

## Work Plan Calendar Year 2009

<b>Cooperator:</b>	Kansas Department of Agriculture		
<b>State:</b>	Kansas		
<b>Project:</b>	Small Grain and Soybean Commodity Survey Plan		
<b>Project Funding Source:</b>	Survey of National Concern		
<b>Project Coordinator:</b>	Laurinda Ramonda		
<b>Agreement Number</b>	09-8453-1227-CA		
<b>Contact Information:</b>	<b>Address:</b>	PO Box 19282, Forbes Field Bldg 282, Topeka, Kansas 66619	
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This Work Plan reflects a cooperative relationship between the Kansas Department of Agriculture (KDA) 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 Small Grain and Soybean Commodity survey. In addition, it outlines the related roles and responsibilities of the Kansas Department of Agriculture and USDA-APHIS-PPQ as negotiated.

### I) OBJECTIVES AND NEED FOR ASSISTANCE

This detection survey will gather data to determine the status of the Silver Y Moth, Egyptian Cotton Leafworm, Old World Bollworm, Yellow Witchweed and Soybean Aphid (in soybean fields), Cereal Leaf Beetle (in wheat fields) and Maritime Gardensnail in wheat and soybeans in Central Kansas. Wheat and soybeans were Kansas' number 2 and 3 crops in 2007 in production and economic value. This project will help build the state survey and NAPIS data bases for these exotic pests to support exports.

<b>Rank</b>	<b>Commodity</b>	<b>Sales</b>	<b>Acres</b>
1	Corn	\$2,072,000,000	3,900,000
2	Wheat	\$1,759,560,000	10,400,000
3	Soybeans	\$891,990,000	2,600,000

**Source:** 2007 Kansas Farm Facts from the National Agriculture Statistics Service.

Survey data from this project will be collected as we monitor fields of wheat and soybeans for pests and beneficial insects. It will also ensure that the action taken if the pests are intercepted is

effective in preventing their introduction into the environment. Data will also be gathered for use in future control programs.

This project will provide the Kansas Department of Agriculture and USDA-APHIS-PPQ, with information regarding the status of the target insects. This information can be used to determine appropriate response actions if positive finds are confirmed by USDA.

This survey cannot be carried out without financial assistance from USDA.

## **II) RESULTS OR BENEFITS EXPECTED**

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

- Reduction to the risk of economic hardship to the agriculture industry and ecological diversity.
- Additional geographic assessment from data gathered.
- Identification of the Silver Y Moth, Egyptian Cotton Leafworm, Old World Bollworm, Yellow Witchweed and Maritime Gardensnail, if present.
- Protection to the state of Kansas from the introduction of Silver Y Moth, Egyptian Cotton Leafworm, Old World Bollworm, Yellow Witchweed and Maritime Gardensnail.
- Prevention of plant health restrictions.
- Identification of pathways of introduction to limit future infestations.
- Identification and distribution of beneficial insects to include Insidious Flower Bug, Minute Pirate Bug, Damsel Bug, Lacewings and Lady Beetles.

## **III) APPROACH**

Trapping for the Silver Y Moth will occur from May to September at or within the edge of fields of wheat and soybeans. Traps will be placed at the level of the crop height and raised as the crop matures. Delta traps will be utilized with the pheromone (Z)-7-dodecenyl acetate and (Z)-7-dodecenol in a ratio of 100:1 to 95:5. The pheromone may be dispensed from a rubber septum at a loading rate of 1mg. Lure must be replaced every 30 days.

Trapping for the Egyptian Cotton Leafworm and Old World Bollworm will occur May to September while the plant is actively growing. Traps will be placed 1.8 meters above the ground. Delta traps will be utilized with the synthetic pheromone (Z,E)-(9,11)-tetradecadienyl acetate with a 2 mg pheromone blend (Egyptian Cotton Leafworm) and (Z)-11-hexadecenal and (Z)-9-hexadecenal in a 25:1 ratio (Old World Bollworm). The lure is replaced every 4 weeks for Old World Bollworm and Egyptian Cotton Leafworm or if a laminate is formulated for Egyptian Cotton Leafworm it will be replaced every 12 weeks.

