CALIFORNIA DEPARTMENT OF FOOD AND AGRICULTURE

Office of Environmental Farming and Innovation

PROACTIVE INTEGRATED PEST MANAGEMENT SOLUTIONS

REQUEST FOR PROPOSALS (RFP)

Release date: October 5, 2021
Grant Proposals Due Date: December 6, 2021

Late grant proposals will not be accepted

https://www.cdfa.ca.gov/oefi/opca/proactive-ipm.html

Contents

About the program

The California Department of Food and Agriculture's (CDFA) Office of Pesticide Consultation and Analysis (OPCA) is pleased to announce funding available for the development of alternatives to control invasive insect pests. The purpose of this Request for Proposals (RFP) is to develop integrated pest management (IPM) program(s) or pieces of IPM program(s) that can be rapidly implemented if a new invasive insect pest species becomes established in California.

A total of $1 million is available in this grant cycle. Funds for the current Request for Proposal (RFP) come from a one-time allocation for this and other research as part of the 2021-2022 budget.

Background

California's agricultural production includes more than 400 commodities. New invasive insect pests can cause major problems for California's agricultural industries and urban communities. Exclusion or eradication of new invasive pests are the preferred first-lines of defense, but despite best efforts some pests become established and require long term management strategies. The urgent need to control a new pest often leads to more frequent use of insecticides. Growers may resort to broad-spectrum insecticides that can disrupt integrated pest management systems and cause secondary pest outbreaks, leading to even greater insecticide use and possibly decreasing profitability. At the same time, growers are under pressure from ever-tightening regulations and need to adopt new pest management methods in order to remain competitive.

CDFA is responsible for preventing and mitigating the effects of invasive pests. Many pests that plague California's agricultural industry first become established through urban areas owing to global travel and unintentional import of exotic pests. CDFA expends considerable effort controlling pest outbreaks in urban areas before they can spread into agricultural regions. Because affected communities have become increasingly concerned about insecticide sprays, it has become difficult to employ standard synthetic chemicals to control pest infestations. There is need for selective, low risk chemical and biological options. Biological control can also provide a safe, long-term alternative for managing such urban pest problems. Classical biological control involves finding natural enemies of exotic pests in their native habitats and releasing them in the area of the infestation, with the goal of establishing a population which will provide continuing pest control.

CDFA pest management efforts are based on IPM and usually include biological control. Biological control, including discovering, evaluating, permitting, and releasing biological control agents, can take many years. During this time, exotic pest populations may expand well beyond the initial infestation. The goal of CDFA's Proactive IPM Solutions program is to anticipate which exotic pests are likely to arrive in the state and develop effective IPM strategies to manage these pests over the long-term. Strategies may include testing various low-risk chemicals, biopesticides, cultural control, life history analysis to determine vulnerable developmental

stages, monitoring techniques for tracking pest populations, and testing of natural enemies that could be quickly deployed when these pests become established. Advanced knowledge of such pest management strategies will minimize disruption to California's growers and urban communities.

Research Priorities

The objective of this research program is to identify and test IPM strategies to control one of the target pests identified by CDFA (Table 1). The IPM program could be quickly implemented once the invasive pest becomes established in California. It is a priority to first utilize and adapt existing knowledge and technology that may exist outside of California. Additionally, the focus is on targets suitable for long-term IPM control. Pests that are typically successfully eradicated, such as certain fruit flies, will not be a high priority.

A proposal should provide straightforward descriptions of the proposed IPM project or strategy, including a detailed scope of work, commitments from team members, and a budget justification (details provided in the **Grant Proposal Requirements** section). Matching funds from industry partners, while not required, are encouraged.

Proposals must identify and justify a high priority target pest from the CDFA target pest list (Table 1). Project proposals must include details and reasoning on what IPM techniques for that pest (biological/cultural control, monitoring, etc.) will be investigated. Projects may include any number of IPM components, including a single aspect of an IPM system. Projects with biological control components should detail a plan to collect data necessary to obtain a release permit and describe the process for how a permit will be obtained. The focus of the research should be on long term control of the invasive pest that minimizes disruption of urban communities and existing agricultural IPM systems. For example, it would be preferable to prioritize testing selective chemistries, biological chemistries, cultural control, and biological control, over broad-spectrum insecticides. Proposals should consider availability of products not registered in California and potential remedies. The proposal must focus on management strategies for pests on the target list (Table 1).

