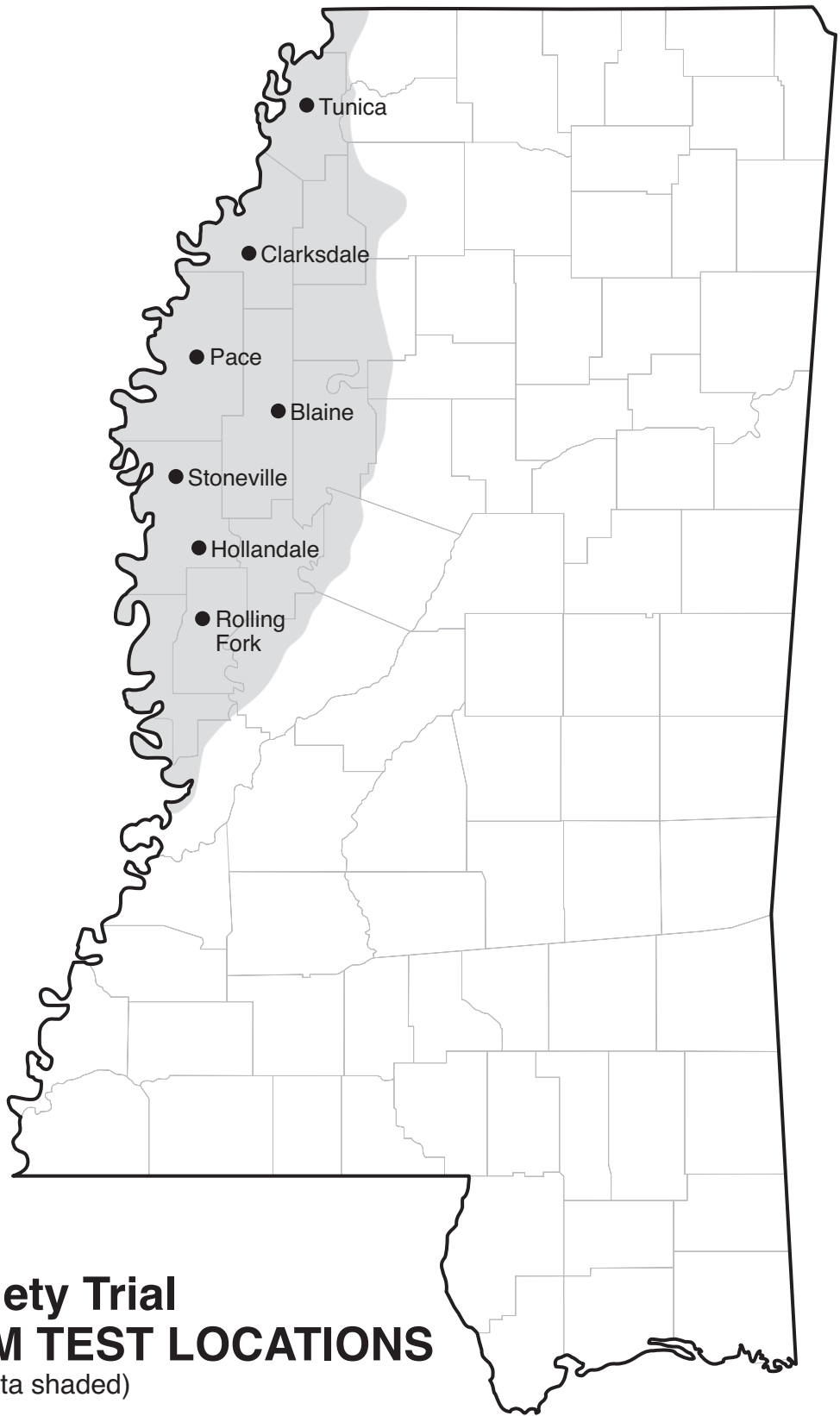
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For more information, contact Dwight Kanter at (662) 686-9311; e-mail, dgkanter@drec.msstate.edu. Information Bulletin 424 was published by the Office of Agricultural Communications, a unit of the Mississippi State University Division of Agriculture, Forestry, and Veterinary Medicine.



Rice Variety Trial
ON-FARM TEST LOCATIONS
(Mississippi Delta shaded)

Mississippi Rice Variety Trials, 2005

INTRODUCTION

In 2005, approximately 263,000 acres of rice were planted in 14 Delta counties of Mississippi, compared with 235,000 acres planted in 2004. Bolivar County had the highest planted acreage at 75,592 acres. Essentially all the production in Mississippi was from long-grain rice. Cocodrie was the predominate variety grown in the Mississippi Delta this year, occupying 39% of the rice acreage, followed by Clearfield 161 at 20%, Cheniere at 20%, Priscilla at 8%, Wells at 5%, and all other varieties at 8%.

The on-farm rice variety tests represent the final step in the yield evaluation program before a variety is released for commercial production in Mississippi. Conducting these tests on commercial farms across the Delta provides important information on variety performance and adaptability under diverse environmental and management conditions. These test locations give a partial sampling of actual production situations in the Delta, where practically all Mississippi rice is produced. These multiple locations also permit evaluation of entries for resistance to pests and/or other field-related stresses, which often have a greater natural incidence at locations other than at the Delta Research and Extension Center (DREC). There was no observed incidence of blast at any of the test locations. The incidence of sheath blight at the on-farm test locations ranged from light to moderate in 2005. False smut was observed at some test locations at very low infestation levels. Kernel smut was not observed at any of the on-farm tests.

Planting dates for the different locations ranged from April 4 to April 28, which are within the typical period for planting rice in the Delta. Two tests (Pace and Stoneville) were planted into conventionally prepared seedbeds, and the other five were planted into stale seedbeds. Three of the test location fields were flushed: Stoneville, Hollandale, and Rolling Fork locations. Light to moderate sheath blight infection developed on susceptible entries at the Tunica, Pace, and Blaine sites. Soil samples were taken at planting within the test area at each location. All results indicated nutrient levels were generally high at all locations. However, the Tunica location had medium levels of phosphorus and zinc and a low level of sulfur.

Variety selection is one of the most important decisions a rice producer makes in preparing production plans each season. The information in this bulletin is intended to help the producer with this decision-making process. In addition to the yield performance of a variety, consideration needs to be given to whole grain and total milling percentages, maturity, lodging, and disease reactions. Data summarized over locations and years are generally a more reliable measure to show future variety performance than individual test results. Other sources of information may include past production experience with a particular variety and consulting with local and state rice Extension personnel.

