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MISSISSIPPI RICE

VARIETY TRIALS, 2002

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-1620 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.

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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, 2002

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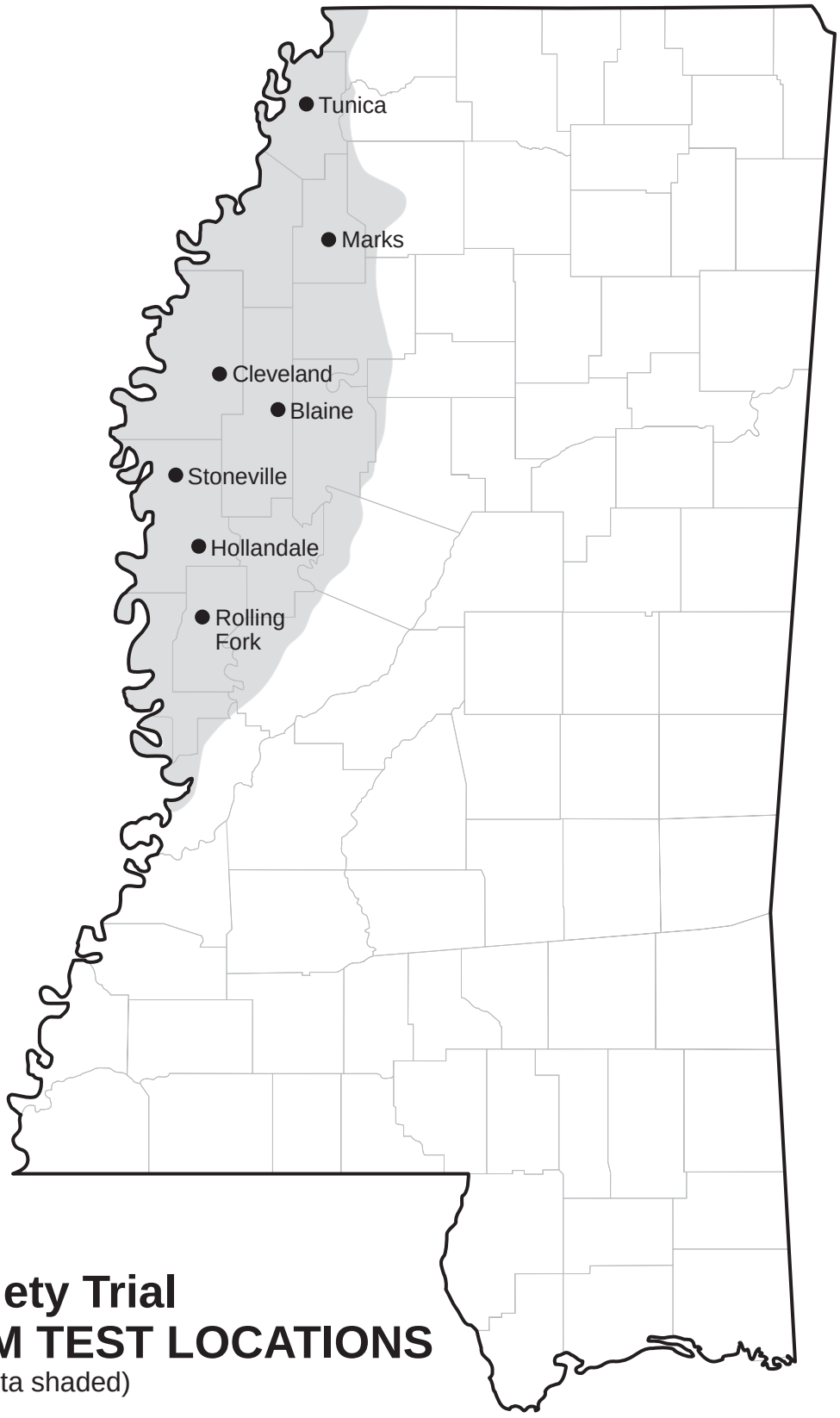

Rice Variety Trial
ON-FARM TEST LOCATIONS

(Mississippi Delta shaded)

Mississippi Rice Variety Trials, 2002

Introduction

In 2002, approximately 268,666 acres of rice were planted in 15 Delta counties of Mississippi compared with 254,000 acres planted in 2001. Bolivar County had the highest planted acreage at 79,050 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 68% of the rice acreage followed by Priscilla at 15%, Lemont at 6%, Wells at 5%, and other varieties at 6%.

The on-farm 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 on-farm test locations ranged from low to high in 2002. 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 14 to May 2, which are within the typical period for planting rice in the Delta. Two tests (Cleveland and Rolling Fork) were planted into conventionally prepared seedbeds and the other five were planted into stale seedbeds. Early-season showers relieved the need for flushing in some fields to obtain a stand. Light to moderate sheath blight infection developed on susceptible entries at the Tunica, Cleveland, Stoneville, and Hollandale sites. However, moderate to high incidence of sheath blight occurred at the Marks location. Soil samples were taken at planting within the test area at each location. All results indicated nutrient levels were high at each location except at the Blaine location where sulfur was low and zinc was at the medium level.