Table 1: CDFA Target Pest List

Scientific name	Common name
Acleris comariana	Strawberry tortrix
Acutaspis albopicta	Albopicta scale
Agonoscena pistaciae	Pistachio psyllid
Agrilus planipennis	Emerald ash borer
Aleurocanthus woglumi	Citrus blackfly
Anoplophora chinensis	Citrus longhorned beetle

Scientific name	Common name
Anoplophora glabripennis	Asian longhorned beetle
Anthonomus rubi	Strawberry blossom weevil
Anthonomus signatus	Strawberry bud weevil
Aonidiella orientalis	Oriental scale
Argyrotaenia ljungiana	Grape tortrix moth
Clavaspis perseae	Armored scale
Conotrachelus nenuphar	Plum curculio
Contarinia nasturtii	Swede midge
Cryptoblabes gnidiella	Honeydew moth
Curculio caryae	Pecan weevil
Cydalima perspectalis	Box tree moth
Davidsonaspis aguacatae	Armored scale
Deudorix livia	Pomegranate butterfly
Eupoecilia ambiguella	European grape berry moth
Harrisina americana	Grapeleaf skeletonizer
***Heilipus* spp.**	Avocado seed weevils
Helicoverpa armigera	Old World bollworm
Lobesia botrana	European grapevine moth
Lycorma delicatula	Spotted lanternfly
Lymantria dispar	Gypsy moth
Oebalus pugnax	Rice stink bug
Oncometopia nigricans	Florida sharpshooter
Oncometopia orbona	Broad headed sharpshooter
Oryctes rhinoceros	Coconut rhinoceros beetle
Ostrinia nubilalis	European corn borer
Paralobesia viteana	Grape berry moth
Parlatoria blanchardi	Parlatoria date scale
Parlatoria ziziphi	Black citrus scale
Paysandisia archon	South American palm borer
Phytomyza gymnostoma	Allium leafminer
Pinnaspis strachani	Armored scale
Prays oleae	Olive moth
Stenoma catenifer	Avocado seed moth
Thaumatotibia leucotreta	False codling moth

Scientific name	Common name
Toxoptera citricida	Brown citrus aphid
***Trioza* spp.**	Avocado leaf-galling psyllids
Tuta absoluta	Tomato leafminer
Xyleborus glabratus	Red bay ambrosia beetle
Zeuzera pyrina	Leopard moth

The following priorities rubric (Table 2) will be used to evaluate proposals for each target pest. Only pests from the CDFA target list will be considered. Note: it is not a requirement for target pests to fall into the highest priority category in all areas to be chosen. This rubric is meant to serve as a guide to researchers when selecting target pests and discussing their importance to California and suitability for this program.

Table 2: Rubric to Guide Target Pest Selection

	HIGHEST PRIORITY	HIGH PRIORITY	MEDIUM- PRIORITY
LOCATION OF PEST	In the USA or territory	In a country with similar climate and trade routes to CA	In a country with similar climate or trade routes to CA
AVAILABILITY OF IPM CONTROL TOOLS (BAITS, LURE, PHEROMONES, THRESHOLDS, SOFTER CHEMISTRIES, ETC.)	Three or more	One or two	None known
STATUS OF IPM PROGRAM	Developed and used in other areas	Developed but not widely used	No IPM systems known or used
STATUS OF NATURAL ENEMIES	Known and cultured	Known	Not known
STATUS OF BIOLOGICAL INSECTICIDES OR SELECTIVE CHEMISTRIES	Known, tested on other insects, and effective	Known but not tested	Not known
IMPORTANCE OF AFFECTED CROP(S)	Multiple crops of major economic or	At least one crop of major economic or	At least one crop with some

	HIGHEST PRIORITY	HIGH PRIORITY	MEDIUM- PRIORITY
	cultural significance in CA	cultural significance in CA	economic or cultural significance in CA
STATUS OF BIOLOGICAL CONTROL PROGRAM	Other states and/or the federal government has started a program	Other countries' governments have started a program	There is no known BC program for the pest
INVASIVE POTENTIAL	Pest is highly invasive in environments similar to, or in areas growing similar crops to CA	Pest is highly invasive in many parts of the world	Pest is invasive in some parts of the world
COMMODITY INVOLVEMENT	Commodity is willing to contribute financially to the project	Commodity is a collaborator	Commodity has not yet been brought into the project

Funding and Grant Term

Proposals will be selected based on the criteria presented below in the Evaluation Criteria section. Projects should be anticipated to start on March 1, 2022 and to last no longer than three years. Maximum funding is $500,000 per project. While it is acceptable to submit a budget for the full amount, smaller projects are also encouraged to apply. Projects with matching funds are strongly encouraged.