TEST PROCEDURES

The 20 long-grain varieties, hybrids, and breeding lines reported here were included in the variety test planted at each of the seven locations. Each test consisted of three replications. The plots at all locations consisted of six 8-inch spaced drill rows with a seeding depth of approximately 1 inch. The varieties and breeding lines were seeded at an equivalent rate of 108 pounds per acre and 35 pounds per acre for the hybrids. The 20% higher seeding rate was used to compensate for the limited seed treatment applied to the experimental lines planted in the tests and possible harsh seedbed conditions. Cultural practices were decided by and were performed by the cooperator and varied by location. Overall, the tests were grown under field conditions of high productivity. The

five hybrids were not fertilized according to recommendations under these test conditions. Therefore, their yields may be lower than normal. The field management practices applied for each location are recorded in the footnotes of Tables 1-7. [Note: Readers who may be less familiar with pesticide formulations and application rates may wish to refer to pesticide product label information available on the web or to the *2005 Weed Control Guidelines for Mississippi* (Extension Publication No. 1532).

Agronomic data were collected at appropriate times during the season. Sheath blight ratings were obtained on a plot-wise basis at seven locations. The natural occurrence of other diseases and insects present in these test plots are moni-

tored during the growing season and noted accordingly. Plots were harvested with a small-plot binder, except for Blaine, Hollandale, and Stoneville, which were hand-harvested because of moderate to severe lodging. Standard procedures were used in processing the samples for grain and milling yield determinations. Readers may refer to MAFES Information Bulletin 283, *1994 Rice Variety Trials*, dated March 1995, for further details on experimental procedures.

Statistical analyses were performed on the yield data for each location. The data combined over the seven locations were

analyzed using the SAS PROC-GLM procedure. The least significant difference (LSD) for yield at the 5% probability level has been included in the tables to aid in comparing varieties. If the yields of any two varieties or lines differ by more than the LSD value, it can be concluded that the variety with the higher yield is superior to the variety with the lower yield.

The coefficient of variation (CV) provides a general indication of the level of precision of each variety test. Lower CV values indicate greater reliability of the test. LSD and CV values are reported in the footnotes of the first nine tables.

RESULTS

The field performance of each variety in the seven individual tests is presented in Tables 1-7. Sheath blight ratings are listed in the location and summary tables (Tables 1-7, 10, and 11). Average test yields ranged from 145 bushels per acre at Pace to 232 bushels per acre at Hollandale (Table 8). The CVs for grain yields across locations were generally within an acceptable range in 2005. Rough rice, total, and whole-grain milling yields were higher in 2004 than they were in 2005. Two weather conditions that occurred during the 2005 growing season were mostly responsible for yield and grain quality reductions. High temperatures in late July and August that occurred during heading and grain filling were one factor. There were 27 days of temperatures 95°F or above that occurred this year as compared with 8 days of comparable temperatures last year. The other factor was the occurrence of two hurricanes that came through the Delta as harvest began, causing severe lodging in many fields. In many cases, the lodged rice was laying flat in the flood for as long as a week before the water could be drained. There were stand problems in the tests located at Tunica, Clarksdale, and Pace. Straighthead and blast were not observed in any of the on-farm tests.

Table 8 provides a seven-location summary of grain yields for the 17 varieties and three experimental lines. Mississippi's new variety — Pace, at 184 bushels per acre — was the highest yielder for 2005. However, it significantly outyielded only Clearfield XP730, Clearfield 131, Clearfield 161, and Trenasse. There was not much separation in yields as shown in Table 8 due to the somewhat larger LSD value as related to this season's events. High temperatures and two hurricanes caused severe lodging in all test locations except at Clarksdale and were generally responsible for lack of distinct yield separation and poor milling quality. The on-farm test at Blaine was an excellent example of the effects of these conditions. Throughout the early and latter part of the growing season, indications were that this test should have been an excellent test although the end result was much less than anticipated (Table 8). Hurricane Katrina caused some lodging at mid-maturity, and Hurricane Rita caused severe lodging at late maturity. Sodium chlorate was applied at the Blaine and Clarksdale locations to facilitate crop dry down and harvesting. Pace, which is a high-yielding long-grain

variety with good milling quality, excellent lodging, and disease resistance, was released by Mississippi in 2005. Three other new long-grain rice varieties have been released recently and are included in this bulletin. Presidio was released by Texas. Clearfield 131 and Trenasse were released by Louisiana in 2005. Clearfield 131 and Clearfield 161 are varieties that are tolerant to the herbicide Newpath®, which controls red rice. Clearfield 131 agronomically is a better variety than Clearfield 161 and produces better milling yields. Seed of the two Clearfield varieties are available from Horizon Ag.

Suggested varieties for Mississippi rice growers would be Cocodrie, Cheniere, Priscilla, Pace, and Wells. Suggested hybrids are Clearfield XL8, Clearfield XP730, XP723, and XP710. Keep in mind that the cost of hybrid seed is substantially higher than for conventional varieties. If a grower has a red rice problem, Clearfield XL8 would be a better choice than Clearfield 161 because its yield is significantly more as indicated in Table 10.

Average values for milling and agronomic characteristics, along with sheath blight ratings for all locations, are also summarized in Table 10. Head rice yields are reported to convey a variety's overall performance in terms of whole-grain milled rice produced per acre. Numerically, MS05Y29 and Sabine produced more whole-grain milled rice than all other varieties and experimental lines in the tests and significantly more than over half of those included in the tests (Table 10). Breeding line MS05Y29 performed well at most test locations, averaging 55.4% whole-grain milling yield. When averaged over all seven locations, MS05Y29 did not yield significantly less than any other variety or experimental line included in the tests. Along with Pace and XP710, it had a low sheath blight infection averaging 3%.

Lodging resistance should be seriously considered when selecting a variety to grow. This is especially important when it occurs before fields are normally drained or when rainy weather persists before harvest. Lodging was light to severe at all locations, except for Clarksdale because of hurricanes Katrina and Rita (Tables 1-7). Nine varieties, hybrids, and experimental lines lodged more than 50% in the 2005 on-farm tests [Trenasse (74%), MS05Y04 (67%), Clearfield 161 (64%), Banks (59%), Clearfield XP730 (58%), XP710

(54%), Cocodrie (53%), Priscilla (52%), and Sabine (51%) (Table 10)]. Breeding line MS05Y29 had the lowest average lodging at 27%.