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. Other sources of information may include past production experience with a particular variety and consulting with local and state rice Extension personnel. Data summarized over locations and years are generally a more reliable measure to show future variety performance than individual test results.

TEST PROCEDURES

Seventeen long-grain varieties and breeding lines were included in the variety test planted at each of the seven locations. Each test consisted of four replications. All plots consisted of seven rows drill-seeded at an equivalent seeding rate of 108 pounds per acre at a depth of approximately 1 inch. 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 performed by the cooperator and varied by location. Overall, the tests were grown under conditions of high productivity. The field management practices 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 *2002 Weed Control Guidelines for Mississippi* (Mississippi State University Extension Service/Mississippi Agricultural and Forestry Experiment Station Pub. No. 1532)].

Agronomic data were collected at appropriate times during the season. Sheath blight ratings were obtained on a plot-wise basis at six locations. Blast ratings were not taken because the disease never developed sufficiently to obtain reliable data in the blast nursery at Stoneville. Plots were hand-harvested, and 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 from each location. 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, they may be considered significantly different.

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 1-6 and 10-11). Average test yields ranged from 148 bushels per acre at Blaine to 203 bushels per acre at Hollandale. The higher CVs for the variety tests at Tunica and Blaine indicate that a problem existed at those two locations. The problem at Tunica was a moderate red rice infestation within the test. Competition from red rice reduced grain yield and milling quality in some plots. Moderate to severe sheath blight and lodging were mostly responsible for the lower yields and milling quality at the Marks test this year. A soil fertility problem existed within the test at the Blaine location generally reducing yields throughout the whole test. Maturity was hastened in some blocks within the test and delayed much too long in others. Whole-grain milling yields were about the same or slightly less in 2002 than they were last year. There were generally no stand problems or irregular emergence in the tests except in the fourth block in the test at Marks. Straighthead and blast were not observed in any of the on-farm tests.

Table 8 provides a seven-location summary of grain yields for eight varieties and nine experimental lines. The variety Wells ranked first and Francis ranked second in average yield (183 and 182 bushels per acre, respectively) across all seven on-farm locations (Table 10). However, they did not significantly outyield MS02Y23, MS02Y30, Cocodrie, Priscilla, MS02Y26, MS02Y32, and MS02Y37. Although MS02Y25 yielded significantly less than the first five highest yielding varieties, numerically it produced more whole-grain milled rice than all other varieties and lines in the test. This is the second year that MS02Y25 had higher whole-grain rice milling yield in the on-farm variety tests. Priscilla continues to be a high-yielding variety, averaging 178 bushels per acre in the 2002 on-farm test and averaging 179 bushels per acre over 8 years. Priscilla also has good disease and lodging resistance. However, it lodged more this year than in previous years. Its average whole-grain milling yield is slightly lower than most other commercial varieties. Cocodrie continues to be a high-yielding variety and continues to have excellent milling quality. The new long-grain rice variety Francis was released by Arkansas in 2002. This new variety was included in the on-farm tests this year for the first time. CL161 is a new variety that is tolerant to the herbicide Newpath® that controls red rice. CL161 has more tolerance to Newpath® than its predecessors CL121 and CL141. In comparison to Lemont, its grain and whole-grain milling yield is slightly higher.

Nine commercial rice varieties included in Delta Research and Extension Center tests since 1984 are provided in Table 9. The column labeled "Average grain yield" indicates the performance of individual varieties for all years they were included in these tests. Individual varieties have been tested for different numbers of years. The 3-year yield average is for comparing varieties for 1999-2001. The yield data include 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.

Average values for milling and agronomic characteristics for all locations are 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. Twelve varieties and experimental lines produced more head rice per acre than Francis, and five produced more per acre than Wells (Table 10).

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 with most occurring at the Tunica, Marks, and Rolling Fork locations (Tables 1, 2, and 7). The varieties that lodged the most in the 2002 on-farm variety tests were Francis (36%), CL161 (27%), and Ahrent (26%) (Table 10).

The long-term performance of 12 varieties in 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 2002 for commercial varieties were nearly the same as the 2001 yields.

Information on disease reactions of individual varieties is presented in Table 12.

The results of two nitrogen fertility studies comparing hybrids and conventional varieties conducted by Joe Street and Tim Walker are summarized in Table 13.

