MISSISSIPPI RICE

VARIETY TRIALS, 2020

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MISSISSIPPI'S OFFICIAL VARIETY TRIALS

MISSISSIPPI STATE UNIVERSITY™
MS AGRICULTURAL AND
FORESTRY EXPERIMENT STATION

Mississippi Rice Variety Trials, 2020

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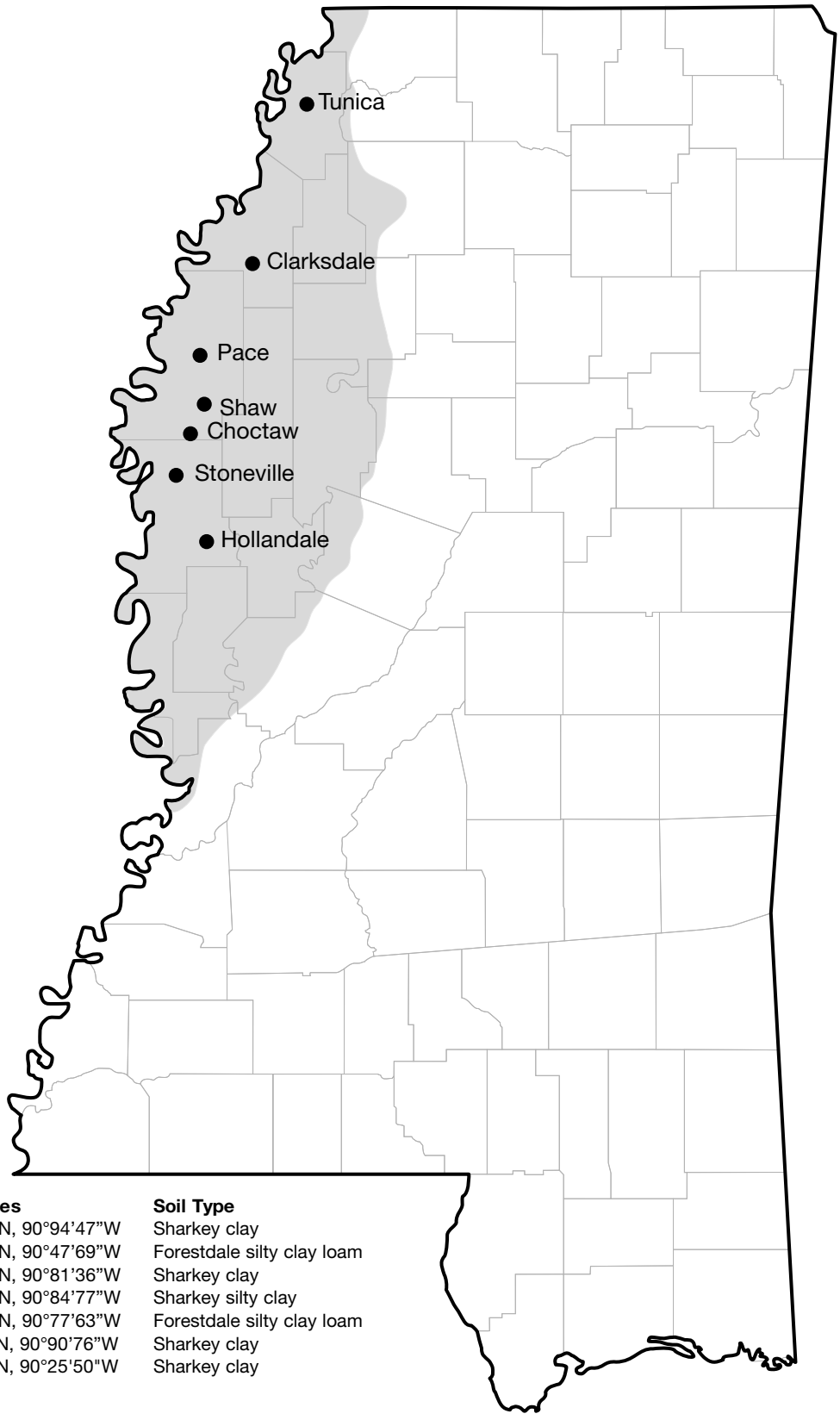
Find variety trial information online at ***mafes.msstate.edu/variety-trials***.



Location	Coordinates	Soil Type
Choctaw	33°60’23”N, 90°94’47”W	Sharkey clay
Clarksdale	34°00’76”N, 90°47’69”W	Forestdale silty clay loam
Hollandale	33°16’72”N, 90°81’36”W	Sharkey clay
Pace	33°81’85”N, 90°84’77”W	Sharkey silty clay
Shaw	33°59’40”N, 90°77’63”W	Forestdale silty clay loam
Stoneville	33°43’14”N, 90°90’76”W	Sharkey clay
Tunica	34°57'99"N, 90°25'50"W	Sharkey clay

Figure 1. Locations of the 2020 Rice On-Farm Variety Trials in the Mississippi Delta.

Mississippi Rice Variety Trials, 2020

INTRODUCTION

The United States Department of Agriculture (USDA) National Agricultural Statistics Service (NASS) estimated the 2020 harvested rice area in Mississippi based on reports from rice producers to be about 171,000 acres. The USDA Farm Service Agency (FSA), on the other hand, certified the 2020 rice planted area in the state to be 164,686 acres. This FSA estimate is 49,763 acres, or 43% more than the Mississippi rice acreage in 2019 of only 114,923. Moreover, this increased rice area is 19,236 acres (13%) more than the running 10-year rice acreage in the state of 145,450 (2011–2020, Table 1).

The USDA NASS in December 2020 also reported the total rice production for Mississippi to be 12.58 million hundredweight or 639,094 metric tons, up 48% from the 2019 production of 8.526 million hundredweight or 433,141 metric tons. At the USDA Economic Research Service November 2020 estimate of the average U.S. rice farm price of $12.90 per hundredweight, the value of Mississippi rice production for 2020 is $162.3 million. Rice yield was reported by USDA NASS to be 7,400 pounds per acre (164.4 bushels per acre), up 50 pounds from 2019 and 194 pounds more than the running 10-year Mississippi average yield of 7,206 pounds (160.1 bushels). The record for statewide average yield, set in 2014, remains at 7,420 pounds per acre (165 bushels per acre or 8,316 kilograms per hectare).

Table 1. USDA National Agricultural Statistics survey of harvested rice acreage in Mississippi (nearest thousand) by year, 1949–2020.

Year	Acres	Year	Acres	Year	Acres	Year	Acres
1949	5,000	1969	60,000	1989	235,000	2009	243,000
1950	7,000	1970	51,000	1990	250,000	2010	303,000
1951	26,000	1971	51,000	1991	220,000	2011	157,000
1952	40,000	1972	51,000	1992	275,000	2012	129,000
1953	51,000	1973	62,000	1993	245,000	2013	124,000
1954	77,000	1974	108,000	1994	313,000	2014	190,000
1955	52,000	1975	171,000	1995	288,000	2015	149,000
1956	44,000	1976	144,000	1996	208,000	2016	194,000
1957	31,000	1977	111,000	1997	238,000	2017	118,000
1958	39,000	1978	215,000	1998	268,000	2018	135,000
1959	44,000	1979	207,000	1999	323,000	2019	116,000
1960	44,000	1980	240,000	2000	218,000	2020	171,000
1961	44,000	1981	337,000	2001	253,000	2021	—
1962	49,000	1982	245,000	2002	253,000	2022	—
1963	49,000	1983	161,000	2003	234,000	2023	—
1964	49,000	1984	190,000	2004	234,000	2024	—
1965	50,000	1985	188,000	2005	263,000	2025	—
1966	55,000	1986	198,000	2006	189,000	2026	—
1967	55,000	1987	198,000	2007	189,000	2027	—
1968	67,000	1988	260,000	2008	229,000	2028	—

Seventeen counties produced rice in Mississippi during 2020 as certified by the USDA FSA (Table 2). The top rice producing counties were Bolivar, Tunica, Sunflower, Quitman, and Washington with 43,107, 25,938, 19,284, 15,056, and 11,775 acres planted, respectively. Eight counties planted more than 10,000 acres of rice in 2020. Bolivar and Tunica counties have been the top two rice-producing counties for Mississippi for 10 years running (2011–2020). All the 17 rice-producing counties registered a net gain in acreage in 2020 compared to 2019, with the highest increases of 10,769, 9,430, and 6,900 acres registered in Bolivar, Sunflower, and Leflore Counties, respectively.

Planting progress was exceedingly slow for Mississippi in 2020, with rice planting occurring at a slower pace than the 3-, 5-, and 1-year averages. Rice planting was delayed due to wet weather conditions that occurred in most parts of the Mississippi Delta early in the growing season. By the middle of May, less than 60% of the rice area had been planted, as happened in 2019 when only 60% of the Mississippi rice crop was planted by the third week of May. Historically, almost 90% of the rice in Mississippi is planted by the third week of May. For 2020, rice planting was finally completed by the middle of June.

Aside from wet weather early in the season, the 2020 rice crop also had to contend with a flurry of hurricanes that occurred late in the season. Fortunately, hurricane-related damage to the rice crop was minimal. In general, insect and disease pressures were average during most of the cropping season. Among the diseases observed were leaf blast and sheath blight, while insect pests observed were rice water weevil and stink bugs. However, for the most part, severe disease and insect pest pressure was observed only in a few isolated areas.

Among the positive attributes of the 2020 growing season were the mild temperatures and excellent harvest weather. Most of the Mississippi rice in 2020 was harvested before rainy weather occurred again in October. These conditions resulted in a higher state average yield in 2020. This situation could keep growers' excitement at a high level and leading to increased rice acres again in 2021.

Table 2. USDA Farm Service Agency certified rice acres planted by county in Mississippi, 2011–2020.

