SCSB Final Report

General Information
Principal Investigator(s) Name(s): Ben Fallen
Organization: Clemson University
Date: 01/14/19
Quarter: Final

Proposal Information
Title: Evaluation of SC Soybean Breeding Lines in 2018
Amount Expended to Date: 100% of the budget has been spent as of 12/31/18

Project Summary
All in all, I think this was a successful year for the project, albeit it was a primarily wet year. Planting and harvest were a challenge this year, to say the least. A large part of what we do to evaluate breeding lines that that were developed by the Soybean Breeding Program at Clemson University is to test our most elite varieties in numerous reginal tests. Our primary goal is to test our varieties for yield performance against other top yielding varieties, including current commercial varieties. All data has been collected and sent off for analysis, but most of the regional trials have not been reported. I have included a couple of websites under the additional information heading for websites of where this information can be found, once all data has been analyzed.

Another part of this project is developing new varieties to be evaluated. During July, August and September we were able to make 4,000 cross pollinations attempts. This is where we take pollen from one flower, from a plant with desired characteristics and use that pollen to pollinate another flower, from a plant with equal or additional desirable characteristics. In 2018, we focused on improved yield, increased protein content, nematode resistance, and improved nutritional content as desirable characteristics.

Key Performance Indicators
Drought tolerance is one issue we have focused on for the past few years and this year was the first year of multilocation testing. One of our new lines, currently under development that performed well in 2019 was SC17-DRC27. This line tested very well in the drought stress test in Florence, SC and in Sandhills, NC. Of course, a variety release is the best KPI. One of the requests I continue to get is for a RR1 MG6 variety. So, we have been testing a few lines over the years and nothing had stood out, but this year SC17-6519RR1 did well in Florence. It was the top yielder in the MG6 SCOVT irrigated trial planted in Florence and statistically similar to the top yielder in the MG6 Drought Stress trial planted in Florence, SC. Hopefully, this line performed well at other locations and will continue to do so in the coming years as well.

Additional Information
Please visit the SC Official Variety Test website at https://www.clemson.edu/cafls/research/vt/soybeans.html or google Clemson Soybean OVT. This is an excellent website to look at not only Clemson soybean varieties, but commercial varieties submitted by soybean seed companies.