Table 1. Performance of long-grain rice varieties and lines grown on unclassified clay soil near Tunica, Tunica County, Mississippi, 2002.[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							
	bu/A	*lb/A*	*%*	*%*	*lb*	*in*	*days*	*days*	*%*	*g*	*%*
MS02Y23	221	5257	67.1	52.9	42.1	43	84	129	0	26.9	—
MS02Y37	215	5371	69.2	59.6	43.0	47	84	129	25	19.5	0.3
Priscilla	201	4840	68.2	53.6	42.5	41	86	135	1	26.0	0.3
Wells	196	4873	70.3	55.2	44.2	44	89	138	22	23.1	0.3
MS02Y30	189	4203	68.3	55.0	42.3	41	85	132	0	25.6	0.0
MS02Y25	188	5348	69.2	63.2	44.9	44	85	127	1	21.1	0.0
CL161	187	4988	68.2	60.1	42.9	41	93	135	1	21.0	1.3
Saber	187	5126	66.0	61.0	43.3	42	86	123	1	21.4	0.0
MS02Y33	185	4844	67.9	57.9	43.3	39	86	133	0	21.8	1.3
Cocodrie	178	4610	67.3	57.7	42.8	42	87	137	16	23.2	0.8
MS02Y28	175	4724	67.8	60.0	43.6	47	90	130	0	21.6	0.0
MS02Y20	175	4942	69.0	62.7	43.9	43	89	131	6	20.4	0.0
Lemont	172	4196	68.2	57.3	43.4	39	92	139	0	24.9	0.3
Francis	168	3911	67.5	51.7	41.5	43	86	138	50	21.5	0.8
MS02Y26	166	3827	68.1	51.2	41.6	41	84	131	0	25.8	0.5
Ahrent	166	3889	64.4	52.3	41.1	44	83	131	8	21.6	0.0
MS01Y32	151	3731	66.3	54.5	42.7	37	89	137	0	24.5	0.0

[1]**Planting date**: April 16. **Emerged**: May 2. **Herbicides**: Command® at 1 gallon to 7 acres on April 17; Stam® at 4 lb/A on May 14; Grandstand® at 1 pt/A on June 12. **Fertilizer**: Ammonium sulfate at 200 lb/A on May 4; urea at 265 lb/A on May 15; urea at 70 lb/A on June 20 and June 30. **Permanent flood**: May 15. **Insecticide**: Karate Z® at 1 gallon to 66 acres on July 31; methyl parathion at .25 lb/A on August 21. **Fungicide**: Tilt® at 6 oz/A on July 11; Quadris® at 1 gallon to 15 acres on July 31. **Drained field**: August 21.
[2]Rough rice at 12% moisture. A difference of 57 bu/acre is required for one variety to differ from another at the 5% probability level. C.V. = 24.1%.
[3]Days after emergence.
[4]Weight of 1000 kernels.
[5]Sheath blight rating is the visually estimated infected area within the plots.

Table 2. Performance of long-grain rice varieties and lines grown on Crowder sandy clay soil near Marks, Quitman County, Mississippi, 2002.[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							
	bu/A	*lb/A*	*%*	*%*	*lb*	*in*	*days*	*days*	*%*	*g*	*%*
Saber	181	4971	68.1	60.9	43.5	43	84	122	0	21.3	10.3
MS02Y23	172	3562	65.8	45.9	40.3	44	85	132	51	25.1	3.3
MS02Y30	172	3332	67.1	43.2	39.5	42	85	138	38	26.1	4.5
MS02Y25	169	4864	69.9	63.9	43.8	44	87	130	0	21.4	10.5
MS02Y26	167	3288	67.2	43.8	39.9	42	87	137	43	25.1	5.5
Wells	166	3690	70.0	49.6	43.0	43	87	134	15	23.8	18.8
Cocodrie	165	3671	66.0	49.5	41.2	44	87	140	26	22.3	18.8
MS02Y32	165	3784	67.3	50.9	40.6	41	87	136	13	22.4	18.8
MS02Y20	162	4679	70.4	64.1	43.1	44	90	136	6	21.2	9.5
Priscilla	159	2978	66.0	41.7	40.5	42	86	138	71	26.7	5.5
MS02Y28	152	3637	66.2	53.2	41.9	46	89	134	29	22.0	2.5
Ahrent	148	3016	64.9	45.3	39.9	44	84	135	83	21.6	16.8
Francis	142	2447	61.7	38.6	39.2	43	83	139	19	20.1	22.5
MS02Y37	138	3726	69.3	59.9	42.1	45	84	128	6	18.5	22.5
MS02Y33	135	2813	66.0	45.7	41.1	43	87	140	1	20.6	57.5
CL161	128	3131	66.3	53.7	40.9	43	93	138	13	19.6	38.8
Lemont	123	2463	68.8	44.4	39.7	38	92	131	56	23.3	87.5

[1]**Planting date**: April 16. **Emerged**: May 3. **Herbicides**: Command® at 1 gallon to 5 acres plus Facet® at .5 lb/A plus Permit® at .5 oz/A on April 17. **Fertilizer**: Urea at 200 lb/A on May 18 and 100 lb/A on July 2 and July 12. **Permanent flood**: May 20. **Insecticide**: Karate Z® at 1 gallon to 60 acres on August 3. **Fungicide**: Tilt® at 6 oz/A on July 24. **Drained field**: August 20.
[2]Rough rice at 12% moisture. A difference of 17 bu/acre is required for one variety to differ from another at the 5% probability level. C.V. = 8.3%.
[3]Days after emergence.
[4]Weight of 1000 kernels.
[5]Sheath blight rating is the visually estimated infected area within the plots.