County	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	10-yr. avg.
Adams	0	192	0	0	0	157	0	157	0	0	51
Attala	10	0	0	0	0	0	0	0	0	0	1
Bolivar	50,813	34,956	33,734	47,702	42,139	47,839	27,431	34,659	32,338	43,107	39,472
Carroll	0	0	0	0	0	0	0	0	0	102	10
Coahoma	11,370	8,797	8,109	14,453	9,933	12,885	7,788	9,970	5,768	10,248	9,932
DeSoto	335	553	1,190	2,316	99	1,896	1,261	1,605	586	1,009	1,085
Grenada	328	282	282	0	893	402	143	0	55	278	266
Holmes	234	141	121	203	195	655	0	1,036	126	207	292
Humphreys	1,996	1,955	1,475	3,426	2,576	5,695	3,874	4,264	4,089	6,242	3,559
Issaquena	880	890	1,115	483	345	764	427	435	0	0	534
Lee	8	10	3	3	0	3	0	0	0	0	3
Leflore	6,754	5,328	3,905	6,000	5,059	7,734	1,770	5,035	3,150	10,050	5,479
Panola	5,383	5,901	5,523	10,188	5,966	9,668	8,458	7,343	7,411	9,040	7,488
Quitman	6,360	8,440	8,766	15,565	12,220	20,515	10,763	10,311	10,248	15,056	11,824
Sharkey	855	306	433	857	789	1,123	282	647	0	202	549
Sunflower	19,351	14,253	13,635	25,241	15,612	19,944	7,843	12,458	9,854	19,284	15,747
Tallahatchie	6,267	6,460	6,964	12,859	7,142	12,330	7,083	6,803	7,890	10,361	8,416
Tate	869	828	934	1,082	955	1,123	822	797	935	1,220	957
Tunica	23,167	21,696	24,603	28,608	25,833	34,812	27,286	31,403	24,090	25,938	26,744
Washington	18,854	14,687	11,480	15,690	13,027	12,135	8,442	8,091	8,319	11,775	12,250
Yazoo	2,273	765	0	867	914	1,571	893	0	64	567	791
Total	156,107	126,440	122,272	185,543	143,697	191,251	114,565	135,014	114,923	164,686	145,450

ON-FARM VARIETY TRIALS

On-farm varietal evaluation is a vital step in the variety development process for many crops, including rice.

Conducting variety trials under producers' field conditions helps identify the released varieties or hybrids as well as elite experimental breeding lines that are best suited to specific growing environments, including niche markets. It also helps determine which specific entries are widely adapted to and/or have consistent performance across varying growing conditions. This information not only helps in future breeding, but also is important for proper deployment of released varieties.

It is typical in on-farm variety trials for standard varieties, hybrids, new releases, and elite experimental lines to be evaluated in their target growing environments. In the case of elite breeding lines, based on their performance in these multi-environment tests, the most promising are selected for possible release as new varieties. The information collected on these lines include yield and milling performance, insect and disease susceptibility, tolerance to environmental stresses, vigor, and lodging scores. However, apart from using the data generated for line advancement decisions, they could also be used to recycle yet-imperfect lines back into the hybridization program.

With the inclusion of released varieties from Mississippi and the U.S. Midsouth as entries in the on-farm trials, the testing process also helps local rice producers to determine the most suitable released variety to plant on their respective farms based on the test locations. By placing these trials at multiple key locations throughout the Mississippi Delta, varieties, hybrids, and elite lines are exposed to the prevalent growing conditions and practices that are commonly used in commercial production in Mississippi. Many of these growing conditions and management practices cannot be reproduced at the MSU Delta Research and Extension Center in Stoneville, thus there is a great value to on-farm evaluations from a research and development perspective. In return, growers are afforded the opportunity to evaluate the current varieties and hybrids in commercial circulation, side by side under their own management conditions. Ultimately, this process helps them in deciding which variety or hybrid to use on their farms the following year and in placing advanced seed orders for their chosen varieties or hybrids accordingly.

Variety selection is one of the most important decisions a grower makes in crop production planning. Growers should attempt to select varieties that offer the best combination of yield and quality factors while also considering the variety's tolerance or susceptibility to both biological and environmental factors that could limit yield potential. As grain quality is becoming more important for improving U.S. rice global competitiveness, producers will benefit from having grain quality data for the commercial varieties evaluated in the variety trials. Millers, consolidators, and traders may also use this grain quality data for implementing "identity preserved" strategies that are gaining importance for improving overall rice grain quality. Rice research and extension specialists can use variety trials as an educational platform for demonstrating the merits of on-farm evaluation to other scientific or technical staff, growers, private consultants, rice industry personnel, students, policy makers, and the general public. Through these trials, interested parties are afforded a first look at new or potential releases from Mississippi State and other participating rice breeding programs, including from the private industry.

TEST PROCEDURES

For 2020, the rice On-Farm Variety Trials consisted of 36 entries including five hybrids/FullPage® herbicide technology-based materials, 16 Clearfield® or Provisia® purelines (seven released varieties and nine elite experimental lines), and 15 conventional purelines (seven released varieties and eight elite experimental lines). All hybrids/Full Page® materials were provided by RiceTec, HorizonAg provided all the Clearfield® and Provisia® herbicide-technology-based purelines, and the conventional pureline released varieties came from the public breeding programs of Mississippi (two), Arkansas (two), Louisiana (two), and Texas (one). The trials were conducted in seven locations from north to south of the Mississippi Delta: Tunica, Clarksdale, Pace, Shaw, Choctaw, Stoneville, and Hollandale (**Figure 1**). Individual plots consisted of eight drilled rows that were 15 feet in length and spaced 8 inches apart. Varieties and experimental lines were planted at a seeding rate of 85 pounds of seed per acre, while the hybrids were planted at 25 pounds of seed per acre. Seeds were mechanically

drilled approximately 1.25 inches deep into stale seedbeds at all locations. All entries were replicated three times at each location using a randomized complete block experimental design. Crop management practices for each location, as well as the stresses encountered, are presented in **Tables 3-9.**

For more information on pesticide formulations and application rates, please refer to the pesticide product label information available on the internet or to MSU Extension Service Pub. 1532, *2020 Weed Control Guidelines for Mississippi* (http://extension.msstate.edu/sites/default/files/publications/publications/P1532_web.pdf).

Agronomic and crop phenology data were collected at appropriate times during the growing season. Lodging ratings were obtained on a plot-by-plot basis. The entire plot was harvested with a Wintersteiger Delta plot combine equipped with a computerized weighing system and a moisture meter. Due to differences in maturity, most of the entries at each location were required to have achieved the appropriate harvest moisture level before the test was harvested. Average harvest grain moisture levels for each entry are reported in **Tables 3-9**. Subsamples of each entry were collected at harvest and these were used for measuring milling-related traits, chalkiness, bushel weight, and 1,000-seed weight parameters.

For yield, previous replicated research has shown that the border effect common in small-plot research could result in increases in grain yield estimates of 10% for inbred varieties and 15% for hybrids. Therefore, the plot yields reported for the test entries should be compared in a relative manner rather than just through the absolute values for the reported yield potential.

Analysis of variance procedure was conducted for all relevant data gathered from the trials using SAS version 9.4 statistical software. The Least Significant Difference (LSD) test at the 5% significance level may be used to determine significant differences between entries. If the value of the yield difference between any two trial entries at a location, as computed from the yields reported in **Tables 3-9,** is greater than the LSD value for that particular location, the entries are deemed to be statistically different from each other. In addition, a coefficient of variation (CV) was calculated for each test. This measure is an indication of the variability or "noise" in the trial, thus the level of precision of each test. Lower CV values indicate greater reliability of the test. Coefficient of variation values of 10% or less are generally considered to be optimum for plant-breeding trials, and CV values above 25% are considered unacceptable. The LSD and CV values for yield in these tests are reported in the footnotes of **Tables 3-9** and are included for the other measured variables in **Table 11**.

RESULTS

To assist Mississippi rice producers in their variety selection process for 2021, preliminary results of the 2020 rice variety trials were immediately processed and made available online in late October 2020 via the Mississippi Agricultural and Forestry Experiment Station Variety Trials website (http://mafes.msstate.edu/variety-trials/includes/crops/rice.asp). Traditionally, hard copies of the preliminary results would also have been distributed to rice producers attending the annual Delta Rice Producers Meeting in Cleveland, Mississippi, in mid-November. However, due to the COVID-19 pandemic, this yearly growers' meeting was not held in 2020.

Complete details on the performance of each entry at each of the seven test locations are presented in **Tables 3-9**. As with the 2019 trials, the 2020 yield evaluations were planted in a narrow time span of about 4 weeks (April 6 to May 6). The Stoneville trial was the only trial planted on an experiment station. In general, plant stands were excellent, with uniform emergence and optimum plant density for all the locations. Among the diseases reported to have occurred at some point in the growing season were leaf blast and sheath blight. However, none of these factors occurred to a level that was economically damaging or that completely wiped out any test entry. Lodging was reported in six of the seven locations (except for Stoneville) because of rainfall and strong hurricane-induced winds late in the season. The most severe lodging occurred in Hollandale, where 60% of the entries lodged by up to 90%. Lodging occurred in the hybrids/FullPage®, Clearfield, Provisia®, and conventional pureline groups at six of the seven locations. However, nine breeding lines (five Clearfield® and four conventional types) and four commercial varieties (one Provisia® and three conventional types) showed superior standability and did not exhibit any lodging in all the seven locations. There was no significant black bird damage in Stoneville unlike previous years.

The average rice yield across entries and locations for the 2020 trials was 259 bushels per acre, up 34 bushels (15%) from the 2019 average of 225 bushels, and 39

bushels (17%) more than the 220-bushel running 5-year variety trial overall yield average (2015–2019). Moreover, the 2020 overall yield average of 259 bushels per acre surpasses, by 17 bushels (7%), the formerly highest recorded average trial yield of 242 bushels in 2014. This yield trend in the trials closely mirrors the Mississippi statewide yield trends from USDA NASS data, where an uptick in yield was also recorded for 2020. Location yield averages ranged from 225 bushels per acre for Stoneville to 284 bushels for Choctaw. Tunica (281 bushels) and Hollandale (269 bushels) were the second and third highest yielding sites, respectively. Hollandale was the highest yielding location in these trials the previous year. On the other hand, the Stoneville location has consistently been the lowest yielding during the last 5 years (2016–2020) with an average of 175 bushels per acre across entries primarily due to moderate to heavy black bird damage. With minimal black bird damage in 2020, the Stoneville location average yield exceeded 200 bushels for the first time.

The CV values for yield were all acceptable and ranged from 5.8% (for both Choctaw and Shaw) to 14.4% (Hollandale). Total milling yields across locations tended to be normal across entries (clustered around the average of 70.8%), but substantial entry differences were observed for whole milled rice, ranging from 55.4% to 65.6% and averaging a high 61%.

