

California Department of Food and Agriculture
FERTILIZER RESEARCH AND EDUCATION PROGRAM
SPECIAL REQUEST FOR FULL PROPOSALS

2016 SPECIAL REQUEST FOR FULL PROPOSALS

The Fertilizer Research and Education Program (FREP) within the California Department of Food and Agriculture's (CDFA) Division of Inspection Services is currently accepting full proposals to address the issues of the effect of biochar on nutrient management, grower education and outreach, and barriers to adoption of improvements in nitrogen management. Listed below are three potential areas of research and education that would support addressing agronomic and environmental issues related to nitrogen fertilizer use in the state.

1. The Role of Biochar on Nutrient Management in California Soil-Crop Systems

Biochar is considered a soil amendment that has the potential to simultaneously sequester carbon and improve soil physical, chemical and biological properties. Tree mortality in natural ecosystems as well as in orchards across California are the potential feed stock for local biochar production. However, despite numerous research projects and publications on biochar and its use in agriculture, there is significant need for better understanding of biochar for improved nutrient and water management in agricultural systems under California conditions. Knowledge gaps pertaining to biochar include, but are not limited to characterization of locally produced biochar, impacts on nutrient availability and movement in the root-zone, appropriate agronomic rates, effects on soil structure, pH and salinity, in California cropping systems. In addition, a better understanding of the economic feasibility of biochar utilization in California agriculture must be developed. This information is crucial and timely for better management of nutrients in croplands.

2. Education and Outreach (Technical Education)

There is a need for the development of educational and/or certification materials and programs for growers. These educational efforts should increase awareness and implementation of sound use of fertilizing materials and/or proper operation and maintenance of irrigation systems.

There is increasing demand for applied technical training for agricultural workers at all levels of farming organizations. Appropriately trained farm staff will employ irrigation and nutrient management practices that support efficient crop production and optimize environmental outcomes.

Potential training topics include nitrogen management training for growers, irrigation training for agricultural staff at all levels, and/or nitrogen management training for agricultural workers at all levels. Specifically, trainings should build on (not duplicate) existing materials and resources such as the NMP Self Certification Workshop, should feature new research as well as outreach tools to optimize water and nutrient placement and timing for optimal environmental benefits and sustained yield (Crop Manage, for instance). Proposals should include metrics for evaluating the outreach efforts (persons served, conservation practices implemented), potentially incorporating follow-up surveys to learn what impacts the trainings had on implementation rates of new management techniques.

3. Addressing Challenges and Barriers to Improving Management Practices

There are significant knowledge gaps in better understanding of challenges to improving management practices in various agricultural systems in California. There are a variety of available management practices that can save money, time and improve environmental outcomes; however, many of these

practices have only been adopted on limited scale. Research that fills knowledge gaps associated with barriers to a wider adoption/improvement of management practices would include studies of the costs and benefits associated with various practices, including perceived and modeled costs of specific practices and how they might be affected by different farm-level characteristics.

- What kinds of economic thresholds exist with different practices, including practices with co-benefits for economic return, water quality, and other environmental benefits?
- What are the regulatory or institutional barriers that limit the development, implementation or success of practices that maximize irrigation and nutrient efficiency?
- What types of incentives or programs might increase grower implementation of practices that optimize water and nutrient use?
- Human behavior studies related to decision making and adoption. This may include, but is not limited to studies that address fertilization and agricultural management decisions and the social, economic, and political variables driving adoption of effective nutrient management practices.

Authority for this program is derived from the Food and Agricultural Code, Article 6, section 14611 (b). This is a competitive process. Grant applications will undergo both an administrative and technical review. No cost share is required for participation in this program, but it may be considered in review. Grant funding of \$75,000 per year for up to three years is typical for projects, but projects over \$75,000 per year could be considered depending on the experimental approach and scope of the proposal. Multiple full proposals will be accepted from different combinations of applicants. A full proposal leveraging other sources of funding is welcome and strongly encouraged.

WHO MAY APPLY

Any individual or group may submit a concept proposal. Given the scientific needs of this grant solicitation, this request for full proposal is open to research institutions (e.g. University of California system, California State University system, USDA (research entities such as ARS), and other similar institutions as well as private research firms). Coordination among research institutions and private firms to leverage expertise is strongly encouraged.

HOW TO APPLY

Applicants must submit a full proposal to FREP by the date specified below. Please consult Full Proposal Submittal Requirements (below).

