 MID SOUTH SOYBEAN BOARD

**ONE PAGE SUMMARY**

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| Project Title | LADDER (Large Agricultural Database that Drives Extension and Research) |
| PI’s Name | Zach Reynolds | E-mail | zach.reynolds@msstate.edu |
| PI’s Title | Research Project Manager | Institution: | Mississippi State University |
| Mailing Address | 301 Research Blvd. |
| City/State/Zip | Starkville, MS 39759 |
| Phone number | 662-418-6620 |
| Additional PIsFor this project | Dave Spencer, Brian Mills |
| Research locations(states involved) | Mississippi, Louisiana, Arkansas, Missouri |
| **Timeline:****Current Year - FY23** | **Multi-Year Project Information** (if applicable) |
| Year 1 (Current) | Year 2 | Year 3 |
| Start Date |  | April 1, 2024 | April 1, 2025 | April 1, 2026 |
| End Date |  | March 31, 2025 | March 31, 2026 | March 31, 2027 |
| Funds Requested | $ | $55,626 | $55,625 | $55,625 |
| **Program Area:** Irrigation, Fertility, Rotations using soybean, Research Validation, Producer Communications,Economics |
| Other relatedfunding: | N/A |
| Objectives: | Using a large agricultural geodatabase, determine the effects of environment, i.e., CEC, pH, slope, climatic data, and agronomic practices including irrigation, precision ag technology, nutrient management, planting systems, and tillage systems on soybean productivity and profitability at the farm scale. Also, deliver research-based, Extension programming to soybean producers in the Mid-South to stimulate the adoption and proper implementation of geospatially specific agronomic practices that improve grain yield, net returns, andsustainability. |
| Justification: | Analysis of large-scale, agricultural data can be used to determine the effects of agronomicpractices, management philosophies, and environment on crop productivity and profitability. |
| Exp Setup: | We propose to collect, process, and securely store geospatially specific agronomic andenvironmental data for the purpose of addressing the MSSB’s primary research andExtension concerns. Data will be subject to ANOVA, ANCOVA, and regression techniques. |
| Summary: | An aggregated geospatial database can help expedite answers to agronomic issues bycollecting and analyzing large quantities of data across a variety of management practices in the Mid-South. |
| Benefit to midsouth farmers: | Growers at times can be hesitant to adopt research practices done in small-plot settings. The LADDER program will help alleviate this by validating results at a landscape level. A database such as this also gives universities another tool to provide insight on what agronomic issues have the most economical impact and need to be further investigated for the benefit ofgrowers. |
| Progress Made: | Data collection of 350K+ acres along with processes of how to successfully collect andanalyze data are constantly being automated and improved. Additional funding will allow us to take said data and begin researching best means of analysis. |
| Signature of Principle InvestigatorZach Reynolds Digitally signed by Zach Reynolds Date: 2024.07.31 13:59:22 -05'00 | Date: |
| 7/31/2024 |