Media Contact: John Lovett jlovett@uada.edu 479-502-9712 [@ArkAgResearch](https://twitter.com/ArkAgResearch)

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# **Arkansas Agricultural Experiment Station rice breeders release two new conventional lines**

By John Lovett

U of A System Division of Agriculture

## Fast facts

* New medium-grain line, Taurus, could change market dynamics
* New long-grain rice, Ozark, shows improved yield potential

(949 words)

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FAYETTEVILLE, Ark. — Rice breeders with the Arkansas Agricultural Experiment Station have developed two new conventional rice varieties that outperform their predecessors in yield potential.

Both new rice varieties, a medium-grain and a long-grain, were recently approved for release by the University of Arkansas System Division of Agriculture and are expected to be commercially available as early as 2023 on a limited basis. Breeder seed increase is currently underway in a Puerto Rico winter nursery and foundation seed will be grown this year at the Rice Research and Extension Center and other Arkansas locations.

The new medium-grain rice, 19AR033, could even be a gamechanger in the coming years for medium-grain rice growers in the South, according to Jarrod Hardke, a professor and rice extension agronomist for the University of Arkansas System Division of Agriculture Cooperative Extension Service.

Officially named Taurus, the medium-grain variety offered an average yield potential of 232 bushels per acre in the 2021 Arkansas Rice Variety Advancement Trials.

“Based on ARVAT data, 19AR033 has a significant yield advantage over all current medium-grain varieties in all test locations,” said Xueyan Sha, senior rice breeder for the Arkansas Agricultural Experiment Station, the research arm of the Division of Agriculture. Sha conducts his work at the Rice Research and Extension Center in Stuttgart.

Sha said Taurus was bred for Midsouth conditions and would be adaptable to wherever Jupiter or Titan are grown. Taurus is a cross between four other conventional varieties and has a more plump kernel than Jupiter. It outshined even the latest medium-grain varieties, Lynx and Titan, in the 2021 trials at six locations. Taurus brought in the highest average yield in a Clay County field with 249 bushels per acre.

“It could change the economics of our medium-grain rice production,” Hardke said. “For the few years we’ve had it in the advanced testing program, it is a complete standout against the other commercial medium-grains for yield potential,” Hardke said. “We’re used to looking at five to 10 bushels per acre changes. This one is up to 20 bushels. It’s not the kind of jump you’re used to looking at.”

The new medium-grain rice could allow a farmer to take it to market without a premium and make it more competitive on the world stage, Hardke said. In December 2021, southern medium-grain rice was going for [$6.17 per bushel](https://www.uaex.uada.edu/media-resources/news/2021/december2021/12-17-2021-Ark-YEAREND-Ag-Overview.aspx).

Arkansas is the No. 1 rice-producing state in the nation, with over 1.4 million acres planted in mostly long-grain rice. Most of the state’s medium-grain rice is grown in areas north of I-40 and west of Crowley’s Ridge. In 2020, Arkansas had 125,000 acres planted in medium-grain rice, according to USDA data.

Compared to Jupiter, the one disadvantage for 19AR033 is that it has shown some susceptibility to bacterial panicle blight, Sha said. Jupiter is the only rice variety showing good resistance to bacterial panicle blight. Taurus has both Pi-ks and Pi-z genes for blast resistance, however.

Milling and grain quality for Taurus, as well as lodging tolerance, are equal to or slightly better than Jupiter, Sha said.

Taurus reaches 50 percent heading in an average of 86 days, which is about three days earlier than Jupiter or Lynx but three days later than Titan, with a plant height of 36 inches. It has an average milling yield of 64 percent head rice and 71 percent total milled rice. Lynx, which was released in 2020 with yield potential improvements over Jupiter and Titan, offered an average milling yield of 59 percent head rice and 68 percent total milled rice.

**New Long-Grain Rice**

The Rice Research and Extension Center is also set to release a new conventional long-grain rice with yield improvement over its predecessors in two years of statewide rice performance trials.

The new conventional long-grain variety, 20AR185, is a cross of Diamond and LaKast and has been named Ozark.

“Diamond has shown some issues the last two years,” Sha said. “It seems it has not been as consistent on yield potential, so this one we hope can be used as a replacement for Diamond. It’s definitely shown a yield advantage in the ARVAT.”

Ozark offered an average of 218 bushels per acre in the 2021 ARVAT conducted at six locations in Arkansas. Sha said the overall yield advantage of Ozark over Diamond is about 5 percent.

Ozark is agronomically very similar to Diamond with a plant height of 43 inches. Maturity for Ozark is a day or two earlier than Diamond at 88 days to 50 percent heading, Sha said. Lodging tolerance is also similar to Diamond’s with a slight improvement in milling, especially head rice yield.

Disease resistance is also like Diamond, with susceptibility to sheath blight, leaf and neck blasts, and moderate susceptibility to narrow brown leaf spot. Ozark also shows moderate susceptibility to false smut and is moderately resistant to straighthead.

Sha said new rice varieties like these, which are bred specifically for Arkansas’ growing conditions, would not be possible without the support of Arkansas’ rice growers.

"We are thankful for the funding and support from Arkansas rice producers through the Rice Checkoff and the Arkansas Rice Research & Promotion Board,” Sha said.

The new varieties were developed with a complete package of management recommendations for fertilizer, irrigation, and related agricultural practices. To receive the recommendations for your growing conditions, contact your local county extension agent.

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Media Contact: John Lovett
U of A System Division of Agriculture
Arkansas Agricultural Experiment Station
(479) 763-5929
jlovett@uada.edu