The long-term performance of 17 varieties in the on-farm tests is presented in Table 11. Three-year and multiyear averages are indicated for individual varieties. Data averaged over several years are generally more reliable for predicting variety performance for yield and other characteristics. Average grain yields in 2005 for the commercial varieties were numerically lower than the 2004 yields.

The performances of 13 commercial rice varieties included in other yield trials conducted at the Delta Research and Extension Center are reported in Table 9. The column labeled “average grain yield” indicates the performance of

individual varieties for all years they were included in these tests since 1990. Individual varieties have been tested for different numbers of years. The 3-year yield average compares varieties from 2002 to 2004. The yield data includes both standing and lodged plants as the plots were hand-harvested. Important consideration should be given to the lodging data as an indication of straw strength. Efficiency in combine harvesting requires varieties with lodging resistance, particularly when adverse weather conditions may occur as the crop ripens and matures.

Information on disease reactions of individual varieties is presented in Table 12. The nitrogen fertility guidelines for commonly grown commercial varieties in Mississippi are provided by Tim Walker and are presented in Table 13.

Table 1. Performance of long-grain rice varieties, hybrids, and lines grown on Dubbs/Dundee silt loam soil near Tunica, Tunica County, Mississippi, 2005.¹

Variety or line	Grain yield ²	Milled head rice	Milling yield		Bushel weight	Plant height	50% heading ³	Maturity ³	Lodging	1000 seed weight ⁴	Sheath blight ⁵
			Total	Whole							
	<i>bu/A</i>	<i>lb/A</i>	%	%	<i>lb</i>	<i>in</i>	<i>days</i>	<i>days</i>	%	<i>g</i>	%
XP710	226	5786	66.0	56.9	38.0	39	78	128	71	27.6	3
Clearfield XL8	181	4135	65.8	50.7	39.2	39	79	131	73	21.9	13
XP721	179	4560	66.6	56.6	39.2	37	72	123	53	27.9	0
Clearfield XP730	175	4260	65.0	53.9	38.6	43	74	122	94	23.9	17
XP723	171	4460	67.8	58.1	38.8	41	76	129	93	24.7	10
Presidio	171	4129	66.1	53.8	41.2	36	76	125	73	21.8	20
Priscilla	170	4003	63.9	52.3	41.5	36	78	127	78	24.7	7
MS05Y29	169	4593	65.8	60.4	42.4	39	82	132	0	22.6	3
Cocodrie	169	4300	64.7	56.5	41.7	36	78	130	97	21.6	17
MS05Y33	167	4335	65.1	57.9	40.1	38	82	133	47	25.9	17
Sabine	167	4129	65.4	55.1	43.0	39	80	129	83	22.8	23
MS05Y04	163	3419	64.4	46.5	43.3	38	77	127	98	21.8	33
Banks	161	3842	63.5	53.2	41.4	39	84	131	70	21.6	17
Pace	157	3772	64.8	53.4	40.6	37	76	123	50	24.7	7
Cheniere	157	4055	66.9	57.8	42.2	35	78	127	90	20.8	20
Clearfield 131	153	3997	67.1	58.0	41.9	33	82	129	26	21.8	17
Wells	152	3524	65.6	51.7	43.7	39	83	131	92	24.7	20
Clearfield 161	148	3586	63.3	53.9	40.8	40	81	129	92	19.8	27
Cybonnet	146	3856	67.5	58.5	43.2	36	79	127	37	22.7	13
Trenasse	146	3449	64.9	52.3	41.2	40	70	122	77	23.7	13

¹Planting date: April 18. Emerged: May 6. Herbicides: Stam® at 4 lb/A plus Facet® at 0.5 lb/A plus crop oil concentrate at 1 pt/A on May 12; Clincher® at 15 oz/A plus crop oil concentrate at 1 qt/A on June 7. Fertilizer: Urea at 260 lb/A on May 18 and 130 lb/A on June 20. Permanent flood: May 19. Insecticide: Mustang Max® at 1 gallon to 40 acres on August 3. Fungicide: Propimax® at 6 oz/A on July 10. Drained field: August 8. NOTE: All hybrids were fertilized according to the cooperator's practice and not by RiceTec recommendations.

²Rough rice at 12% moisture. A difference of 25 bu/A is required for one variety to differ from another at the 5% significance level. C.V. = 9.9%.

³Days after emergence

⁴Weight of 1,000 kernels at 12% moisture.

⁵Sheath blight rating using average percent of plants infected on a plot basis.

Table 2. Performance of long-grain rice varieties, hybrids, and lines grown on Dowling clay soil near Clarksdale, Coahoma County, Mississippi, 2005.¹

Variety or line	Grain yield ²	Milled head rice	Milling yield		Bushel weight	Plant height	50% heading ³	Maturity ³	Lodging	1000 seed weight ⁴	Sheath blight ⁵
			Total	Whole							
	<i>bu/A</i>	<i>lb/A</i>	%	%	<i>lb</i>	<i>in</i>	<i>days</i>	<i>days</i>	%	<i>g</i>	%
XP710	204	4723	66.0	51.6	40.4	46	101	143	0	30.0	0
MS05Y04*	180	4377	65.4	54.0	44.4	40	99	139	0	23.8	0
Clearfield XL8	178	4145	65.8	51.8	40.1	45	96	136	0	25.0	3
Cybonnet	177	4890	68.6	61.3	43.7	41	98	139	0	25.1	3
Wells	169	3785	66.6	49.8	43.0	41	101	146	0	26.9	0
Sabine	167	4379	66.0	58.3	43.7	39	102	141	0	24.8	0
Cocodrie	166	4311	66.8	57.5	43.2	39	98	141	0	25.0	3
Priscilla	165	3855	64.9	51.8	41.4	41	101	142	0	27.0	0
XP723*	162	4490	68.1	61.6	40.3	45	91	137	0	28.2	0
MS05Y33	161	4199	66.0	57.9	41.0	40	101	146	0	28.0	3
Banks	161	3361	63.0	46.5	43.3	43	103	147	0	24.8	0
Clearfield XP730	160	4081	67.1	56.4	39.9	46	94	138	0	26.1	0
Pace	157	3795	66.2	53.8	38.2	41	101	139	0	27.2	0
Clearfield 131	153	4263	67.5	62.1	42.7	36	98	142	0	22.9	0
Presidio*	140	3613	66.8	56.8	42.1	39	95	137	0	23.1	7
XP721	139	3449	65.8	55.3	39.2	40	89	141	0	29.1	0
Clearfield 161*	138	3630	65.9	58.3	42.9	43	102	143	0	23.8	0
MS05Y29	134	3661	65.9	60.7	42.6	40	97	148	0	24.9	0
Cheniere	126	3032	65.1	53.4	41.2	38	101	147	0	22.9	0
Trenasse*	85	2092	61.6	53.4	39.2	42	88	136	12	24.9	7