During May through September the Maritime Gardensnail will be looked for. The presence of these snails (0.59 inches in diameter) on the tops of plants and structures, their empty shells and slime trails will be searched for at the edge of the field while we are monitoring the traps. Also defoliation of plants and aestivation on the plant heads and stalks will be checked.

Yellow Witchweed will be visually surveyed for in soybean fields during May through September at the same time as monitoring traps and checking for the Maritime Gardensnail. Very leafy plants with five lobed lemon yellow flowers with a horseshoe-shaped stigmata and light green hairy stems and leaves will be searched for. These plants will parasitize the host plant.

During May until harvest in wheat fields and growing until September in soybean fields, will be visually surveyed. Symptomatic plants with chlorosis (yellowing), feeding holes or a general unhealthy appearance will be inspected for the Cereal Leaf Beetle in wheat fields and the Soybean Aphid in soybean fields. This will occur when monitoring traps.

Also during the visual inspections, a sweep net will be used in a 10-20 foot circle to look for beneficial insects. These will include the Insidious Flower Bug, Minute Pirate Bug, Damsel Bug, Lacewings and lady beetles.

Traps will be placed at least 50 meters apart. Wheat and soybean fields will be selected in counties +/- 50 miles east and west of Highway 81, which runs north and south through Wichita, up through the central part of the state. The intent is to survey these counties but the number of counties may be altered depending on cost constraints: Butler, Clay, Cloud, Cowley, Dickinson, Ellsworth, Harper, Harvey, Jewell, Kingman, Lincoln, Marion, McPherson, Mitchell, Ottawa, Reno, Republic, Rice, Saline, Sedgwick, Sumner, and Washington. The number of counties and fields may change depending on financial constraints.

Survey and trapping will be done with temporary/seasonal staff and KDA full time employees when needed. Temporary/seasonal employees will be trained and monitored by the State Survey Entomologist and State Survey Coordinator. Traps will be checked and/or lure changed every 4 weeks.

<b>Commodity</b>	<b>County</b>	<b>Planted All Purposes (acres)</b>	<b># of fields to be trapped *</b>
Soybeans	Butler	42,300	1
Wheat	Butler	67,500	2
Soybeans	Clay	62,000	2
Wheat	Clay	96,300	4
Soybeans	Cloud	32,800	1
Wheat	Cloud	125,600	5
Soybeans	Cowley	30,800	1
Wheat	Cowley	92,100	1
Soybeans	Dickinson	52,100	2
Wheat	Dickinson	159,600	6
Soybeans	Ellsworth	8,000	1
Wheat	Ellsworth	103,900	4
Soybeans	Harper	4,400	1
Wheat	Harper	249,300	10

Soybeans	Harvey	49,000	2
Wheat	Harvey	133,700	5
Soybeans	Jewell	41,800	1
Wheat	Jewell	144,400	5
Soybeans	Kingman	10,900	1
Wheat	Kingman	205,100	8
Soybeans	Lincoln	11,700	1
Wheat	Lincoln	110,100	4
Soybeans	Marion	47,700	1
Wheat	Marion	144,200	5
Soybeans	McPherson	43,000	1
Wheat	McPherson	240,900	9
Soybeans	Mitchell	25,000	1
Wheat	Mitchell	202,800	8
Soybeans	Ottawa	19,300	1
Wheat	Ottawa	122,900	4
Soybeans	Reno	43,400	1
Wheat	Reno	254,600	10
Soybeans	Republic	61,300	2
Wheat	Republic	110,100	4
Soybeans	Rice	31,500	1
Wheat	Rice	175,400	7
Soybeans	Saline	25,500	1
Wheat	Saline	152,700	6
Soybeans	Sedgwick	40,800	1
Wheat	Sedgwick	207,700	8
Soybeans	Sumner	37,000	1
Wheat All	Sumner	399,000	12
Soybeans	Washington	74,700	3
Wheat	Washington	100,500	4

\* Number of fields surveyed based on acreage of crop planted. 1 field surveyed for every 25,000 acres per county of crop planted. If less than 25,000 acres of crop planted then 1 field will be surveyed. The intent is to survey 22 counties and 159 fields but cost constraints may alter this number.