Table 3. Performance of long-grain rice varieties and lines grown on Dowling clay soil near Cleveland, Bolivar County, Mississippi, 2002.[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							
	bu/A	*lb/A*	*%*	*%*	*lb*	*in*	*days*	*days*	*%*	*g*	
Wells	194	4240	69.3	48.4	44.6	43	78	125	3	24.8	5.5
Cocodrie	192	4719	66.3	54.5	43.6	41	79	124	0	23.3	5.0
MS02Y37	180	4819	67.7	59.6	44.7	45	82	120	0	20.7	6.0
MS02Y32	178	3948	65.8	49.2	42.6	38	77	120	0	23.7	5.8
Francis	177	3434	65.0	42.5	42.3	40	75	124	6	20.5	6.5
MS02Y20	175	5032	68.4	64.0	44.3	44	79	114	0	22.4	4.3
Ahrent	173	3546	63.7	45.1	41.9	42	77	119	8	21.8	6.5
Priscilla	173	3637	64.3	46.8	43.0	39	79	112	0	27.0	6.3
MS02Y33	171	4028	68.0	52.2	43.4	39	79	125	0	22.6	7.0
MS02Y23	168	3884	66.3	51.3	43.1	38	77	111	0	27.7	4.0
MS02Y26	167	3481	65.3	46.3	42.6	39	77	114	0	26.1	3.5
MS02Y28	166	3912	65.4	52.1	43.6	41	80	116	0	23.2	4.8
MS02Y25	165	4695	67.6	63.4	44.9	43	79	114	0	21.7	3.5
MS02Y30	163	3728	66.8	50.9	42.2	38	77	113	0	25.9	4.8
CL161	162	4284	67.2	58.6	43.0	40	82	121	0	21.5	5.0
Saber	159	4353	66.1	60.9	43.8	39	76	109	0	21.9	5.0
Lemont	143	3292	67.9	51.3	42.5	35	83	120	0	25.0	7.0

[1]**Planting date**: April 17. **Emerged**: May 2. **Herbicides**: Command® at 1 gallon to 6 acres plus 10 gallons of ammonium thiosulfate on April 17; 2-4-D at 1 qt/A on June 18. **Fertilizer**: Urea at 300 lb/A on May 19; urea at 100 lb/A on June 18. **Permanent flood**: May 19. **Fungicide**: Propimax® at 4 oz/A on July 15. **Drained field**: August 14.
[2]Rough rice at 12% moisture. A difference of 18 bu/A is required for one variety to differ from another at the 5% probability level. C.V. = 7.5%.
[3]Days after emergence.
[4]Weight of 1000 kernels.
[5]Sheath blight rating score using a 0 (least susceptible) to 9 (most susceptible) scale.

Table 4. Performance of long-grain rice varieties and lines grown on Forestdale silty loam soil near Blaine, Sunflower County, Mississippi, 2002.[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							
	bu/A	*lb/A*	*%*	*%*	*lb*	*in*	*days*	*days*	*%*	*g*	*%*
Francis	183	4431	68.7	53.4	44.7	40	88	130	1	23.0	0.8
Lemont	165	3987	68.9	53.5	45.2	34	97	131	0	24.9	0.0
MS02Y26	163	3536	67.9	48.2	44.4	36	91	128	0	28.8	0.0
MS02Y25	160	4556	68.5	63.5	46.3	39	89	124	0	23.0	0.0
CL161	159	4305	67.6	60.0	44.5	36	94	131	0	23.2	0.0
MS02Y33	159	4134	68.2	57.7	45.1	36	91	131	0	22.7	0.0
MS02Y20	157	4245	67.8	60.0	45.8	37	92	126	0	25.3	0.0
Cocodrie	156	4079	67.3	58.1	45.3	36	88	128	0	25.1	0.0
MS02Y32	155	3854	66.5	55.2	43.7	36	91	130	0	24.7	0.0
MS02Y37	155	3936	66.8	56.0	45.2	41	94	131	0	22.7	0.0
Wells	153	3422	67.9	49.6	45.7	37	90	128	0	25.0	0.0
Priscilla	150	3558	66.5	52.1	44.8	36	97	132	0	25.7	0.0
MS02Y30	149	3467	67.1	51.8	43.8	37	97	133	0	28.4	0.0
MS02Y23	138	2961	65.4	47.6	43.9	35	92	127	0	29.8	0.0
Saber	136	3670	67.2	60.1	44.8	38	93	127	0	22.1	0.0
Ahrent	133	2943	66.1	48.7	43.5	40	87	123	10	22.9	0.0
MS02Y28	127	3137	65.8	55.0	45.0	37	94	128	0	24.6	0.0

[1]**Planting date**: April 14. **Emerged**: May 1. **Herbicides**: Command® at 1 gallon to 6 acres plus Aim® at .5 oz/A plus Glyfos Herbicide® at 1.5 pt/A on April 23; Permit® at .5 oz/A plus Aim® at .75 oz/A on May 20. **Fertilizer**: Urea at 300 lb/A on May 25. **Date flushed**: April 24. **Permanent flood**: May 26. **Insecticide**: Fury® at 1 gallon to 40 acres on May 30. **Drained field**: August 29.
[2]Rough rice at 12% moisture. A difference of 29 bu/A is required for one variety to differ from another at the 5% probability level. C.V. = 13.7%.
[3]Days after emergence.
[4]Weight of 1000 kernels.
[5]Sheath blight rating is the visually estimated infected area within the plots.

