Pathway Survey – Early Detection of Exotic Plant Pests Work Plan
January 1, 2015 – December 31, 2015

Cooperator:	Kansas Department of Agriculture			
State:	Kansas			
Project:	Pathway Survey: Early Detection of Exotic Plant Pests			
Project funding source:	CAPS Priority Survey ☒ Other Line Item Pest ☐			
Project Coordinator:	Laurinda Ramonda			
Agreement Number:	15-8420-1788-CA			
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This Work Plan reflects a cooperative relationship between the Kansas 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 an early detection for exotic plant pests at shipping hubs and the related roles and responsibilities of the Kansas Department of Agriculture and USDA-APHIS-PPQ as negotiated.

I) OBJECTIVES AND NEED FOR ASSISTANCE

Shipping hubs, such as container storage and transfer yards, inland ports, rail depots and rail yards, are pathways through which Exotic Plant Pests (EPP's) could be introduced and could also act as places at which EPP's could become established. The exteriors and interiors of shipping containers, as well as the cargo within, can be a pathway for introduction of EPP's. Areas where shipping containers are stored are often sites where solid-wood packing materials (SWPM) (including dunnage) are retained. Infested SWPM retained on site could be a source of EPPs. When containers, rail cars or trucks are unloaded, EPP's present in or on SWPM or cargo may escape into the surrounding environment. Shipping vehicles, such as containers and trucks, have also been shown to harbor EPP's. Shipping hubs are a logical pathway for potential introductions of EPP's and the focus of this survey.

- EPP's are major pests in many parts of the world, causing direct damage to a wide array of agricultural plants, including field crops, seed crops, vegetable crops, fruit and greenhouse/nursery plants.
- Wood boring EPP's can threaten ornamental and urban trees, Kansas' logging and wood products, nursery, orchard, and tourism industries.
- Establishment and spread of EPP's can require increased use of pesticides to protect the above commodities, which could threaten Kansas' water quality.

- Some EPP's, such as mollusks and lygaeoid or pentatomid bugs, engage in "massing behavior". Such behavior can contaminate food crops and, in the case of mollusks, may damage harvesting machinery.
- Establishment and spread of EPP's can result in restrictive quarantines on affected export commodities. Prophylactic pesticide applications would be required, as would additional inspections and subsequent paperwork.
- Introduction, establishment and spread of EPP's in Kansas would provide a "bridge" whereby these pests could spread to and infest the rest of the United States, threatening agricultural commodities throughout the nation.

Early detection of EPP's will facilitate possible eradication of these and any other major agricultural pests found during this survey, helping to prevent permanent establishment and subsequent spread of EPP's in the United States. A similar survey has been conducted in Oregon by the Oregon Department of Agriculture since 2008 and has resulted in the identification of many exotic species new to the U.S. including: *Aegopinella nitidula* (a snail), *Nebria brevicollis* (a ground beetle), and *Philopedon plagiatus* (a weevil). While only *P. plagiatus* is thought to be a potential agricultural pest, such results indicate the efficacy and value of this survey approach. This approach looks at the pathways by which potential pests can enter our state and country.

A central mission of APHIS and of the Cooperator is to prevent the introduction, establishment, and spread of exotic agricultural pests. This project will provide the Kansas Department of Agriculture and USDA-APHIS-PPQ, with information regarding the status of exotic plant pests. This information can be used to determine appropriate response actions if positive finds are confirmed.

This survey cannot be implemented without the funds provided by USDA-APHIS-PPQ.

II) RESULTS OR BENEFITS EXPECTED

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

A. What results or benefits will be derived from the cooperative effort?

- Identification of pathways of introduction to limit future infestations.
- Early detection of EPP's, facilitating eradication or control of these pests.
- Evidence of absence of EPP's in surveyed areas of Kansas would facilitate trade with domestic and foreign trade partners.
- Information on EPP's (and other undocumented exotic invertebrates) introduced via port, rail, and container yards and other shipping hubs in Kansas will be acquired. This information will also be useful for other exotic pest surveys and risk assessments.
- Knowledge of areas and commodities at high risk for the introduction and establishment of EPP's and the pathways through which high-risk commodities enter Kansas will be acquired. This information will be useful for other exotic pest surveys and risk assessments.
- Early prevention of plant health restrictions.