Funding must supplement not supplant existing activities/programs. Supplement is defined as adding to existing funds to enhance or expand existing activities. Supplant is defined as replacing existing funds for an activity because grant funds are to fund the same activity.

CDFA reserves the right to offer an award different than the amount requested.

Project Eligibility

Public or private colleges and universities, local and federal government entities including tribal governments, and non-profit organizations are eligible to apply.

The project lead(s) and their institutions must be based in California, though it is encouraged to subcontract with out-of-state collaborators.

The project lead(s) and/or collaborators must have access to a quarantine facility if the project involves biological control or testing products on insects that are not yet established in California.

All necessary federal and state permits must be obtained for work with any non-exempt species.

California state agencies may not submit proposal applications but may be listed as subcontractors on other proposals. State agency share of funding may not exceed 30% of total funding. State agencies may not take the lead in project management.

How to Submit a Grant Proposal

Grant proposals must be submitted via the WizeHive application portal (https://webportalapp.com/sp/login/opca_proactive_ipm_grant_program) no later than the grant due date at 5 pm. Applicants must first create an account through WizeHive, login, and fill out all required sections of the online application form. Completed budget templates and appendices (e.g. CVs, letters of support) must be uploaded and submitted through the portal as well.

Late submissions will not be accepted.

CDFA cannot assist in the preparation of grant proposals; however, general questions may be submitted to cdfa.opca@cdfa.ca.gov. In order to ensure all potential applicants benefit from all submitted questions and answers, all questions and responses will be posted on the Proactive IPM Solutions webpage: https://www.cdfa.ca.gov/oefi/opca/proactive-ipm.html. To ensure a response from CDFA, all questions must be submitted according to the timeline below. Answers will be posted according to the same timeline.

Questions Received by	Answers Provided by
October 22, 2021	November 1, 2021
November 12, 2021	November 22, 2021

Proposal Review and Evaluation

A review committee consisting of scientists at CDFA, United States Department of Agriculture (USDA), California Department of Pesticide Regulation (CDPR), and University of California and California State University researchers will review the proposals and evaluate their merits. Any member of the committee who is connected to a submitted project will recuse themselves from the process. The evaluation criteria are found at the end of this document.

Award Notification

All applicants will be notified regarding the status of their proposal. Comments will be provided. Successful applicants will be provided a grant agreement following award announcement. Grant recipients will be required to submit semi-annual reports and a final report to demonstrate project accomplishments, address problems and delays, and describe activities planned during the next reporting period. Invoices must be submitted quarterly for prompt reimbursement. More frequent invoice submission will be considered on a case-by-case basis.

Disqualifications

The following will result in the disqualification of a grant proposal:

- Incomplete grant proposals, including grant proposals with one or more unanswered questions and/or missing, blank, unreadable, corrupt, or otherwise unusable attachments
- Grant proposals requesting more than the maximum award amount
- Grants proposals requesting funds outside of the grant term
- Grant proposals with unallowable costs or activities necessary to complete the project objectives
- Grants with out-of-state project leads

Appeal

Any disqualification taken by the Office of Environmental Farming and Innovation (OEFI) during the administrative review for the preceding reasons may be appealed to CDFA's Office of Hearings and Appeals Office within 10 business days of receiving a notice of disqualification from CDFA. The appeal must be in writing and signed by the responsible party name on the grant application or his/her authorized agent. It must state the grounds for the appeal and include any supporting documents and a copy of the OEFI decision being challenged. The submissions must be sent to the California Department of Food and Agriculture, Office of Hearings and Appeals, 1220 N Street, Sacramento, CA 95814 or emailed to CDFA.LegalOffice@cdfa.ca.gov. If submissions are not received within the time frame provided above, the appeal will be denied.

Grant Proposal Requirements

All sections of the grant proposal, described below, must be submitted through the online application form here: https://webportalapp.com/sp/login/opca_proactive_ipm_grant_program. Appendices (Section D) must be uploaded to the submission portal as a single PDF file attachment.

