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| Project Title | | Screening and Selecting Non-Xtend Soybeans for Dicamba Tolerance | | | | | |
| PI’s Name | | Grover Shannon | | E-mail | | grantsdc@missouri.edu | |
| PI’s Title | | Emeritus Professor | | Institution: | | The Curators of the Univ of Missouri | |
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| Phone number | | 573-379-5431 | | | | | |
| Additional PIs  For this project | | Caio Canella Vieira, MU-FDREEC | | | | | |
| Research Locations  (and states involved) | | Portageville, Missouri | | | | | |
| **Timeline:**  **Current Year - FY23** | | | **Multi-Year Project Information** (if applicable) | | | | |
| Year 1 | | Year 2 | | Year 3 |
| Start Date |  | | **April 1, 2023** | |  | |  |
| End Date |  | | **March 31, 2024** | |  | |  |
| Funds Requested |  | | $65,499 | | $ | | $ |
| **Program Area (e.g., breeding, mngt.):** | | | | | | | |
| Objectives | | Identify natural tolerance to off-target dicamba damage, understand the underlying genetic and physiological basis of this tolerance trait, and deploy varieties with enhanced tolerance to U.S soybean farmers. | | | | | |
| Justification | | The EPA has approved the re-registration of dicamba for over-the-top applications until 2025 and it is expected non-Xtend soybeans will continue to be exposed to and suffer losses from the off target dicamba movement. | | | | | |
| Exp Setup | | Trials will be conducted to assess the differential responses to off-target dicamba damage, perform mapping studies, and select advanced breeding materials with enhanced tolerance. | | | | | |
| Summary | | Genotypes may respond differently to off-target damage. Tolerant genotypes exposed to off-target dicamba may suffer a maximum of 10% yield penalty whereas susceptible genotypes may suffer as much as 40% yield losses. | | | | | |
| Key Metrics | | Field trials performance; Quality of data; Number of advanced materials in USDA regional trials with enhanced resistance; Number of publications and presentations. | | | | | |
| Expected Deliverables | | Elite non-Xtend soybean varieties with enhanced tolerance to off-target dicamba damage; Genes/QTLs/markers associated with dicamba tolerance; Improved understanding of dicamba and its effects (genetic and physiological) on non-Xtend soybeans. | | | | | |
| Benefit to midsouth farmers | | Flexibility, freedom of choice, and a layer of yield protection to off-target dicamba damage provided by genetics regulating natural tolerance and ability to recovery. | | | | | |
| Progress Made | | Two peer-reviewed publications were published in 2022. Many high-yielding lines with tolerance have been advanced in the breeding pipeline. Genetic mapping is getting close to completion. | | | | | |
| Signature of Principle Investigator | | | | | | Date: 8/12/2022 | |
| Caio Canella Vieira on behalf of Grover Shannon. | | | | | |  | |

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