Table 5. Performance of long-grain rice varieties and lines grown on Tunica clay soil near Stoneville, Washington County, Mississippi, 2002.[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							
	bu/A	*lb/A*	*%*	*%*	*lb*	*in*	*days*	*days*	*%*	*g*	*%*
Francis	196	4487	63.8	50.9	43.0	43	82	126	0	23.4	0.3
Wells	189	4214	65.6	49.7	44.3	42	84	127	0	27.9	0.0
Cocodrie	183	4444	63.8	54.0	43.6	42	82	125	0	24.8	0.0
MS02Y30	180	4427	66.1	54.8	42.7	39	83	123	0	27.5	0.3
Saber	175	4849	66.4	61.6	43.1	43	82	118	0	22.9	0.5
MS02Y32	174	4191	63.9	53.5	42.5	34	85	125	0	23.8	0.0
MS02Y26	171	3807	65.0	49.3	42.6	39	84	125	0	26.9	0.0
Priscilla	169	3991	64.4	52.4	43.3	40	85	122	0	27.5	0.0
MS02Y23	169	4066	64.5	53.3	42.9	40	84	123	0	27.2	0.0
Ahrent	169	3762	62.2	49.4	40.9	44	79	122	0	23.5	0.0
MS02Y37	164	4070	63.8	55.3	42.7	47	85	125	0	22.3	0.0
MS02Y33	163	4209	64.0	57.3	42.6	41	85	126	0	24.0	0.0
MS02Y25	155	4228	65.3	60.7	43.7	43	86	121	0	22.7	0.3
MS02Y28	154	3939	64.5	56.9	43.4	41	88	124	0	24.1	0.0
CL161	154	3995	64.4	57.8	42.0	41	87	126	0	22.6	0.3
MS02Y20	149	3997	64.4	59.7	43.5	42	85	120	1	23.2	0.0
Lemont	136	2932	64.4	47.8	40.5	39	87	123	0	25.1	2.0

[1]**Planting date**: May 2. **Emerged**: May 9. **Herbicides**: Stam® at 3 lb/A plus Facet® at .5 lb/A plus Prowl® at 1 lb/A on May 14; Stam® at 3 lb/A plus Bolero® at 3 lb/A plus Permit® at .5 oz/A on June 3. **Fertilizer**: Ammonium sulfate at 600 lb/A on June 4; urea at 110 lb/A on July 2. **Permanent flood**: June 6. **Drained field**: August 16.
[2]Rough rice at 12% moisture. A difference of 17 bu/A is required for one variety to differ from another at the 5% probability level. C.V. = 7.4%.
[3]Days after emergence.
[4]Weight of 1000 kernels.
[5]Sheath blight rating is the visually estimated infected area within the plots.

Table 6. Performance of long-grain rice varieties and lines grown on Dundee silty clay soil near Hollandale, Washington County, Mississippi, 2002.[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							
	bu/A	*lb/A*	*%*	*%*	*lb*	*in*	*days*	*days*	*%*	*g*	*%*
Francis	231	5166	68.3	49.6	43.5	44	82	134	75	23.9	1.3
Priscilla	224	4885	69.0	48.6	43.8	42	85	131	3	27.9	0.3
MS02Y30	221	5058	69.2	51.0	44.0	40	83	127	0	28.3	0.0
MS02Y23	218	5024	68.5	51.2	43.9	43	85	129	1	27.8	0.0
Cocodrie	215	5385	68.5	55.5	44.5	43	83	133	0	25.0	0.3
Wells	214	4909	69.6	51.0	45.1	45	87	135	11	25.7	0.5
Lemont	213	5450	69.6	56.6	44.0	38	88	128	0	27.0	0.0
MS02Y37	213	5815	69.5	60.7	44.9	47	84	127	0	22.4	0.0
MS02Y32	205	5180	69.1	56.1	44.0	41	84	132	0	25.8	0.0
MS02Y20	204	5980	69.8	65.1	46.0	43	87	125	0	23.8	0.0
MS02Y26	199	4554	69.8	50.7	43.7	41	82	125	0	28.1	0.5
Saber	199	5701	67.8	63.8	44.6	42	83	122	0	23.6	0.0
MS02Y33	197	5096	68.4	57.5	44.7	41	85	134	0	24.4	1.0
MS02Y25	196	5851	70.1	66.3	45.7	44	86	128	0	23.8	0.0
MS02Y28	194	5308	68.5	60.8	44.9	47	86	128	0	25.6	0.0
Ahrent	179	4061	67.0	50.4	43.2	44	85	129	0	24.1	0.0
CL161	177	4616	57.9	67.2	43.1	43	88	136	74	23.6	2.3

[1]**Planting date**: April 15. **Emerged**: April 29. **Herbicides**: Roundup® at 1.5 pt/A plus Command® at 1.5 pt/A on April 17; Regiment® at 11.25 g/A plus Permit® at .5 oz/A on May 24. **Fertilizer**: Ammonium sulfate at 100 lb/A on May 16; urea at 100 lb/A on May 25, June 2, June 14, and June 21. **Date flushed**: April 28 and May 16. **Permanent flood**: May 25. **Insecticide**: Karate Z® at 1 gallon to 70 acres on May 25 and July 23. **Fungicide**: Propimax® at 6 oz/A on July 10. **Drained field**: August 12.
[2]Rough rice at 12% moisture. A difference of 23 bu/A is required for one variety to differ from another at the 5% probability level. C.V. = 8.1%.
[3]Days after emergence.
[4]Weight of 1000 kernels.
[5]Sheath blight rating is the visually estimated infected area within the plots.

