Provisia Rice Demonstration

Cooperator: Shawn Finch
Investigator: Tom Barber / Dave Freeze
Location: Light
Soil Series: Foley-Bonn complex

Background: A large share (est. 30%) of rice produced in Greene County is grown on fields that have been leveled to zero grade. Along with the advantages of no levees and easier water management seen with zero grade production come some disadvantages. Producers tend to limit rotation on these fields since they are more challenging for soybean production. Many farmers have put these fields into continuous rice production, often planting only Clearfield rice. This has resulted in many of these fields developing barnyardgrass, red rice, and weedy rice problems. These weeds have become resistant to the ALS family of herbicides which include Newpath, the key herbicide used in Clearfield rice production.

Objective: The Provisia rice system was a new weed control tool available to producers in 2018. It includes PVL01 rice (variety from HorizenAG) and Provisia herbicide (from BASF). With this system, the producer can spray Provisia herbicide over the top of PVL01 since it has a gene for tolerance to that herbicide (quizalofop-P-ethyl). Our goal was to evaluate the efficacy of the Provisia system to control herbicide resistant weeds (grasses) in problem rice fields. We also wanted to monitor PVL01 for pest tolerance and yield potential.

Production System & Planting:

The demonstration field has been in mostly Clearfield rice production the last decade, and has developed a severe red rice / weedy rice problem. It was planted to CL151 in 2016, and laid out in 2017 when it was put to zero grade.

The spring of 2018, the east half of the demonstration field received a ton of poultry litter where deeper leveling cuts had been made. The only preplant tillage used was a Kelley tool to help cover up poultry litter. The field was drilled stale seedbed on April 20th. A 70 pound seeding rate of PVL01 was used.
**Weed Control Results:**

Weed control turned out excellent on the demonstration field. It started with a burndown application of glyphosate plus Command 3ME (6 oz.) at planting. A second shot of Command (6 oz.) plus Facet was applied on May 3rd as recommended by the U of A (overlapping residuals).

The first Provisia (15.5 oz.) application went out on May 20th. Seedling weedy rice / red rice was present in row middles at this time. The second Provisia (15.5 oz.) treatment went out preflood on June 4th. Shawn’s demo field was virtually weed free the rest of the season. Most farmer’s using overlapping residuals along with the new Provisia approach, were pleasantly surprised to see pretty rice fields (few visible weeds) in 2018.

**Production Results & Summary:**

The field ended up with a pretty thick stand. We averaged 18 plants per square foot. We were a little worried about potential lodging, but the field ended up holding up all the way to harvest.

Regarding fertility, 260 # urea (120 units) was applied preflood. We used Greenseeker plots to access the need for midseason nitrogen. The plots indicated no MS nitrogen was needed, but we did end up putting out 35 units N on the west side of the field that did not get chicken litter.

Turning to pest management, with a thick stand, we did see a high level (80% + stops & climbing plant) of sheath blight that required fungicide treatment (Quilt Exel – 18 oz) in early July. Later on, after heading, we did see a moderate level of false smut throughout the field along with a few scattered white heads (rotten neck blast) in the NE corner of the field. Due to a dry August, blast development pretty much came to a halt.

We were satisfied with yield recorded for the field. It cut in the 160 bushel range similar to what we seen with PVL01 in the U of A trials in 2018.

For those fields where you have a grassy weed problem, the Provisia rice system may be a good option. With proper herbicide timing you should be able to achieve good weed control. You should also be able to produce a good crop where rice would not be an option without this approach.

According to Dr. Tom Barber, UA Extension Weed Scientist, adding Loyant (with 1st shot of Provisia) to help with post broadleaf / sedge control may be a good fit with the Provisia system. Also, make sure fields you put Provisia rice on were not in Clearfield production the previous year. PVL01 is not tolerant to Newpath and may be injured by herbicide carryover.