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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. | |
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| Project Title: | Enhancing Stink Bug Resistance in Midsouth Soybean |
| Organization: | LSU AgCenter |
| Principal Investigator Name: | Jeffrey A. Davis |
| Report Period: | December 16, 2024, to March 15, 2025 |
| Project Status: Ongoing until March 31, 2025 | |
| ***Louisiana State University AgCenter (Dr. J. A. Davis)***  A MS student is responsible for conducting the laboratory and field evaluations of stink bug resistance. This season, in 2024, we planted one hundred F2 lines for genomic screening. The screening of these lines will allow us to conduct a rough mapping of stink bug resistance. Leaves were collected and sent to the University of Missouri for genotyping in August.  Additionally, field evaluations allowed us to calculate damage indices for breeding lines based on field level stink bug pressure. Results can be found below in Table 1. S20-13179LL55 was highly susceptible to stink bug injury while seed of S20-15411GT was highly resistant.   |  |  | | --- | --- | | **Treatment** | **Damage Index (mean ± se)** | | S20-13179LL55 | 2.32 ± 0.14 a | | S20-14129GT | 2.10 ± 0.13 a | | S20-1492 | 1.81 ± 0.05 ab | | S20-15411GT | 1.54 ± 0.33 b | | S20-2227 | 1.98 ± 0.14 ab | | S20-4428 | 2.03 ± 0.15 ab | | S20-5669 | 2.16 ± 0.14 a | | S20-7117 | 1.89 ± 0.17 ab |   ***University of Missouri (Dr. F. Lin)***  In 2023, five crosses were created to establish populations for mapping Stink Bug resistance genes. The aim was to transfer these resistance genes from exotic plant introductions into elite soybean lines and to genetically map the resistance (see Table 2). The crosses were sent to a winter nursery in Costa Rica to advance the generations until the F5 generation. We anticipate generating 250 Recombinant Inbred Lines (RILs) for each population to facilitate gene mapping in April 2025. Once these lines are received, they will be planted in the field in rows for Stink Bug screening.  Table 2: Stink Bug mapping populations.   |  |  |  |  |  | | --- | --- | --- | --- | --- | | **Cross** | **PEDIGREE** | **Project** | **Harvest** | **Total** | | S23-580 | S21-22147 x S21-21942 | SB Map | Single Plants | 120 | | S23-581 | S21-22147 x IAC-100 | SB Map | Single Plants | 117 | | S23-582 | S21-21975 x PI 085665 | SB Map | Single Plants | 120 | | S23-583 | S21-21975 x PI 097139 | SB Map | Single Plants | 315 | | S23-584 | S21-22147 x PI 097139 | SB Map | Single Plants | 312 | | |