¹Planting date: April 4. Emerged: April 22. Herbicides: Command® at 1 gallon to 8 acres plus Roundup® at 22 oz/A plus Grandstand® at 1 gallon to 12 acres on April 9; Cincher® at 15 oz/A plus crop oil concentrate at 1 qt/A on June 7. Fertilizer: Ammonium sulfate at 100 lb/A on May 10; urea at 200 lb/A on May 23 and 100 lb/A on July 1. Permanent flood: May 24. Insecticide: Karate® at 1 gallon to 75 acres on August 1. Fungicide: Quadris® at 1 gallon to 10 acres on July 10; Tilt® at 7 oz/A on August 1. Drained field: August 26. NOTE: All hybrids were fertilized according to the cooperators practice and not by RiceTec recommendations.

*Bird damage during grain ripening was observed in one or more replicated plots of these entries.

²Rough rice at 12% moisture. A difference of 38 bu/A is required for one variety to differ from another at the 5% significance level. C.V. = 15.2%.

³Days after emergence.

⁴Weight of 1,000 kernels at 12% moisture.

⁵Sheath blight rating using average percent of plants infected on a plot basis.

Table 3. Performance of long-grain rice varieties, hybrids, and lines grown on Sharkey clay soil near Pace, Bolivar County, Mississippi, 2005.¹

Variety or line	Grain yield ²	Milled head rice	Milling yield		Bushel weight	Plant height	50% heading ³	Maturity ³	Lodging	1000 seed weight ⁴	Sheath blight ⁵
			Total	Whole							
	<i>bu/A</i>	<i>lb/A</i>	%	%	<i>lb</i>	<i>in</i>	<i>days</i>	<i>days</i>	%	<i>g</i>	%
XP710	187	4149	64.5	49.3	37.0	45	90	130	0	28.8	7
Cheniere	167	3598	62.7	47.9	39.8	36	89	131	5	20.7	17
Wells	161	3594	66.0	49.7	42.2	42	94	137	33	25.7	20
Pace	160	3340	61.7	46.4	39.4	38	91	130	0	27.8	0
MS05Y29	160	3938	63.6	54.7	41.0	38	90	134	0	24.8	10
MS05Y04	159	2864	59.4	39.8	40.8	41	88	133	92	21.7	33
MS05Y33	157	3677	63.5	52.0	37.4	41	90	140	4	27.2	10
Clearfield XL8	156	3234	62.3	46.2	38.3	43	86	127	28	25.9	10
Sabine	156	3230	61.4	46.2	40.9	37	91	132	32	24.7	33
XP721	154	3249	62.1	46.5	36.7	39	75	127	0	27.0	23
Priscilla	151	3155	59.9	46.3	39.1	37	88	131	5	27.1	10
XP723	150	3508	62.7	51.8	37.9	46	88	136	6	26.3	3
Presidio	149	3196	63.5	47.7	38.6	40	89	133	19	23.9	27
Cocodrie	137	3215	62.8	52.2	39.7	39	92	140	62	24.2	20
Banks	135	3089	63.9	51.0	41.3	45	98	138	75	23.9	10
Cybonnet	131	2982	63.4	50.5	41.1	38	91	132	33	22.9	30
Clearfield 161	125	2693	61.5	47.8	39.6	39	92	133	78	21.7	47
Clearfield XP730	123	2806	62.8	50.8	37.6	45	87	129	70	23.8	10
Clearfield 131	122	2640	62.4	48.1	40.4	35	91	133	25	23.0	50
Trenasse	96	1669	57.3	38.8	38.1	39	86	133	94	26.3	43

¹Planting date: April 5. Emerged: April 25. Herbicides: Command® at 1 gallon to 8 acres on April 22; Stam® at 2 lb/A plus Facet® at 0.5 lb/A plus Permit® at 1 oz/A plus soy oil at 1 pt/A on May 5; Blazer® at 1 gallon to 16 acres on June 26. Fertilizer: Ammonium sulfate at 100 lb/A on May 12; urea at 270 lb/A on May 26 and 140 lb/A on June 27. Permanent flood: May 27. Drained field: August 15. NOTE: All hybrids were fertilized according to the cooperators practice and not by RiceTec recommendations.

²Rough rice at 12% moisture. A difference of 25 bu/A is required for one variety to differ from another at the 5% significance level. C.V. = 10.5%.

³Days after emergence.

⁴Weight of 1,000 kernels.

⁵Sheath blight rating using average percent of plants infected on a plot basis.

Table 4. Performance of long-grain rice varieties, hybrids, and lines grown on Dundee silt loam soil near Blaine, Sunflower County, Mississippi, 2005.¹

Variety or line	Grain yield ²	Milled head rice	Milling yield		Bushel weight	Plant height	50% heading ³	Maturity ³	Lodging	1000 seed weight ⁴	Sheath blight ⁵
			Total	Whole							
	<i>bu/A</i>	<i>lb/A</i>	%	%	<i>lb</i>	<i>in</i>	<i>days</i>	<i>days</i>	%	<i>g</i>	%
Sabine	184	4908	66.8	59.1	41.2	41	93	139	95	23.2	7
Pace	183	3880	61.0	46.6	36.8	44	91	137	95	25.2	10
Priscilla	183	4418	63.1	53.5	39.8	44	92	138	95	26.1	7
Cocodrie	171	3941	61.8	51.1	39.7	44	93	143	95	22.3	7
Presidio	166	3824	63.8	51.1	38.6	40	90	134	95	23.3	3
Wells	154	3489	63.4	50.2	40.4	45	93	144	95	22.1	7
MS05Y29	154	3560	58.6	51.2	39.8	45	94	143	95	22.2	10
Clearfield 131	154	3369	62.0	48.2	37.7	38	93	145	95	21.3	10
Cheniere	151	3402	63.3	49.9	39.1	41	93	139	95	19.2	10
MS05Y04	149	2538	59.5	37.9	38.4	43	88	138	95	22.2	0
Cybonnet	149	3885	67.2	58.1	40.4	42	94	142	95	22.1	10
Trenasse	148	3147	59.9	47.0	36.8	44	81	131	95	25.3	7
Clearfield XL8	147	3266	63.4	49.2	36.6	47	89	133	95	23.5	10
XP721	145	2826	59.9	43.7	34.5	42	77	137	95	26.3	15
XP723	142	3375	65.3	52.9	35.8	48	90	138	95	25.4	10
Banks	138	3062	60.1	49.0	39.8	47	98	141	95	20.8	7
MS05Y33	136	3241	65.7	52.9	37.3	42	93	140	95	26.3	10
Clearfield 161	124	2475	57.5	44.5	36.4	46	93	138	95	21.2	30
Clearfield XP730	120	2630	61.2	49.1	35.1	50	88	136	95	24.3	20
XP710	99	2067	61.8	46.4	36.4	46	91	141	95	29.3	10

