Appendix J-2

Survey Work Plan - Fiscal Year 2013

Cooperator:	**Colorado Department of Agriculture**			
State:	Colorado			
Project:	Vegetable Crops Pest Survey			
Project funding source:	CAPS Priority Survey ☒ Other Line Item Pest ☐			
Project Coordinator:	John Kaltenbach			
Agreement Number	13-8508-0013-CA			
Contact Information:	**Address:**	700 Kipling St. Suite 4000 Lakewood, CO 80215		
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This Work Plan reflects a cooperative relationship between the *Colorado Department of Agriculture* (the Cooperator) and the United States Department of Agriculture (USDA), Animal and Plant Health Inspection Service (APHIS), Plant Protection and Quarantine (PPQ). It outlines the mission-related goals, objectives, and anticipated accomplishments as well as the approach for conducting a Vegetable Crops Pest Survey and the related roles and responsibilities of the parties [e.g., mutual roles, APHIS role(s), Cooperator role(s)] as negotiated.

I) OBJECTIVES AND NEED FOR ASSISTANCE

The purpose of this project is to conduct an early detection survey of moth species that are pests of Solanaceous crops.

Colorado CAPS personnel will conduct trapping surveys for the following insects:

1. *Helicoverpa armigera*, Old World Bollworm, #3 on AHP 2013 List
2. *Spodoptera littoralis*, Egyptian Cottonworm, #23 on AHP 2013 List
3. *Spodoptera litura*, Cotton Cutworm, #8 on AHP 2013 List
4. *Tecia solanivora*, Guatemalan Potato Moth, Additional Pests of Concern for 2013
5. *Tuta absoluta*, Tomato Leaf Miner, #27 on AHP 2013 List

The survey will be performed at sites using CAPS approved trap and lure combinations. Potatoes are the fourth most valuable field crop in Colorado behind corn, wheat and hay, with the 2010 crop valued at $293 million. Colorado is ranked 4th in the US in total potato production, and 3rd in the US for seed potato production[1]. Over 90% of all of the potato production occurs in the San Luis Valley of Colorado, in the counties of Alamosa, Rio Grande and Saguache, and it is the primary industry in the area.

If one of the target pests is found in this region of the state, significant economic harm could occur to potato growers and their communities.

All of the targeted pests in this survey have the potential to arrive and establish in Colorado based on climate and host plant availability and or predicted distributions. If one or more of the targeted pest were to establish in Colorado there could be severe adverse economic and/or environmental effects. Early detection of an invasive species, prior to establishment, provides regulators and land managers more options for eradication, control and management. Currently, there are inadequate state funds to complete this survey.

[1] NASS, Colorado Agricultural Statistics, 2011

II) RESULTS OR BENEFITS EXPECTED

The Cooperator seeks to conduct a program which is expected to result in:

- The presence or absence of the target pests in the San Luis Valley of Colorado

A. What results or benefits will be derived from the cooperative effort? Use of bulleted Statements is acceptable.

A distribution profile of the targeted pests in Colorado, whether they are present or absent, which will support agriculture export, and help assess specific pest risks to Colorado and the United States. Early detection of targeted pest(s) would help facilitate their eradication or control, reducing or eliminating adverse economic and/or environmental impacts.

Evidence of absence of the targeted pests in surveyed areas of Colorado would facilitate trade with domestic and foreign trade partners. Information on target pests will also be useful for other exotic pest surveys and risk assessments. This project fits within the mission of the Colorado Department of Agriculture which is: To strengthen and advance Colorado's agriculture industry; ensure a safe, high quality and sustainable food supply; and protect consumers, the environment and natural resources.

III) APPROACH

What is the plan of action or approach to the work?

The trapping survey will be conducted following the CAPS approved methods for 2013. All of the targeted pest have an approved trap and lure combination. Traps will be placed near potato fields and serviced once per month (to check for insects, replace trap if necessary and or to change the lure based on the length of effectiveness). One trap will be placed for each of the 5 species at 90 sites (potato fields) spread throughout the area, for a total of 450 traps. They will be placed in each of the five counties in the San Luis Valley in approximate proportion to the

typical acreage planted (Alamosa-30 sites, Rio Grande-27 sites, Saguache-24 sites, Costilla-8 sites and Conejos- 1 site).

