

## **Search for Excellence in Crop Production** **Lawson, K.<sup>1</sup>, Gardener, Z.<sup>2</sup>, Van Pelt, K.<sup>3</sup>**

### **Educating Row Crop Producers in the Lower Arkansas River Valley**

#### **Educational Objectives:**

The Arkansas River Valley is a stretch of row crop land that runs along the Arkansas River from Fort Smith in the west to Little Rock in the central part of the state. The Lower Arkansas River Valley (LARV) consists of Conway, Faulkner and Perry Counties on the eastern most part of the Arkansas River Valley. There are over 35,000 acres of row crops combined in these three counties consisting of rice, soybean, wheat, and corn. Producers in the LARV don't use crop consultants and rely on the University of Arkansas System, Division of Agriculture Cooperative Extension Service for education and recommendations on row crop production. We work together to provide educational material to assist producers with making a profit in an industry where input costs are high and commodity prices are low.

Our objectives are to educate producers to increase yields and profits through:

- Demonstrations that are timely and pertinent to LARV situations and needs
- IPM Multiplier Fields and IPM Insect Trapping
- Production Meetings and Tours

#### **Program Activities:**

On-farm demonstrations allow producers to see firsthand how Extension recommended varieties and best management practices work in their counties and surrounding areas. Producers volunteer many hours of time, equipment and labor to help establish these demonstrations. They invest time and money into the program knowing the results will benefit them in the long run making their operation more efficient.

The counties work together to come up with an Integrated Pest Management (IPM) plan every year for row crops. We work with producers in each county to establish IPM multiplier fields. These fields are scouted weekly by the agents and producers agree to use Extension recommendations on these fields. We also establish insect traps for corn earworm moths in soybeans and southwestern corn borer in corn.

Production meetings and field tours are a chance to educate producers from the demonstrations and IPM projects that we establish. Our production meetings and field tours involve all producers in the River Valley. It is an efficient way to get the word out to a larger group of producers at once. Production meetings are held in the winter, which gives us a chance to summarize the previous year and prepare for the upcoming crop season. Row Crop Tours are hosted in season so producers can have a chance to see our demonstrations while they are in the field. In 2020 we did not have a row crop tour due to COVID restrictions.

## Teaching Methods:

As demonstrations are established and throughout the season, we use social media to explain the purpose and progress of the demonstrations. During field days, we use demonstrations as stops to show producers best management practices or different varieties. At the end of the growing season, all of the data from the demonstrations is summarized in a demonstration summary book and distributed to producers through one on one visits or at production meetings.

IPM fields are scouted weekly and updates sent to producers through email. Scouting of these fields weekly allow us to have a working knowledge of what is going on in production fields and we use that information to inform other producers on what to be scouting for in their fields. When IPM insect traps reach thresholds, insect alerts are sent out to producers through email, text and personal visits.

During the River Valley Row Crop Production Meeting we educate our producers through presentations. River Valley agents will present local information from their demonstrations. Specialists will also be invited to give updates about specific crops.

## Results:

### Demonstrations

- 2018 – 13 Demonstrations
  - 5 Liberty Link Soybean Variety Demonstrations
  - 2 Roundup Ready Soybean Variety Demonstrations
  - 2 Corn Hybrid Demonstrations
  - Corn Silage Hybrid Demonstration
  - Rice Stink Bug Insecticide Evaluation
  - Soybean Inoculant Demonstration
  - Provisia Rice Demonstration
- 2019 – 7 Demonstrations
  - Liberty Link Soybean Variety Demonstration
  - Roundup Ready Soybean Variety Demonstration
  - Conventional Soybean Variety Demonstration
  - Corn Silage Hybrid Demonstration
  - Enlist Herbicide in Soybeans Demonstration
  - 2 Heligen on Corn Earworm in Soybeans Demonstration
- 2020 – 21 Demonstrations
  - 2 Soybean Research Verification Fields
  - 4 Enlist Soybean Variety Demonstrations
  - 3 Enlist Herbicide Demonstrations
  - 3 Rice IPM Verification Fields
  - 2 Irrigated Corn Plant Populations Studies
  - Non Irrigated Corn Plant Population Study
  - 2 Corn Hybrid Demonstrations
  - Rice Stink Bug Demonstration

- 2 Moisture Sensor Demonstration
- Ryegrass Control in Wheat Demonstration

### **Production Meetings and Tours**

- 2018 – 4 Meetings with 144 total in attendance
  - River Valley Row Crop Production Meeting – 70
  - Provisia & Clearfield Rice Production Meeting – 18
  - River Valley Conventional Soybean Meeting – 25
  - River Valley Row Crop Tour – 31
- 2019 – 3 Meetings with 126 total in attendance
  - River Valley Row Crop Production Meeting – 71
  - River Valley Rice Meeting – 15
  - River Valley Row Crop Tour – 40
- 2020 – 4 Meetings with 110 total in attendance
  - Wheat Production Meeting – 11
  - River Valley Rice Production Meeting – 37
  - River Valley Row Crop Production Meeting – 57
  - Rice Waterseed Workshop – 5

### **IPM Multiplier Fields (combined rice, soybean and corn)**

- 2018 – 27 IPM Multiplier Fields
- 2019 – 20 IPM Multiplier Fields
- 2020 – 27 IPM Multiplier Fields

### **Impact Statement:**

Conway, Faulkner and Perry Counties produce over \$19 million dollars in row crop sales every year. Our educational efforts allow producers to make decisions that will assist them to make a profit. Each demonstration is broken down in our demonstration summaries showing producers how they affect them financially. For example we had 3 Enlist Variety Demonstrations. The average yield ranged from 71 to 55 bushels. At \$13.00 a bushel, that is \$923 an acre for the top yield and \$715 for the bottom yield. That is a difference of \$208 per acre. If a producer selects the right variety over 500 acres that is a difference of \$104,000. Our corn plant population studies showed producers that a high seeding rate of 37,250 seeds per acre costs more at \$111 per acre than 27,000 seeds per acre which is \$81. That is a difference of \$20 more per acre, but you will make 14.8 more bushels per acre at the higher seeding rate and at \$6.00 corn that is a difference of \$88.80 per acre. So, even though a higher seeding rate costs more you are going to make \$58.80 more per acre because of the increased yield.

## **Evaluation:**

After every production meeting or tour we ask producers to fill out surveys to help us evaluate our programs. Production meetings have an average rating of 70% excellent, 30% good and 0% on average and poor for 2018 – 2020 with the row crop tour having an average rating of 100% excellent for 2018-2019. Each individual presentation is evaluated and we ask producers if they will change practices on their farm resulting from the presentations in the meetings. Comments are taken into account to help plan the next year's program.

An IPM report is written at the end of every year and sent to the state IPM coordinator to help evaluate our program.