¹Planting date: April 5. Emerged: April 19. Herbicides: Command® at 1 gallon to 10 acres plus Roundup® at 1 qt/A on April 27. Fertilizer: Ammonium sulfate at 100 lb/A on April 27; urea at 250 lb/A on May 24 and 100 lb/A on June 18 and July 5. Permanent flood: May 24. Insecticides: Prolex® at 1 gallon to 80 acres on June 10; Karate® at 1 gallon to 70 acres on August 10. Fungicides: Stratego® at 1 gallon to 9 acres on July 16. Drained field: August 20. NOTE: All hybrids were fertilized according to the cooper-ator's practice and not by RiceTec recommendations.

²Rough rice at 12% moisture. A difference of 46 bu/A is required for one variety to differ from another at the 5% significance level. C.V. = 18.7%.

³Days after emergence.

⁴Weight of 1,000 kernels.

⁵Sheath blight rating using average percent of plants infected on a plot basis.

Table 5. Performance of long-grain rice varieties, hybrids, and lines grown on Tunica clay soil near Stoneville, Washington County, Mississippi, 2005.¹

Variety or line	Grain yield ²	Milled head rice	Milling yield		Bushel weight	Plant height	50% heading ³	Maturity ³	Lodging	1000 seed weight ⁴	Sheath blight ⁵
			Total	Whole							
	<i>bu/A</i>	<i>lb/A</i>	%	%	<i>lb</i>	<i>in</i>	<i>days</i>	<i>days</i>	%	<i>g</i>	%
XP710	209	4482	63.1	47.8	38.0	42	79	124	80	29.6	0
Pace	203	3921	62.8	43.0	39.5	39	81	125	10	27.8	5
Banks	194	3765	62.2	43.2	42.4	46	83	125	0	24.9	0
MS05Y04	193	3415	60.4	39.3	42.5	44	79	120	20	24.8	10
Priscilla	188	3577	60.0	42.3	40.5	37	79	124	20	27.8	0
Cocodrie	185	4065	62.5	48.8	41.9	42	80	124	0	24.9	0
XP721	183	3589	61.0	43.7	38.4	42	68	118	85	28.8	0
MS05Y29	183	4176	61.1	50.8	42.6	40	82	126	0	24.6	0
Cheniere	182	3815	63.2	46.6	41.2	39	80	124	3	22.9	5
Sabine	178	3699	61.0	46.1	42.0	39	81	119	0	24.8	0
Presidio	178	3585	62.6	44.8	39.4	39	77	122	5	24.1	5
Wells	177	3232	63.0	40.5	42.7	45	81	124	0	27.0	0
Clearfield XL8	177	3142	59.8	39.4	37.8	47	77	122	5	26.0	10
Clearfield XP730	175	3446	60.2	43.7	37.8	50	78	121	8	26.0	0
MS05Y33	171	3944	62.9	51.3	39.3	43	82	125	0	29.0	0
Clearfield 161	162	3676	63.7	50.3	41.8	43	82	123	8	23.8	15
Cybonnet	157	3408	62.8	48.2	41.3	40	81	124	38	25.1	0
XP723	157	3040	59.2	43.0	37.3	46	76	120	0	26.9	0
Clearfield 131	156	3206	61.1	45.7	40.8	36	80	120	0	24.1	0
Trenasse	147	2924	59.8	44.1	40.4	43	74	121	84	25.7	0

¹Planting date: April 28. Emerged: May 12. Herbicides: Command® at 1 gallon to 8 acres on May 5; Stam® at 3 qt/A plus Facet® at 0.5 lb/A plus Prowl® at 2.1 pt/A on May 18; Riceshot® at 3 qt/A plus Bolero® at 4 pt/A plus Permit® at 1.1 oz/A on June 6. Fertilizer: Ammonium sulfate at 620 lb/A on June 7; urea at 90 lb/A on July 13. Date flushed: May 9, 18, and 24. Permanent flood: June 8. Drained field: August 28. NOTE: All hybrids were fertilized according to the cooper-ator's practice and not by RiceTec recommendations.

²Rough rice at 12% moisture. A difference of 21 bu/A is required for one variety to differ from another at the 5% significance level. C.V. = 5.9%.

³Days after emergence.

⁴Weight of 1,000 kernels.

⁵Sheath blight rating using average percent of plants infected on a plot basis.

Table 6. Performance of long-grain rice varieties, hybrids, and lines grown on Sharkey clay soil near Hollandale, Washington County, Mississippi, 2005.¹