Full proposals are due by 5:00 p.m. Thursday, September 1, 2016. **FREP will not grant any exemptions.**

Full proposals that are incomplete or late will be returned and eliminated from consideration. **Proposals may be submitted by email only.**

FULL PROPOSAL REVIEW, EVALUATION AND APPROVAL

The California Department of Food and Agriculture (CDFA) may reject any proposal if it is conditional, incomplete or contains irregularities. FREP will not support proprietary product development, product demonstration, or marketing projects. These projects will be disqualified. Appeals of disqualification must be in writing, postmarked within 10 calendar days of the date of the notification of the action, and mailed to the California Department of Food and Agriculture, Office of Hearings and Appeals, 1220 N Street, Suite 400, Sacramento, CA 95814, or emailed to CDFA.LegalOffice@cdfa.ca.gov.

The appeal shall include:

- (1) A copy of the notification or the name of the applicant or recipient organization.
- (2) The proposal or project identification number.
- (3) The title of the proposal or project.
- (4) The reasons the action should not be imposed, including any documentation to support the appeal.
- (5) The signature of the authorized representative.

Appeals not post marked timely will be denied. The action or actions specified in the notification shall remain in effect while the appeal is under review. A decision on the appeal will be issued no later than 10 calendar days from the date the appeal is received, unless notice is provided in writing to the Recipient that the decision will be issued at a later date, not to exceed 30 days from the date the appeal is received.

CDFA may waive an immaterial deviation in the proposal. Waiver of an immaterial deviation shall in no way modify the Request for Proposal documents or excuse the proponent from full compliance with the grant requirements, if the proponent is awarded the grant.

FREP has a Technical Advisory Subcommittee (TASC), which consists of growers, representatives of institutions of higher education, the fertilizer industry, CDFA, U.S. Department of Agriculture and other governmental agencies. The TASC reviews the submitted full proposals to determine whether they are aligned with the special request for full proposals. The TASC considers the following evaluation criteria in their review: Proposal Quality (justification, objectives, work plans and methods and project management, evaluation and outreach), Feasibility and Impact, Professional Qualifications and Fiscal Merit. The TASC then sends their recommendation to the Fertilizer Inspection Advisory Board (FIAB).

The FIAB deliberates and discusses the TASC recommendations and decides, in an up/down vote, whether to accept the TASC recommendation of special request for full proposals. The FIAB then forwards their decision to the Office of the Secretary. CDFA staff then initiates a grant agreement with the grantee to begin the grant approval process and project.

PREPARING YOUR FULL PROPOSAL

Please note that these guidelines have changed. Be sure to thoroughly read and adhere to all submittal requirements or your proposal will not be accepted.

Full proposals must include Sections A through I as described below. Sections A through G must be submitted in Microsoft Word format (doc/docx), single spaced using one inch margins and 12 point Times New Roman font. **Section H: Budget Template must be submitted in Microsoft Excel format (xls/xlsx) using the provided template (See attached).** Section I: Appendices may be submitted in Microsoft Word format (doc/docx) or Adobe format (pdf). Sections A through G must not exceed 15 pages. Full proposals that do not meet the specified formatting requirements or exceed 15 pages will not be accepted. **Please see below for additional specific information on report sections.**

If you have questions about formatting or submitting your proposal, please contact FREP staff at (916) 900-5022. To ensure fair competition, FREP staff does not provide guidance on the development of proposals.

TIMELINE

Special request for full proposals announced.....	July 29, 2016
Full proposals due.....	September 1, 2016
Award notification.....	October 31, 2016
Project start date.....	January 1, 2017

SEND FULL PROPOSALS TO

Proposals will only be accepted if submitted by email. Send email submissions and questions to: freprep@cdfa.ca.gov or Tel: (916) 900-5022

ADDITIONAL INFORMATION

FREP funds and coordinates research to advance the environmentally safe and agronomically sound use and handling of fertilizer materials. FREP serves growers, agricultural supply and service professionals, extension personnel, public agencies, consultants, and other interested parties.

PROPOSAL REPORT SECTIONS

A. Cover Page

1. **Project Title.**

Provide a unique and concise name for the proposed project. If the proposal is a continuation of a previous project, please keep the title consistent.

