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| Please use this form to clearly and concisely report on project progress. The information included should reflect quantifiable results that can be used to evaluate and measure project success. Comments should be limited to the designated boxes. Technical reports, no longer than 4 pages, may be attached to this summary report. |
| Project Number:  | 1420-732-7231 |
| Project Title:  | Effects of the Introduction of Feed Grains into Mid-South Soybean Production Systems |
| Organization:  | Mississippi State University |
| Principal Investigator Name: | Drs. Bobby Golden and John Orlowski |
| Report Period: | April-June 2016 |
| Project Status: Ongoing |
| Mississippi State University-Stoneville-Bobby Golden and John OrlowskiCorn was planted on March 29. Soybean and grain sorghum were planted on April 25. Grain sorghum suffered some injury from a pre-emergence application of Lexar, but has since recovered and has formed a vigorous stand. Both the corn and grain sorghum have received their sidedress applications of N. Overall the study looks very good. Very wet conditions this fall prevented the planting of wheat, so there will be no wheat harvest this year at this location. The double crop plots instead have been planted to full-season soybeans. Due to timely rainfall, no irrigation water has been applied to the irrigated plots in this study. Residue samples from the two previous growing seasons (2014, 2015) in Mississippi, Arkansas, and Louisiana have been processed. The whole samples were ground in a wood chipper. Half of each sample will be burned and the remaining ash analyzed for nutrient content. The nutrient content of the burned residue will be compared to the nutrient content of the whole residue, to determine the amount of nutrients lost due to residue burning. Samples will likely be burned later in the year (August-September). Preparations are being made for the summer research collaborators meeting in Arkansas. Researchers from all study locations will report on crop progress, study conditions, and discuss any issues/opportunities associated with this project. Potential post-doctoral researcher candidates have been interviewed to assist with data analysis and manuscript preparation associated with the project. One candidate from Auburn University has been interviewed and another candidate from the University of Missouri will be interviewed in the coming weeks. Dr. Orlowski also recently attended a crop modeling training course hosted by Iowa State University. The course provided training is the use of APSIM, crop modeling program. It appears that the data generated from this study will fit nicely into APSIM and will allow for analysis of soybean rotations under multiple future conditions including changing weather patterns or changes in the availability of irrigation water. Mississippi State University-Starkville-Trent IrbyOn April 5 corn plots were planted and 120 pounds of TSP + 200 pounds potash were applied to the entire study area.  Also, on this date 3 pts paraquat +0.025%NIS was applied to the soybean and sorghum plots, while 3 pints paraquat + 0.25% NIS + 1 quart atrazine was applied to the corn plots as a burn down application.  On April 7, the second application of fertilizer was applied to the wheat plots; N was applied as 33-0-0 at a rate of 200 pounds of product per acre.  Also on April 7th wheat plots received an application of 0.9 oz Harmony Extra + 0.25% NIS for weed control.  On April 19, soybean plots were planted and received a PRE application of Dual Magnum at 1 pint/ac.  On May 16, the corn plots received 250 lbs of nitrogen (32%) in a sidedress application.  Also on this date, sorghum plots were planted and 16 oz/ac of Lexar was applied as a PRE.  Stand count and crop vigor data has been recorded.University of Arkansas-Jeremy RossPine Tree Location: Corn was planted on April 8 and N fertilizer applied. Soybean and grain sorghum were planted on April 25. The initial stand of grain sorghum suffered severe bird damage and was terminated and replanted on May 9. The May 9 planting suffered some bird damage, but stands are considered adequate to produce good yields. This location has received high levels of rainfall.Newport location: Corn was planted on April 6 and N fertilizer has been applied. Soybean and grain sorghum were planted on April 25. No bird damage was observed at this location. Corn at this location is currently V10, while grain sorghum is V4 and soybeans have reached R1 (beginning flowering).University of Missouri- Gene StevensCorn plots were planted on April 26th and soybean and grain sorghum were planted on May 18th. The corn and grain sorghum had good stands but the soybean were irregular as a result of excessive rainfall.  The initial stand was terminated and the soybean were replanted on June 2 and have emerged.  The corn and grain sorghum received 78 lb N/acre after planting and will receive their remaining N as a sidedress application in the coming weeks. Also in the coming weeks, the wheat will be harvested. The appropriate plots will be burned and then double crop soybean will be planted.Louisiana State University- Ronnie LevyAll plots were planted during the optimum window. Corn was planted on March 23 and soybean and grain sorghum were planted on April 11. Soils samples were taken, tested, and the results sent to Mississippi State. Texas A&M University- Clark Neely and Ronnie SchnellCollege Station has received 57.9 cm of rainfall from March through May which is 224% of normal for the three month period. Temperatures averaged 3.8 degrees warmer in March, near normal in April, and 2.3 degrees cooler in May due to the cloudy wet weather we experienced. Despite the wet conditions, corn (DKS 76-14) was planted at 28K seed/a on March 5 while soybeans (HBK RY5221) and sorghum were planted March 28. Stands were excellent for sorghum and soybean plots, however corn plants suffered from waterlogged soils and yield will be reduced. All crops received 20 GPA of 11-37-0 + Zn in furrow at planting. Weeds were sprayed with Glyphosate (2.0 pt/a) and Brawl (1.33 pt/a) over all crops just after crops were planted and before crop emergence. An additional glyphosate (2 pt/a) treatment was applied over corn following emergence on 3/28/16 and over top of emerged soybeans on 4/28/16. Due to some iron chlorosis, 6-iron was sprayed over soybeans on April 26 at 2 qt/a. Hand samples were collected for wheat yield estimation on May 20 due to inability to harvest plots in a timely manner from rain and continuing bird damage. The plots were mechanically harvested on June 8 to remove remaining seed and wheat residue was burned June 13. Overall, weed control in the soybean and sorghum plots was much better this year compared to last as weather allowed for more timely herbicide application; however, pigweed in corn plots was still higher than desired. Wild hog damage is also a problem this year. Soybean and sorghum appear to be mostly unaffected, but the extent of the damage to corn plots is still uncertain at this time. A field day is being held June 16 to showcase this trial along with other trials around the research farm. |