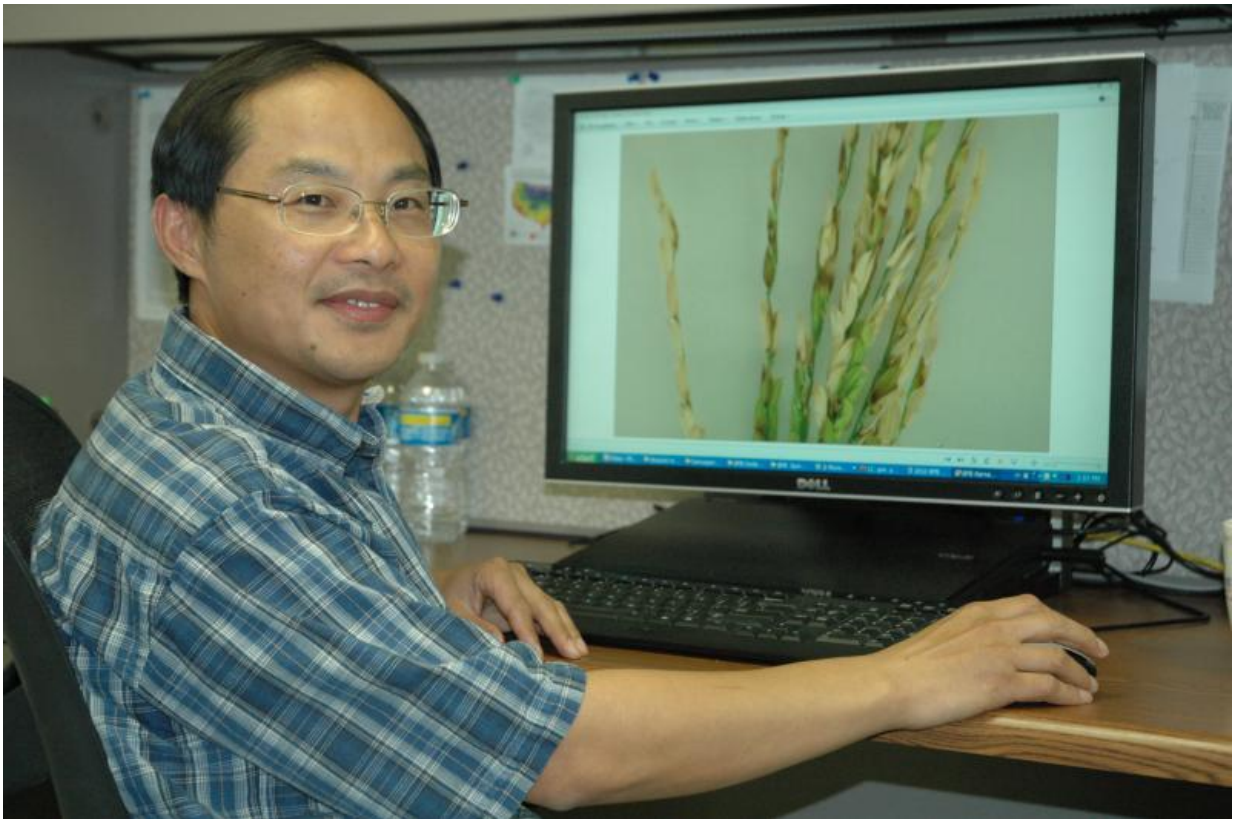


With organic rice in demand, scientists to help farmers improve production

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Dr. Shane Zhou is leading a \$1 million study on organic rice farming. Credit: Texas A&M AgriLife Research photo by Kathleen Phillips

Organic rice is increasingly desired by U.S. consumers, but farmers know that growing the grain chemically free can mean providing a feast

for insects, diseases and weeds.

That's why the U.S. Department of Agriculture has put \$1 million on a multi-state team of scientists with a track record of battling [pests](#) toward the goal of making organic rice profitable for farmers and more available for consumers. The grant also establishes the first Center of Excellence for organic rice research in the U.S.

"Organic rice is important to the U.S., and most of the organic rice acreage is located in the southern growing region and California," said Dr. Xin-Gen "Shane" Zhou, Texas A&M AgriLife Research plant pathologist in Beaumont and project leader. "Organic rice acreage has increased to about 50,000 acres in the nation. In contrast, conventional rice acreage is on the decline.

"The organic market is growing, but U.S. farmers have not been able to keep up with the demand domestically."

While the price farmers receive for organic rice is nearly double what they get for conventionally grown rice, Zhou said, producing an adequate yield of quality rice organically is challenging.

"Very little research has been done on organic rice, and organic studies on other crops do not apply to rice because – unlike other crops – most of it is grown in flooded fields," he said. "That subjects rice to a different spectrum of disease, [weeds](#) and insect pests than dryland or irrigated crops."

Informal surveys to identify the issues affecting organic [rice production](#) were conducted in California, South Carolina, Louisiana, Arkansas and Texas, he said, along with field days, workshops and meetings with farmers, millers and end-users. This helped the scientists identify nutrient management, pest control and rice varieties as the main needs to

make organic rice production economically viable.

The team on the three-year study includes plant pathologists, breeders, crop nutrient managers, economists, weed scientists, entomologists and outreach specialists from Texas, Arkansas and Washington, D.C.

Research on organic rice has been in progress at the AgriLife Research facility in Beaumont for at least five years, Zhou said, and results from those studies, along with some from other areas, will be parlayed into the new study.

"We developed this new proposal to further develop profitable methods for organic rice farmers," he said. "We surveyed organic farmers and found the major issues were weed control, nitrogen supply and stand establishment. In organic rice systems, we are not supposed to use any herbicides, chemical fertilizers, fungicides or insecticides, so that definitely causes a lot of stress for the organic farmers."

For example, farmers would like to use less nitrogen fertilizer, because organic fertilizers are much more expensive compared to conventional fertilizers. But applying organic nitrogen improperly can give the weeds a chance to grow and compete with rice plants, he explained.

Also, diseases not commonly found in conventional rice are more severe in the organic rice, Zhou added.

The research farm at Beaumont is suitable for the study, Zhou noted, because it met the criteria to be certified organic in 2012 and has been maintained as such since. The facility also houses a collection of rice cultivars and breeding lines from around the world that may be useful in finding the best varieties for organic production.

Zhou said the team plans to develop a strategy for organic rice production by the completion of the research and will develop a web-

based economic analysis tool with interactive budgets to help farmers make decisions for their own organic rice production. They also will have on-farm demonstration trials in Texas, Missouri, Florida and South Carolina.

"We will have direct connection with organic rice [farmers](#) to show them what kind of management practices or tools they can use for managing pests and for yield increase," Zhou said.

"Rice is important to the world, and the acreage devoted to rice is really too small in the U.S. compared to the rice acreage in other countries. That's why the potential impact of this project is so important."

Provided by Texas A&M University

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