

**Flag Smut Survey Work Plan  
May 17, 2016 – April 16, 2017**

<b>Cooperator:</b>	Kansas Department of Agriculture		
<b>State:</b>	Kansas		
<b>Project:</b>	Flag Smut		
<b>Project funding source:</b>	Other Line Item Pest		
<b>Project Coordinator:</b>	Laurinda Ramonda		
<b>Agreement Number</b>	16-8420-____-CA		
<b>Contact Information:</b>	<b>Address:</b>	Plant Protection and Weed Control 6531 SE Forbes Avenue, Suite B, Topeka, Kansas 66619	
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	<b>Email Address:</b>	laurinda.ramonda@kda.ks.gov	

This Work Plan reflects a cooperative relationship between the Kansas Department of Agriculture (KDA) (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 Flag Smut survey and the related roles and responsibilities of the Kansas Department of Agriculture and USDA-APHIS-PPQ as negotiated.

**I) OBJECTIVES AND NEED FOR ASSISTANCE**

Disease information regarding the state’s most important monetary and “trademark” crop, wheat, has been essential to stakeholders in both private and public sectors for the purpose of marketing, development of crop protection chemicals, varietal breeding, and livestock feed production and safety and research development.

KDA has statutory authority to protect the natural plant communities and agronomic crops grown in Kansas and to promote export and to meet the regulations of foreign countries of Kansas commodities in memorandum of agreements with USDA. Flag smut is a disease listed by several foreign countries that import both seed and grain of wheat. The reemergence of this disease, in the long term, as an established disease in Kansas may jeopardize the ability to meet foreign nation’s regulations in protecting their wheat production systems from this disease.

Flag smut was documented as a production problem of wheat in the 1930’s in Kansas but until recently has not been known to be present in Kansas wheat production until 2015. If the disease continues to increase in prevalence then production of wheat may be reduced and grain handling systems will become contaminated.

In cooperation with Kansas State University Extension Service and private stakeholders, best management practices to mitigate the disease in the most economical and effective way will be better served with additional information regarding the presence or absence of the disease from a second consecutive year of monitoring.

The objective of this project is to ensure the ability to export Kansas wheat to foreign and domestic customers by conducting a survey to determine the presence of flag smut in wheat grain production fields that were positive in 2015.

This survey can benefit the nation in the reliability of the exportation of wheat. 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:**

- Determining the presence of flag smut in wheat grain production fields that were positive in 2015. This information will help with the determination if KDA activities of contacting growers or landowners in 2015 regarding flag smut infestation achieved a level of control.
- Determining the percentage of fields with the presence of flag smut and compare it to the 2015 infected region of central and west central Kansas. In 2015, the region had 5.7% of the fields with some level of flag smut. A significant increase or decrease will help determine best management strategies or regulations that might be needed to proceed with eliminating this reemerging disease.
- Determining if the fall infection conditions were conducive for infection in 2015 for the 2016 crop. Spores of the fungus can survive several years in soil and infect young wheat plants in the fall. The fungus grows systemically then sporulates through epidermal tissues beginning at early heading stages. Incidence in production fields was generally at trace to low levels but at one site disease incidence exceeded 20%.

## **III) APPROACH**

**What is the plan of action or approach to the work (for bundled survey work plans please include a separate paragraph for each survey detailing survey type, targets, and number of locations)?**

Below is a proposed schedule for counties in central and western Kansas. It follows the chronological development of wheat from south to north and from lower elevations (central Kansas) to higher elevations (western Kansas).

The survey will be contracted out to Plantsmartz. The business is conducted by Jon Appel, retired plant pathologist.

Tech Notes:

GPS coordinates will be taken from adjacent roads to surveyed fields. In the situation where flag smut is found, comments will be made on data sheets on the field direction from the GPS road location.

Data will be taken and filled out on KDA flag smut data log forms and submitted after completion of work of the day by photos/email and then hard copies will be mailed.

The sites per county were determined by taking existing Kansas kernal bunt (KB) sampling protocol numbers and multiplying by 150%. Sites or locations therefore are reflective/weighted as in the KB survey with wheat planting acreages and production numbers provided by USDA NASS five year averages.