- Reduce the risk of economic hardship to the agriculture, wood and nursery industry and ecological diversity.

III) APPROACH

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

This survey is planned for two years. Thirty sites will be surveyed at high-risk container yards for new exotic plant pest species that are potentially harmful to agriculture/horticulture. Survey sites will mainly be in the Kansas City area because this is Kansas' main shipping hub. The counties that are planning to be surveyed are Douglas, Franklin, Johnson, Shawnee and Wyandotte. The survey will be conducted with one temporary/seasonal staff and KDA full time employee when needed. One temporary/seasonal employee will be trained and monitored by the State Survey Entomologist and State Survey Coordinator. Survey activities will occur twice a month at each site during April – August. Traps to be utilized are the pitfall, delta, protein bait and visual.

- There are no species-specific lures, baits, or traps for most of the EPP target species. Consequently, a variety of general insect and invertebrate collection methods will be utilized at each surveyed hub. Survey methods may vary somewhat depending on the characteristics of a given hub. However, basic survey components will include:
  - Safety, access, and presence of suitable habitat permitting, the entire grounds of a given hub will be surveyed.
  - Permission, safety, and access permitting, suitable habitat and properties adjacent to a given hub will be surveyed, particularly if those areas appear more suitable for EPP establishment than the hub premises.
  - Depending upon the availability of suitable surfaces, up to five pitfall traps (particularly effective for crepuscular or nocturnal ground active targets) will be placed in or near likely habitat for EPP's. The pitfalls will be partially filled with a dish soap and water. The pitfalls will be checked every two weeks. Traps will remain at the hubs throughout the survey. These sites will be marked with a marking flag/marking tape.
  - Up to five transects of baits (particularly effective for small, diurnally foraging targets, e.g., red imported fire ants (RIFA) will be placed at each hub or in its vicinity. The baits will consist of cut protein bait such as Spam®. This is intended to attract a great variety of ants, as well as RIFA at different stages of colony development. Surveys should be conducted prior to temperatures reaching 100° F. Searching should occur between 30 minutes to 1 hour. These sites will be marked with a marking flag/marking tape.
  - A very effective method for detecting cryptic invertebrates is by searching of various types of habitats, e.g., prying up loose bark on dead trees, turning over cover on the ground such as rocks and trash, examining walls of buildings, et cetera. Searching will be performed for a minimum of 1 hour. Larger or more complex sites may require longer search periods.
  - Asian defoliator moths (Lymantria) will be surveyed by using 2 delta traps with gypsy moth string lure per location. These sites will be marked with flagging tape.

- Active sampling, i.e., baiting and searching, will be conducted at least monthly during the season: If feasible, baiting and searching will be conducted along the same transects.
- If feasible, the same active sampling transects will be sampled at each sample date. Marked with marking flags/marking tape.
- Depending upon site characteristics and activity, all surveyed sites will receive at least some mollusk survey. Mollusk surveys will be conducted in the following manner:
  - Visual Encounter Surveys (VES), a method long used to survey for amphibians, which are similar to mollusks in preferring moist microhabitats, having clumped distributions, and with individuals dispersing over limited distances. VES's will focus on preferred habitats.
  - Conducted during the periods while soil is moist and temperatures are above about 50^0 F, after spring or summer rains. Mollusks are much less active when soil is dry and when conditions are very cool or very hot. Moist microhabitats favored by mollusks:
    - Near heavily vegetated areas
    - Under or near cover, such as rocks, boulders, boards, fallen logs and branches, broken concrete, flower pots, planters, etc.
    - Amid leaf litter, compost and rubbish
    - On rock walls, cement pilings, etc.
    - Along stream or seepage margins
    - At the base of plants, under leaves, in the "heart" of compact plants.
  - In areas with signs of mollusk presence:
    - Feeding damage to plants
    - Eggs
    - Mucus and slime trails
    - Feces
- Specimen collection:
  - Depending upon the specific taxon, specimens will be collected into plastic containers, killing jars or 70% ethanol and stored in a cool place until they can be returned to the lab.
  - All prospective EPP's will be collected.
  - Labels will be placed on the outside of the container (live EPP's could eat labels placed inside).
- Specimens requiring special preparation will be collected alive and appropriately prepared upon arrival at the lab (e.g., larvae and mollusks). For instance, upon arrival at the lab, mollusk specimens will be drowned in water for 24 hours so specimens will be at their greatest extension, making key features more visible and rendering dissection easier.
- Specimens (except those best preserved dry) will then be transferred to 70% ethyl alcohol for storage before screening, sorting, identification and final labeling.
- Delta traps with suspect target specimens will be brought back to the state entomologist/lab.
- Latitudes and longitudes of all survey paths/transects and sites will be recorded, as will more resolute GPS readings for any suspected positive samples.