**Source:** Planted acres-2007 Kansas Farm Facts from the National Agriculture Statistics Service.

	<b>Planted All Purposes (acres)</b>	<b># of fields to be checked</b>
<b>Total</b>	4,393,400	159
Total Soybeans	795,000	28
Total Wheat	3,598,400	131

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

- Maintain a State Cooperative Agricultural Pest Survey (CAPS) Committee that will meet at least once a year for input on surveys and how to better the CAPS program and surveys.
- Work together in carrying out field surveys, trapping, identification and data collection on pests, diseases or weeds that may pose an immediate risk to the agriculture of Kansas or the United States.
- 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. Anticipated accomplishments:**

1. Fact sheets, webpage, resources, and pest reporting will be continually updated as new information becomes available or new pests found.
2. Survey data on pests will be entered into the state survey data base and NAPIS database when pest identification is confirmed.
3. GPS coordinates will be included with trap surveys.
4. All data will be entered into the state survey database and NAPIS when it becomes available.
5. Identification and distribution data on beneficial insects in wheat and soybean fields.

**b. Criteria to evaluate the results and successes of the project:**

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

**c. Methodology used to determine if identified needs are met and results and benefits are achieved:**

1. Review of the state survey database and NAPIS database to ensure that data from the pest detection activities have been entered.
2. Review the accomplishment reports, supporting outreach materials (if applicable), and maps.

3. State CAPS and KDA meetings to keep updated on issues.

**2. Types of data to be collected and how it will be maintained:**

- a. All survey data from cooperative agreements involving pest surveys will be entered by the State Survey Coordinator or KDA staff into the state survey database and NAPIS database to include but not limited to observation number, observation date, data source, state/county, site code, EPA pest code, pest status, and survey method.
- b. Complete, accurate, and timely pest survey data will be entered into NAPIS using approved protocol. The data entry requirements are:
  - Enter new national, state, and county records into NAPIS database within 48 hours of confirmation of a pest or pathogen identification by a recognized identifier.
  - Non-time sensitive records, including negative data, must be entered into NAPIS within 2 weeks of confirmation.
  - Negative data should 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. The Cooperator will:**

- Conduct surveys at wheat and soybean fields May 2009 through September 2009.
- Hire temporary/seasonal staff to set up and monitor traps and to visually survey fields.
- Document locations by GPS coordinate.
- Supply GPS equipment.
- Provide KDA staff when needed.
- Provide vehicle and fuel for travel for conducting field samples and collecting data.
- Provide lodging when needed.

**1. Work to be accomplished:**

- Trapping for the Silver Y Moth using Delta traps will occur from May through September with lure changes every 30 days.
- Trapping for the Egyptian Cotton Leafworm and Old World Bollworm using Delta traps will occur May through September. The lure is replaced every 4 weeks for Old World Bollworm and Egyptian Cotton Leafworm or if a laminate is formulated for Egyptian Cotton Leafworm it will be replaced every 12 weeks.
- During May through September the Maritime Gardensnail will be visually surveyed for at the edge of the field while monitoring the traps. Also defoliation of plants and aestivation on the plant heads and stalks will be checked.
- Yellow Witchweed will be visually surveyed for in soybean fields during May through September during the same time as monitoring traps and checking for the Maritime Gardensnail.