Variety or line	Grain yield ²	Milled head rice	Milling yield		Bushel weight	Plant height	50% heading ³	Maturity ³	Lodging	1000 seed weight ⁴	Sheath blight ⁵
			Total	Whole							
	<i>bu/A</i>	<i>lb/A</i>	%	%	<i>lb</i>	<i>in</i>	<i>days</i>	<i>days</i>	%	<i>g</i>	%
MS05Y33	262	5831	64.9	49.5	38.8	40	88	147	100	29.0	7
MS05Y04	261	4135	62.1	35.4	40.5	38	85	140	100	24.7	0
Pace	261	4027	65.1	34.4	40.5	40	90	140	100	26.6	0
Presidio	251	5178	65.4	45.9	39.3	38	85	140	100	24.7	0
Banks	250	5249	63.6	46.7	42.3	46	93	144	100	22.6	0
Wells	249	4164	62.1	37.1	41.8	41	90	145	100	24.5	0
Sabine	237	5601	65.5	52.6	42.5	40	91	142	100	24.7	0
Priscilla	232	4025	63.3	38.4	40.5	41	89	140	100	27.5	0
Cocodrie	229	4597	62.4	44.7	40.5	39	89	143	100	23.5	0
Clearfield XL8	226	4318	64.7	42.5	37.5	45	88	138	100	24.1	0
Clearfield XP730	226	4561	63.2	45.1	36.5	48	88	135	100	25.9	3
XP721	225	3611	63.1	35.6	38.1	38	81	134	100	29.1	0
XP723	224	4452	63.2	44.3	37.2	44	86	141	100	26.9	3
Cheniere	221	4136	65.3	41.5	40.2	38	91	141	100	21.7	0
XP710	216	3656	63.4	37.9	36.4	43	90	143	100	28.3	0
MS05Y29	215	5148	63.0	53.3	41.7	43	92	150	87	24.6	0
Cybonnet	214	3983	63.5	40.9	41.6	40	90	141	100	23.9	7
Clearfield 161	212	4452	62.5	47.0	39.7	42	92	143	100	21.4	0
Clearfield 131	204	4205	64.1	45.9	39.2	38	90	142	100	22.7	3
Trenasse	200	3028	57.2	33.5	38.0	39	81	140	100	25.6	7

¹Planting date: April 4. Emerged: April 17. Herbicides: Stam EDF® at 5 lb/A plus Facet® at 0.5 lb/A plus Prowl H₂O® at 1 qt/A on May 4; Permit® at 0.5 oz/A on May 19; Clincher® at 15 oz/A plus crop oil concentrate at 1 qt/A on June 2. Fertilizer: Ammonium sulfate at 100 lb/A on May 5; urea (Agrotain® treated) at 125 lb/A on May 20; urea at 125 lb/A on May 30 and 100 lb on June 14 and June 21. Date flushed: May 5. Permanent flood: May 20. Insecticide: Prolex® at 1 gallon to 80 acres on May 19 and July 23. Fungicide: Stratego® at 14 oz/A on July 3. Drained field: August 6. NOTE: All hybrids were fertilized according to the cooperators practice and not by RiceTec recommendations.

²Rough rice at 12% moisture. A difference of 29 bu/A is required for one variety to differ from another at the 5% significance level. C.V. = 7.7%.

³Days after emergence.

⁴Weight of 1,000 kernels.

⁵Sheath blight rating using average percent of plants infected on a plot basis.

Table 7. Performance of long-grain rice varieties, hybrids, and lines grown on Sharkey clay soil near Rolling Fork, Sharkey County, Mississippi, 2005.¹

Variety or line	Grain yield ²	Milled head rice	Milling yield		Bushel weight	Plant height	50% heading ³	Maturity ³	Lodging	1000 seed weight ⁴	Sheath blight ⁵
			Total	Whole							
	<i>bu/A</i>	<i>lb/A</i>	%	%	<i>lb</i>	<i>in</i>	<i>days</i>	<i>days</i>	%	<i>g</i>	%
MS05Y29	185	4600	62.7	55.3	41.8	43	83	127	5	24.1	0
Wells	183	4068	64.1	49.4	41.4	46	83	127	7	25.1	3
Clearfield 131	181	4549	64.6	55.7	40.4	37	81	123	0	25.3	0
Cheniere	180	3745	62.4	46.3	39.6	39	83	125	23	22.2	7
Pace	176	3841	63.4	48.2	41.7	39	85	124	33	27.2	0
Cocodrie	175	4119	63.6	52.5	41.4	41	84	126	0	24.3	0
Clearfield XL8	168	3286	60.6	43.4	36.5	48	81	124	12	23.2	3
Priscilla	168	3465	60.8	45.8	40.1	39	85	126	53	27.0	0
Cybonnet	163	4152	65.4	56.7	42.0	43	83	124	7	26.5	10
MS05Y04	161	3395	62.7	46.7	42.2	42	82	124	50	23.9	10
Sabine	159	3827	61.5	53.4	41.9	40	84	125	34	23.3	8
Presidio	157	3789	65.2	53.5	40.6	39	81	119	8	24.5	3
MS05Y33	157	3975	66.4	56.0	39.1	42	84	126	32	28.0	17
Banks	155	3241	60.8	46.2	40.0	48	86	127	50	22.8	0
Clearfield XP730	154	3424	62.4	49.5	36.5	49	80	125	20	25.8	0
XP710	152	3494	64.4	51.1	37.2	44	84	126	38	28.5	0
Trenasse	151	3207	59.9	47.3	38.1	41	76	124	60	25.9	0
XP723	150	3334	61.2	49.4	36.5	48	80	127	32	26.2	3
Clearfield 161	139	3285	62.7	52.4	40.5	44	85	126	57	21.4	3
XP721	111	2308	62.9	46.2	36.4	41	73	122	28	26.4	0

¹Planting date: April 28. Emerged: May 12. Herbicides: Stam EDF® at 5 lb/A plus Aim® at 1.25 oz/A plus Permit® at 0.5 oz on May 26; Clincher® at 15 oz/A plus crop oil concentrate at 1 qt/A on June 20; Blazer® at 1 gallon to 16 acres on July 15. Fertilizer: Ammonium sulfate at 100 lb/A on May 26; urea at 250 lb/A on June 10 and 100 lb/A on June 30 and July 10. Date flushed: May 27. Permanent flood: June 16. Insecticide: Prolex® at 1 gallon to 84 acres on June 22. Fungicide: Propimax® at 6 oz/A on July 28. Drained field: August 29. NOTE: All hybrids were fertilized according to the cooperators practice and not by RiceTec recommendations.

²Rough rice at 12% moisture. A difference of 21 bu/A is required for one variety to differ from another at the 5% significance level. C.V. = 7.6%.

³Days after emergence.

⁴Weight of 1,000 kernels.

⁵Sheath blight rating using average percent of plants infected on a plot basis.

Table 8. Average rough rice yields of long-grain varieties, hybrids, and lines evaluated in on-farm tests at seven locations, 2005.

