

Weedy Rice Resistance Survey in the Arkansas River Valley

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Need/Goal

Arkansas ranks #1 in rice production in the United States. Even though the majority of the states 1.4 million acres are grown in Eastern Arkansas, approximately 10,000 acres are grown in the River Valley Region of Arkansas. The Arkansas River Valley consists of land on both sides of the Arkansas River running from Faulkner County on the Eastern part of the Valley all the way to Sebastian County on the Western side.

The #1 weed of Arkansas rice fields is weedy rice which is closely related to the rice that producers grow. This makes control with herbicides almost impossible until the introduction of Clearfield rice in 2002. This type of rice is resistant to the herbicide Newpath, which will control weedy rice but not harm the rice crop being grown. Over the years, producers did not adopt a 0% tolerance of weedy rice in their fields. Sometimes weedy rice plants were missed with a herbicide application, or things occurred that allowed the weedy rice to grow and pollinate. Over time, the plants cross pollinated, and Arkansas established a Newpath resistant population of weedy rice. With weedy rice again becoming a problem, there was a new herbicide resistant variety introduced in 2018 which was called Provisia rice. Provisia has provided great control of weedy rice over the years, but in 2024 a field in Faulkner County was suspected of being Provisia resistant. It is very important for producers to know what the weedy rice population in their fields is resistant too. In times where money is tight, producers need to focus resources on production practices that help control the weedy rice population. Herbicide applications that don't work are the most expensive treatments that a producer can apply. Seed that has this technology is expensive and other less expensive varieties can be acquired if resistance is a problem. The goal for this survey was to determine what kind of resistant weedy rice populations were present in the Arkansas River Valley.

Procedure

The University of Arkansas runs a resistance screening program through the Crop, Soil and Environmental Science department. Weedy rice samples can be sent to Dr. Jason Norsworthy, a weed scientist with the University of Arkansas to determine resistance. In the fall of 2024, 25 rice fields were sampled in Faulkner, Perry and Yell county. Mr. Hank Chaney from Chaney Consulting LLC assisted with collection. Samples were taken before the fields were harvested, but when the seedheads of the weedy rice were mature. Samples were hand delivered to the lab in Fayetteville, where the lab grew out the seed and sprayed the seedlings to determine resistance.



County Agent Harvesting Samples of Weedy Rice in a Faulkner County, Arkansas Rice Field

Results

Once the results were received producers were notified.

- 2 fields of the 25 sampled were not resistant to any herbicide.
- 23 fields were resistant to Newpath. Most producers knew they were looking at resistance to Newpath and were already using newer technology or taking advantage of rotation with soybeans.
- 3 of the fields were resistant to Provisia along with Newpath. These fields were the ones that were suspected earlier in the season to be resistant.

The confirmation of Provisia resistance is troubling. Currently there are no other technologies to control weedy rice in a rice crop. The fields that do have the resistance are leveled fields that stay wet and are not suited well for rotation to soybeans, which could help destroy some of the seed bank. This is an opportunity for the University of Arkansas Division of Agriculture Cooperative Extension Service to work with these producers to determine best practices to be able to continue to grow rice.

This information is crucial to producers when deciding what commodity to plant, and if going with rice, what variety to plant. To get the word out to other producers, these results were shared with rice producers in the region at the Arkansas River Valley Rice Production meeting held on March 4, 2025.



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Map of Arkansas Showing the Arkansas River Valley Region

Special thanks and recognition for assistance from
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Locations and resistance results of sampled fields in the Arkansas River Valley rice growing region