- Traps will be placed at least 50 meters apart. Wheat and soybean fields will be selected in counties +/- 50 miles east and west of Highway 81, which runs north and south through Wichita, up through the central part of the state. The counties surveyed will be: Butler, Clay, Cloud, Cowley, Dickinson, Ellsworth, Harper, Harvey, Jewell, Kingman, Lincoln, Marion, McPherson, Mitchell, Ottawa, Reno, Republic, Rice, Saline, Sedgwick, Sumner, and Washington. The number of counties and fields may change depending on financial constraints.
- During May until harvest in wheat fields and growing until September in soybean fields, will be visually surveyed. Symptomatic plants with chlorosis (yellowing), feeding holes or a general unhealthy appearance will be inspected for the Cereal Leaf Beetle in wheat fields and the Soybean Aphid in soybean fields. This will occur when monitoring traps.
- During the visual inspections, a sweep net will be used in a 10-20 foot circle to look for beneficial insects. These will include the Insidious Flower Bug, Minute Pirate Bug, Damsel Bug, Lacewings and lady beetles.
- Survey and trapping will be done with temporary help and KDA full time employees when needed. Temp employees will be trained and monitored by the State Survey Entomologist and State Survey Coordinator. Traps will be checked and/or lure changed every 4 weeks.
- Location of fields to be trapped will be found through county extension, producers and crop consultants.
- Trap monitoring and/or lure change once a month.
- Soybeans- Approximately 28 fields will be checked.
- Wheat- Approximately 131 fields will be checked.
- Approximately 159 fields will be checked, if this is financially feasible otherwise the number of fields may change.
- 22 counties in Kansas will be checked if financially feasible otherwise the number of counties may change.

## **2. Resources that are required to perform the work:**

- Temporary/seasonal employees to be hired through CAPS survey to conduct survey in wheat and soybean fields.
- KDA staff will help when needed for collection and/or sorting and training.
- Poles for hanging traps, hand tools, sweep nets, hand lenses, storage boxes, alcohol, alcohol proof pens, Ziploc bags, vials and insect repellent and other supplies if needed.
- GPS unit and map for location of fields.
- Rental or state vehicles 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. Personnel needed and duties:**

- Temporary/seasonal employees to be hired through CAPS survey to conduct survey in wheat and soybean fields.
- KDA staff will help when needed for collection and/or sorting and training.

**4. Equipment needed to perform work (\$5,000 or more):**

- Equipment provided by cooperator:** N/A
- Equipment provided by APHIS:** N/A
- Equipment purchased in whole or part with APHIS funds:** N/A
- How equipment will be used:** N/A
- Method of disposition of the equipment upon termination of the agreement:**  
N/A

**5. Information technology equipment:**

- Provided by KDA, office space with associated services and utilities, computers and other office equipment for the use of Cooperator personnel. These include digital camera, GPS unit, PDA and computer with internet service. PDA's and GPS units are provided through Infrastructure.

**6. Supplies needed to perform work:**

- Poles for traps
- Sweep nets
- Hand lenses
- Vials
- Shipping boxes
- Hand tools
- Insect repellent
- Ziploc bags
- Alcohol
- Alcohol proof pens
- Comparison specimens for Silver Y Moth, Egyptian Cotton Leafworm, Old World Bollworm, Maritime Gardensnail, Yellow Witchweed, Soybean Aphid, Cereal Leaf Beetle, Insidious Flower Bug, Minute Pirate Bug, Damsel Bug, Lacewings and Lady Beetles.

**a. What supplies will be provided by the Cooperator?**

- GPS units, digital camera, PDA and office supplies

**b. What supplies will be provided by APHIS?**

- Lure and delta traps.

- Replacement traps and lures.
- Outreach materials.
- Comparison specimens for Silver Y Moth, Egyptian Cotton Leafworm, Old World Bollworm, Maritime Gardensnail, Yellow Witchweed, Soybean Aphid, Cereal Leaf Beetle, Insidious Flower Bug, Minute Pirate Bug, Damsel Bug, Lacewings and Lady Beetles.

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

- Supplies for the collection of specimens (poles for traps, hand lenses, vials, shipping boxes hand tools, insect repellent, Ziploc bags, alcohol, alcohol proof pens).
- Supplies for shipping specimens.