Samples will be screened by John Kaltenbach, CDA and suspect material will be identified by Boris Kondratieff, systematic entomologist at Colorado State University.

A. The Cooperator and APHIS Mutually Agree to/that:

1. Work together in carrying out field surveys, trapping, identification and data collection on pests, diseases or weeds that may pose an immediate risk to Colorado's agriculture and or natural resources.
2. Utilize Cooperator and APHIS program funding, as outlined in the Financial Plan, within the authorized parameters to support survey, detection and CAPS objectives.

1. What is the quantitative projection of accomplishments to be achieved?

a. By activity or function, what are the anticipated accomplishments by month, quarter, or other specified intervals?
March to May: Site selection and preparation for survey work, including securing traps and lures from APHIS, letter to growers requesting cooperation and hiring a survey technician
May to June: install traps, begin trap service
May to October: Continue trap service or replace lure in all traps as needed. Screen collections for suspect samples
November: Ensure all data and specimens are identified and entered
December to February: Summary report written for inclusion in Annual CAPS Report.

b. What criteria will be used to evaluate the project? What are the anticipated results and successes?

1. Results
   - Number of sites reviewed and analyzed
   - Number of sites surveyed
   - Number of traps at each site
   - Efficacy of trapping
   - Maps and data are produced
2. Successes
   - Sites identified match criteria for selection
   - Sites and traps are deployed in a timely and efficient manner
   - The number of traps and sites meet plans
   - Early detection of targeted species
   - Timely maps and data are produced

c. What methodology will be used to determine if:

1. Identified needs are met
   •If funding proves sufficient to implement survey as described
   •If CDA personnel prove to have sufficient expertise to implement survey as described
2. Results and benefits are achieved.
   •If information derived from survey facilitates eradication of previously unknown infestations of targeted pests
   •If evidence of absence of infestations of targeted pest, as determined by survey, proves useful when dealing with regulatory concerns of domestic or foreign trade partners

2. What type of data will be collected and how will it be maintained?

a. Address timelines for collection and recording of data.
Data will be collected throughout the survey and reported when identifications are completed.

b. How will APHIS be provided access to the data?
Data is collected on data sheets and stored in Excel databases and submitted to an APHIS approved database.

B. The Cooperator will:

1. By function, what work is to be accomplished?
Select 90 sites and set 1 trap for each species at each site for a total of 450 traps. The traps and lure will be set according to CAPS Approved Methods for 2013.

Table 1

Target(s)	Lure	Trap Type
Helicoverpa armigera	Z11-16Ald Z9-16Ald butylated hydroxytoluene	Plastic Bucket Trap
Spodoptera litura *Spodoptera littoralis*	Z9E11-14Ac Z9E12-14Ac	Plastic Bucket Trap
Spodoptera littoralis	Z9E11-14Ac Z9E12-14Ac	Plastic Bucket Trap
Tuta absoluta	E3Z8Z11-14Ac E3Z8-14Ac	Large Plastic Delta Trap
Tecia solanivora	E3 – 12Ac Z3 – 12Ac 12Ac	Paper Delta Trap

Traps will be check once per month; to check for specimens, to replace missing, lost or damaged traps and/or change lure as suggested in the approved methods for effectiveness.
All samples will be initially brought back to CDA for processing. Samples will be taken to CSU for identification of specimens. Suspected target specimens will

initially be sent to the appropriate APHIS Regional identifier, and if required, specimens will be forwarded to appropriate NIS systematists for final determination. All relevant data will be recorded and documented as in Section V.