- All samples will be brought back to Kansas Department of Agriculture (KDA) for processing. Specimens will be sorted and identified, if possible.
- Suspected target specimens will be sent to the appropriate APHIS identifier.

Surveys will be conducted for the following species of EPP's:

<u>Insects:</u>

Coleoptera: Chrysomelidae
- *Diabrotica speciosa*, Cucurbit beetle – (CAPS 2015 Commodity Surveys) – Visual survey

Coleoptera: Curculionidae
- *Naupactus leucoloma*, Whitefringed weevil – in southeastern USA and southern California – Pitfall trap
- *Pseudocneorhinus bifasciatus*, Twobanded Japanese weevil – in Eastern USA – Pitfall trap

Coleoptera: Elateridae
- *Agriotes sputator*, European wireworm – northeastern North America – Pitfall trap
- *Agriotes ustulatus*, European wireworm – not known to be in North America – Pitfall trap

Coleoptera: Scarabaeidae
- *Anomala orientalis*, Oriental beetle – Eastern North America – Pitfall trap
- *Rhizotrogus majalis*, European chafer – Eastern North America and southern British Columbia – Pitfall trap

Hymenoptera: Formicidae
- *Linepithema humile*, Argentine ant – Eastern and Southwestern USA – Protein bait Spam® trap

Solenopsis:
- *Solenopsis invicta*, Imported fire ant – Protein bait Spam® trap

Lymantria: (2 traps per location with gypsy moth lure)
- *albescens*, Okinawa Gypsy Moth – (CAPS Asian Defoliators) – Delta trap, 2 sticky sides, gypsy moth lure
- *dispar asiatica*, Asian Gypsy Moth – (CAPS Asian Defoliators) – Delta trap, 2 sticky sides, gypsy moth lure
- *dispar japonica*, Japanese Gypsy Moth – (CAPS Asian Defoliators) – Delta trap, 2 sticky sides, gypsy moth lure
- *postalba*, White-winged Gypsy Moth – (CAPS Asian Defoliators) – Delta trap, 2 sticky sides, gypsy moth lure
- *umbrosa*, Hokkaido Gypsy Moth – (CAPS Asian Defoliators) – Delta trap, 2 sticky sides, gypsy moth lure

<u>Plants:</u>

Onopordum:
- *Onopordum acaulon*, Horse Thistle – (CAPS AHP 2015) – Visual survey

<u>Snails:</u>

Mollusca:

- *Cernuella cisalpina*, Striped helicella snail – (*Cernuella* spp.) – (CAPS Mollusk Survey) – Visual survey
- *Cernuella virgata*, Striped snail – (*Cernuella* spp.) – (CAPS Mollusk Survey) – Visual survey
- *Cochlicella*, Helicid snail – (*Cochlicella* spp.) – (CAPS Mollusk Survey) – Visual survey
- *Monacha*, Helicid snail – (*Monacha* spp.) (CAPS Mollusk Survey) – Visual survey
- *Veronicella*,Veronicellid Slug – (*Veronicella* spp.) – (CAPS Mollusk Survey) – Visual survey

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

- Utilize Cooperator and APHIS program funding, as outlined in the Financial Plan, within the authorized parameters to support survey, detection and objectives.
- Maintain a State Cooperative Agriculture Pest Survey committee that will meet at least once a year.
- Work together in carrying out field surveys, trapping and data collections, emphasizing pest and diseases that may pose an immediate risk to the agriculture of the state and United States.
- Have representation at national and/or Regional annual meetings.

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?