2. **Project Leader(s).**

Specify each project leader's name, title, affiliation, mailing address, telephone number, and email address. **A two page resume, a list of recent publications, and a description of current research/outreach activities must be included for each project leader under Section I: Appendices.*

3. **Cooperator(s).**

Specify each cooperator's name, title, affiliation, mailing address, telephone number, and email address. **A letter from each cooperator must be included under Section I: Appendices describing their role in the project, estimated time commitment, and a statement of agreement to participate in the project. Do not include a cooperator's name on the proposal unless a support letter is included with the proposal at the time of submission.*

4. **Supporter(s).**

Specify organizations and/or individuals that support the ideas and objectives of the project but are not providing funding. **A letter from each supporter must be included under Section I: Appendices explaining the rationale for their support. Do not include a supporter's name on the cover page unless the support letter is included with the proposal at the time of submission.*

5. **CDFA Funding Request Amount/Other Funding.**

Provide funding request amount (\$) from CDFA and amount committed from extra-mural or in-kind sources for each year of the project. Specify organizations that have committed funding to this project including funding amounts, contact names, addresses, and telephone numbers.

6. **Agreement Manager.**

Specify the person who will manage the grant on behalf of the recipient (i.e. UC Regents, Office of Sponsored Research, etc.). Include the organization/entity, grant manager name, phone number, email address, and mailing address.

B. Executive Summary (not to exceed two pages)

1. **Problem.**

Simply and concisely define the problem to be addressed.

2. **Objectives, Approach, and Evaluation.**

State specific project objectives, describe the approach that will be employed, and identify criteria that will be used to evaluate the project's success.

3. **Audience.**

Specify those who will use and benefit from the project findings or products.

C. Justification

1. **Problem.**

Specify the problem to be addressed by the project and describe its extent, severity, and magnitude. Explain the potential impact of this project on a statewide level.

2. **FREP Mission and Research Priorities.**

Explain how the project will address one or more of FREP's Research Priorities for this funding cycle, as well as how the project will contribute to FREP's mission of advancing the environmentally safe and agronomically sound use of fertilizing materials.

3. **Impact.**

Explain agronomic, economic, environmental or other implications on a local, regional, and statewide basis.

4. **Long-Term Solutions.**

Indicate the project's potential for measurable progress toward long-term solution(s) to the specific problem(s) addressed in the proposal.

5. **Related Research.**

Describe previously conducted, related research and/or education efforts.

6. **Contribution to Knowledge Base.**

Explain the project's contribution to current knowledge and specify new information to be generated by the project.

7. **Grower Use.**

Describe practical applications and incentives for growers to adopt the proposed practices.

D. Objectives

1. Provide a clear, concise, and complete statement of each specific research and/or educational objective(s), including outreach.

E. Work Plans and Methods (for multi-year projects, include a work plan for each year)

1. **Work Plan.**

Organize the work plan into project tasks and sub-tasks, which are units of work designed to achieve the specific project objectives. Each task should be numerically identified with a descriptive title and should include a detailed description of the activities and methods. Describe interim and final task products and completion dates or milestones.

2. **Methods.**

Summarize the methods to be employed, indicating data to be gathered, parameters to be measured, sampling scheme, experimental design, and methods of analysis to be used, if applicable.

3. **Experimental Site.**

Provide a description or graphical representation of the experimental site, if applicable.

F. Project Management, Evaluation, and Outreach

1. **Management.**

Describe the role of project leaders and cooperators and briefly explain how the various participants' work will be coordinated.

2. **Evaluation.**

For primarily research-oriented projects, provide a method for assessing the progress and success of the project, including cost/benefit analysis of adoption of new technologies, as well as barriers to adoption, where applicable. For education projects, define and provide a means to analyze success of project activities beyond counting the number of participants in educational activities. Provide specific plans for the evaluating the success of the project.

3. **Outreach.**

FREP project proposals must include an outreach component. Projects must complete at least three outreach activities per year to fulfill this requirement. Outreach activities may include grower field days, meetings, and trade journal articles. Specify outreach activities, events and/or approximate dates when they will occur. If outreach activities cannot be detailed upon submission of the proposal, the project leader must notify FREP staff of the planned outreach activities prior to submission of the signed grant for funding.