**d. How will the supplies be used?**

- To collect samples.
- Planning, implementation, data collection and data submission of surveys.
- Education of stakeholders, extension and the general public.
- Pest detection survey.
- 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. Procurements made and method of procurement in support of the funded project:**

- The Fiscal Department at the Kansas Department of Agriculture will provide most contracts.
- Temporary staffing/seasonal staffing will be employed by KDA.
- Most procurements will be made by purchase.

**8. Travel needs for project:**

- Travel will be required to survey sites by use of a KDA or rental vehicle. The KDA Plant Protection and Weed Control Plant Program Manager is the approving official. Costs are included in the financial plan.
- Lodging may be required for longer distance sampling. The KDA Plant Protection and Weed Control Plant Program Manager is the approving official. Costs are included in the financial plan.

**9. Reports:**

- a. All reports are submitted 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. Financial Status Reports, SF-269, in the frequency and time frame specified in the Notice of Award, Article 4.

**10. Contributing parties working on the project:**

**a. List Participating Agency/Institution:**

KDA, County Extension Agents, Crop Consultants, Soybean and Wheat Commission, USDA-APHIS.

**b. List all who will work on the project:**

KDA staff or temporary/seasonal employees.

**c. Describe the nature of their effort:**

Help with site identifications, permission for surveys and confirmation of pest identification.

**d. Contribution:**

Sampling and identification of pests

**C. APHIS Will:**

- Provide PDA's and GPS units through Infrastructure.
- Provide delta traps and lure.
- Provide replacement delta traps and replacement lure.
- Provide any new information that becomes available on the Silver Y Moth, Egyptian Cotton Leafworm, Old World Bollworm, Yellow Witchweed, Maritime Gardensnail, Soybean Aphid, Cereal Leaf Beetle and Beneficial insects.
- Review data.
- Provide outreach materials for the Silver Y Moth, Egyptian Cotton Leafworm, Old World Bollworm, Yellow Witchweed and Maritime Gardensnail, Soybean Aphid, Cereal Leaf Beetle and Beneficial insects, if available.
- Provide funds to the Cooperator to cover costs outlined in the Financial Plan.
- Make arrangements for Taxonomic support in identification and sorting if necessary.
- Provide training, when necessary.
- Provide comparison specimens for KDA for Silver Y Moth, Egyptian Cotton Leafworm, Old World Bollworm, Maritime Gardensnail, Yellow Witchweed, Soybean Aphid, Cereal Leaf Beetle, Insidious Flower Bug, Minute Pirate Bug, Damsel Bug, Lacewings and Lady Beetles.

**1. Equipment needed to perform work:**

**a. Will equipment be loaned or provided by APHIS? No**

**b. How will the equipment be used? N/A**

#### **IV) GEOGRAPHIC LOCATION OF PROJECT**

- A.** The small grain and soybean commodity project will occur in wheat and soybean fields in counties +/- 50 miles east and west of Highway 81, which runs north and south through Wichita, up through the central part of the state. The intent is to survey these counties but the number of counties may be altered depending on cost constraints: Butler, Clay, Cloud, Cowley, Dickinson, Ellsworth, Harper, Harvey, Jewell, Kingman, Lincoln, Marion, McPherson, Mitchell, Ottawa, Reno, Republic, Rice, Saline, Sedgwick, Sumner, and Washington. The number of counties and fields may change depending on financial constraints.
- B.** The type of terrain involved in this project will mainly be cropland.
- C.** There could be many unusual features which may have impact on the project or activity such as rivers, lakes, forests and wild life sanctuaries.
- D.** 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. How data will be maintained:**
- 1.** All survey data from cooperative agreements involving pest surveys will be entered by the State Survey Coordinator or KDA staff into the state survey database and NAPIS database to include but not limited to observation number, observation date, data source, state/county, site code, EPA pest code, pest status, and survey method.
  - 2.** Complete, accurate, and timely pest survey data will be entered into NAPIS using approved protocol. The data entry requirements are:
    - Enter new national, state, and county records into NAPIS database within 48 hours of confirmation of a pest or pathogen identification by a recognized identifier.
    - Non-time sensitive records, including negative data, must be entered into NAPIS within 2 weeks of confirmation.
    - Negative data should 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.
- F. Criteria to evaluate the results and successes of the project:**
- Pest detection survey and outreach activities for the project completed.
  - All data collected from the pest detection survey is entered into the state survey database and 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.