2. **What resources are required to perform the work?**
Funding – see detailed financial plan
Personnel – see IIIB3
Supplies – see IIIB6

3. **What numbers and types of personnel will be needed and what will they be doing?** Tie these needs back to the activities outlined in III.A
   - CDA SSC – overall coordination, training, site selection, and data entry
   - CDA Survey Technician – surveying

4. **What equipment will be needed to perform the work?** Include major items of equipment with a value of $5,000 or more.

   a. What equipment will be provided by the cooperator? Microscopes and similar lab equipment
   b. What equipment will be provided by APHIS? None
   c. What equipment will be purchased in whole or in part with APHIS funds? None
   d. How will the equipment be used? N/A
   e. What is the proposed method of disposition of the equipment upon termination of the agreement/project? N/A

5. **Identify information technology equipment, e.g., computers, and their ancillary components.** All information technology supplies (e.g., small items of equipment, connectivity through air cards or high speed internet access, GPS units, radios for emergency operations etc.) should be specifically identified.
   CDA computers for data entry, documentation, and analysis; GPS units; Cameras

6. **What supplies will be needed to perform the work?** Identify individual supplies with a cumulative value of $5,000 or more as a separate item. **All information technology supplies (e.g., small items of equipment, connectivity through air cards or high speed internet access, GPS units, radios for emergency operations) should be specifically identified above.

   a. What supplies will be provided by the Cooperator? Field and lab supplies
   b. What supplies will be provided by APHIS? Traps and Lure
   c. What supplies will be purchased in whole or in part with APHIS funds? Plastic containers, Collection vials, wire, zip ties, lure for *Tecia solanivora*
   d. How will the supplies be used? For trapping activities

e. What is the proposed method of disposition of the supplies with a cumulative value over $5,000 upon termination of the agreement/project?
N/A

7. **What procurements will be made in support of the funded project and** what is the method of procurement (e.g., lease, purchase)?
(Cooperator procurements shall be in accordance with OMB Circulars A-102 or A110, as applicable.) None

8. **What are the travel needs for the project?**

   a. Is there any local travel to daily work sites? Who is the approving official? What are the methods of payment? Indicate rates and total costs in the Financial Plan.
   There will be travel from the CDA office to local survey sites.
   SSC will coordinate personnel conducting surveys and will authorize local travel. Salaries, benefits, and transportation are paid for via the requested APHIS funding as detailed in the Financial Plan.

   b. What extended or overnight travel will be performed (number of trips, their purpose, and approximate dates). Who is the approving official?
   No overnight travel is planned.
   c. What is the method of payment? Indicate rates and total cost in the Financial Plan.
   Not applicable

9. **Reports**:

   a. Submit all reports to the APHIS Authorized Department Officer's Designated Representative (ADODR). Reports include:
      1. Narrative accomplishment reports in the frequency and time frame specified in the Notice of Award, Article 4.
      2. Federal Financial Reports, SF-425 (replaces SF-269 October 1, 2009) in the frequency and time frame specified in the Notice of Award, Article 4.

10. **Are there any other contributing parties who will be working on the project?**
   a. List Participating Agency/Institution: Colorado State University; USDA APHIS PPQ, Colorado
   b. List all who will work on the project: Rob Davidson (CSU-San Luis Valley Research Center), Boris Kondratieff (CSU-Fort Collins)
   c. Describe the nature of their effort: Rob Davidson, local coordination in San Luis Valley. Boris Kondratieff, Insect identification
   d. Contribution: will identify and screen targeted species

C. **APHIS Will:**

1. Outline the Agency's (USDA APHIS PPQ) substantial involvement.

1. (a) Include any significant Agency collaboration and participation

- Where possible, provide relevant information on importers or locations of interested and higher probability of finding EWB/BB insects, and collaborate on site selection.
- Provide taxonomic support as needed.

1. (b) Project oversight and performance management

- Provide funding and agreements in a timely manner
- Provide training in data entry or tracking as necessary
- Provide feedback on site selection and reporting of survey

2. What equipment will be needed to perform the work? Include major items of equipment with a value of $5,000 or more.

a. Will Equipment be loaned or provided by APHIS? ☐Yes ☒No (If Yes, please list:
b. How will the equipment be used? N/A

IV) GEOGRAPHIC LOCATION OF PROJECT

A. Is the project statewide or in specific counties, townships, and/or national or state parks? (List the names of ALL counties, townships, and/or national or state parks, and tribal areas that apply) The survey will be conducted in Alamosa, Rio Grande, Saguache, Conejos and Costilla counties in the San Luis Valley.