Each site location will consist of approximately three acres for the survey evaluation. If fields are fenced or no trespassing signs posted, nearby fields may be visited. Sites on a county border or where the field was near a county border, involving more than one county, will be considered one area. Fields will be spaced by a minimum of a two mile buffer if there are fields available. Road availability and condition, weather and production area characteristics will be factors determining spacing of fields/sites.

Sample collection for verification purposes will be conducted by double bagging samples, labeling with date, county and field number. Each suspect flag smut collection will have a KDA chain of custody form attached to it. Samples will be delivered to the KDA headquarters office in Manhattan for further verification/confirmation purposes by the state plant pathologist. If a suspect is found in a new county it will be sent to Megan Romberg at USDA.

Weather may delay or cause some adjustment to the number of sites visited.

<b>Week</b>	<b>County</b>	<b>FS Prod. fields (non-seed) 2015</b>	<b>2016 Sites includes P. field #</b>
5/16	Stafford	1	6
	Pratt	1	8
	Kiowa	1	3
	Edwards	0	3
	Pawnee	0	4
	Barton	1	8
<b>Totals</b>			<b>32</b>
5/23	Rush	2	5

	Lincoln/Russell	1	4
	Dickinson/Ottawa	1	4
	Ellis	1	5
	Trego	1	3
<b>Totals</b>			<b>21</b>
6/1	Graham/Rooks	1	5
	Rooks	4	7
	Phillips	1	3
	Smith	1	6
<b>Totals</b>			<b>21</b>
6/6	Ness	1	6
	Wichita	1	6
	Scott	1	6
	Decatur	0	6
<b>Totals</b>			<b>24</b>
<b>Grand Total</b>	<b>21</b>		<b>98</b>

**A. The Cooperator will:**

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

<b>Deliverable</b>	<b>Description</b>
Suspect flag smut samples taken for confirmation	Samples will be collected at positive sites, double bagged, and delivered to KDA in a timely fashion.
Data sheets and photos of sheets	Field incidence and notes regarding site evaluations will be delivered to KDA. Electronic mail will be utilized to keep KDA informed, within 24 hours of results.
A one page summary of	Developed after completion of the project and summarization of the results will be given to KDA. An invoice of services

activities and billing	rendered will be completed and payment within 30 day of receiving the invoice.
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**2. 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?**

- Plan and conduct a flag smut of wheat survey in the following counties: Stafford, Pratt, Kiowa, Edwards, Pawnee, Barton, Rush, Lincoln, Russell, Dickinson, Ottawa, Ellis, Trego, Graham, Rooks, Phillips, Smith, Ness, Wichita, Scott, and Decatur surveying 98 total locations from May-June.
- GPS coordinates will be taken from adjacent roads to surveyed fields during survey. In the situation where flag smut is found, comments will be made on the data sheets on the field direction from the GPS road location.
- Data will be taken and filled out on KDA flag smut forms and submitted after completion of work of the day by photos/email and then a hard copy will be mailed.
- Each site location will consist of approximately three acres for the survey evaluation. If fields are fenced or no trespassing signs posted, nearby fields may be visited. Sites on a county border or where the field was near a county border, involving more than one county, will be considered one area. Fields will be spaced by a minimum of a two mile buffer if there are fields available. Road availability and condition, weather and production area characteristics will be factors determining spacing of fields/sites.
- Sample collection for verification purposes will be conducted by double bagging samples, labeling with date, county and field number. Each suspect flag smut collection will have a KDA chain of custody form attached to it. Samples will be delivered to the KDA headquarters office in Manhattan for further verification/confirmation purposes by the state plant pathologist. If a suspect is found it will be sent to Megan Romberg at USDA for confirmation.

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

- Determine the presence or absence of flag smut in wheat grain production fields that were positive in 2015.
- Determine if KDA activities of contacting growers or landowners in 2015 regarding flag smut infestation achieved a level of control.
- Determine the percentage of fields with the presence of flag smut and compare it to the 2015 infected region of central and west central Kansas.

- Determine if the fall infection conditions were conducive for infection in 2015 for the 2016 crop.

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

The survey will be contracted out to Plantsmartz. The business is conducted by Jon Appel, retired plant pathologist.