- Trapping will occur from April to August with traps removed in August - trap deployment and visual surveillance months are dependent upon type of pest species.
- Traps checked at least twice monthly.
- Fact sheets, webpage, resources, and pest reporting will be continually updated as new information becomes available.
- Data will be entered into the NAPIS database when pest identification is confirmed and/or becomes available.
- GPS coordinates will be included with surveys.
- Survey and identification of any exotic plant pests.
- Suspect specimens in will be forwarded to a qualified identifier.

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

- Pest detection survey activities completed.
- All data collected from the pest detection survey is entered into the approved database.
- SPHD, SPRO, PSS, SSC meetings to keep updated on issues, if needed.

- Presence or absence of EPP's.
- Better knowledge of the pathways that are at high risk for the introduction and establishment of EPP's.
- Identification of major transportation hubs.

c. What methodology will be used to determine if:

1. Identified needs are met

- Survey completed within timeframe specified.

2. Results and benefits are achieved

- Review of the NAPIS database to ensure that data from the pest detection activities have been entered.
- Review of the accomplishment reports, supporting outreach materials (if applicable), and maps.
- SPHD, SPRO, PSS, SSC meetings to keep updated on issues.

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

a. Address timelines for collection and recording of data

All survey data from cooperative agreements involving pest surveys will be entered by the State Survey Coordinator or KDA staff into the NAPIS database.

The data entry requirements are:

- Enter new national, state, and county records into APHIS approved database within 48 hours of confirmation of a pest or pathogen identification by a recognized identifier.
- Non-time sensitive records, including negative data, APHIS approved database within 2 weeks of confirmation.
- Negative data will be entered within 2 weeks of decommissioning a trap, obtaining the results from an identifier, or performing a laboratory assay.
- Survey data will be collected with GPS technology for internal pathway analyses. Survey maps will be developed from approved GIS mapping software.

b. How will APHIS be provided access to the data?

- Complete, accurate, and timely pest survey data will be entered into the NAPIS database using approved protocol and accessible.
- Semi-annual and annual survey accomplishment reports submitted to ADODR.

B. The Cooperator will:

- Compile a list of shipping hubs in the Kansas City and surrounding area. These areas will include container freight stations, warehouses, distribution locations, logistics sites and rail companies.
- Document locations by GPS coordinate.
- Equipment used in this survey will be maintained by cooperator upon completion of project.
- Conduct surveys at high risk areas that are susceptible to the introduction and establishment of EPP's from April 2015 to August 2015.
- Hire one temporary/seasonal staff person to perform survey.
- Supply GPS equipment.
- Provide KDA staff when needed.
- Provide vehicle and fuel for travel for conducting survey and collecting data.

1. By function, what work is to be accomplished?

- Prepare a list of shipping hubs in the Kansas City and surrounding area before survey begins. These areas will include container freight stations, warehouses, logistics sites and rail companies.
- Survey will be performed by one temporary/seasonal person.
- KDA full time employees will be utilized when needed. Temp employees will be trained and monitored by the State Survey Entomologist and State Survey Coordinator.
- Data will be entered into the NAPIS database when pest identification is confirmed and/or becomes available.
- GPS coordinates will be included with surveys.
- Screening for target specimens will be performed by KDA.
- Suspect specimens in traps will be sent to a qualified identifier.

2. What resources are required to perform the work?

- Qualified identifier for identification (taxonomic support).
- Temporary/seasonal employee to be hired through CAPS survey to conduct survey.
- KDA permanent staff will help when needed for collection, training and screening of target specimens.
- GPS unit and map for locations.
- Rental vehicle (shortage of state vehicles) and fuel are required set up and monitor traps.
- Provided by Cooperator, office space with associated services and utilities, computers and other office equipment for the use of Cooperator personnel. These include digital camera, GPS unit and computer with internet service. Computers will be used for entering survey data into the state survey database and NAPIS database.

3. What numbers and types of personnel will be needed and what will they be doing?

- A temporary/seasonal person to conduct survey.
- KDA permanent staff to help when needed for collection, training and screening of target specimens.
- Data acquired will be entered into the NAPIS database by the State Survey Coordinator or KDA staff.
- KDA staff will screen target specimens.
- Qualified identifier for specimen identification (APHIS Identifier).