Allowable and unallowable costs

A cost is allowable if it directly relates to the project and is incurred solely to advance work under the Grant Agreement. Allowable costs include, but are not limited to, salaries and wages, indirect costs, fringe benefits, consultant services, travel, telephone, equipment (lease/rental), subcontractors and materials, data processing, land rentals, training and communications. Indirect costs must be treated in accordance with your organization's policies and procedures. In the absence of a policy, applicant's indirect costs must not exceed ten percent of the total modified direct cost. University of California applicants should use the negotiated indirect rate of 30%.

Unallowable expenses include but are not limited to costs for hospitality suites, alcoholic beverages, costs of entertainment, costs for organized fund raising including financial campaigns and solicitation of gifts, and travel to states with active discriminatory laws as detailed in the travel section below. Unallowable costs will not be reimbursed.

A. APPLICANT INFORMATION

1. Project Leader(s).

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

2. Research Collaborator(s).

Specify each collaborator's name, title, affiliation, mailing address, telephone number, and email address. Commodity boards/growers/grower groups providing funding or in-kind support should be included here. A letter from each collaborator must be included under Section D: Appendices describing their role in the project, estimated time commitment, and a statement of agreement to participate in the project. Do not include a collaborator's name unless a support letter is included with the proposal at the time of submission.

3. 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 D: Appendices explaining the rationale for their support. Do not include a supporter's name unless the support letter is included with the proposal at the time of submission.

B. PROJECT INFORMATION, including:

1. Project Title.

Provide a unique and concise title for the proposed project that adequately describes the project.

2. Project Summary (not to exceed 1,000 words). Concisely describe the project, including project objectives. Concisely define the problem as it relates to the chosen priority target pest, state project objectives, describe the approach to be used, and identify criteria that will be used to evaluate the project's success

3. Introduction and Justification.

3.1. Specify reasons for selecting the target pest including how it might impact California. (450 word maximum)

3.2 Explain how the project will contribute to the goals of the proactive IPM solutions. (450 word maximum)

3.3 Describe relevant research about the target pest and/or system. (450 word maximum)

3.4 If biological control is a component, explain how and where host range testing will be conducted. (450 word maximum)

4. Work Plan and Methods.

Provide a work plan in which the project is divided into tasks and sub-tasks. Identify who is responsible for completing each task. (2,000 word maximum)

5. Project Management and Evaluation.

Provide a timeline. Describe how data will be collected and shared with the CDFA. Detail what measures will be used to evaluate the project and how they will be assessed and reported to CDFA. (650 word maximum)

C. BUDGET

Complete the budget table and upload to the online application form. An Excel version of budget table can be found on the Proactive IPM Solutions webpage: https://www.cdfa.ca.gov/oefi/opca/proactive-ipm.html. If there is a subaward, include a budget table for the subaward as well. Costs that are not personnel, operating expenses, or subawards should be listed individually under other direct costs. These might include but are not limited to greenhouse rentals, quarantine costs, and/or publishing costs.

From: To:					
BUDGET CATEGORY	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Total**
PERSONNEL: *Salary and fringe benefits.*					
Salary					
Fringe benefits					
OPERATING EXPENSES					
Travel					
Materials & Supplies					
Equipment					
SUBAWARD ***Not subject to IDC Calc***					
OTHER DIRECT COSTS (ODC) ***Subject to IDC Calc***					
Other direct cost 1					
Other direct cost 2					
TOTAL DIRECT COSTS					
Indirect (F&A) Costs **F&A Base** ***Rate*** ***MTDC ****					
TOTAL COSTS PER YEAR					
TOTAL COSTS FOR PROPOSED PROJECT PERIOD					

* MTDC = Modified Total Direct Cost

Provide a detailed narrative of your proposed budget broken into years 1, 2, and 3. As described above, funding for subsequent years will not be released until the year 1 benchmark has been met. The budget should contain a narrative in paragraph format for each budget category in order to determine the costs are reasonable and allowable. Allowable and unallowable costs are defined in the Allowable and Unallowable Costs section above. Assume a start date of March 1, 2022 and explain all of the following:

1. Personnel. Provide classification level, percent of time based on full time salary/wages, benefits, employment period, and name of individual to be hired, if available. (350 word maximum)

