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| Project Number: | 1920-172-0125-A |
| Project Title: | Enhanced Pest Control Systems for Mid-South Soybean Production |
| Organization: | LSU AgCenter |
| Principal Investigator Name: | Trey Price |
| Report Period: | 4th Quarter 2018 |
| Project Status: Active | |
| **Louisiana Price:** In 2018, we had a total of 15 locations for the 45-entry trial: LA (4), AR (5), MS (2), MO (1), TN (1), TX (1), and AL (1). Cercospora leaf blight developed at all locations. All indications are that all locations were successful. Cooperators are in the process of sending data to Dr. Ward for analysis. There were 460 entries and at least 6 locations for the PI trial. There appear to be sources of resistance to CLB. In our program, the 460 PI and 45 variety trials were planted in Alexandria, LA, and the second location for the 45 entry variety trial was planted in St. Joseph, LA. We rated the 460 PI trial three times as maturity groups matured with a simplified rating scale suggested by our statistician and Dr. Brian Ward. The rating system is simple, efficient, and accurately represents disease incidence and severity. We rated the 45 entry trial in Alexandria once. Disease pressure was light and weed pressure was so intense, the trial was not harvestable. In St. Joseph, LA, the trial was rated twice with a nice range of disease severity and harvested in a timely manner. Yields and seed quality were excellent. **Ward:** Travel to 16 locations across 7 states was undertaken and leaf samples showing CLB symptoms were taken. In total, over 1,000 isolates were obtained. These isolates were backed up for long-term and short-term storage. DNA is currently being extracted and will be used to build a population map across the mid-south. DNA markers will also be used to determine strobilurin resistance across populations and species. Poison plates will be used to ascertain SDHI and MBC resistance. **Padgett:** Three ratings were conducted on September 13, 18, and 27. Diseases present included Cercospora leaf blight, frogeye leaf spot, target spot, and soybean rust. Cercospora incidence and severity was high in some varieties. However some varieties look promising for sources of resistance to the Cercospora leaf pathogens. Soybean rust was also severe at the end of the season. This made it difficult to rate because of defoliation. Data has been given to Dr. Brian Ward for analysis. Inclement weather prevented harvest. **Davis:** No report received. **Buckley:** No report received.  **Alabama Sikora:** No report received.  **Arkansas Spurlock:** The variety trial was planted 6 June 2018 at a field location near Mist, AR. The farm has a history of Cercospora leaf blight pressure and the field has been in continuous soybean for 5+ years. Plots were planted on 2-row 38” row spacing, 10 ft long, with 5 ft alleys and varieties replicated 4 times. The initial rating was made on 14 August with another rating on 31 August and another on 17 September.  Cercospora leaf blight pressure was moderate for south Arkansas and symptoms were present in the test at the initial rating. The first rating was the only rating where significant differences were observed. There was a replication interaction that when removed also render the result NS. Those results are presented in a supplement file. Due to one of the wettest years on record, the test could not be harvested with a plot combine. The test was hand harvested on 30 October. Yield and seed quality data will be reported later. **Mississippi Allen:** Plots at both locations have been harvested. Data for the Verona location have been sent to Brian Ward. The last purple seed stain evaluations for the Stoneville location should be completed by the end of the week and those data also sent to Brian by sometime next week (12/19/2018). Plans for the 2019 season will begin shortly.  **Missouri Chen: Lengthy report attached.**  **Tennessee Kelly:** The 45 variety CLB trial (cut to 40 at one location for us due to space), it has been rated and was the very last thing to be harvested, still analyzing data, definitely see a big difference in seed quality which has not been rated yet.  **Texas Zhou**: **Lengthy report attached.** | |