The grain yield summary data for all entries at each location are provided in **Table 10.** Moreover, summary data for all other measured parameters averaged over the seven locations are provided in **Table 11**.

Among hybrid/FullPage® entries, the non-herbicide tolerant RT7301 gave the highest yield of 322 bushels per acre, which was also the highest average yield among all entries in the trial. Another non-herbicide tolerant entry, RT7501, came in second with an average yield of 312 bushels per acre. Both RT7301 and RT7501 outyielded the high-yielding conventional hybrid XP753 (previously designated in Mississippi variety trial reports as XL753), which was the third top-yielding entry in both the 2000 (306 bushels) and 2019 (261 bushels) evaluations. XP753 had been the highest yielding hybrid in these trials in 6 of the last 7 years with an average yield across locations of 297 bushels per acre in 2018, 296 bushels in 2017, 274 bushels in 2016, 275 bushels in 2015, 306 bushels in 2014, and 278 bushels in 2013 or an average yield of 284 bushels for this entire 7-year period. Its yield superiority over other hybrids and conventional pureline entries has been consistent over the years. The herbicide-tolerant FullPage® entry RT7521FP, which surpassed XP753 in yield for 2019, came it fourth in this group in 2020 with a yield of 271 bushels per acre. Historically, hybrids have yielded, on average, about 21% (46 bushels) higher than pureline varieties, both for Clearfield® and conventional types, in Mississippi rice variety trials. For 2020, this hybrid/FullPage® yield advantage was, on average, 19% over Clearfield® and 14% over conventional variety types. However, since the plot border effect is greater on hybrids than in purelines, the actual yield differences may be expected to be closer when comparing the highest yielding hybrid to the highest yielding purelines.

Among the 16 Clearfield®/Provisia® type pureline entries, the six highest yield entries were all experimental breeding lines. RU2004191 was the highest yielding in this group with an average yield of 274 bushels per acre across locations followed by RU2004071 (269 bushels) and then RU1804147 and RU1704055 (both 264 bushels). RU1804147 was the highest among 16 Clearfield®/ Provisia® type pureline entries in 2019, while RU1704055 was the highest yielding among all Clearfield® entries in 2017, among the top five entries for yield in 2018, and the seventh highest yielding entry in 2019. Following these six breeding materials that are still under development were the newly released Clearfield® variety CLL16 with 262 bushels per acre and the Mississippi-bred long-grain Clearfield® potential release CLX54197 with 257 bushels. CLX54197 has the unique Cheniere-type cereal chemistry and was also among the top five entries for yield in both the 2018 and 2019 on-farm yield evaluations. The released Clearfield® varieties CL163 and CL153, which were the highest yielding in 2019, did not perform as well in 2020. CL153 had been the highest yielding Clearfield® released long-grain variety entry in these trials both in 2017 (223 bushels per acre) and 2018 (220 bushels). The newly released Provisia® pureline variety PVL02 was ranked last for yield in the group, as it was the entry most affected by plot lodging (average of 73%) in six of the seven locations with lodging occurrence.

Among conventional purelines, the top-yielding entry in 2020 with an average yield of 277 bushels per acre was Thad, the Mississippi-bred variety released in 2017. Following closely with a yield average of 275 bushels per acre was RU1904163, an elite experimental line still under development and entered in these trials for the first time in 2020. Rounding up the top five for yield in this group were the released varieties Rex (274 bushels), Diamond (268 bushels), and the breeding line RU1804067 (264 bushels). Rex, which remains popular among Mississippi growers, was ranked second in the 2018 trials, while Diamond, a recent release from

Arkansas, topped the 2019 and 2017 trials. The released varieties Thad, Diamond, and Rex, along with another conventional release that did not perform well this year (Lakast), have been among the top-yielding entries in these on-farm trials during the last 5 years (since 2016).

Entries that begin with RU designations are elite experimental breeding lines that have performed well in the sequential, multistage, yield evaluation conducted by the MSU rice breeding program. They have usually been entered or are about to be entered in the multistate Rice Uniform (RU) Regional Research Nursery or URRN. This URRN system is conducted by public breeding institutions in the U.S. to evaluate elite lines in other rice-growing states while sharing elite materials among U.S. breeders. The entries represent the best lines from different breeding programs and are typically at the final stages of testing. *Entries from Mississippi in the URRN have the number "4" as the first digit of the last four digits of the RU designation (e.g., RU200**4**191).*

Table 12 shows the agronomic, yield, and milling data for select rice varieties that have been included in on-farm tests for the last 3 years. Based on varietal performance in 21 trials conducted during the past 3 years (2018, 2019, and 2020), the yield performance of conventional varieties Diamond, Rex, Lakast, and Thad were statistically similar at 240 bushels per acre each for both Rex and Diamond, 239 bushels for Lakast, and 238 bushels for Thad. In comparison, Mermentau, a variety from Louisiana that was popular in previous years among Mississippi producers, yielded an average of 220 bushels per acre in the same trials. The Texas-bred variety Sabine, which is used in the rice-processing industry, yielded only 202 bushels per acre or about 38 bushels (18%) lower than Thad, a comparable variety.

Among the Clearfield® released varieties, the best performer during the past three years (2018, 2019, 2020) has been CL153 with an average yield of 228 bushels per acre. However, several breeding lines still under development have consistently outyielded CL153 during the period. Among these promising Clearfield® experimental lines that outyielded all other released Clearfield® varieties is CLX54197 (formerly coded as RU1504197), which had the fourth highest yield in 2019 among Clearfield® trial entries, was ranked third in 2018, and performed well also in 2017 (223 bushels per acre). Moreover, this line out-yielded all released long-grain Clearfield® varieties included in the tests in all 3 years except for CLL16 in 2020 (262 bushels vs. 257 bushels). CLX54197 is like Thad and CL163 in terms of having high amylose content but is like the formerly popular variety Cheniere in terms of having "softer-cooking" quality. The potential release of this elite Clearfield® breeding line in 2021 is being explored in coordination with HorizonAg.

Milling traits varied substantially among the test entries, and high-yielding entries did not necessarily have the best grain-quality characteristics. Aside from these trait considerations for variety selection, performance stability over different environments and across years also needs to be considered. Certain varieties such as Cheniere have been relatively stable over many years and thus have been popular in Mississippi and the Midsouth in the past. Thad has been unanimously accepted by all major rice milling and exporting companies in the U.S. due to its excellent grain quality traits that is also favored by sectors of the rice food-processing industry. Rex, on the other hand, continues to be popular among rice growers due to its excellent yield stability over multiple locations both in Mississippi and other rice-growing states in the Midsouth.

Variety and hybrid reactions to common diseases and straighthead disorder are listed in **Table 13**. Decisions about the use of fungicides should be made considering a variety's susceptibility to a particular disease, the potential for the disease to cause economic loss, and efficacy of fungicides that are available to combat or prevent the respective disease.

Nitrogen fertilization rate guidelines are provided in **Table 14**. These guidelines were generated from multiyear, multisite N response studies conducted for newly released varieties. A combination of current economics, individual varieties' susceptibility to lodging, and yield potential are included in determining the rate guidelines. Annually, coarse-textured soils, commonly referred to as silt loams, require approximately 30 pounds per acre less nitrogen than fine-textured or clay soils. By applying less N on silt loam soils, disease and lodging incidence tend to decrease without sacrificing yield and quality.

Based on this year's variety-trial results and taking into consideration previous years' performance, the conventional varieties suggested for Mississippi rice growers are Thad, Diamond, and Rex. The conventional varieties Cheniere and Mermentau have not performed as well as these varieties, though they have done well in Mississippi in the past. Sabine is often grown on limited acreage by contract, primarily due to its high amylose content and related cereal chemistry characteristics desired by the rice processing industry. The recent release of Thad and CL163, both high-amylose varieties with excellent grain qualities, provides more varietal options to the U.S. rice-processing industry as well as U.S. rice export markets requiring high-amylose rice.

For RiceTec's hybrids using the new FullPage® technology that provides growers with new generation IMI herbicide tolerance to control red rice, the best option based on 2 year's trials (2019 and 2020) is RT7521FP, which topped all entries regardless of type for yield in 2019 and was the top-yielding FP entry in 2020 (with 271 bushels per acre). For conventional hybrid rice production, XP753 remains the proven best option based on several years' yield data but the new conventional hybrid RT7301, tested for the first in 2020, promises to be a superior option along with RT7501, another first-year entry. RT7301 and RT7501 yielded 16 bushels (5%) and 6 bushels (2%) more than XP753 in 2020. Detailed additional information on production of conventional and FullPage® hybrids is available at RiceTec (https://www.ricetec.com/products-services/seed-products/).

Among the Clearfield® released varieties that are offered exclusively by HorizonAg (http://www.horizon-seed.com/horizon/content/varieties), the two newly released long-grain types CLL16 and CLL15 outperformed CL153, which was the best performing long-grain Clearfield® variety type in the 2018, 2017, and 2016 trials. CLL16, CLL15, CL153, and CL163 (for those desiring high-amylose rice) are the best varietal options for long-grain Clearfield® rice. There were no medium-grain Clearfield® entries in the 2020 trials. Clearfield® rice should be used as a tool with careful attention given to stewardship so that the technology can last into the future. Stewardship should encompass minimizing the potential for outcrossing of red rice and Clearfield® rice. Stewardship should also include the addition of postemergence and residual herbicides for grass control so that selection pressure that could break down herbicide resistance is minimized. It should be noted that incidences of ALS-resistant (Newpath®, Beyond®) barnyardgrass and sedges have increased in the last few years. Outcrossing and grass resistance jeopardize this important technology. The new Provisia® varieties PVL01 and PVL02, which were tested in these trials for the third and first time in 2020, respectively, promise to be a useful companion technology to extend the usefulness of Clearfield® rice system for controlling red rice. However, it is important to follow the technology recommendations, such as being out of rice for a year when switching from Clearfield® to Provisia® varieties.