Table 7. Performance of long-grain rice varieties and lines grown on Sharkey clay soil near Rolling Fork, Issaquena County, Mississippi, 2002.[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]
			Total	Whole						
	bu/A	*lb/A*	*%*	*%*	*lb*	*in*	*days*	*days*	*%*	*g*
MS02Y30	185	4241	68.3	50.7	41.3	43	83	129	49	27.7
MS02Y23	181	3996	65.9	49.0	40.4	43	80	128	50	27.9
MS02Y26	181	3519	66.6	43.2	40.1	43	78	130	46	27.6
Wells	180	4212	69.2	52.1	43.2	46	84	129	56	26.2
Francis	179	4125	65.5	51.1	40.5	44	82	133	100	23.6
Priscilla	170	3764	65.9	49.2	41.1	43	83	132	71	29.3
Cocodrie	168	4093	64.8	54.2	40.7	45	83	133	54	24.8
MS02Y32	166	3691	63.7	49.2	39.5	42	86	130	44	23.9
MS02Y33	156	3995	65.6	57.0	44.2	43	82	130	75	23.3
Saber	152	4041	66.0	59.0	41.9	41	80	120	0	22.7
MS02Y28	147	3590	65.7	54.4	41.2	48	82	133	75	23.1
MS02Y20	145	3976	66.7	61.0	41.6	45	84	128	21	23.5
Ahrent	138	3296	64.3	53.2	39.5	43	78	131	76	23.5
MS02Y25	133	3766	68.5	62.8	42.5	45	82	132	7	23.1
CL161	132	3345	64.9	56.4	40.0	45	88	130	99	21.9
MS02Y37	130	3445	67.3	59.1	44.1	49	83	128	100	21.3
Lemont	122	2568	67.7	46.8	38.8	39	88	132	99	26.3

[1]**Planting date**: April 24. **Emerged**: May 12. **Herbicides**: Roundup® at 1 qt/A plus Command® at 1 gallon to 5 acres on April 25; Stam® at 5 lb/A plus Facet® at .25 lb/A plus Aim® at 0.8 oz/A on May 20; Permit® at .5 oz/A plus Aim® at 1 oz/A on June 7; Ordram® at 25 lb/A on June 14. **Fertilizer**: Ammonium sulfate at 115 lb/A on May 9; urea at 200 lb/A on June 6 and 100 lb/A on June 29 and July 1. **Date flushed**: May 6 and 25. **Permanent flood**: June 10. **Insecticide**: Methyl parathion at 1 gallon to 16 acres on August 12. **Drained field**: August 23.
[2]Rough rice at 12% moisture. A difference of 17 bu/A is required for one variety to differ from another at the 5% probability level. C.V. = 7.9%.
[3]Days after emergence.
[4]Weight of 1000 kernels.

Table 8. Average rough rice yields of long-grain varieties and lines evaluated in on-farm tests at seven locations, 2002.

Variety or line	Location							Average
	Tunica	Marks	Cleveland	Blaine	Stoneville	Hollandale	Rolling Fork	
	bu/A	*bu/A*	*bu/A*	*bu/A*	*bu/A*	*bu/A*	*bu/A*	*bu/A*
Wells	196	166	194	153	189	214	180	183
Francis	168	142	177	183	196	231	179	182
MS02Y23	221	172	168	138	169	218	181	181
MS02Y30	189	172	163	149	180	221	185	180
Cocodrie	178	165	192	156	183	215	168	180
Priscilla	201	159	173	150	169	224	170	178
MS02Y26	166	167	167	163	171	199	180	173
MS02Y32	151	165	178	155	174	205	166	171
MS02Y37	215	138	180	155	164	213	130	171
Saber	187	181	159	136	175	199	152	170
MS02Y20	175	162	175	157	149	204	145	167
MS02Y33	185	135	171	159	163	197	156	167
MS02Y25	188	169	165	160	155	196	133	167
MS02Y28	175	152	166	127	154	194	147	159
Ahrent	166	148	173	133	169	179	138	158
CL161	187	128	162	159	154	177	132	157
Lemont	172	123	142	165	136	213	122	154
Mean	169	149	167	148	167	203	155	166
LSD (0.05)	57	17	18	29	17	23	17	12
CV %	24	8	8	14	7	8	8	14
Date Planted	4/16	4/16	4/17	4/14	5/2	4/15	4/24	

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, 1984-2001.