Variety or line	Location							Average
	Tunica	Clarksdale	Pace	Blaine	Stoneville	Hollandale	Rolling Fork	
	<i>bu/A</i>	<i>bu/A</i>	<i>bu/A</i>	<i>bu/A</i>	<i>bu/A</i>	<i>bu/A</i>	<i>bu/A</i>	<i>bu/A</i>
Pace	157	157	160	183	203	261	176	184
XP710	226	204	187	99	209	216	152	183
MS05Y04	163	180	159	149	193	261	161	180
Priscilla	170	165	151	183	188	232	168	179
Wells	152	169	161	154	177	249	183	178
Sabine	167	167	156	184	178	237	159	177
Clearfield XL8	181	178	156	147	177	226	168	176
Cocodrie	169	166	137	171	185	229	175	176
Presidio	171	140	149	166	178	251	157	173
MS05Y29	169	134	160	154	183	215	185	171
MS05Y33	167	161	157	136	171	262	157	171
Banks	161	161	135	138	194	250	155	170
Cheniere	157	126	167	151	182	221	180	168
XP723	171	162	150	142	157	224	150	165
Cybonnet	146	177	131	149	157	214	163	163
XP721	179	139	154	145	183	225	111	162
Clearfield XP730	175	160	123	120	175	226	154	161
Clearfield 131	153	153	122	154	156	204	181	161
Clearfield 161	148	138	125	124	162	212	139	149
Trenasse	146	85	96	148	147	200	151	139
Mean	160	154	145	149	173	232	165	168
LSD 0.05	25	38	25	46	21	29	21	23
CV %	10	15	11	19	6	8	8	22
Date Planted	4/18	4/4	4/5	4/5	4/28	4/4	4/28	

Table 9. Annual and average grain yields and agronomic characteristics of long-grain commercial varieties grown at the Delta Research and Extension Center, Stoneville, Mississippi, 1990-2004.

Variety ¹	Origin ²	Grain yield ³			Years in test	Milling yield		Plant height	50% heading	Lodging	Bushel weight
		2004	Avg.	3-yr avg.		Total	Whole				
		<i>bu/A</i>	<i>bu/A</i>	<i>bu/A</i>	<i>no.</i>	<i>%</i>	<i>%</i>	<i>in</i>	<i>days</i>	<i>%</i>	<i>lb</i>
Banks	AR	203	195	199	5	68.0	50.3	44	89	33	43.5
Cheniere	LA	206	185	191	5	67.4	54.1	36	85	6.8	42.2
Cocodrie	LA	200	180	194	10	68.0	56.4	39	82	0.4	43.0
Cybonnet	AR	171	171	170	5	68.6	59.2	39	87	0.5	43.7
Dellrose	LA	160	152	174	14	68.3	52.9	41	82	4	43.6
Dixiebelle	TX	108	147	139	15	68.4	57.4	34	83	0	42.9
Francis	AR	196	204	198	6	66.4	51.4	39	85	1.0	43.4
Jefferson	TX	161	151	159	11	67.2	52.1	37	78	1.6	41.7
Pace	MS	156	175	173	4	67.2	52.2	36	89	15	42.6
Priscilla	MS	157	174	171	11	67.2	52.3	39	85	2.6	43.4
Sabine	TX	112	159	155	4	65.4	52.0	29	88	0	43.0
Trenasse	LA	183	179	179	3	63.7	51.7	40	83	10	40.8
Wells	AR	190	184	186	9	69.4	48.2	42	82	0	44.7

¹Dellrose = long-grain aromatic; Dixiebelle and Sabine have the Rexmont cooking and processing qualities.

²Origin: AR = Arkansas, LA = Louisiana, MS = Mississippi, TX = Texas.

³In 2002 and 2004, variable size areas of stunted plant growth and development occurred at random across the tests affecting results and variety performance.

Table 10. Average agronomic and milling performance of long-grain varieties, hybrids, and lines grown at seven on-farm locations, 2005.

Variety or line	Origin ¹	Average yield ²		Milling yield		Plant height	50% heading ³	Maturity ³	Lodging	1000 seed weight ⁴	Sheath blight ⁵	Approximate seed/pound
		Rough rice	Head rice	Total	Whole							
		bu/A	lb/A	%	%	in	days	days	%	g	%	no.
Pace	MS	184	3790	63.6	46.7	40	88	132	43	26.6	3	17052
XP710	RT	183	4029	64.2	48.7	44	88	134	54	28.9	3	15695
MS05Y04	MS	180	3451	62.1	43.0	41	86	132	67	23.1	13	19536
Priscilla	MS	179	3796	62.4	47.5	39	88	133	52	26.7	4	16988
Wells	AR	178	3717	64.5	47.2	42	90	137	49	25.2	8	18000
Sabine	TX	177	4259	64.0	53.3	39	89	133	51	24.0	10	18900
Clearfield XL8	RT	176	3672	63.4	46.5	45	86	131	47	24.2	7	18743
Cocodrie	LA	176	4079	63.6	52.1	40	88	136	53	23.7	7	19139
Presidio	TX	173	3918	64.9	50.8	39	85	130	45	23.6	10	19220
MS05Y29	MS	171	4260	63.0	55.4	41	89	137	27	24.0	3	18900
MS05Y33	MS	171	4138	65.1	54.0	41	89	137	44	27.6	10	16434
Banks	AR	170	3675	62.5	48.3	45	93	137	59	23.1	5	19636
Cheniere	LA	168	3677	64.2	49.2	38	88	134	47	21.5	9	21097
XP723	RT	165	3831	64.1	52.0	45	84	133	47	26.4	4	17181
Cybonnet	AR	163	3903	65.6	53.7	40	88	133	45	24.0	11	18900
XP721	RT	162	3387	63.3	47.1	40	77	129	48	27.8	5	16316
Clearfield XP730	RT	161	3609	63.3	50.1	47	84	130	58	25.1	8	18071
Clearfield 131	LA-H	161	3774	64.3	52.3	36	88	134	37	23.0	12	19721
Clearfield 161	LA-H	149	3386	62.4	50.6	42	90	134	64	21.9	18	20712
Trenasse	LA	139	2781	60.1	45.3	41	80	130	74	25.3	12	17929
Mean		168	3796	63.9	50.5	40	87	133				
LSD 0.05		23	497	2.2	3.8	2	4	5				
CV %		22.0	21.1	5.7	12.0	6.4	8.2	6.1				

¹ Origin: AR = Arkansas; LA = Louisiana; LA-H = Louisiana origin and seed marketing done by Horizon Ag, LLC; MS = Mississippi; RT = RiceTec, Inc.; TX = Texas.