As is well known to rice producers, no pureline variety or hybrid is always perfect for all cropping conditions. Each cropping year may bring about recurring or new biological and/or environmental factors with the potential to negatively impact varietal performance and, ultimately, a rice producers' bottom line. Breeders must, therefore, continue to develop new strains that satisfy the needs of both producers and end users. The breeding program must cater to the needs of rice growers who are faced with an ever-changing production landscape. At the same time, it must also consider the varying needs of millers, the food industry, and consumers who continually demand higher quality rice for consumption and/or processing. The best of these new strains must perform well under farm conditions before they can be released. Each new variety release would be expected to have qualities or characteristics that add value to end-users. Ultimately, varietal performance over time and in different environments, in addition to economics, should be considered when choosing which variety to plant among the many available options. This is where the regular conduct of on-farm trials provides a great value for rice producers. For varieties with high yield potential, producers should consider risks such as lodging and disease incidence and plan to manage for those yield-limiting factors to derive maximum benefit. Planting several pureline varieties or hybrids, FullPage®, Clearfield®, Provisia®, and conventional types may help mitigate the risks associated with large production areas that are commonly found in Mississippi.

Table 3. Performance of rice varieties, hybrids, and experimental lines grown on Sharkey clay soil near Choctaw, Mississippi (33°60'23"N, 90°94'47"W), 2020.[1]

Entry	Yield[2]	Whole milled rice	Total milled rice	Chalk[3]	Harvest moisture	Bushel weight	Plant height	50% heading[4]	Lodging[5]	Lodging score[6]	1,000 seed weight[7]
	bu/A	*%*	*%*	*%*	*%*	*lb*	*in*	*days*	*%*	*(1-5)*	*g*
Hybrids											
RT7521FP	300	63.2	71.8	5.3	14.3	39.9	46.0	82	40	3	20.6
RT7321FP	293	64.5	72.4	7.7	15.0	41.2	46.0	82	0	1	20.2
XP753	345	67.5	73.9	7.4	14.8	41.9	42.0	83	0	1	22.8
RT7301	369	66.9	73.4	7.7	14.7	42.3	40.5	83	0	1	23.7
RT7501	363	67.0	73.2	5.0	15.6	41.8	40.8	85	0	1	23.4
Clearfield/Provisia											
CLL15	276	67.9	73.0	7.1	18.5	42.7	37.8	85	0	1	19.1
CLL16	289	62.1	71.3	3.7	21.9	44.3	43.3	87	0	1	23.0
CLL17	260	67.1	72.1	4.3	18.8	42.4	40.0	85	40	3	14.0
CL153	264	68.6	73.2	3.1	14.8	43.1	38.8	85	0	1	20.0
CL163	281	65.5	71.9	8.3	17.4	42.5	40.5	85	15	2	20.5
CLX54197	289	67.0	72.4	5.6	16.7	44.6	38.0	85	0	1	17.1
PVL01	225	65.9	72.9	5.2	16.6	40.7	37.8	87	0	1	18.8
PVL02	203	69.5	74.5	4.8	15.3	41.8	40.8	83	45	3	14.6
RU1804147	285	63.0	70.4	10.7	19.5	42.6	42.5	85	10	2	20.1
RU1704055	282	61.1	71.0	5.1	19.3	24.7	40.0	86	0	1	21.5
RU1804135	281	67.0	74.0	9.4	16.4	43.3	37.8	88	0	1	23.4
RU1804139	262	65.5	73.0	4.3	13.9	43.2	35.5	85	0	1	20.7
RU1904209	279	68.7	73.0	7.4	9.2	41.9	42.5	83	0	1	22.7
RU2004071	274	62.8	70.8	4.6	22.0	39.5	40.3	88	0	1	20.1
RU2004191	280	65.4	72.0	5.2	21.6	43.3	42.3	86	0	1	17.8
RU2004195	287	65.7	71.9	7.6	19.1	44.0	41.8	83	0	1	24.3
Conventional											
Cheniere	257	67.8	75.0	5.9	14.3	41.8	37.0	84	20	2	17.0
Diamond	296	67.6	73.7	3.4	20.4	42.1	44.8	87	0	1	25.9
LaKast	291	65.8	72.9	5.1	18.0	43.8	41.8	83	10	2	23.1
Mermentau	284	67.5	73.0	6.8	18.1	42.7	38.8	83	0	1	20.3
Rex	281	65.3	71.1	7.2	19.7	43.3	43.0	87	0	1	22.5
Sabine	252	68.1	72.9	3.4	15.4	43.2	37.0	86	0	1	20.1
Thad	301	66.3	71.9	4.0	19.4	45.1	39.3	87	0	1	22.2
RU1804067	286	64.0	70.9	5.3	14.2	43.5	40.8	87	0	1	21.9
RU1804214	279	67.9	72.6	5.2	18.4	43.8	42.0	86	0	1	21.5
RU1904127	287	67.4	72.8	3.8	18.4	42.4	44.5	85	0	1	21.7
RU1904155	280	64.6	72.2	4.7	20.6	43.9	44.0	88	0	1	21.6
RU1904163	302	63.7	72.2	6.1	18.8	42.7	39.5	86	0	1	20.4
RU1904175	285	64.0	72.1	3.8	21.6	41.6	42.0	88	0	1	16.6
RU1804071	288	66.3	71.9	4.3	13.1	43.2	42.8	87	0	1	20.3
RU1904131	277	67.2	73.4	8.8	19.8	41.9	43.0	88	0	1	21.3

[1]**Planting date:** April 17. **Emergence:** April 30. **Herbicides:** April 18 – 21 fl oz/A Command, 2 fl oz/A Sharpen, 1 qt/A Roundup PowerMAX; June 2 – 10.66 fl oz/A Grandstand, 0.65 oz dry/A Regiment; June 16 – 15 fl oz/A Clincher SF. **Fertilizer:** May 7 – 101.08 lb/A Diammonium Phosphate/Ammonium Sulfate; June 2 – 155.13 lb/A Urea; June 17 – 101.72 lb/A Urea; July 2 – 105.25 lb/A Urea; July 9 – 103.92 lb/A Urea. **Insecticide:** August 2 – 1.80 fl oz/A Warrior II. **Fungicide:** July 22 – 19 fl oz/A Stratego. **Flood date:** May 25 **Drain date:** August 14. **Harvested:** September 4. **LSD = A difference of 27 bu/A is required for one variety to differ from another at the 5% probability level. C.V. = 5.8%**

[2]Rough rice at 12% moisture.

[3]Winseedle chalk measurement.

[4]Days after emergence.

[5]Percent of plot that was lodged.

[6]Severity of lodging: 1=plants totally erect, 5=plants completely on ground.

[7]Weight of 1,000 kernels.

Table 4. Performance of rice varieties, hybrids, and experimental lines grown on Alligator clay soil near Clarksdale, Mississippi (34°04'10"N, 90°59'03"W), 2020.[1]

Entry	Yield[2]	Whole milled rice	Total milled rice	Chalk[3]	Harvest moisture	Bushel weight	Plant height	50% heading[4]	Lodging[5]	Lodging score[6]	1,000 seed weight[7]
	bu/A	*%*	*%*	*%*	*%*	*lb*	*in*	*days*	*%*	*(1-5)*	*g*
Hybrids											
RT7521FP	249	66.1	72.8	7.7	16.5	39.0	34.0	81	25	2	24.8
RT7321FP	270	66.7	73.5	8.2	16.1	41.2	34.5	80	30	2	22.1
XP753	343	69.1	74.0	6.5	15.5	41.3	33.0	81	0	1	24.7
RT7301	341	68.6	73.1	8.3	16.8	41.8	34.3	81	0	1	25.7
RT7501	281	66.1	73.1	3.2	19.0	39.4	32.5	84	50	3	21.1
Clearfield/Provisia											
CLL15	245	67.1	73.0	6.0	20.8	40.8	30.8	81	13	2	17.8
CLL16	253	62.3	71.2	3.7	23.8	42.0	35.5	83	0	1	24.0
CLL17	207	64.4	71.4	6.7	20.1	40.0	32.3	82	80	4	16.8
CL153	239	68.7	72.7	2.9	19.1	41.9	33.3	82	15	2	22.3
CL163	227	66.3	72.1	5.9	18.3	41.4	34.8	82	20	2	22.3
CLX54197	243	66.9	72.1	6.2	19.6	43.1	33.3	82	0	1	20.0
PVL01	234	66.7	72.7	4.4	20.0	39.6	35.5	85	0	1	20.4
PVL02	147	69.1	74.2	4.5	18.2	41.6	34.0	82	88	4	15.3
RU1804147	275	65.2	70.8	6.7	18.8	42.5	36.0	82	10	2	24.3
RU1704055	258	63.5	71.7	6.2	20.0	38.0	35.0	84	0	1	21.8
RU1804135	242	65.9	73.3	6.4	18.0	41.2	34.8	84	0	1	24.3
RU1804139	264	69.2	74.3	4.1	22.3	41.7	35.8	84	0	1	23.2
RU1904209	273	70.2	73.1	7.4	20.2	42.2	37.8	81	13	2	23.6
RU2004071	292	64.5	71.9	5.5	20.7	41.7	33.8	84	0	1	24.0
RU2004191	271	68.0	73.3	5.8	21.1	42.3	35.8	83	0	1	21.3
RU2004195	242	66.2	71.5	4.9	19.0	43.5	36.5	82	0	1	25.9
Conventional											
Cheniere	213	69.0	74.8	6.3	16.8	40.1	30.3	82	15	2	16.8
Diamond	250	67.1	73.3	4.1	19.9	42.9	37.3	83	10	2	25.1
LaKast	273	67.7	73.1	4.5	18.3	43.4	37.3	81	0	1	26.0
Mermentau	245	66.2	72.0	5.1	21.2	41.3	32.8	82	0	1	21.3
Rex	254	66.8	71.6	8.2	19.3	42.3	36.3	82	0	1	23.6
Sabine	229	69.6	73.3	1.9	17.8	42.6	32.8	82	0	1	20.9
Thad	244	65.8	70.9	3.3	20.3	43.8	33.8	82	0	1	23.6
RU1804067	258	63.5	71.1	5.5	18.8	41.9	32.5	83	0	1	23.4
RU1804214	257	68.8	72.8	4.6	19.2	42.5	37.5	83	0	1	22.5
RU1904127	268	68.4	72.9	5.0	18.4	42.1	37.0	82	0	1	23.1
RU1904155	264	66.4	72.4	5.0	20.4	42.5	36.3	84	0	1	23.1
RU1904163	243	63.2	71.5	4.8	19.6	40.9	31.8	84	0	1	21.6
RU1904175	236	62.0	71.0	5.2	20.0	39.7	34.3	84	0	1	18.0
RU1804071	254	65.2	71.5	6.3	18.4	42.0	35.8	85	0	1	19.7
RU1904131	243	66.2	73.2	6.1	20.4	41.0	35.0	84	10	2	19.1

[1]**Planting date:** April 17. **Emergence:** April 30. **Herbicides:** May 19 – 3 qt/A Ricebeau, 1 qt/A Facet, 1 qt/A Prowl, 0.6 oz dry/A Permit. **Fertilizer:** April 21 – 100 lb/A MESZ; May 19 – 100 lb/A Urea; June 2 – 100 lb/A Urea; July 17 – 75 lb/A Urea. **Insecticide:** 3.5 fl oz/A pyrethroid. **Harvested:** September 3. **LSD = A difference of 35 bu/A is required for one variety to differ from another at the 5% probability level. C.V. = 8.4%**
[2]Rough rice at 12% moisture.
[3]Winseedle chalk measurement.
[4]Days after emergence.
[5]Percent of plot that was lodged.
[6]Severity of lodging: 1=plants totally erect, 5=plants completely on ground.
[7]Weight of 1,000 kernels.