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?**
      - Computers for data entry, documentation, and analysis
      - Microscopes and similar lab equipment

   b. **What equipment will be provided by APHIS?** N/A

   c. **What equipment will be purchased in whole or in part with APHIS funds?** N/A

   d. **How will the equipment be used?**
      - Data entry, documentation, and analysis
      - Screening of pests

   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.**
   Provided by KDA, office space with associated services and utilities, computers and other office equipment for the use of Cooperator personnel. These include GPS unit and computer with internet service.

6. **What supplies will be needed to perform the work?**

   - Specimen storage facilities
   - Hand lenses
   - Protein bait Spam®
   - Hand tools (pruners)
   - Ziploc bags
   - Alcohol
   - Alcohol proof pens, pens, tape, etc. (office supplies)
   - GPS units
   - Plywood
   - Collection vials/jars
   - Trowel
   - Traps – delta, pitfall

- Lure – gypsy moths
- Insect pins
- Insect kill strips
- Shipping boxes
- Fuel for rental vehicle
- Twine
- Marking flags
- Marking tape
- Cups (for pitfall traps)
- Insect repellent

a. What supplies will be provided by the Cooperator?

- Specimen storage facilities
- Hand lenses
- Hand tools (pruners)
- GPS units
- Some delta traps
- Some collection vials
- Marking flags
- Shovel

b. What supplies will be provided by APHIS?

- Traps
- Lure
- Insect kill strips

c. What supplies will be purchased in whole or in part with APHIS funds?

- Protein bait Spam®
- Ziploc bags
- Alcohol
- Alcohol proof pens
- Plywood
- Collection vials/jars
- Insect pins
- Shipping boxes
- Trowel
- Marking tape
- Fuel for rental vehicle

d. How will the supplies be used?

- Planning, implementation, data collection and data submission of survey.
- Pest detection survey work.

- Shipping of specimens to identifiers or labs.

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

- There should not be any.

7. What procurements will be made in support of the funded project and what is the method of procurement?

- Supplies used for survey work.
- The Fiscal Department at the Kansas Department of Agriculture will provide most contracts.
- Seasonal employee will be employed by a temporary employment service that has a contract with the state.
- Most procurements will be made by purchase order.
- Some procurements will be made reimbursable personal expense.

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.

- Travel will be required to survey sites by use of a KDA or rental vehicle (shortage of state vehicles).
- Most procurements will be made by purchase order.
- Some procurements will be made reimbursable personal expense.
- The KDA Plant Protection and Weed Control Plant Program Manager is the approving official.
- Costs are included 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? What is the method of payment? Indicate rates and total cost in the Financial Plan.

- There should not be any.

c. What is the method of payment? Indicate rates and total cost in the Financial Plan.

- Purchase order.
- Reimbursable personal expense.
- Costs are included in financial plan.

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:

- KDA
- USDA-APHIS-PPQ

b. List all who will work on the project:

- KDA - state entomologist, CAPS coordinator and temporary/seasonal employees
- USDA-APHIS-PPQ

c. Describe the nature of their effort:

- KDA – survey work
- USDA-APHIS- PPQ – funding, support and pest identification

d. Contribution:

- KDA- survey work, specimen screening
- USDA-APHIS-PPQ-identification of pests

C. APHIS Will:

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

a. Include any significant Agency collaboration and participation

- Provide some traps, kill strips and lure.
- Provide funds to the Cooperator to cover costs outlined in the Financial Plan.
- Make arrangements for Taxonomic support in identification and sorting.

b. Project oversight and performance management

- Review of data results submitted to USDA approved database.
- Review data and submit accomplishment reports to ADODR.
- Provide training, when necessary.

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)

Thirty sites will be surveyed at high-risk container yards mainly in the Kansas City area. The planned counties to be surveyed are Douglas, Franklin, Johnson, Shawnee and Wyandotte.

B. What type of terrain (e.g., cropland, rangeland, woodland) will be involved in the project?

This survey will take place in urban industrial and business parks.

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)

There could be many unusual features that can have impact on the project in an urban setting. This could include high traffic and truck volumes, human disturbance and weather related issues.

D. Identify the kind of data to be collected: The kinds of data to be collected will include, but not limited to, observation number, observation date, data source, state/county, site code, EPA pest code, pest status and survey method.

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

1. **Results:**

   - Pest detection survey activities for the project completed.
   - All data collected from the pest detection survey is entered into the NAPIS database.
   - Maps of the pest detection survey activities are produced to aid in planning of future pest detection surveys, pathway risk analysis, and outreach activities.
   - State CAPS and KDA meetings to keep updated on issues.