2. Operating Expenses. Itemize and justify all of the following operating expenses:

A. Supplies: Itemize and justify all supplies to be purchased. Supplies are anything with an acquisition cost under $5,000 per unit. For each grant year, provide an

itemized list of projected supply expenditures, the dollar amount for each item, and describe how it will support the purpose and goal of the project. (425 word maximum)

B. Travel: The maximum travel rates allowable are the rates in effect at the time of travel as established by the California Department of Human Resources (CalHR). Exceptions: Colleges and Universities must comply with their institution's travel policies. For each grant year, itemize and indicate the following information, if applicable, for each trip: (a) destination; (b) purpose of trip; (c) number of trips; (d) identify travelers; (e) number of days traveling; (f) estimated airfare costs; (g) estimated ground transportation costs; (h) estimated lodging and meals costs; and, (i) estimated mileage rate. (350 word maximum)

Additionally, in accordance with California Assembly Bill 1887, state funded and state sponsored travel to states with discriminatory laws is prohibited. **Grant funds cannot be used to support costs for travel to states with active discriminatory laws.** For the most up-to-date list of prohibited states, please visit https://oag.ca.gov/ab1887.

C. Other Direct Costs: Identify and explain any additional expenses not covered by the above categories. Other expenses include, but are not limited to: conferences or meetings, communications, speaker/trainer fees, publication costs, data collection, and other budgeted costs associated with the project. (350 word maximum)

D. Indirect costs are any costs that are incurred for common or joint objectives that therefore cannot be readily identified with an individual project, program, or organizational activity. They generally include facilities operation and maintenance costs, depreciation, and administrative expenses. It is generally unallowable to charge an indirect cost as a direct cost. Indirect costs must be treated in accordance with your organization's policies and procedures. In the absence of a policy, applicant's indirect costs must not exceed ten percent. Any non-UC applicants requesting an indirect rate of over 10% will need to provide their Negotiated Indirect Cost Rate Agreement. UC applicants should use the negotiated rate of 30%. (125 word maximum)

3. Other Funding Sources. Indicate if any Federal, State or other grant program(s) are providing funding for this project. Identify the Federal, State agency or organization administering the program(s), and the amount(s) of funds requested/awarded. (125 word maximum)

D. APPENDICES (uploaded as single PDF file)

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. Research Collaborators. Include a letter of support from each research collaborator, including a description of their role in the project and statement of agreement to participate in the project.

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

Evaluation Criteria

All applications will be evaluated based on the criteria detailed below (Table 3)

Table 3: Evaluation criteria

EVALUATION CRITERIA	**Max points**
Proposal Quality • Project Summary: Concisely defines the problem, describes the approach to be used, and identifies criteria that will be used to evaluate the project's success. • Objectives: Provides a clear and concise statement of each objective. • Work Plans and Methods: Work plan is organized by tasks and subtasks and includes milestones. Clearly explains path to conduct host range testing and/or efficacy testing. Clearly explains experimental design and statistical analyses. • Project Management and Evaluation: Gives detailed timeline and evaluation metrics. Evaluation metrics should be more than completing tasks. • Additional information includes required information for project leaders, cooperators, and supporters.	25
Project Justification • Relevance to Research Priorities: Clearly states how proposed target pest fits into the priority rubric. • Justification: Defines/describes the problem, explains impact on a local/regional/statewide level, indicates potential contribution to long-term problem resolution, describes previously conducted related research, and specifies new information to be generated.	30
Project Team and Resources *Team* • Are the project leaders, cooperators, and other researchers well-suited to the project?	15

EVALUATION CRITERIA	**Max points**
• Collaborative/multi leader project: Do the investigators have complementary and integrated expertise and their leadership approach/governance and organizational structure appropriate for the project? • Does the project proposal have strong support from relevant organizations/ individuals? • Have any commodities provided matching funds? *Resources* • Are the institutional support, equipment, and other physical resources available to the investigators adequate for the project proposed? • Will the project especially benefit from the unique features of the scientific environment and/or collaborative arrangements?	
Feasibility and Impact • Project is manageable within proposed framework of budget, time and personnel. • Project objectives are clear, well stated, and achievable. • The overall strategy, work methodology, and analyses methods are well-reasoned and appropriate to accomplish the objectives of the project. Potential problems, alternative strategies and benchmarks for success are included.	20
Fiscal Merit • Project's budget is detailed, reasonable, and accurate. • Budget Narrative: Itemizes, describes, and justifies all project expenses.	10
Total points	100