Table 5. Performance of rice varieties, hybrids, and experimental lines grown on Sharkey clay soil near Hollandale, Mississippi (33°16'72"N, 90°81'36"W), 2020.[1]

Entry	Yield[2]	Whole milled rice	Total milled rice	Chalk[3]	Harvest moisture	Bushel weight	Plant height	50% heading[4]	Lodging[5]	Lodging score[6]	1,000 seed weight[7]
	bu/A	*%*	*%*	*%*	*%*	*lb*	*in*	*days*	*%*	*(1-5)*	*g*
Hybrids											
RT7521FP	261	54.9	70.9	5.5	10.2	40.0	42.8	79	82.5	4	22.3
RT7321FP	266	56.4	71.8	6.9	14.5	41.1	41.5	77	90	4	22.5
XP753	295	58.4	72.3	6.9	15.4	41.5	39.8	77	72.5	4	22.5
RT7301	293	57.6	72.3	9.6	11.4	42.2	37.5	79	90	4	22.5
RT7501	244	59.2	71.2	4.3	12.7	39.7	39.3	84	90	4	23.2
Clearfield/Provisia											
CLL15	273	64.1	72.2	7.8	13.0	41.7	38.3	80	38	3	20.7
CLL16	250	60.1	70.3	2.7	16.7	44.2	44.0	89	10	2	22.9
CLL17	265	63.7	71.3	5.6	12.2	41.5	39.0	81	70	4	17.7
CL153	279	36.0	72.3	5.0	14.4	42.4	38.5	81	10	2	20.2
CL163	216	59.2	70.1	8.8	12.5	42.2	38.5	82	73	4	21.6
CLX54197	244	62.7	71.1	5.2	11.0	44.1	38.8	81	55	3	19.3
PVL01	248	64.7	72.8	5.0	11.8	40.8	39.8	84	0	1	20.2
PVL02	204	64.6	73.1	4.7	14.0	42.0	42.3	78	53	3	16.2
RU1804147	292	61.8	70.0	9.4	14.0	42.3	42.5	82	40	3	23.3
RU1704055	281	57.8	68.8	4.9	10.0	40.4	42.3	85	0	1	23.1
RU1804135	285	66.1	72.2	8.8	12.4	43.0	40.5	84	0	1	23.9
RU1804139	280	63.5	71.7	5.2	17.5	41.7	38.3	83	0	1	24.3
RU1904209	231	66.2	72.3	7.8	14.2	41.9	44.0	80	20	2	23.8
RU2004071	303	63.1	70.8	4.0	14.6	43.8	41.0	85	0	1	23.1
RU2004191	283	63.8	71.8	6.3	15.3	43.6	39.0	82	0	1	20.4
RU2004195	283	60.6	70.0	8.5	14.1	43.9	44.5	81	0	1	23.2
Conventional											
Cheniere	227	65.7	73.5	4.8	10.6	42.3	37.8	82	63	3	16.5
Diamond	292	64.3	72.5	3.3	16.7	44.4	44.5	84	0	1	24.3
LaKast	249	62.8	72.0	5.6	13.1	43.4	43.5	82	50	3	21.2
Mermentau	290	64.9	71.2	4.8	13.8	43.0	40.3	81	0	1	19.9
Rex	312	64.5	70.8	6.3	16.5	43.0	42.5	82	0	1	24.0
Sabine	240	66.2	71.7	3.1	14.0	43.9	40.3	83	0	1	20.5
Thad	316	63.8	71.1	4.9	15.4	44.5	39.0	83	15	2	22.7
RU1804067	289	62.8	70.4	5.9	11.3	43.7	41.3	82	0	1	22.9
RU1804214	295	64.4	71.5	4.4	9.1	43.3	42.8	81	0	1	20.1
RU1904127	267	63.9	71.9	4.6	12.3	42.4	42.8	80	15	2	21.3
RU1904155	282	57.5	70.9	7.4	14.4	44.0	44.8	81	50	3	17.4
RU1904163	303	55.0	71.0	4.8	13.3	42.1	39.0	83	0	1	18.1
RU1904175	234	60.8	70.7	4.8	13.4	41.0	41.3	90	25	2	16.6
RU1804071	297	62.5	70.8	4.5	9.4	43.0	43.5	83	0	1	20.3
RU1904131	219	62.9	71.7	8.5	17.9	41.8	41.3	85	10	2	19.2

[1]**Planting date:** May 4. **Emergence:** May 13. **Herbicides:** May 6 – 3 pt/A RoundUp, 1 gal/6 A Command, 1.5 oz Sharpen; June 12 – 0.67 oz/A Regiment, 2/3 pt/A Grandstand. **Fertilizer:** May 22 – 100 lb Ammonium Sulfate/Diammonium Phosphate; June 16 – 150 lb Urea; June 29 – 100 lb Urea; July 14 – 100 lb Urea; July 21 – 100 lb Urea. **Insecticide:** August 5 – 1 gal/70 A Warrior II. **Fungicide:** July 22 – 19 oz/A Stratego. **Flood date:** June 13. **Harvested:** September 17. **LSD = A difference of 63 bu/A is required for one variety to differ from another at the 5% probability level. C.V. = 14.4%**

[2]Rough rice at 12% moisture.

[3]Winseedle chalk measurement.

[4]Days after emergence.

[5]Percent of plot that was lodged.

[6]Severity of lodging: 1=plants totally erect, 5=plants completely on ground.

[7]Weight of 1,000 kernels.

Table 6. Performance of rice varieties, hybrids, and experimental lines grown on Sharkey silty clay soil near Pace, Mississippi (33°81'85"N, 90°84'77"W), 2020.[1]

Entry	Yield[2]	Whole milled rice	Total milled rice	Chalk[3]	Harvest moisture	Bushel weight	Plant height	50% heading[4]	Lodging[5]	Lodging score[6]	1,000 seed weight[7]
	bu/A	*%*	*%*	*%*	*%*	*lb*	*in*	*days*	*%*	*(1-5)*	*g*
Hybrids											
RT7521FP	288	58.8	69.7	7.0	9.5	39.9	45.0	79	57.5	3	23.1
RT7321FP	276	54.9	70.2	4.8	11.1	42.0	42.8	77	50	3	22.5
XP753	305	61.7	71.9	5.3	12.2	41.6	42.5	78	47.5	3	22.6
RT7301	320	62.8	71.8	6.5	12.6	42.2	40.8	78	40	3	23.2
RT7501	331	61.6	70.4	3.5	19.6	40.1	41.5	82	0	1	24.9
Clearfield/Provisia											
CLL15	260	64.1	71.8	3.9	14.2	42.0	39.3	81	0	1	20.7
CLL16	265	55.7	67.8	4.2	22.6	44.6	41.8	83	0	1	22.9
CLL17	222	59.6	69.8	4.7	13.0	42.0	40.8	79	85	4	18.3
CL153	215	63.9	71.3	4.6	13.3	42.6	39.3	80	0	1	20.4
CL163	235	62.5	70.5	4.3	15.3	42.4	41.8	82	0	1	20.3
CLX54197	246	61.6	70.1	7.5	12.0	43.9	38.8	80	0	1	20.1
PVL01	228	61.3	71.9	3.5	14.0	40.5	40.5	83	0	1	19.2
PVL02	181	63.5	72.7	4.8	12.6	43.0	41.0	80	95	4	17.7
RU1804147	228	59.9	68.9	5.5	15.1	42.9	43.5	81	20	2	21.7
RU1704055	252	52.3	67.4	6.3	14.3	39.4	39.8	82	0	1	22.0
RU1804135	250	59.9	70.4	6.7	13.9	42.2	40.3	83	0	1	22.6
RU1804139	256	62.4	71.8	7.1	19.5	41.9	39.0	82	0	1	22.1
RU1904209	187	64.6	71.5	5.1	16.3	41.7	46.0	81	15	2	21.7
RU2004071	275	59.1	69.1	6.9	18.9	43.4	40.0	83	0	1	22.8
RU2004191	256	62.2	70.6	6.0	18.1	43.6	42.5	83	0	1	19.6
RU2004195	276	60.7	69.8	6.9	10.1	43.5	43.3	81	0	1	23.4
Conventional											
Cheniere	239	65.9	73.4	2.8	14.3	42.5	39.5	82	0	1	17.2
Diamond	261	61.5	71.5	5.1	19.7	44.4	45.8	83	0	1	25.0
LaKast	270	59.2	71.2	2.8	12.4	43.5	45.3	80	13	2	22.1
Mermentau	278	63.1	70.9	7.6	12.0	42.3	43.0	80	0	1	19.0
Rex	283	60.8	68.6	7.2	8.9	42.6	42.5	82	0	1	24.6
Sabine	267	66.0	71.9	3.8	12.0	43.8	40.3	83	0	1	18.7
Thad	281	61.7	69.5	2.1	9.4	45.0	39.8	81	0	1	21.8
RU1804067	265	58.0	68.8	6.8	11.1	42.7	41.0	82	0	1	21.1
RU1804214	251	63.8	70.9	3.6	12.0	43.7	40.8	82	0	1	20.9
RU1904127	269	63.4	71.2	6.8	11.8	42.9	43.8	80	0	1	21.5
RU1904155	271	57.9	69.1	6.2	15.9	44.1	44.0	83	0	1	20.8
RU1904163	273	58.5	69.5	7.1	10.6	43.2	37.5	83	0	1	20.1
RU1904175	244	58.8	69.0	5.4	13.6	42.2	40.8	83	0	1	19.6
RU1804071	265	61.1	70.1	6.5	10.7	43.4	41.0	82	0	1	19.6
RU1904131	255	62.8	71.9	6.9	12.9	42.2	39.8	83	0	1	22.7

[1]**Planting date:** May 3. **Emergence:** May 13. **Herbicides:** May 4 – 32 fl oz/A RoundUp, 2 fl oz/A Sharpen, 12.8 fl oz/A Command. June 6 – 1.5 pt/A Facet L, 0.55 oz dry/A Regiment. **Fertilizer:** May 12 – 50 lb/A Ammonium Sulfate and 50 lb/A Diammonium Phosphate; June 6 – 250 lb/A Urea; June 28 – 100 lb/A Urea, July 7 – 100 lb/A Urea. **Flood date:** June 6. **Harvested:** September 10. **LSD = A difference of 38 bu/A is required for one variety to differ from another at the 5% probability level. C.V. = 8.9%**

[2]Rough rice at 12% moisture.