Variety[1]	Origin[2]	Grain yield			Years in test	Milling yield		Plant height	50% heading	Lodging	Bushel weight
		2001	Avg.[3]	3-yr avg.		Total	Whole				
		bu/A	*bu/A*	*bu/A*	*no.*	*%*	*%*	*in*	*days*	*%*	*lb*
Ahrent	AR	156	174	174	3	64.9	45.6	42	77	14	40.4
Cypress	LA	137	151	151	14	69.7	61.3	40	85	6	43.5
Cocodrie	LA	161	172	171	7	68.0	54.6	40	79	<1	43.1
Dellrose	TX	131	146	150	11	68.9	53.5	41	81	5	43.7
Dixiebelle	TX	168	149	147	12	69.3	58.7	35	81	0	42.9
Francis	AR	188	213	213	3	66.3	47.3	42	80	<1	44.0
Jefferson	TX	152	148	147	8	67.3	52.6	37	76	12	41.8
Lemont	TX	129	142	142	18	69.8	52.2	37	89	<1	43.1
Priscilla	MS	172	175	183	8	67.6	51.3	40	82	<1	43.6
Saber	TX	146	150	166	6	66.5	53.8	41	80	4	43.1
Wells	AR	189	183	195	6	69.2	45.1	42	79	0	44.9

[1]Dellrose = long-grain aromatic.
[2]Origin: AR = Arkansas, LA = Louisiana, MS = Mississippi, TX = Texas.
[3]Grain yield averaged across all years tested.

Table 10. Average agronomic and milling performance of long-grain varieties and lines grown at seven on-farm locations, 2002.

Variety or line	Origin[1]	Average yield[2]		Milling yield		Bushel weight	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*	*%*	*%*	*lb*	*in*	*days*	*days*	*%*	*g*		*no.*
Wells	AR	183	4195	68.8	50.7	44.3	43	86	131	15	25.2	5.5	18000
Francis	AR	182	4000	65.8	48.2	42.1	42	83	132	36	22.3	6.5	20340
MS02Y23	MS	181	4107	66.2	50.2	42.4	41	84	126	15	27.5	4.0	16494
MS02Y30	MS	180	4118	67.5	50.9	42.2	40	85	128	12	27.1	4.8	16738
Cocodrie	LA	180	4429	66.3	54.8	43.1	42	84	131	14	24.1	5.0	18821
Priscilla	MS	178	3950	66.3	49.2	42.7	40	86	129	21	27.2	6.3	16676
MS02Y26	MS	173	3716	67.1	47.5	42.1	40	83	127	13	26.9	3.5	16862
MS02Y32	MS	171	4053	66.1	52.6	42.2	39	85	129	8	24.3	5.8	18666
MS02Y37	MS	171	4531	67.6	58.8	43.4	46	85	127	19	21.1	6.0	21497
Saber	TX	170	4673	66.8	61.1	43.6	41	83	120	0	22.3	5.0	20340
MS02Y20	MS	167	4693	68.1	62.4	44.0	43	87	126	5	22.8	4.3	19894
MS02Y33	MS	167	4149	66.7	54.9	43.0	40	85	131	11	22.8	7.0	19894
MS02Y25	MS	167	4758	68.4	63.4	44.5	43	85	125	1	22.4	3.5	20250
MS02Y28	MS	159	4035	66.2	56.0	43.4	44	87	127	15	23.5	4.8	19302
Ahrent	AR	158	3502	64.7	49.2	41.4	43	82	127	26	22.7	6.5	19982
CL161	HA	157	4079	66.4	57.6	42.3	41	89	131	27	21.9	5.0	20712
Lemont	TX	154	3578	68.0	50.9	41.9	37	89	128	22	25.2	7.0	18000
Mean		166	3979	66.7	53.1	42.8		84	127				
LSD (0.05)		12	367	0.8	2.1	0.5		2	2				
CV (%)		14.2	17.6	2.2	7.4	2.0		3.6	3.1				

[1]Origin: AR = Arkansas, LA = Louisiana, MS = Mississippi, TX = Texas.
[2]Rough rice at 12% moisture.
[3]Days after emergence.
[4]Weight of 1000 kernels.
[5]Sheath blight score using a 0 (least susceptible) to 9 (most susceptible) scale.

Table 11. Annual and average grain yields along with agronomic and milling data averages of rice varieties and lines grown in the Delta on-farm tests from 1996 to 2002.[1]

Variety or line	Grain yield [2]								3-year avg.[3]	Total tests	Milling yield [4]		Bushel weight	Plant height	Days to		Lodging	1000 seed weight [5]	Sheath blight [6]
	1996	1997	1998	1999	2000	2001	2002	Avg.			Total	Whole			Heading	Maturity			
	bu/A	*bu/A*	*bu/A*	*bu/A*	*bu/A*	*bu/A*	*bu/A*	*bu/A*	*bu/A*	*no.*	*%*	*%*	*lb*	*in*	*no.*	*no.*	*%*	*g*	
Lemont	162	150	152	161	165	151	154	146	157	91	70.1	55.3	42.4	37	87	124	10	25.8	4.5
Cypress	144	130	145	165	166	—	—	144	159	63	68.8	60.4	41.6	39	84	123	14	23.1	3.5
Kaybonnet	153	148	151	177	—	—	—	153	159	42	68.5	58.9	42.3	47	82	116	8	20.6	2.7
Priscilla	181	172	160	177	182	198	178	179	186	63	67.3	51.2	41.9	40	82	125	5	27.9	3.4
Jefferson	151	133	141	155	153	—	—	146	150	42	67.7	52.4	40.8	37	74	109	4	28.2	3.0
Cocodrie	—	145	165	179	190	182	178	173	183	42	67.9	56.2	41.4	40	81	126	10	24.6	3.0
Madison	—	135	145	146	—	—	—	142	142	21	68.1	57.0	39.8	37	87	122	1	23.8	2.6
Wells	—	—	174	188	196	195	183	187	191	28	69.8	48.9	43.3	43	81	126	11	25.6	3.0
Ahrent	—	—	—	—	164	157	158	160	160	21	64.9	50.1	41.4	42	80	126	14	22.0	5.1
Saber	—	—	—	—	164	162	170	165	165	21	64.9	53.3	43.2	40	82	119	<1	22.6	4.3
CL161	—	—	—	—	—	148	157	153	—	14	67.1	56.9	41.6	41	86	130	36	22.3	4.5
Francis	—	—	—	—	—	—	182	182	—	7	65.8	48.2	42.1	42	83	132	36	21.7	6.5