2. **Successes:**

- Presence or absence of pests.
- Identification of high risk areas for the introduction of EPP's.

F. Methodology used to determine if the results and benefits are achieved:

1. Identified needs are met:

- Survey completed in specified timeframe.

2. Results and benefits are achieved:

- Review of the NAPIS database to ensure that data from the pest detection activities have been entered.
- Review the accomplishment reports, supporting outreach materials (if applicable), and maps.
- State CAPS and KDA meetings to keep updated on issues.

V) DATA COLLECTION AND MAINTENANCE

All survey data from cooperative agreements involving pest surveys will be entered by the State Survey Coordinator or KDA staff into the APHIS approved database using approved protocol.

VI) TAXONOMIC SUPPORT

A. Person or Institution that will screen targets (Name & Contact Information)

State Entomologist
Kansas Department of Agriculture
Plant Protection and Weed Control
6531 SE Forbes Avenue, Suite B
Topeka, Kansas 66619
(785) 564-6698

OR

B. ☒ Request for taxonomic support.

- Regional APHIS-PPQ identifier (s) for screened samples.

VII) SIGNATURES

ROAR **Date**	**ADODR** **Date**

Detailed Financial Plan

PROJECT: Pathway Survey – Early Detection of Exotic Plant Pests
COOPERATOR NAME: Kansas Department of Agriculture
AGREEMENT NUMBER: 15-8420-1788-CA
TIME PERIOD: January 1, 2015-December 31, 2015

Financial Plan must match the SF-424A, Section B, Budget Categories

ITEM			APHIS FUNDS	COOPERATOR FUNDS (Show even if zero)	TOTAL
PERSONNEL:	**Hours**	**Salary**			
KDA staff - Paid by Cooperator funds	100	$25	$0	$2,500	$2,500
Subtotal			**$0**	**$2,500**	**$2,500**
FRINGE BENEFITS:	**Percent** (enter as decimal not %)				
KDA staff - Paid by APHIS funds - 22%	0.22		$0	$550	$550
Subtotal			**$0**	**$550**	**$550**
TRAVEL:	**Cost**	**Length of time**			
SUV rental for temporary staff for 4.5 months @ $979/month (shortage in state vehicles) **	$979	4.5	$4,406	$0	$4,406
Subtotal			**$4,406**	**$0**	**$4,406**
EQUIPMENT:	**Cost**				
			$0	$0	$0
Subtotal			**$0**	**$0**	**$0**
SUPPLIES:	**Cost**	**Length of time**			
Alcohol, alcohol proof pens, Ziploc bags, jars, shipping supplies, insect repellent, twine, boxes, etc.	$130		$130	$0	$130
Supplies to build pitfall traps	$55		$55	$0	$55
Protein bait Spam®	$75		$75	$0	$75
Fuel - 2027 miles/month x $3.75 per gallon/20 mpg x 4.5 months- for rental vehicles**	$380	4.5	$1,710	$0	$1,710
Traps and lure provided by USDA	$0		$0	$0	$0
Subtotal			**$1,970**	**$0**	**$1,970**

CONTRACTUAL:	**Cost**	**Length of time**			
Key Staffing (1 temporary staff) $20.00 x 720 hours	$20	720	$14,400	$0	$14,400
Subtotal			**$14,400**	**$0**	**$14,400**
OTHER:	**Cost**				
Shipping samples to identifier	$100		$100	$0	$100
Subtotal			**$100**	**$0**	**$100**
TOTAL DIRECT COSTS			**$20,876**	**$3,050**	**$23,926**
INDIRECT COSTS	**Percent** (enter as decimal not %)				
Indirect rate- 19.7%	0.197		**$0**	**$600**	**$600**
TOTAL			**$20,876**	**$3,650**	**$24,526**
COST SHARE INFORMATION (Percent)			**85%**	**15%**	

***** Kansas' Negotiated Cost Rate (Salary + Fringe Benefits x %=Indirect Cost)

****** There is a shortage of state vehicles. We give the option of renting a vehicle or using personally owned vehicles. If renting we pay for the fuel and if a personal vehicle is used we pay mileage.