B. What type of terrain (e.g., cropland, rangeland, woodland) will be involved in the project? Rural areas near farm fields and adjacent to farm fields.

C. Are there any unusual features which may have an impact on the project or activity such as rivers, lakes, wild life sanctuaries, commercial beekeepers etc? (list all that apply) None

D. Identify the kind of data to be collected:
Location (county and Latitude/Longitud) Type of site (farm fields or adjacent to farm fields), Type of trap and lure, Dates of installation and servicing, Identification of specimens.

E. Establish criteria to evaluate the results and successes of the project:

1. Results:
   - Number of sites reviewed and analyzed

- Number of sites surveyed
- Number of traps at each site
- Efficacy of trapping
- Maps and data are produced

2. Successes:
   - Sites identified match criteria for selection
   - Sites and traps are deployed in a timely and efficient manner
   - The number of traps and sites meet plans
   - Early detection of targeted species
   - Timely maps and data are produced

F. Methodology used to determine if the results and benefits are achieved:
1. Identified needs are met: Funding is received in a timely manner; written narrative reports are submitted and data are entered into approved database.
2. Results and benefits are achieved: Results: Review of accomplishment reports and submitted data.

V) DATA COLLECTION AND MAINTENANCE

A. New national, state, and county records will be entered into and APHIS approved database within 48 hours of confirmation of a pest or pathogen identification by a recognized identifier.

B. Non-time sensitive records, including negative data, will be entered an APHIS approved database within 2 weeks of confirmation.

C. Negative data will be entered within 2 weeks of decommissioning a trap, obtaining the results from an identifier, or performing a laboratory assay.

D. Survey data will be collected with GPS technology for internal pathway analyses

E. Survey maps will be developed from approved GIS mapping software.

F. Data entry worksheets for the commodity surveys will be made available if requested when completed.

VI) TAXONOMIC SUPPORT

A. Person or Institution that will screen targets (Name & Contact Information)
Dr. Boris Kondratieff (Ph. 970-491-7314)
003 Laurel Hall
Colorado State University
Fort Collins, CO 80523

OR

B. ☐ Request for taxonomic support.

(If you request taxonomic support the Program managers and PPQ's National Identification Services will use the information you provide in the J-3 Appendix to assign your survey samples to the appropriate taxonomic personnel.)

VII) SIGNATURES

SPRO, Mitch Yergert Date	**ADODR, Pat McPherren Date**

VIII) FINANCIAL PLAN

DETAILED FINANCIAL PLAN **Vegetable Crops Pest Survey** Colorado Department of Agriculture 13-8508-0013-CA (32%) TIME PERIOD: March 1, 2013 to February 28, 2014 *Financial Plan must match the SF-424A, Section B, Budget Categories*		
ITEM	**APHIS FUNDS**	**COOPERATOR FUNDS (Show even if zero)**
PERSONNEL:		
Seasonal technician, 200 hours at $15/hour	$3,300	$0
Subtotal	$3,300	$0
FRINGE BENEFITS:		
14% of personnel expenses	$462	$0
Subtotal	$462	$0
TRAVEL:		
	$0	$0
Subtotal	$0	$0
EQUIPMENT		
	$0	$0
Subtotal	$0	$0
SUPPLIES		
Lure for *Tecia solanivora*	$130	
Misc. supplies: wire, zip ties, plastic bags	$17	$0
Subtotal	$147	$0
CONTRACTUAL		
	$0	$0
Subtotal	$0	$0
OTHER		
Lease vehicle (LV) $50/month for 2 months	$100	$0
Mileage charge for L/V : 1,000 miles @ .36/mile	$360	$0
Mobile phone service ($15/month, 2 months)	$30	$0
Specimen ID by CSU, 100 at $10/specimen	$1,000	$0
Subtotal	$1,490	$0
TOTAL DIRECT COSTS	$5,399	$0
INDIRECT COSTS (13.72% on Salary & Finge)	$516	$0
TOTAL	$5,915	$0
Cost Share Information	100.00%	0.00%