[1]Test locations were in farmers' fields extending from the northern to the southern Delta area.
[2]Rough rice at 12% moisture. Data columns for 1989 to 1995 were omitted, but their numbers were included in the average yield and total test numbers.
[3]Average for 2000 to 2002.
[4]Values for milling and agronomic characteristics are accumulated means over all years of testing.
[5]Weight of 1000 kernels.
[6]Average sheath blight scores using 0 (least susceptible) to 9 (most susceptible) scale from selected tests since 1996 with moderate or higher disease severity.

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
Ahrent	MR	MS	—	—	—	—	—	—	—
CL161	MR/MS	VS	MS	MS	—	—	—	—	S
Cocodrie	MS	VS	VS	S	MR	MR	MS	S	S
Cypress	MS	VS	S	MS	MR	R	S	S	S
Dixiebelle	MS	VS	—	MS	MS	MS	—	S	—
Drew	R	MS	MS	MS	S	MS	MS	MS	S
Francis	S	MS	S	MS	—	—	—	—	—
Jackson	S	MS	S	MR	R	MR	—	MS	—
Jefferson	S	MS	S	MR	R	MR	MR	MS	MR
Katy	R	MS	R	S	R	MR	—	MS	MR
Kaybonnet	R	MS	MS	S	S	MR	—	MS	S
LaGrue	S	S	VS	MS	R	MR	R	MS	S
Lemont	MR	VS	MR	MR	R	S	S	MS	MS
Madison	R	VS	R	MS	R	MS	R	MS	MS
Priscilla	MS	MS	S	MR	R	MR	MR	S	S
Saber	R	S	—	MR	MR	MR	MR	—	—
Wells	S	MS	MS	MS	R	—	—	MS	S

[1]Abbreviations: R = resistant, MR = moderately resistant, MS = moderately susceptible, S = susceptible, VS = very susceptible.
Note: These ratings are subject to change should new or other information become available.

Table 13. Hybrid yield response for nitrogen rate and timing combinations compared with Francis and Cocodrie at two locations.

Hybrid/Variety	Nitrogen treatment			Leland[1]			Shaw[2]		
	PF	MS	Boot	Grain yield	Milling yield		Grain yield	Milling yield	
					Whole	Total		Whole	Total
	lb/A	*lb/A*	*lb/A*	*bu/A*	*%*	*%*	*bu/A*	*%*	*%*
XL7	0	0	0	113	49.3	68.5	160	52.9	68.3
XL7	90	0	30	236	47.7	67.9	202	51.9	67.6
XL7	90	0	60	249	49.9	68.8	206	52.1	67.7
XL7	120	0	0	257	46.0	67.8	181	51.4	67.2
XL7	120	0	30	258	49.5	68.8	183	50.2	66.3
XL7	120	0	60	264	52.3	68.7	174	53.4	68.7
XL8	0	0	0	117	47.7	68.0	151	52.1	67.8
XL8	90	0	30	236	52.0	68.9	171	51.3	67.8
XL8	90	0	60	243	50.8	68.8	153	53.4	68.7
XL8	120	0	0	228	53.7	64.2	160	51.9	67.6
XL8	120	0	30	266	49.9	67.4	180	51.0	66.9
XL8	120	0	60	248	51.3	69.6	210	51.7	68.1
Francis	120	60	0	242	53.5	69.0	181	52.7	68.1
Cocodrie[3]	120	60	0	229	54.8	70.1	—	—	—
LSD (0.05)				23	ns	ns	32	ns	ns
C.V.%				7.1	6.6	2.4	12.4	3.4	2.4

[1]The soil type at Leland is a Sharkey silty clay with very high native fertility. **Planting date**: May 1. **Emerged**: May 8. **Herbicide**: Stam® at 4 lb/A and Prowl® at 2.4 pt/A on May 23. **Flooded**: June 11. **Drained**: August 20.
[2]The soil type at Shaw is a sandy clay loam with high native fertility. **Planting Date**: May 22. **Emerged**: May 29. **Flooded**: June 16. **Drained**: September 5.
[3]Yield and milling data for Cocodrie are not reported because the plots were severely affected by straighthead.

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