[3]Winseedle chalk measurement.

[4]Days after emergence.

[5]Percent of plot that was lodged.

[6]Severity of lodging: 1=plants totally erect, 5=plants completely on ground.

[7]Weight of 1,000 kernels.

Table 7. Performance of rice varieties, hybrids, and experimental lines grown on Forestdale silty clay loam soil near Shaw, Mississippi (33°59'40"N, 90°77'63"W), 2020.[1]

Entry	Yield[2]	Whole milled rice	Total milled rice	Chalk[3]	Harvest moisture	Bushel weight	Plant height	50% heading[4]	Lodging[5]	Lodging score[6]	1,000 seed weight[7]
	bu/A	*%*	*%*	*%*	*%*	*lb*	*in*	*days*	*%*	*(1-5)*	*g*
Hybrids											
RT7521FP	255	56.1	69.1	3.4	14.6	40.1	48.8	87	81.3	4	25.6
RT7321FP	204	55.2	70.9	4.4	13.6	42.0	44.3	87	0	1	26.4
XP753	254	58.3	71.6	4.6	13.9	41.7	41.3	87	0	1	25.7
RT7301	323	57.3	71.0	5.8	15.2	42.4	40.5	88	0	1	26.3
RT7501	337	58.7	69.8	4.0	18.1	39.7	42.5	87	0	1	26.0
Clearfield/Provisia											
CLL15	249	62.5	71.5	5.4	14.6	42.0	36.0	87	0	1	22.7
CLL16	253	57.8	70.3	2.8	16.3	43.8	42.5	87	0	1	26.0
CLL17	131	61.8	69.9	4.7	15.5	41.4	40.3	88	70	4	21.2
CL153	271	65.0	71.8	3.8	15.6	42.4	38.8	89	0	1	23.3
CL163	278	61.7	70.1	6.7	10.3	42.1	39.0	88	0	1	25.6
CLX54197	232	59.5	69.1	4.4	17.1	44.0	37.5	88	0	1	23.2
PVL01	201	60.9	71.4	3.9	18.1	40.8	40.3	88	0	1	20.4
PVL02	145	63.0	71.2	5.1	14.6	42.7	42.3	88	78	4	18.6
RU1804147	238	60.1	69.4	6.0	13.3	42.3	40.3	88	0	1	26.9
RU1704055	234	50.4	67.0	4.2	15.1	39.3	41.0	88	0	1	23.7
RU1804135	251	58.1	68.9	9.1	15.4	42.9	42.3	89	0	1	25.5
RU1804139	202	58.6	70.1	4.2	16.5	41.3	42.3	89	40	3	25.5
RU1904209	188	64.3	71.0	5.8	16.2	41.8	44.8	88	0	1	25.4
RU2004071	245	55.2	68.1	4.1	19.3	42.1	42.3	87	0	1	23.8
RU2004191	286	59.2	69.9	5.2	17.7	42.8	42.0	88	0	1	23.6
RU2004195	261	54.9	69.0	6.0	13.0	43.6	44.5	90	0	1	26.0
Conventional											
Cheniere	242	65.6	73.4	5.2	14.0	42.8	36.5	87	0	1	19.4
Diamond	273	58.4	70.5	2.8	14.7	44.7	44.8	90	0	1	25.7
LaKast	238	58.5	70.2	3.9	11.3	44.0	39.5	89	0	1	25.4
Mermentau	266	62.0	70.3	5.6	15.6	42.8	42.0	88	0	1	21.7
Rex	277	58.8	68.7	5.0	10.4	42.3	39.8	88	0	1	26.8
Sabine	222	64.8	70.9	4.4	15.9	43.8	40.5	88	0	1	22.5
Thad	302	61.0	70.0	4.5	13.6	45.3	40.8	88	0	1	25.2
RU1804067	243	57.1	68.1	3.1	16.3	43.1	40.0	88	0	1	25.0
RU1804214	233	64.2	71.7	5.4	16.4	43.7	41.3	87	0	1	23.4
RU1904127	230	63.2	71.5	5.1	14.2	42.5	40.5	90	0	1	23.9
RU1904155	190	55.8	69.0	5.2	18.9	43.4	43.8	88	0	1	24.8
RU1904163	263	51.2	68.4	3.9	12.6	42.6	38.8	87	0	1	22.8
RU1904175	205	52.4	68.5	6.6	15.4	40.3	36.8	90	0	1	21.8
RU1804071	218	60.3	70.1	2.4	15.3	43.8	38.3	88	0	1	22.5
RU1904131	178	53.4	69.3	10.4	13.7	39.6	38.8	88	0	1	24.8

[1]**Planting date:** May 3. **Emergence:** May 9. **Herbicides:** February 15 – 6.67 fl oz/A Section Three, 1.33 pt/A 2,4-D LV6, 1 qt/A Cornerstone 5 Plus; May 5 – 1 pt/A Command, 2 fl oz/A Sharpen, 32 fl oz Envy Six Max; June 4 – 1 dry oz/A Halomax 75, 32 fl oz/A Facet L. **Fertilizer:** May 25 – 100 lb/A Diammonium Phosphate; June 6 – 200 lb/A Urea, June 25 – 100 lb/A Urea, July 16 – 100 lb/A Urea. **Insecticide:** July 27 – 2 fl oz/A Lambda T-2. **Flood date:** June 7. **Drain date:** August 8. **Harvested:** September 9. **LSD = A difference of 27 bu/A is required for one variety to differ from another at the 5% probability level. C.V. = 5.8%**

[2]Rough rice at 12% moisture.

[3]Winseedle chalk measurement.

[4]Days after emergence.

[5]Percent of plot that was lodged.

[6]Severity of lodging: 1=plants totally erect, 5=plants completely on ground.

[7]Weight of 1,000 kernels.

Table 8. Performance of rice varieties, hybrids, and experimental lines grown on Sharkey clay soil near Stoneville, Mississippi (33°43'14"N, 90°90'76"W), 2020.[1]

Entry	Yield[2]	Whole milled rice	Total milled rice	Chalk[3]	Harvest moisture	Bushel weight	Plant height	50% heading[4]	Lodging[5]	Lodging score[6]	1,000 seed weight[7]
	bu/A	*%*	*%*	*%*	*%*	*lb*	*in*	*days*	*%*	*(1-5)*	*g*
Hybrids											
RT7521FP	275	60.3	69.2	9.1	20.4	40.6	44.0	88	0	1	25.0
RT7321FP	202	56.3	67.3	8.9	15.7	40.5	43.0	81	0	1	24.3
XP753	251	52.8	68.3	9.8	15.4	40.8	39.5	84	0	1	24.5
RT7301	247	53.0	68.2	13.0	18.7	41.5	40.3	85	0	1	24.4
RT7501	281	54.5	67.8	5.7	23.4	40.4	37.0	91	0	1	25.5
Clearfield/Provisia											
CLL15	182	58.5	68.3	10.7	21.0	41.4	35.3	82	0	1	20.6
CLL16	237	58.4	67.7	4.8	23.8	45.0	41.0	89	0	1	23.3
CLL17	210	59.8	67.9	8.0	21.4	42.5	35.8	86	0	1	20.6
CL153	189	63.4	69.8	5.1	19.7	43.4	34.0	84	0	1	21.3
CL163	228	62.1	69.3	6.1	20.5	43.2	37.8	93	0	1	22.1
CLX54197	258	62.2	68.8	7.3	18.9	45.6	35.0	87	0	1	21.9
PVL01	193	58.4	69.9	2.6	20.5	41.6	34.5	90	0	1	20.6
PVL02	131	57.0	68.2	8.4	17.6	40.3	39.8	82	0	1	16.6
RU1804147	256	59.1	67.5	8.2	14.8	44.0	38.0	87	0	1	23.5
RU1704055	232	57.0	68.2	7.8	22.7	41.4	39.3	89	0	1	21.7
RU1804135	239	61.8	69.9	9.1	19.1	44.5	37.0	92	0	1	25.0
RU1804139	235	63.3	71.7	10.0	21.7	42.2	36.3	89	0	1	21.2
RU1904209	186	63.3	69.8	6.5	21.7	41.2	40.0	81	0	1	21.2
RU2004071	225	62.3	69.6	7.1	24.8	44.0	40.8	94	0	1	21.0
RU2004191	258	62.9	69.9	7.9	17.0	44.4	40.0	88	0	1	20.9
RU2004195	207	60.6	68.2	8.8	21.5	44.7	38.8	86	0	1	24.5
Conventional											
Cheniere	217	57.4	72.0	3.8	18.7	43.8	35.8	86	0	1	19.7
Diamond	217	59.4	69.5	4.6	22.9	45.2	41.8	91	0	1	25.1
LaKast	235	58.4	68.7	5.2	20.4	43.9	41.8	86	0	1	23.9
Mermentau	201	62.6	69.8	6.7	21.2	42.9	37.3	82	0	1	20.3
Rex	230	63.2	68.6	7.8	17.7	44.5	37.5	89	0	1	25.2
Sabine	199	62.7	70.1	3.9	22.6	45.3	36.8	88	0	1	21.7
Thad	224	61.3	69.3	2.0	23.6	46.1	39.0	89	0	1	22.8
RU1804067	222	58.8	67.5	7.9	23.7	44.7	38.5	91	0	1	23.7
RU1804214	228	61.9	69.0	3.2	17.5	44.4	37.0	87	0	1	22.4
RU1904127	222	63.1	70.0	6.1	20.2	43.7	36.3	84	0	1	22.9
RU1904155	237	57.2	68.4	12.1	19.9	45.0	40.3	89	0	1	22.6
RU1904163	245	56.7	67.9	8.0	20.4	44.3	35.5	90	0	1	21.5
RU1904175	234	61.3	69.8	4.0	26.4	43.0	41.0	93	0	1	18.4
RU1804071	234	61.8	68.8	5.1	17.0	44.6	37.8	88	0	1	21.5
RU1904131	230	65.0	71.8	6.7	21.0	44.0	39.5	91	0	1	24.3

[1]**Planting date:** May 6. **Emergence:** May 18. **Herbicides:** May 7 – 16 fl oz/A Command, 2 fl oz/A Sharpen, 48 fl oz/A Gramoxone (2 lb); June 18 – 1 gal/A Stam, 2/3 oz/A Permit (dry), 16 oz/A Facet L, June 29 – 6 oz/A Newpath. **Fertilizer:** June 30 – 150 lb/A Urea. **Flood date:** July 2. **Drain date:** September 17. **Harvested:** September 22. **LSD = A difference of 42 bu/A is required for one variety to differ from another at the 5% probability level. C.V. = 11.4%**

[2]Rough rice at 12% moisture.

