

United Soybean Board Domestic Programs Report Form

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.

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| Project # and Title | #1420-732-7231 Effects of the Introduction of Feed Grains into Mid-South Soybean Production Systems |
| Organization & Project Leader | Bobby R. Golden – Mississippi State University |
| Reporting Period | September 15 – December 15 |

Project Status:

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| <p>Mississippi State University (Stoneville) - Bobby R. Golden</p> <p>Since our last update, two posters were presented at the international ASA meeting in Minneapolis MN detailing the project and its 2014 outcomes. One on the base yield year for imparting the rotations, and another describing the base nematode analysis at each location. After this year's data is complete we can begin describing the treatment trends from the initial rotation year on treatments were one rotation cycle has been complete. Find below brief updates as of December 12 for each state involved. We also have interest from a PI in Oklahoma to join the project for the beginning in the 2016 crop year, but final details have not been worked out as of date.</p> <p>At Stoneville, we have harvested corn, soybean, and grain sorghum. Residue management techniques have been imparted and soil sampling for both nematodes and soil quality analysis have been conducted. Do to the overtly dry weather soil samples were taken twice, immediately after the final harvest and then a month later after a significant rainfall event, to observe if any differences in nematode populations could be seen. Due to the mid-summer drought overall yield levels from all crops were down from 2014 values. However, irrigation played a much greater role in stabilizing yield in 2015 when compared to the previous year. Grain sorghum yields were lower than expected due to insect pressures. 3 applications were made form sugarcane aphid and two midge sprays were applied. Preliminary harvest metric data analysis are presented below:</p> <p>Dryland Corn: 149 bu/ac (Burn Residue); 137 bu/ac (No Burn) Irrigated Corn: bu/ac 186 (Residue Burn); 185 bu/ac (No Burning) Dryland Soybean: 37 bu/ac (No Burning); 36 bu/ac (Residue Burn) Irrigated Soybean: 68 bu/ac (Residue Burn); 70 bu/ac (No Burning) Dryland Sorghum: 63 bu/ac (Residue Burn); 39 bu/ac (No Burning) Double crop soybean: 43 bu/ac (Residue Burn); 41 bu/ac (No Burning)</p> <p>Mississippi State University (Starkville) – Trent Irby</p> <p>The Brooksville, MS location of this project has been harvested for 2015. Sorghum was harvested on September 24, 2015 and corn and soybean plots were harvested on October 10, 2015. Soil Samples and Residue Management trash samples (1 meter square sample) were collected on October 16, 2015. On November 13, 2015 the residue management plots were</p> |
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burned. Wheat plots were planted on November 17, 2015. Prior to planting wheat, glyphosate was applied across plot area for control of emerged weeds. Data from 2016 are currently being summarized.

University of Arkansas – *Jeremy Ross*

Pine Tree location:

- All plots have been harvested, and data is being entered for analysis. Final data should be confirmed and ready for analysis by the end of December 2016.
- All of the residue management treatments were burned according to protocol.
- No wheat was planted due to wet conditions.

Newport location

- All plots have been harvested, and data is being entered for analysis. Final data should be confirmed and ready for analysis by the end of December 2016.
- Burning of the residue management treatments were attempted, but a poor burn was achieved on some of the plots.
- No wheat was planted due to wet conditions.

University of Missouri – *Gene Stevens*

In Missouri, we tended to have positive yield increases for both irrigation and burning the previous crop (wheat or corn). When burning residue this fall, we noticed a higher incidence of grass pressure in corn plots where the previous residue was not burned. Disease incidence of Grey Leaf Spot was not recorded, but this also may have played a factor in these plots.

Yields from each treatment are summarized below:

Dryland Corn: 129 bu/ac (Burn Residue); 119 bu/ac (No Burn)

Irrigated Corn: 153 bu/ac (Residue Burn); 117 bu/ac (No Burning)

Dryland Soybean: 50 bu/ac (No Burning); 64 bu/ac (Residue Burn)

Irrigated Soybean: 72 bu/ac (Residue Burn); 68 bu/ac (No Burning)

Dryland Sorghum: 87 bu/ac (Residue Burn); 87 bu/ac (No Burning)

LSU AgCenter – *Ronnie Levy*

Dr. Josh Lofton, separated from the LSU AgCenter as of August 31, 2015. Dr. Ronnie Levy will be the subcontractor for the St. Joseph, location. In Louisiana, All crops except soybeans after wheat have been harvested. As soon as the soybeans are harvested the residue management will be initiated. In the transitioning phase of State PI we are working through getting all the yield values. Preliminary analysis suggests that differences to irrigation were observed to both soybean and corn, with little difference associated with burning residue. Full results will be available by the January MSSPB meeting

Texas-A&M – *Clark Neely and Ronnie Schnell*

College Station received 40 cm of rain in September, October, and November, which was 138% above normal. Roughly half of this rain fell in the third weekend of October. Weather conditions remained very dry for the summer through mid-October until this rain event and then conditions remained wet through December. Temperatures were 1.9 degrees F above normal for the three month span. Irrigated soybeans were harvested Sept 9, but dryland soybeans remained too green and thus were harvested Sept 16. Double crop soybeans were harvested Oct 20. Double cropped soybeans were irrigated with 3.8 cm on Sept 23, while all harvested plots were sprayed with Cornerstone herbicide (2 qt/a) on Sept 18 to kill weeds prior to burning. All plots with no residue management were tilled Nov 14, while residue burning did not commence on other plots until Nov 23 due to a burn ban prior to Oct 23 and then delayed due to wet conditions thereafter. Residue burning is still in progress as residue has been hindered by damp

stalks. All wheat plots were prepped and planted on Dec 7 with WB Cedar hard red winter wheat. We did not experience any disease issues in the fall, but did spray once to control stinkbugs Sept 18. The primary weed issues included annual grasses, morning glory and pigweed. Average soybean yields harvested in 2015 are as follows:

Dryland Soybeans: 20.2 bu/a

Irrigated Soybeans: 26.2 bu/a

Double Crop Soybeans (No residue burning): 4.8 bu/a

Double Crop Soybeans (Residue burning): 9.7 bu/a