2019 MSPC Request for Proposals- Production

The mission of the Michigan Soybean Promotion Committee is to manage checkoff resources to increase return on investment for Michigan soybean farmers while enhancing sustainable soybean production.

The Michigan Soybean Promotion Committee (MSPC) welcomes production research proposals in this 2019 request for proposals. Within this request, MSPC's research priorities are outlined with the intent of providing structure and focus to divide limited research resources while ensuring flexibility and transparency. Researchers are empowered to devise creative solutions and figure out new ways to approach challenges.

Background

The Michigan Soybean Promotion Committee has been administering programs in the areas of soybean research, education and market development since a grower approved assessment program became effective in 1976.

Headquartered in Frankenmuth, the Committee is governed by a seven member board of soybean producers representing seven distinct soybean producing districts as defined in the 1976 approved referendum and subsequently amended. This board directs the program for which these proposals are being solicited. Any project approved and administered by the MSPC shall be conducted in accordance with the Soybean Promotion, Research and Consumer Information Act, P.L. 101-624 and with the Soybean Promotion and Research order, 7 CFR Part 1220 by virtue of the MSPC being appointed by the United States Department of Agriculture to administer the federal program in Michigan.

Objective

The Michigan Soybean Promotion Committee seeks research projects through the Request for Proposal process that address production challenges outlined in the 2019 Research Priorities in order to best accomplish our mission of managing checkoff resources to increase return on investment for Michigan soybean farmers while enhancing sustainable soybean production.

Procedures

Proposals should be preceded by a cover sheet that lists project title, 2019 MSPC research program area(s), budget request, organization information, project summary and signature of principle investigator. Proposals should include a brief project summary, objectives, project deliverables, experimental procedures and benefit to soybean farmers. Evaluation benchmarks at the project mid-point and conclusion should also be included. Proposal submissions should be limited to three pages and written for review by non-technical reviewers. Proposals should utilize 11 point font and single spaced text.

A project budget form should accompany each proposal. Multiple year projects must request funding annually. Supplemental detail must be provided on all direct costs including materials and supplies, travel, publication costs and computer costs that exceed $1,000. Leveraged fund sources and amounts are to be provided. Principle investigator salaries and benefits,

nonexpendable equipment and administrative overhead charges including indirect costs are not permitted for inclusion on MSPC grants.

Upon funding approval, projects will be entered and tracked through a national on-line database at www.soybeanresearch.com. Written mid-term and final reports will be submitted though this system.

MSU proposal requests will be routed through MSU's e-transmittal system. A separate e-transmittal is required for each proposal. Questions regarding this process should be directed to Jackie Lindsey at jlindsey@anr.msu.edu or 517.884.3862.

Non-MSU proposal requests should be sent directly to MSPC via email to Mark Seamon at mseamon@michigansoybean.org. Expect email confirmation of your proposal submission.

All forms, including the Request for Proposals, proposal cover sheet and budget sheet are available at michigansoybean.org under the *Forms & Resources* tab, or among the Agricultural Commodity Group RfP listing at AgBioResearch's website under Researcher Resources.

Proposals are due December 1, 2018.

Time-frame
MSPC legal requirements dictate research projects are funded in one year increments, though projects with multi-year time frames will receive priority contingent upon adequate progress and adherence to proposed timelines.

Funding level
While no formal parameters dictate funding levels, strong justification is necessary for projects exceeding $30,000 for projects with graduate student education components or $20,000 without graduate student components.

Research Structure
Four key research categories have been identified, each representing specific areas of soybean production and profitability. All proposals should indicate the specific research priority area(s) which will be addressed.

> Resource Limitations: factors that impact attaining maximum genetic potential
> Plant Health: issues that compromise and detract from plant health
> Genetics: inherent genetic potential of soybean plants
> External Factors: factors that impact soybean profitability external plant production

Within each category, specific focus areas are outlined. Research projects are intended to work across focus areas and develop integrated solutions to production issues. For instance, row spacing studies impact resource competition and environmental focus areas.

For each focus area, allocation percentages are outlined. These allocation percentages are intended to serve as guidelines for the relative importance of each focus area and represent a combination of time, effort and allocated funding.

Priorities for 2019 are listed for each focus area. Research projects addressing these priorities will receive priority, though proposals for research projects addressing issues outside of these priorities will be considered.

Evaluation Criteria
Project proposals will be evaluated based on relevancy to 2019 research priorities, impact potential for Michigan soybean farmers, feasibility, originality, scientific soundness, investigator qualifications and collaboration. Collaboration is encouraged not only among investigators, departments, institutions and organizations, but between disciplines and research focus areas as well.