[3]Winseedle chalk measurement.

[4]Days after emergence.

[5]Percent of plot that was lodged.

[6]Severity of lodging: 1=plants totally erect, 5=plants completely on ground.

[7]Weight of 1,000 kernels.

Table 9. Performance of rice varieties, hybrids, and experimental lines grown on Sharkey clay soil near Tunica, Mississippi (34°57'99"N, 90°25'50"W), 2020.[1]

Entry	Yield[2]	Whole milled rice	Total milled rice	Chalk[3]	Harvest moisture	Bushel weight	Plant height	50% heading[4]	Lodging[5]	Lodging score[6]	1,000 seed weight[7]
	bu/A	*%*	*%*	*%*	*%*	*lb*	*in*	*days*	*%*	*(1-5)*	*g*
Hybrids											
RT7521FP	274	42.3	68.7	5.8	8.7	41.4	40.5	88	85	4	22.8
RT7321FP	347	40.3	69.3	6.5	10.1	42.7	38.5	87	80	4	24.0
XP753	351	35.0	69.8	6.9	9.4	43.3	39.5	87	0	1	24.2
RT7301	360	36.0	70.0	9.2	9.5	43.3	39.0	87	10	1	25.0
RT7501	345	44.4	69.1	3.1	8.8	41.5	40.3	91	0	1	24.0
Clearfield/Provisia											
CLL15	270	56.4	70.4	5.9	11.1	43.9	38.5	90	38	3	20.9
CLL16	285	43.8	68.6	2.2	12.4	46.2	39.3	93	45	3	19.6
CLL17	244	54.1	69.1	5.3	10.8	43.8	37.5	91	45	3	19.0
CL153	290	58.1	70.6	2.5	11.0	44.6	40.0	92	0	1	23.1
CL163	211	48.9	68.4	7.9	11.2	43.3	34.8	88	95	4	20.2
CLX54197	288	56.1	69.8	4.5	11.6	46.4	36.5	92	0	1	21.8
PVL01	235	56.1	70.7	3.8	10.0	42.5	40.5	95	0	1	20.2
PVL02	182	57.6	71.6	5.2	11.2	43.5	39.8	90	83	4	16.8
RU1804147	277	52.0	67.8	11.6	11.5	45.1	40.8	89	40	3	23.5
RU1704055	311	52.4	69.0	4.6	9.8	41.8	39.5	90	0	1	23.5
RU1804135	293	53.0	69.8	9.7	10.5	45.0	40.5	92	0	1	25.3
RU1804139	297	62.9	71.7	3.5	11.4	44.0	39.3	89	0	1	24.1
RU1904209	271	57.5	70.5	6.2	11.0	44.0	43.0	90	10	2	23.8
RU2004071	265	45.1	69.1	2.8	10.3	45.3	40.3	91	0	1	23.2
RU2004191	285	45.8	70.3	6.3	10.7	45.4	42.3	92	0	1	22.2
RU2004195	286	57.7	69.2	7.2	11.5	45.4	42.0	88	0	1	24.4
Conventional											
Cheniere	271	62.1	73.4	5.3	9.9	43.8	36.5	88	20	2	18.2
Diamond	287	51.0	70.7	1.3	11.7	46.3	46.5	91	0	1	24.5
LaKast	253	54.8	70.6	5.3	10.5	44.6	40.3	88	25	2	22.7
Mermentau	275	62.4	71.0	5.7	10.6	44.4	39.3	71	0	1	20.3
Rex	282	59.0	68.8	6.3	11.3	44.7	42.8	89	0	1	24.5
Sabine	280	61.8	71.4	2.8	10.2	45.2	38.8	90	0	1	20.8
Thad	273	48.6	69.4	5.1	11.4	46.4	35.8	89	0	1	23.6
RU1804067	282	55.8	68.5	5.3	10.8	44.8	38.8	87	0	1	24.4
RU1804214	287	54.5	70.1	4.6	11.3	45.1	41.3	90	0	1	22.1
RU1904127	288	61.0	71.3	3.5	10.5	44.9	40.0	90	0	1	23.6
RU1904155	303	41.2	69.5	4.9	11.0	45.8	43.0	91	0	1	22.8
RU1904163	294	39.5	69.6	5.0	10.9	44.4	38.8	91	0	1	20.4
RU1904175	212	51.4	70.1	4.2	10.3	44.3	36.3	91	65	4	20.1
RU1804071	287	57.7	69.9	3.0	10.5	44.8	41.8	92	0	1	21.9
RU1904131	285	57.6	71.2	7.4	11.7	44.6	42.5	93	0	1	25.3

[1]**Planting date:** April 6. **Emergence:** April 18. **Herbicides:** May 13 – 0.5 oz dry/A Regiment, .67 oz dry/A Permit **Fertilizer:** May 13 – 292 lb/A 41-0-0-4; June 10 – 115 lb/A 41-0-0-4. **Fungicide:** July 8 – 17 oz/A Stratego. **Drain date:** August 12. **Harvested:** September 8. **LSD = A difference of 41 bu/A is required for one variety to differ from another at the 5% probability level. C.V. = 9%**

[2]Rough rice at 12% moisture.

[3]Winseedle chalk measurement.

[4]Days after emergence.

[5]Percent of plot that was lodged.

[6]Severity of lodging: 1=plants totally erect, 5=plants completely on ground.

[7]Weight of 1,000 kernels.

Table 10. Average rough rice yields of varieties, hybrids, and experimental lines evaluated in on-farm trials at seven locations, 2020.

Entry	Choctaw	Clarksdale	Hollandale	Pace	Shaw	Stoneville	Tunica	Avg.	Stability[1]
	bu/A	*bu/A*	*bu/A*	*bu/A*	*bu/A*	*bu/A*	*bu/A*	*bu/A*	
Hybrids									
RT7521FP	300	249	261	288	255	275	274	271	7
RT7321FP	293	270	266	276	204	202	347	265	19
XP753	345	343	295	305	254	251	351	306	14
RT7301	369	341	293	320	323	247	360	322	13
RT7501	363	281	244	331	337	281	345	312	14
Clearfield/Provisia									
CLL15	276	245	273	260	249	182	270	251	13
CLL16	289	253	250	265	253	237	285	262	7
CLL17	260	207	265	222	131	210	244	220	21
CL153	264	239	279	215	271	189	290	250	15
CL163	281	227	216	235	278	228	211	239	12
CLX54197	289	243	244	246	232	258	288	257	9
PVL01	225	234	248	228	201	193	235	223	9
PVL02	203	147	204	181	145	131	182	170	17
RU1804147	285	275	292	228	238	256	277	264	9
RU1704055	282	258	281	252	234	232	311	264	11
RU1804135	281	242	285	250	251	239	293	263	9
RU1804139	262	264	280	256	202	235	297	256	12
RU1904209	279	273	231	187	188	186	271	231	19
RU2004071	274	292	303	275	245	225	265	269	10
RU2004191	280	271	283	256	286	258	285	274	5
RU2004195	287	242	283	276	261	207	286	263	11
Conventional									
Cheniere	257	213	227	239	242	217	271	238	9
Diamond	296	250	292	261	273	217	287	268	10
LaKast	291	273	249	270	238	235	253	258	8
Mermentau	284	245	290	278	266	201	275	263	12
Rex	281	254	312	283	277	230	282	274	9
Sabine	252	229	240	267	222	199	280	241	12
Thad	301	244	316	281	302	224	273	277	12
RU1804067	286	258	289	265	243	222	282	264	9
RU1804214	279	257	295	251	233	228	287	261	10
RU1904127	287	268	267	269	230	222	288	261	10
RU1904155	280	264	282	271	190	237	303	261	14
RU1904163	302	243	303	273	263	245	294	275	9
RU1904175	285	236	234	244	205	234	212	236	11
RU1804071	288	254	297	265	218	234	287	263	11
RU1904131	277	243	219	255	178	230	285	241	15
Mean	284	253	269	259	239	225	281	259	
LSD	27	35	63	38	27	42	41	24	
CV	5.8%	8.4%	14.4%	8.9%	5.8%	11.4%	9.0%	14.8%	
Planting Date	April 17	April 17	May 4	May 3	May 3	May 6	April 6		
Emergence date	April 30	April 30	May 13	May 13	May 9	May 18	April 18		

[1]Stability is calculated by dividing the standard deviation by the mean and multiplying by 100. The lower the number, the more stable it is across multiple locations.

Table 11. Average agronomic and milling performance of varieties, hybrids, and experimental lines grown at seven on-farm locations, 2020.