² Rough rice at 12% moisture.

³ Days after emergence.

⁴ Weight of 1,000 kernels at 12% moisture.

⁵ Sheath blight rating using average percent of plants infected.

Variety or line	Grain yield ²										3-year avg. ³	Total tests	Milling yield ⁴		Plant height	Days to ⁵ Heading	Lodging	1000 seed weight ⁶	Sheath blight ⁷						
	1999	2000	2001	2002	2003	2004	2005	Avg.	bu/A	bu/A			Total	Whole						Bushel weight	no.	no.	no.	%	%
	bu/A	bu/A	bu/A	bu/A	bu/A	bu/A	bu/A	bu/A	bu/A	bu/A			%	%						lb	in	no.	no.	%	%
Priscilla	177	182	198	178	192	196	179	179	189	84	68.9	53.6	42.1	39	83	127	9	27.5	23						
Cocodrie	179	190	182	180	195	209	176	180	193	63	67.9	57.0	42.0	40	83	129	15	24.1	33						
Wells	188	196	195	183	200	201	178	190	193	56	69.6	50.8	43.6	42	83	129	17	25.4	26						
Clearfield 161	-	-	148	157	169	185	149	162	168	35	67.4	58.0	42.0	40	84	132	38	21.8	26						
Cheniere	-	-	-	-	199	212	168	193	193	21	69.3	58.3	42.6	37	87	132	20	21.9	18						
Clearfield XL8	-	-	-	-	199	228	176	199	199	21	68.7	50.0	39.7	44	83	129	40	24.1	22						
XP710	-	-	-	-	219	215	183	206	206	21	68.1	54.0	39.5	43	87	133	35	29.1	5						
Cybonnet	-	-	-	-	185	186	163	178	178	21	69.7	60.4	43.8	39	85	129	20	24.0	6						
XP723	-	-	-	-	-	232	165	199	-	14	68.9	59.3	39.6	44	83	131	34	26.7	4						
Banks	-	-	-	-	-	196	170	183	-	14	67.8	56.4	43.1	45	90	136	41	23.5	3						
Sabine	-	-	-	-	-	183	177	180	-	14	68.0	60.1	43.5	38	87	130	31	24.1	6						
Clearfield 131	-	-	-	-	-	-	161	161	-	7	64.3	52.3	43.4	36	88	134	37	23.0	12						
Clearfield XP730	-	-	-	-	-	-	161	161	-	7	63.3	50.1	37.4	47	84	130	58	25.1	8						
Pace	-	-	-	-	-	-	184	184	-	7	63.6	46.7	38.5	40	88	132	43	26.6	3						
Presidio	-	-	-	-	-	-	173	173	-	7	64.9	50.8	39.9	39	85	130	45	23.6	10						
Trenasse	-	-	-	-	-	-	139	139	-	7	60.1	45.3	38.7	41	80	130	74	25.3	12						
XP721	-	-	-	-	-	-	162	162	-	7	63.3	47.1	37.6	40	77	129	48	27.8	5						

¹Test locations were in farmers' fields extending from the northern to the southern Delta area.

²Rough rice at 12% moisture. Data columns for 1990 to 1998 were omitted, but their numbers were included in the average yield and total test numbers.

³Average of the three most recent years tested.

⁴Values for milling and agronomic characteristics are accumulated means over all years of testing.

⁵Days after emergence

⁶Weight of 1,000 kernels at 12% moisture.

⁷Sheath blight rating using average percent of plants infected on a plot basis.

Table 12. Reactions of rice varieties to common diseases.¹

Variety	Blast	Sheath blight	Kernel smut	Straight head	Brown leaf spot	Narrow brown leaf spot	Leaf smut	Stem rot	False smut
Banks	MS	MS	VS	MS	R	R	MR	S	S
Cheniere	S	MS	VS	MR	MR	MS	MR	—	—
Clearfield 131	MS	VS	—	MS	—	—	—	—	—
Clearfield 161	MS	VS	S	MS	—	—	—	—	S
Clearfield XL-8	R	MS	MS	MR	MR	R	R	S	MS
Clearfield XP730	R	MS	MS	MR	—	—	—	S	MS
Cocodrie	MR	S	VS	S	MR	MR	MS	S	S
Cybonnet	R	MS	VS	MS	R	MR	MR	S	S
Dixiebelle	MS	VS	—	MS	MS	R	R	S	—
Francis	S	MS	S	MS	MS	MR	MS	—	—
Jefferson	MS	MS	S	MS	MR	MR	MR	MS	MR
Pace	MS	MS	—	—	—	—	—	—	—
Priscilla	MS	MS	S	MR	R	MR	MR	S	S
Presidio	MS	S	—	—	—	—	—	—	—
Sabine	MS	VS	—	—	R	R	R	—	—
Trenasse	S	S	—	—	—	—	—	—	—
Wells	S	MS	MR	MR	MR	R	MS	S	S
XP-710	R	MR	MS	S	R	R	R	MS	MS
XP-721	R	MS	—	S	—	—	—	—	—
XP-723	R	MS	MS	MS	MR	R	R	S	MS

¹Abbreviations: R = resistant, MR = moderately resistant, MS = moderately susceptible, S = susceptible, VS = very susceptible. Note: These ratings are subject to change as new or further information may become available.

Table 13. Nitrogen fertility rate guidelines.

Variety	Clay soils			Silt loam soils ¹		
	Preflood	Midseason	Boot split	Preflood	Midseason	Boot split
	lb/A	lb/A	lb/A	lb/A	lb/A	lb/A
Cheniere	120-150	30-60	0	90-120	30-60	0
Clearfield 131	120	60	0	120-150	30-60	0
Clearfield 161	90-120	60	0	90-120	30	0
Cybonnet	120-150	60	0	120	60	0
Dixiebelle	90-120	60	0	90-120	60	0
Francis	90-120	30-60	0	90-120	30-60	0
Pace	150	30-60	0	90-120	60	0
Priscilla	120-150	60	0	90-120	60	0
Trenasse	90-120	60	0	90	30-60	0
Wells	90-120	30-60	0	90-120	30-60	0
Hybrids						
Clearfield XL8	120	0	30	90	0	30-60
Clearfield XL730	120	0	60	90	0	60
Clearfield XL723	120	0	30-60	90	0	60
Clearfield XL710	120	0	30	90	0	30

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