**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?** None planned

**b. What equipment will be requested from APHIS on loan?** None planned

**c. What equipment will be purchased in whole or in part with APHIS funds?**  
None planned

**d. How will the equipment be used?** None planned

**e. What is the proposed method of disposition of the equipment upon termination of the agreement/project?** None planned

**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 computer with internet service.

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

- Data log sheets
- GPS newer unit and charger
- Right of entry documents
- Chain of custody forms
- Pens and markers
- Fuel for vehicle

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

- Data log sheets
- GPS newer unit and charger
- Right of entry documents
- Chain of custody forms
- Pens and markers (contractor will supply)
- Fuel for vehicle (contractor will supply)

**b. What supplies will be requested from APHIS (list supplies)?**

- None planned

- c. **What supplies will be purchased in whole or in part with APHIS funds?**
    - None planned
  - d. **How will the supplies be used?**
    - Sampling and logging survey sites
  - e. **What is the proposed method of disposition of the supplies with a cumulative value over \$5,000 upon termination of the agreement/project?**
    - None planned
7. **What procurements will be made in support of the funded project and what is the method of procurement (e.g., lease, purchase)?**
- None planned
8. **What are the travel needs for the project?**
- a. **Is there any local travel to daily work sites? Indicate rates and total costs in the Financial Plan.**
    - Travel will be required to survey sites by use of the contractor vehicle. The state plant pathologist will travel by state vehicle.
    - The KDA Plant Protection and Weed Control Program Manager is the approving official.
    - No costs planned for vehicles or fuel.
  - b. **What extended or overnight travel will be performed (number of trips, their purpose, and approximate dates)? Indicate rates and total cost in the Financial Plan.**
    - Lodging and meals will be required for state plant pathologist to visit some longer distance sites.
    - Travel will occur from May-June.
    - The KDA Plant Protection and Weed Control Program Manager is the approving official.
    - Costs are included in the financial plan.
9. **Reports:**
- Submit all reports to the APHIS Authorized Department Officer's Designated Representative (ADODR). Reports include:
- a. Narrative accomplishment reports in the frequency and time frame specified in the Notice of Award, Article 4.
  - b. Federal Financial Reports, SF-425 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. If so, list other participating institutions/agencies who will work on the project:**

- Plantsmartz (contractor)
- KDA
- Kansas State University

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

- Plantsmartz – survey and data collection
- KDA – some survey, disease identification
- Kansas State University – disease identification

**B. APHIS Will:**

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

**a. Include any significant Agency collaboration and participation**

- Provide any new information that becomes available on flag smut.
- Provide funds to the Cooperator to cover costs outlined in the Financial Plan.

**b. Project oversight and performance management**

- Review of data results submitted NAPIS database.
- Submit accomplishment reports to ADODR.

**c. Provide the equipment requested by the cooperator in 4.b. & c.**

- None planned

**d. Provide the supplies requested by the cooperator in 6.b. & c.**

- None planned

**IV) GEOGRAPHIC LOCATION OF PROJECT**

**A. Is the project statewide or in specific counties?**

Stafford, Pratt, Kiowa, Edwards, Pawnee, Barton, Rush, Lincoln, Russell, Dickinson, Ottawa, Ellis, Trego, Graham, Rooks, Phillips, Smith, Ness, Wichita, Scott, and Decatur

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

Cropland sites in rural areas

**C. Are there any unusual geographic features which may have an impact on the project? (list all that apply)**

There could be many unusual features which may have an impact on the project or activity such as rivers, lakes, forests and wildlife sanctuaries. Areas might have

disruption through human contact and dust, dirt and debris. Also rattlesnakes and wildlife could have an impact on where to survey.

## V) DATA COLLECTION AND MAINTENANCE

Each State is responsible for entering complete, accurate, and timely pest survey data using approved protocol and methodology. All survey data from Pest Detection funded CAPS surveys will be entered into the National Agricultural Pest Information System (NAPIS). NAPIS is the final repository for all Pest Detection survey data.

- First record for the State and/or County will be entered within **48 hours** of confirmation of identification by a qualified identifier.
- All other required records, both positive and negative survey data, must be entered **within two weeks** of confirmation.
- All records are to be entered into the NAPIS database by **December 31<sup>st</sup>** of the year of survey so these data can be included in the yearly Plant Board Report.

