



**TARGETED REQUEST FOR PROPOSALS SUBMISSION
DEADLINE EOB 1/16/2024**

TRFP TITLE: CHARACTERIZING IMPACT OF PLANT GROWTH REGULATOR, BIOSTIMULANT, BIOLOGICAL, AND NUTRITIONAL PRODUCTS ON SOYBEAN GROWN IN MS

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PROPOSAL DEADLINE: EOB 1/16/2024

INTRODUCTION:

The Mississippi Soybean Promotion Board (MSPB) focuses on investing Mississippi checkoff dollars to develop and promote soybean and soybean production to improve the bottom-line potential for soybean farmers. The MSPB strategy is to leverage funds and partner with public and private entities to address production research, identify market opportunities, and communicate the outcomes to Mississippi soybean farmers and industry influencers.

PURPOSE OF TRFP:

MSPB is trialing a framework through which it can more effectively invest checkoff dollars on behalf of Mississippi soybean growers. That framework will utilize Targeted Requests for Proposal (TRFP). The strategy of TRFPs is built upon identification of comprehensive General Focus Areas (GFAs). The GFA is a general agronomic subject matter with high interest of growers and industry. A single TRFP is tied to a single GFA. The GFA is further divided into Specific Research Targets (SRTs) which correspond to the 'scope' of the more comprehensive GFA. Proposals should be directed to address one to several of the SRTs. The intentions of the framework include: 1) shift a portion of research focus and budget spend from present issues and impact and toward near-term (5 year) and longer-term (10 year) efforts and impacts, 2) develop a greater proportion of funded research that is unique, new, and likely to accentuate MSPB funded research within the soybean industry, 3) encourage collaborative efforts across disciplines for a better understanding of key issues, and 4) close some of the gap between current research and focus areas of early-adopters in the state.

BACKGROUND & PURPOSE OF PROJECT:

Adoption of nonconventional inputs has been increasing in recent years across the US. Plant growth regulators (PGRs), nutritional, and most recently biological and bio-stimulant products are gaining in popularity within major agricultural crops, somewhat lagging in use relative to organic or conventional production and in specialty crops. In most instances, these products do not add more cost to a production budget, but instead are purchased with dollars reallocated from another input such as commercial fertilizer.

These products are marketed for post-, pre-, and in-season use. The impact these products have on the crop depends both on the product itself as well as when and how it is applied. Products are often used to increase fertilizer or nutrient use efficiency (availability, uptake, recovery), reduce plant stress, promote root and shoot growth, decrease plant height/stimulate branching, promote flowering/fruit retention, and prolong plant health. By understanding the desired impact on crop physiology, a program can then be built to incorporate these types of products into MS soybean management.

The purpose of this CFA/TRFP is to create an understanding of how PGRs, nutritional, biological, and bio-stimulant products impact yield components in MS soybean and consequently provide guidance on incorporation of these products into management plans.

Expected outcomes should include, but are not limited to:

- 1) Knowledge of key yield determination points in soybean which correspond to yield components.
- 2) Clear understanding of how nonconventional products can affect soybean yield components.
- 3) BMP guidelines for incorporation of product or product types into various production systems.
- 4) A preliminary understanding of any interaction with large volume soybean varieties.

TARGET AUDIENCE:

The target audience is both the MS soybean growers and those who influence soybean production in MS.

SPECIFIC RESEARCH TARGETS (Proposals to include one to several SRTs):

- 1) *Identify critical yield determination points in soybean growth and development.*
 - a) Yield components (stand, branching, nodes, pods, seeds, grain size/density)
 - b) Validate phenological points at which stress/stimulant can affect yield component.
- 2) *Evaluate the effects of key nutrients, classes of bio-stimulants and PGRs, and biologicals on key yield components in soybean.*
 - a) Crop timing (using BMPs)
 - b) Interest in each nutrient, classes of PGRs and bio-stimulants in stepwise fashion
- 3) *Evaluate the effect that key additives have when combined with nutritional products.*
 - a) Bio-stimulants
 - i) Carbon based (humic, humic acid, fulvic acid, sugars)
 - ii) Seaweed extracts (kelp, seaweed, micro algae, chitosan, etc.)
 - iii) Protein hydrolysates (amino acids, peptides, other nitrogenous compounds)
 - b) Alternative chelation products
 - c) Nutritional combinations (to improve uptake; maximize effect at critical timing)
- 4) *Document the impact, both individually and in combination, for influencing yield components based on results from above.*
 - a) Negative control and key manipulations at each component
 - b) Positive control and key omissions by component
- 5) *Evaluate the top 10 soybean varieties by volume in the state for response to efforts to manipulate the yield components.*
 - a) Test in both standard management intensive management
 - b) Characterize response for which components can be affected.

ADDITIONAL CONSIDERATIONS:

The contractor is expected to work with MSPB and BBRC and maintain regular contact throughout the contract period.

DELIVERABLES

Completion Date	Description of Deliverables
October 15, 2023	Posting of TRFPs
January 16, 2024	Submission of Proposal
February 6, 2024	Revision of Proposal (if necessary)
February 20, 2024	Funding
March 15, 2024	Verbal Check In
June 15, 2024	Field Visits, Short Summary to Date
October 15, 2024	Q4 Preliminary Review, Data Sharing
December 1, 2024	Yearly Analysis in PPT Form
December 31, 2024	MSSOY.org Postings

RFP TIMELINE:

- TRFP distribution: October 15, 2023.
- Last day to submit questions: January 16, 2024
- Initial project proposals due: January 16, 2024
- Selections made: February 20, 2024
- Prospective contractors notified: February 23, 2024

INSTRUCTIONS:

Please email proposals to: research@mssoy.org by January 16, 2024.

Proposals must contain at a minimum the specific criteria listed below:

- 1) A description of PI's capabilities, resources, and experience. Emphasis should be placed on experience related to this RFP.
- 2) A thorough proposal outlining PIs' planned work, deliverables, and timeline to complete the work focused on Research Specific Target(s).
- 3) Detailed budget: all bids for services must provide a breakout of how the fee was derived including but not limited to a breakdown of hourly rate and the amount of effort they anticipate doing the work.
- 4) Proposals should be no longer than 10 pages (8 ½" x 11").