For basic science proposals in particular, these research funds are intended to function as seed money in order to leverage outside funds.

Confidentiality
Proposals are distributed to the MSPC board of directors and research staff for review. Some proposals may be selected for peer review. Proposals are considered privileged information and are shared only on a confidential basis. Special requirements for confidentiality should be included with proposals.

2019 MSPC Research Priorities

Resource Limitations

Environmental factors   Allocation: 0.5%
Goal: Maximize light, temperature, and other environmental resource limitations

> 2019 research priorities:
> Novel approaches to increase access to light and temperature.

Water   Allocation: 2.0%
Goal: Ensure optimal moisture conditions by maximizing water availability through soil water holding capacity, supplemental irrigation, and drainage systems

> 2019 research priorities:
> Improve irrigation management with overhead systems with a focus on practical management techniques.
> Novel approaches to supplemental irrigation.
> Optimize the utilization of nutrient and pesticide applications through irrigation systems.

Nutrients   Allocation: 15.0%
Goal: Sustainably manage crop nutrient availability

> 2019 research priorities:
> Improve understanding of nutrient management treatment yield responses to environment and management.
> Explore crop nutrition interaction with disease management.
> Increase understanding of the effects of manure applied in soybean systems.

Resource competition and utilization   Allocation: 8.0%
Goal: Manage biotic and abiotic factors that limit resource availability

> 2019 research priorities:
> Develop multi-faceted weed control management plans.
> Combat herbicide resistance issues.
> Optimize soybean plant populations by yield potential and environment.
> Improve seedbed preparation systems.
> Manage systems for optimal root growth and development.

Plant physiology   Allocation: 5.0%
Goal: Modify plant physiology to maximize genetic potential

    2019 research priorities:
    Modify plant physiological responses to environment and management.
    Explore applications for foliar growth promoters.
    Improve understanding of fungicide yield responses in absence of disease pressure.
    Improve stress mitigation.

Soil health   Allocation: 3.5%
Goal: Promote biotic and abiotic interactions in the soil for increased agronomic utilization

    2019 research priorities
    Develop integrated systems for wide-scale implementation.

Plant Health

Nematology   Allocation: 9.5%
Goal: Mitigate yield reduction from nematodes

    2019 research priorities:
    Improve understanding of SCN distribution and prevalence.
    Evaluate emerging technologies for nematode control.
    Maintain relevant and current management recommendations.

Pathology   Allocation: 15.0%
Goal: Mitigate yield reduction from disease

    2019 research priorities:
    Foster awareness and management of new and emerging pathology issues.
    Improve understanding of pathology interactions with environment and management.
    Further refine white mold management strategies to minimize yield loss.

Entomology   Allocation: 2.0%
Goal: Mitigate yield reduction from insects

    2019 research priorities:
    Management of new and emerging entomology issues.
    Ensure rapid response to seasonal threats.
    Address issues related to seed applied insecticides.

Genetics

Yield   Allocation: 12.0%

Goal: Identification of yield potential and development of new germplasm

> 2019 research priorities:
> Identify high yielding varieties.
> Increase understanding of yield interactions with management and environment.
> Develop new high yielding varieties.

Protein and oil   Allocation: 8.0%

Goal: Increase soybean value through protein and oil characteristics

> 2019 research priorities:
> Improve national and international positioning of Michigan's inherent high protein.
> Implement non-GMO varieties with high oil characteristics.
> Increase protein and oil with management.
> Develop new high protein and oil varieties.

Value-added traits   Allocation: 13.0%

Goal: Increase soybean value through genetic characteristics

> 2019 research priorities:
> Identify and develop white mold resistance.
> Identify and develop sudden death resistance.
> Develop novel, high value, non-GMO traits.

External Factors

Harvest and handling   Allocation: 0.5%

Goal: Minimize harvest losses and quality degradation in storage

> 2019 research priorities:
> Improve combine harvest efficiency.
> Develop recommendations for on-farm storage in Michigan.

System approaches   Allocation: 5.0%

Goal: Develop soybean management strategies that maximize profitability and sustainability across the crop rotation

> 2019 research priorities:
> Develop system-wide fungicide management plans
> Develop system-wide plant / soil management plans

Environmental Responsibility   Allocation 1.0%

Goal: Minimize the negative environmental impacts from soybean production

<u>2019 research priorities:</u>
Increase understanding of the fate of soil and applied nutrients in field crops systems.