## **G. Methodology used to determine if the results and benefits are achieved:**

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

## **V) DATA COLLECTION AND MAINTENANCE**

1. All survey data from cooperative agreements involving pest surveys will be entered by the State Survey Coordinator or KDA staff into the state survey database and NAPIS database to include but not limited to observation number, observation date, data source, state/county, site code, EPA pest code, pest status, and survey method.
2. Complete, accurate, and timely pest survey data will be entered into NAPIS using approved protocol. The data entry requirements are:
  - Enter new national, state, and county records into NAPIS database within 48 hours of confirmation of a pest or pathogen identification by a recognized identifier.
  - Non-time sensitive records, including negative data, must be entered into NAPIS within 2 weeks of confirmation.
  - Negative data should 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.

## **VI) TAXONOMIC SUPPORT**

### **A. Person or Institution that will screen targets:**

Glenn Salsbury, State Entomologist  
Kansas Department of Agriculture  
105 S. Dittmann  
Frontenac, KS 66763

Jeff Vogel, State Weed Specialist  
Kansas Department of Agriculture  
PO Box 19282, Forbes Field, Bldg. 282  
Topeka, KS 66619

Samples will be sorted to species. Any necessary sample verifications and identifications will be done by an approved entomologist or USDA identifier.

- B. KDA requests taxonomic support and to be provided with comparison specimens for Maritime Gardensnail, Old World Bollworm, Egyptian Cotton Leafworm, and Silver Y Moth identification and screening.

**Screened to what taxonomic group (e.g., family or genus name)?**

Autographa gamma  
Spodoptera littoralis  
Helicoverpa armigera  
Cerutuella virgata  
Alectra vogelii  
Aphis glycines  
Oulema melanopus  
Orius spp.  
Nabis spp.  
Lacewings  
Lady Beetles

Survey Collection Details: (Total Number of Trap Collections= Number of Sites X Number of Traps X Total Number of Visits)

<b>Target Species</b>	<b>Survey Dates (Starting-Ending)</b>	<b>Number of Sites*</b>	<b>Number of Traps/Visual surveys</b>	<b>Number of visits</b>	<b>Potential Number of Collections</b>
Autographa gamma (Silver Y Moth)	May 2009 through September 2009	159	1	4	636
Spodoptera littoralis (Egyptian Cotton Leafworm)	May 2009 through September 2009	159	1	4	636
Helicoverpa armigera (Old World Bollworm)	May 2009 through September 2009	159	1	4	636
Cerutuella virgata (Maritime Gardensnail)	May 2009 through September 2009	159	1	5	795
Alectra vogelii (Yellow Witchweed)	May 2009 through September 2009	28	1	5	140
Aphis glycines (Soybean Aphid)	June 2009 through September 2009	28	1	4	112
Oulema melanopus (Cereal Leaf Beetle)-in wheat fields	May 2009 through June 2009	131	1	2	262

Orius spp. (Insidious Flower Bug & Minute Pirate Bug)	May 2009 through September 2009	159	1	5	795
Nabis spp. (Damsel Bug)	May 2009 through September 2009	159	1	5	795
Lacewings	May 2009 through September 2009	159	1	5	795
Lady Beetles	May 2009 through September 2009	159	1	5	795
				<b>Total</b>	<b>6397</b>

\* Number of sites may change depending on cost constraints.

<p><b>Source(s):</b> Egyptian Cotton Leafworm #37-2009 AHP list, Silver Y Moth #66-2009 AHP list, Old World Bollworm #1 2009 AHP list, Maritime Gardensnail #41 AHP list, Aphids, Cereal Leaf Beetle and Beneficial Insects-Kansas interest</p>
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## VI) SIGNATURES

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**ROAR**

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**Date**

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**ADODR**

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**Date**