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Project Title:	Enhanced Pest Control Systems for Mid-South Soybean Production
Organization:	LSU AgCenter
Principal Investigator Name:	Trey Price
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Project Status: Active

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☐ I have included a brief non-technical summary of this report that can be posted to the website for public viewing.

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Louisiana Price: Seed for the PI increase has been retrieved from GRIN and sent to Missouri for increases this season. One location of the public variety (40 entry) trial has been rated. The other location in Alexandria will be rated this week; however, this location will not be harvested due to excessive weed pressure. Plans are to visit all locations within the next two weeks to rate and collect samples isolate collection. **Ward:** Dr. Brian Ward has left his position for an industry job; however, he continues to assist on publishing our results. I have hired a competent replacement, who will start on October 1. Publications have been written and are in review with authors and journal reviewers. Promising sources of CLB resistance in breeding lines have been advanced in trials while many entries have been dropped. Updated lists have been distributed to collaborators. Further analyses are being conducted and written for publication for fungicide efficacy on CLB and symptom correlation. Fungal isolates have been stored and will be utilized by the incoming post doc. **Padgett:** The Baton Rouge location has been rated once, and plans are to return late this week for a second rating. **Davis:** 40 advanced breeding selections were planted at two locations; Ben Hur and Dean Lee Research Stations. Soybean lines were evaluated for stink bug numbers via sweep net from R3 to R6. Stink bug pressure was good at both locations, averaging 7.3 per 25 sweeps, almost double the threshold of 4 per 25 sweeps. Stink bug populations were a mix of Southern green stink bug (40%) and redbanded stink bug (60%) with a few brown stink bugs. At both locations, selection S13-10590C was highly susceptible to stink bugs, averaging 16 per 25 sweeps over 4 weeks, 4X threshold. At both locations, selections R15-7171 and S16-15170C were highly resistant to stink bugs, averaging less than 0.9 and 1.4 stink bugs per 25 sweeps over 6 weeks, respectively, a 94.4 and 92.5% reduction in stink bug numbers compared to the most susceptible varieties. Harvest will begin end of September and seed evaluation for stink bug damage will then be conducted. **Buckley:** No report received.

Alabama Sikora: The trial is nearing R6 with light CLB pressure and will be treated for soybean rust.

Arkansas Tolbert: The trial was planted on Rohwer Station in Kelso, AR, 6/5. Plants are averaging R6 growth stage and have been rated once on 8/28 for taproot decline. On 9/4 plants were beginning to exhibit Cercospora leaf blight signs and are scheduled to be assessed early this week, and every 2 weeks following.

Mississippi Allen: Plots were planted in Stoneville and Verona. The plots in Verona were lost due to herbicide issues. Plots in Stoneville are beginning to reach the initial stages for rating. Evaluations will be made multiple times.

Missouri Chen: CLB Variety Trial: With maturities ranging from 4.2 to 5.7 across the 40 entries in the CLB variety trial, we have been monitoring the trial for the last three weeks. There has been very little disease presence up to this point. We are just beginning to see some symptoms of leaf bronzing in a few plots. **CLB PI Evaluation:** We have also been monitoring the 57 PI's weekly with no signs of CLB up to this point. The earlier maturing lines will start senescence soon, so we may be able to rate the later maturing lines for another week or two. **CLB Crossing:** We were able to make 7 new crosses for CLB resistance using the PI's that were identified to have the best resistance from the 2016, 2017 and 2018 collaborative data sets. These PI's were crossed with high yielding Conv, RR1 and R2Y breeding lines. The F1 hybrids will be sent to a winter nursery for generation advancement and will be planted in our progeny row nursery in 2021. **Stink Bug Project:** We were able to make 6 new crosses between lines with stink bug resistance and high yielding conventional, RR1 and R2Y lines in 2019. The F1 hybrids will be sent to a winter nursery for generation advancement and will be planted in our progeny row nursery in 2021. We are also increasing the lines with stink bug resistance for Jeff Davis to have an adequate seed supply to enter into the CLB variety trial in 2020.

Tennessee Kelly: No report received.

Texas Zhou The soybean resistance evaluation trial established at Texas A&M AgriLife Research and Extension Center, Beaumont, Texas has been going very well. The trial is at the plant growth stage toward R6 (full seed). Cercospora late blight symptoms start to appear on the petioles and leaves in some of the plots. Disease assessment on petioles and leaves will start soon. It is expected that the trial will be harvested, and yield determined as required. Percent of seed stain will also be assessed after harvest.