## VI) TAXONOMIC SUPPORT

A. Person or Institution that will screen targets (Name & Contact Information) and level of screening/identification.

Gaelle Hollandbeck  
1320 Research Park Drive  
Manhattan, Kansas 66502  
785-564-6787  
gaelle.hollandbeck@kda.ks.gov

OR

B.  Request for taxonomic support.

New county record suspect disease samples will be sent to:

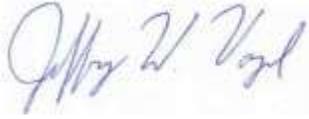
Megan Romberg, Plant Pathologist  
USDA-ARS  
10300 Baltimore Boulevard, Bldg. 010A, Room 329  
Beltsville, Maryland 20705  
301-313-9391  
megan.k.romberg@aphis.usda.gov

## VII) SURVEY SUMMARY FORM

A Survey Summary Form must be completed to summarize all CAPS surveys **funded by the Pest Detection line item.**

- A Survey Summary Form is not required for this survey.

**VIII) SIGNATURES**



**5/19/2016**

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**ROAR**

**Date**

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**ADODR**

**Date**

## Detailed Financial Plan

**PROJECT:** Flag Smut

**COOPERATOR NAME:** Kansas Department of Agriculture

**AGREEMENT NUMBER:** : 16-\_\_\_\_-1641-CA

**TIME PERIOD:** May 17, 2016-April 16, 2017

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

ITEM			APHIS FUNDS	COOPERATOR FUNDS (Show even if zero)	TOTAL
<b>PERSONNEL:</b>	<b>Hours</b>	<b>Salary</b>			
KDA staff - Paid by APHIS funds (based on average hourly wage for permanent employees)			\$0	\$0	\$0
<b>Subtotal</b>			<b>\$0</b>	<b>\$0</b>	<b>\$0</b>
<b>FRINGE BENEFITS:</b>	<b>Percent</b> (enter as decimal not %)				
KDA staff - Paid by APHIS funds	0		\$0	\$0	\$0
<b>Subtotal</b>			<b>\$0</b>	<b>\$0</b>	<b>\$0</b>
<b>TRAVEL:</b>	<b>Cost</b>	<b>Length of time</b>			
Lodging 3 nights @ \$85/night (state plant pathologist)	\$85	3	\$255	\$0	\$255
Meals @ \$51/day x 3 days (state plant pathologist)	\$51	3	\$153	\$0	\$153
			\$0	\$0	\$0
<b>Subtotal</b>			<b>\$408</b>	<b>\$0</b>	<b>\$408</b>
<b>EQUIPMENT:</b>	<b>Cost</b>				
			\$0		\$0
<b>Subtotal</b>			<b>\$0</b>	<b>\$0</b>	<b>\$0</b>
<b>SUPPLIES:</b>	<b>Cost</b>	<b>Length of time</b>			
			\$0	\$0	\$0

<b>Subtotal</b>			<b>\$0</b>	<b>\$0</b>	<b>\$0</b>
<b>CONTRACTUAL:</b>	<b>Cost</b>	<b>Length of time</b>			
Plantsmartz Contracted Survey	\$9,500		\$9,500	\$0	\$9,500
<b>Subtotal</b>			<b>\$9,500</b>	<b>\$0</b>	<b>\$9,500</b>
<b>OTHER:</b>	<b>Cost</b>				
Shipping	\$92		\$92		\$92
<b>Subtotal</b>			<b>\$92</b>	<b>\$0</b>	<b>\$92</b>
<b>TOTAL DIRECT COSTS</b>			<b>\$10,000</b>	<b>\$0</b>	<b>\$10,000</b>
<b>INDIRECT COSTS</b>	<b>Percent (enter as decimal not %)</b>				
Contract personnel (no indirect)	0		<b>\$0</b>	<b>\$0</b>	<b>\$0</b>
<b>TOTAL</b>			<b>\$10,000</b>	<b>\$0</b>	<b>\$10,000</b>
<b>COST SHARE INFORMATION (Percent)</b>			<b>100%</b>	<b>0%</b>	