The following are acceptable outreach activities:

- Special grower meetings where the project leader or cooperator has a significant planning role and participation
- Presentations designed specifically for Pest Control Advisers (PCAs), Certified Crop Advisers (CCAs), field persons, or agricultural production consulting personnel
- Articles in trade publications and popular agricultural media
- Publications in peer-reviewed scientific journals
- Other outreach activities as approved by FREP staff

The following are **not** acceptable for outreach activities/products:

- Presentations to academic audiences

- Presentations required by other funding agencies

G. Budget Narrative

Provide a detailed narrative of your proposed budget. Assume a start date of January of the following year and explain all of the following:

- Personnel Expenses. Provide classification level, percent of time based on full time salary/wages, benefits, employment period, and name of individual to be hired, if available. For University of California and other public agencies and universities, specify if other funds come from existing staff salary, are extra-mural, or are in-kind. If funds are from staff salary, specify the amount on a percentage of full time equivalent-basis.
- Operating Expenses. Itemize and justify all of the following operating expenses:
 - *Supplies*: Itemize and justify all supplies to be purchased.
 - *Equipment*: Itemize and justify all equipment purchases. During the grant period, titles to equipment purchased with CDFA funds will vest with the State. CDFA will only authorize expenditure for equipment (equipment with a life expectancy greater than four years or with a value greater than \$4000) on a pro-rated basis. After the grant period, the state may transfer ownership or allow the grantor to purchase such equipment. The grantor must maintain inventory records for such equipment.
 - *Travel*: Itemize the number of trips, estimated mileage, destination(s), and identify who will be traveling. CDFA will reimburse travel expenses at the rates specified by the California Department of Personnel Administration. Only travel expenses to and from the project site(s) or to conduct outreach activities within California will be covered.
 - *Professional/Consultant Services*: Identify and explain any and all work or services to be sub-granted. Sub-granting will only be allowed with the expressed written permission of the State.
 - *Other Expenses*: Identify and explain any additional expenses not covered by the above categories.
- Other Funding Sources. List and explain all other organizations providing funding for this project.

H. Budget Template (not included in the 15 page maximum)

Prepare a budget table for the project using the attached FREP Project Proposal Budget Template Excel spreadsheet. The template uses formulas to automatically generate totals as numbers are entered into the fields; do not alter the formatting or formulas in the un-shaded cells. An example of a completed budget is included with the template. **Budgets submitted without using the template will not be accepted;** applicants will be asked to resubmit the budget using the approved budget template or their proposal will be disqualified. Assume a project start date of January of the following year and show amounts requested for each of the following categories:

- Personnel Expenses.
 - *Salary*: For each individual working on the project, list the name, percent time based on full-time salary, and their role in the project in the salary section.
 - *Benefits*: Percentage of benefits (fringe) to be paid may be listed in the benefits section.
 - *Indirect Costs*: A maximum of 10 percent of total Personnel Expenses (salary plus benefits) is allowable for indirect costs.
- Operating Expenses. Enter the total amount requested for each year for all of the following operating expense categories. **All expenses must be itemized and justified in Section G: Budget Narrative.*
 - *Supplies*
 - *Equipment*
 - *Travel*
 - *Professional/Consultant Services*

- *Other Expenses*
- c. Other Funding Sources. List each additional organization contributing funding to the proposed project. Specify funding to be contributed each year.

PRIOR YEAR PROJECTS

If the proposed project builds upon a previously funded FREP project, indicate the Agreement Number(s), and explain how the new proposed project complements or builds upon the previous project's efforts, the results of the completed work, and the long-term quantifiable effects of these results.

OTHER FUNDING SOURCES

Activities funded under the FREP cannot duplicate activities funded by another grant program(s).

If the proposed project has been or will be submitted to or funded by a grant program other than FREP, identify the grant program(s), the entity administering the program(s), and the amount(s) of grant funds requested/awarded. Describe how the activities supported by FREP funding will differ from and/or supplement the other grant program(s) rather than duplicate those funding efforts.

I. Appendices (not included in the 15 page maximum)

1. Project Leaders.

Include a two-page resume and list of recent publications. Also include a description of current research/outreach activities; provide information on all current, planned, pending, and recent projects, whether or not there is a specific time commitment and how it will impact the proposed project.

2. Cooperators.

Include a letter from each cooperator describing their role in the project, estimated time commitment, and statement of agreement to participate in the project. Copies of faxed letters are acceptable if attached to the proposal at submission time.

3. Supporters.

Include a letter from each supporter explaining the rationale for their support. Copies of faxed letters are acceptable if attached to the proposal at submission time.