

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:	Bobby Golden and John Orlowski
Project Overview - What key activities were undertaken and what were the key accomplishments during the life of this project?	
<p>This project was the first three year cycle of a multi-year rotational study. During this period the rotational studies were established at seven locations across five states in the Mid-South. Over the three years of the project yield data, nematode, and soil fertility data was collected.</p>	
Deliverables - List each deliverable and indicate whether or not it was supplied and if not supplied, please provide an explanation as to why.	
<p>1. Determine the optimum agronomic rotation for sustainable Mid-South soybean production.</p> <p>This deliverable is in the process of being supplied. Being a rotation study, multiple cycles of the rotational systems need to be evaluated. The first rotational cycles are being completed this fall, so we will be able to draw some initial conclusions about the optimum rotations for Mid-South soybean production systems. The next 3 to 6 years of this study will be key to fully supplying this deliverable.</p> <p>2. Build an economic database to describe the risk associated with each soybean rotation system commonly used in the Mid-South.</p> <p>Similar to the first deliverable, this deliverable is in the process of being supplied. Evaluation of risk requires information from multiple rotational cycles across multiple environments. The database is currently being compiled and additional data will be added to the database as the study progresses. The next 3 to 6 years of this study will be key to fully supplying this deliverables.</p> <p>3. Define the influence of feed grain residue management on succeeding soybean yield and pest pressures.</p> <p>Similar to the other deliverables, this is in the process of being supplied. Aside from the yield and economic analysis being collected, residue samples have been collected from corn and grain sorghum plots at multiple locations over the past three years. These samples will be analyzed to determine the amount of nutrients lost when residue is burned.</p>	

Did this project meet the intended Key Performance Indicators (KPIs)? List each KPI and describe progress made (or not made) toward addressing it, including metrics where appropriate.

1. Rotational partners influence on soybean yield stability in the Mid-South is determined by the end of FY2016 and documented through published manuscripts, extension materials and meeting presentations.

Since the final yield data has not yet been collected from all study locations, manuscripts and extension materials cannot be finalized. The most up-to-date data will be presented this winter at the American Society of Agronomy Meetings and Extension meetings across the states participating in the study.

2. The influence of various soybean rotational partners on economic stability in the Mid-South is determined during FY2016 and documented through publications and extension materials

Since the final yield data has not yet been collected from all study locations, manuscripts and extension materials cannot be finalized. The most up-to-date data will be presented this winter at the American Society of Agronomy Meetings and Extension meetings across the states participating in the study.

3. Complete observations of crop development, weather data, management history, yield, and shifting pest pressures for all locations for the 6-year study are provided as supplementary material to the published manuscripts.

This information is currently being collected and archived. It will be made available with the appropriate manuscripts and publications.

4. All data is made available on the MSSB and participating QSSBS websites by the end of FY 2016.

When the final yield data is collected and verified for 2016 we will begin the process of posting the relevant information to both the MSSB and QSSB websites.

5. The economic risk assessment of achieving various yield levels for different soybean rotational partners is defined at representative sites using long-term weather data, trial yields, and commodity input tracking.

This is in the process of being completed.

6. A farmer-friendly summary of the project is prepared by the end of FY 2016 that can serve as a decision-making guide for soybean rotation partner selection for the mid-south and for a particular location based on agronomic and economic information obtained from the trial.

When the final yield data from 2016 has been collected and verified the project summary for the first three years of the rotation will be finalized.

What, if any, follow-on steps are required to capture benefits for all US soybean farmers?
Describe in a few sentences how the results of this project will be or should be used.

The major follow up step for this project is the continuation of the project for multiple rotational cycles.

Describe any unforeseen events or circumstances that may have affected project timeline, costs, or deliverables.

Suitable post-doctoral candidates were not available during the first three years of this study. The lack of qualified support limited the opportunity for data analysis this fall. Also, with this project ending before all yield data had been collected for 2016 (largely due to the later maturing double crop soybeans) also limited opportunities for thorough data analysis and pushed major efforts for data analysis and publication preparation into the winter of 2016/2017.

List any relevant performance metrics not captured in KPI's.