Entry	Origin[1]	Yield[2]	Whole milled rice	Total milled rice	Chalk[3]	Harvest moisture	Bushel weight	Plant height	50% heading[4]	Lodging[5]	Lodging[6]	1,000 seed weight[7]	Approximate seeds/pound
		bu/A	*%*	*%*	*%*	*%*	*lb*	*in*	*days*	*%*	*(1-5)*	*g*	*no.*
Hybrids													
RT7521FP	RT	272	57.4	70.3	6.2	13.5	40.1	43	83	51	3	23.5	19354
RT7321FP	RT	268	56.3	70.7	6.8	13.7	41.5	42	81	38	2	23.1	19617
XP753	RT	309	57.5	71.7	6.8	13.8	41.7	40	82	18	2	23.9	19030
RT7301	RT	322	57.4	71.4	8.6	14.1	42.2	39	83	20	2	24.4	18607
RT7501	RT	312	58.8	70.6	4.1	16.7	40.4	39	86	20	2	24.0	18905
Clearfield/Provisia													
CLL15	HA	251	62.9	71.4	6.7	16.2	42.1	37	84	13	2	20.4	22302
CLL16	HA	262	57.2	69.6	3.5	19.6	44.3	41	87	8	1	23.1	19654
CLL17	HA	220	61.5	70.2	5.6	16.0	41.9	38	84	56	3	18.2	24906
CL153	HA	248	60.5	71.7	3.9	15.4	42.9	38	85	4	1	21.5	21102
CL163	HA	238	60.9	70.3	6.9	15.1	42.4	38	86	29	2	21.8	20826
CLX54197	HA	257	62.3	70.5	5.8	15.3	44.5	37	85	8	1	20.5	22162
PVL01	HA	223	62.0	71.7	4.0	15.8	40.9	38	87	0	1	20.0	22733
PVL02	HA	170	63.5	72.2	5.4	14.8	42.1	40	83	63	3	16.5	27444
RU1804147	MS	265	60.1	69.2	8.3	15.3	43.1	40.5	85	18	2	23.3	19461
RU1704055	MS	267	56.3	69.0	5.6	15.9	37.9	39.5	86	0	1	22.5	20203
RU1804135	MS	263	61.7	71.2	8.4	15.1	43.1	39	87	0	1	24.3	18694
RU1804139	MS	256	63.6	72.0	5.5	17.6	42.3	38	86	6	1	23.0	19727
RU1904209	MS	231	64.9	71.6	6.6	15.5	42.1	43	83	8	1	23.2	19593
RU2004071	MS	269	58.9	69.9	5.0	18.7	42.8	40	87	0	1	22.6	20114
RU2004191	MS	273	61.0	71.1	6.1	17.3	43.6	41	86	0	1	20.8	21797
RU2004195	MS	263	60.9	69.9	7.1	15.5	44.1	42	84	0	1	24.5	18509
Conventional													
Cheniere	LA	238	64.8	73.6	4.9	14.1	42.4	36	84	17	2	17.8	25465
Diamond	AR	268	61.3	71.6	3.5	18.0	44.3	44	87	1	1	25.1	18098
LaKast	AR	258	61.0	71.2	4.6	14.9	43.8	41	84	14	2	23.5	19331
Mermentau	LA	262	64.1	71.2	6.0	16.1	42.7	39	81	0	1	20.4	22255
Rex	MS	274	62.6	69.7	6.9	14.8	43.2	41	85	0	1	24.5	18563
Sabine	TX	241	65.6	71.7	3.3	15.4	43.9	38	85	0	1	20.7	21887
Thad	MS	274	61.2	70.3	3.7	16.2	45.1	38	85	3	1	23.1	19629
RU1804067	MS	265	60.0	69.3	5.7	15.2	43.5	39	86	0	1	23.2	19569
RU1804214	MS	261	63.6	71.2	4.4	14.8	43.8	40.4	85	0	1	21.8	20785
RU1904127	MS	261	64.3	71.6	5.0	15.1	43.0	41	84	2	1	22.6	20114
RU1904155	MS	261	57.2	70.2	6.5	17.3	44.1	42	86	7	1	21.9	20758
RU1904163	MS	277	55.4	70.0	5.7	15.2	42.9	37	86	0	1	20.7	21932
RU1904175	MS	238	58.6	70.2	4.9	17.3	41.7	39	88	15	2	18.7	24241
RU1804071	MS	266	62.1	70.4	4.6	13.5	43.5	40	86	0	1	20.8	21797
RU1904131	MS	248	62.1	71.8	7.8	16.8	42.1	40	87	3	1	22.4	20281
Mean		259	61	71	6	16	41	40	83	15	3	22	20818
LSD		23.6	4.7	1.1	1.3	2.8	1.3	2.3	2.9				
CV		14.8	10.5	2.2	31.8	29.0	4.2	7.9	4.6				

[1]AR = Arkansas; LA = Louisiana; MS = Mississippi; TX = Texas; HA = Horizon Ag, in conjunction with the respective state; RT = RiceTec Inc.
[2]Rough rice at 12% moisture.
[3]Winseedle chalk measurement
[4]Days after emergence.
[5]Percent of plot that was lodged.
[6]Severity of lodging: 1=plants totally erect, 5=plants completely on ground.
[7]Weight of 1,000 kernels.

Table 12. Average agronomic and milling performance of varieties and hybrids grown at 21 on-farm locations from 2018–20.[1]

Entry	Origin[2]	Yield[3]	Whole milled rice	Total milled rice	Chalk	Bushel weight	Plant height	50% heading[4]	Lodging[5]	Lodging score[6]	1,000 seed weight[7]	Approx. seeds/ pound
		bu/A	*%*	*%*	*%*	*lb*	*in*	*days*	*%*	*(1-5)*	*g*	*no.*
Conventional												
Cheniere	LA	206	61.1	72.3	5.5	40.5	37	84	10	1	23.9	19768
Diamond	AR	240	55.0	69.6	5.3	42.4	43	85	3	1	28.3	16221
Lakast	AR	239	54.8	69.5	5.6	41.9	42	83	9	1	28.4	16291
Mermentau	LA	220	61.8	69.9	8.3	41.0	39	81	0	1	25.6	18148
Rex	MS	240	59.2	68.2	7.9	41.6	40	84	0	1	29.1	15846
Sabine	TX	202	60.7	70.3	5.1	42.1	39	84	0	1	26.1	17858
Thad	MS	238	56.7	68.7	4.5	43.2	39	86	1	1	26.6	17242
XP753	RT	289	52.3	70.6	9.4	39.9	42	80	12	1	26.4	17269
Clearfield												
CL151	LA-HA	204	57	70	6.2	38.3	39	87	0	1	26.5	17727
CL163	MS-HA	222	58	69	9.0	40.4	40	85	15	2	26.8	17282
CL153	LA-HA	228	59	70	5.3	41.0	38	83	3	1	26.0	17809

[1]Data presented are the averages of 21 total sites that served as the On-Farm Variety Trials for 2018–20. Listed entries were included in all 3 years.
[2]AR = Arkansas; LA = Louisiana; MS = Mississippi; TX = Texas; HA = Horizon Ag, in conjunction with the respective state; RT = RiceTec Inc.
[3]Rough rice at 12% moisture.
[4]Days after emergence.
[5]Percent of plot that was lodged.
[6]Severity of lodging: 1=plants totally erect, 5=plants completely on ground.
[7]Weight of 1,000 kernels.

Table 13. Reactions of rice varieties and hybrids to common diseases in the Midsouth.[1]

Variety/ Hybrid	Sheath blight	Blast	Stem rot	Kernel smut	False smut	Brown leaf spot	Straight head	Lodging	Black sheath rot	Bacterial panicle blight	Narrow brown leaf spot	Leaf smut
Bowman	MS	S	S	S	S	R	MS	MS	MS	S	MR	—
Cheniere	S	S	S	S	S	MR	MR	MS	MS	MS	VS	MR
CL111	VS	S	VS	S	S	R	MS	S	S	S	S	
CL142-AR	MS	S	S	S	S	R	MS	MS	S	S	MS	
CL151	S	VS	VS	S	S	R	VS	S	S	VS	S	—
CL152	S	MS			S		MR	MR		MS	R	
CL162	S	S	S	S	S	—	MR	VS	S	MR	R	—
CL261	MS	MS	S	MS	S	R	S	MR	MS	S	S	
CLXL729	MS	MR	MS	MS	S	R	MR	S	MS	MR	MS	—
CLXL745	MS	MR	MS	MS	S	R	MR	S	MS	MR	MS	—
Cocodrie	S	S	S	S	S	MR	VS	MS	MS	VS	MS	MS
Mermentau	S	S					MS			MS		
Rex	S	VS					MR	MR		VS	VS	
RoyJ	MS	S	S	VS	S	MR	S	MR	MS	S	MR	
Sabine	S	S	S	S	S	R	—	MR	S	S	MS	—
Taggart	MS	S	S	S	S	—	—	MS	S	S	—	—
Templeton	MS	R	S	S	S	—	—	MS	S	S	—	—
Wells	S	S	S	MS	S	MR	MR	S	—	VS	R	—
XL723	MS	MR	MS	MS	S	R	MR	S	MS	MR	MS	—
XL753	R	MR								MR		

[1]Abbreviations: 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 14. Nitrogen fertilizer rate guidelines for selected rice varieties.

Varieties	Clay soils[1]		Silt loam soils[2]	
	Preflood	Midseason	Preflood	Midseason
	lb/A	*lb/A*	*lb/A*	*lb/A*
Bowman	120-150	30-60	90-120	30-60
Cheniere	120-150	30-60	90-120	30-60
CL151[3]	90-135	0-45	90	45
CL152	120-150	45	120	45
CL153	120-150	30-60	90-120	30-60
CL163	120-150	45	120	45
CL172	120-150	30-60	90-120	30-60
Cocodrie	120-150	30-60	90-120	30-60
Diamond	120-150	30-60	90-120	30-60
Lakast	120-140	30-45	90-120	30-45
Mermentau	120-150	30-60	90-120	30-60
PVL01	120-150	30-60	90-120	30-60
PVL02[4]	120-150	30-60	90-120	30-60
Rex	120-150	45	120	45
Sabine	120-150	30-60	90-120	30-60
Thad	120-150	30-60	90-120	30-60

[1]Clay soils include soils with CEC greater than 20 $cmol_c\ kg^{-1}$.
[2]Silt loam soils include soils with CEC less than 20 $cmol_c\ kg^{-1}$.
[3]CL151 is highly prone to lodging.
[4]Limited data for both clay and silt loam soils. Recommendations are subject to change with further testing.

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Reuben Moore, Interim Director **www.mafes.msstate.edu**