

TEST PROCEDURES

For 2016, the Rice On-Farm Variety Trials consisted of 34 entries, including five hybrids (three Clearfield® and two conventional types), 10 Clearfield types (6 released varieties and 4 elite experimental lines), and 19 conventional types (13 released varieties and 6 elite experimental lines). All hybrids were provided by RiceTec. All Clearfield types were provided by HorizonAg. Conventional released varieties came from the public breeding programs of Mississippi (3), Arkansas (5), Louisiana (3), and Texas (2). The trials were conducted at seven locations from across the Mississippi Delta: Tunica, Clarksdale, Ruleville, 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.

Readers who may be less familiar with pesticide formulations and application rates may wish to refer to pesticide product label information available on the Internet or to the 2017 Weed Control Guidelines for Mississippi available both in print and online (MSU Extension Service Publication 1532, <http://msucares.com/pubs/publications/p1532.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. Entire plots were harvested with a small-plot combine equipped with a computerized weighing system and moisture meter. Due to differences in maturity, most entries at each location were required to have achieved the appropriate harvest moisture level before the tests were 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 procedures were conducted for all relevant data gathered from the trials using SAS 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. CV 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.