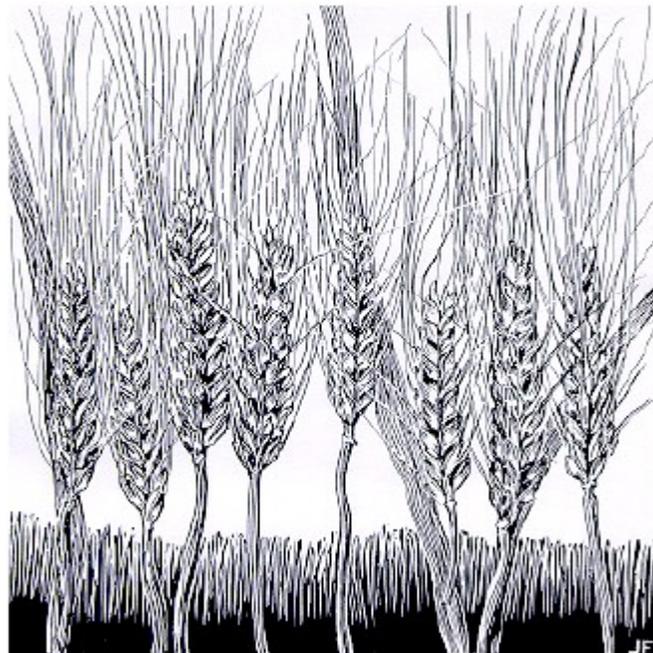




United States Department of Agriculture

NATIONAL KARNAL BUNT SURVEY



**United States Department of Agriculture
Animal and Plant Health Inspection Service
Plant Protection and Quarantine**

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BACKGROUND

Karnal bunt (KB) is caused by the fungus *Tilletia indica* Mitra. This plant pathogen was first reported in 1931, infecting wheat growing near the city of Karnal in the Indian state of Haryana – hence the common name “Karnal bunt”. The United States Department of Agriculture (USDA), Animal and Plant Health Inspection Service (APHIS), Plant Protection Quarantine (PPQ) National Karnal Bunt Survey was initiated in 1996 in response to the detection of KB disease in the United States (U.S.). Since then this survey has provided invaluable information in the form of negative occurrence data to support the export of U.S. wheat to foreign markets. USDA-APHIS-PPQ continues to explore new methodologies, survey, detection, and analysis technologies and revised the survey protocols and techniques to take advantage of these advances. PPQ will make changes to future survey protocols as new technologies become available.

PURPOSE

The purpose of the National KB Survey is to provide the basis for (1) U.S. certifying officials to issue phytosanitary certificates and additional declarations, if required by the countries to which we export (or may export) wheat, and (2) establishment of KB pest free areas in the U.S.

NATIONAL SURVEY AREAS

The National KB Survey will be conducted in wheat producing states in areas where KB has not been previously detected. (See Table 1).

CROPS TO BE SURVEYED

Wheat (*Triticum aestivum* L.), durum wheat (*Triticum turgidum* L. subsp. *durum* (Desf.) Husn.), and triticale (*Triticum aestivum* L. x *Secale cereale* L.) from producing counties.

Table 1. National Karnal Bunt Survey of Wheat Producing States, in Areas Not Previously Detected.		
Alabama	Arizona (parts of)	Arkansas
Colorado	California (parts of)	Delaware
Georgia	Idaho	Illinois
Indiana	Iowa	Kansas
Kentucky	Michigan	Minnesota
Mississippi	Missouri	Montana
Nebraska	Nevada	New Jersey
New Mexico	North Carolina	North Dakota
Ohio	Oklahoma	Oregon
South Carolina	South Dakota	Tennessee
Texas (parts of)	Utah	Virginia
Washington	West Virginia	Wisconsin
Wyoming		

PROTOCOLS for GRAIN SAMPLES

The KB National Survey will collect representative samples from counties where susceptible host crops are produced according to statistics provided by USDA, National Agricultural Statistics Service (NASS). The number of samples will be based on the average production of each host for a 5-year period. This information may be obtained by using the NASS website: www.nass.usda.gov/ (Table 2).

The survey does not intend to sample every local elevator. The survey is designed to represent crop production within all production areas. Aggregation point samples provide the best representation of local crop conditions.

The official composite sample size for the bunted kernel analysis is 4-pounds. *USDA requests that no more than 4-pound samples be submitted to the National KB Sample Processing Laboratory.* Samples should be submitted and sealed in sturdy paper bags, or double bagged if not sturdy. An additional 250-gram sample should be taken and retained by the State as a reference sample. This additional sample may be stored in a Nalgene® bottle or another appropriate container. Once the 4-pound composite sample

has been determined to be free of KB, the 250-gram reference sample may be disposed of in the trash.

If a bunted kernel is found in the 4-pound composite sample, the 250-gram reference sample will be held for additional analysis if required. When the original positive determination is accepted by the parties involved, the 250-gram reference sample may be disposed of using an APHIS-approved method (Table 3).

If a county has more than one county/local elevator, choose elevators to sample that best represent the entire county. If a county is represented in the NASS data but has no county elevator, samples should be taken from the elevators to which the grain is shipped. This may require that samples be taken from elevators in adjacent counties or even adjoining States.

Each elevator normally takes a moisture and/or quality sample from each load arriving at the elevator. If arrangements can be made with the elevator to save all or a portion of these samples by placing them in a barrel, national survey samples may be taken when each barrel approaches capacity. This will represent a sampling of all wheat coming into the elevator. Once national survey samples have been taken, the barrels may be emptied. The objective is to take a 4-pound sample that represents all the wheat in the barrel. This can be done either using a small grain probe or using a disposable plastic cup to dip grain from several locations within the barrel. If the barrel sample method cannot be used, run the wheat out of one or more grain bins and use disposable 16-ounce plastic cups to collect grain from the belt until a 4-pound sample has been collected. Mechanical samplers (diverters) should be used if available for collecting samples from a belt.

The State KB Coordinator will create a list of all elevators to be surveyed in a State with the contact person identified for each location and keep it as a file. At least once during the sampling season, a PPQ representative should visit each elevator participating in survey sampling. The purpose of the visit is to observe the sampling process and to provide information and answer questions concerning the program.

Table 2. USDA, National Agricultural Statistics Service (NASS): Steps to Obtain Data on Average Production of Karnal Bunt-Susceptible Host Crops.

Go to NASS website (www.nass.usda.gov/) Home Page

Under *Quick Stats* select **Crops** in the “State and County Data” section

Click **Go**

On the “U.S. & All States County Data” page

Step 1: select **Wheat All**

Step 2: select **All Practices**

Step 3: select **From 2010 and To 2014**

In “Primary Locations” select **Your State**

In “Secondary Locations” select **All Counties**

Click **Add** Click **Get Data**

Download data to a disk, portable jump drive, etc.

Table 3. APHIS-Approved Method for Disposal of positive KB Reference Samples.

1. Autoclave

- To allow for maximum heat penetration, samples should not be combined with a large mass of items within the autoclave without increasing the time the material is held at 250F.
- Temperature: 250F
- Time: Minimum of 20 minutes
- Heat: Dry Heat

2. Dispose of autoclaved samples as laboratory waste or biohazard waste.

TIMING OF SURVEY SAMPLING

The ideal time to sample grain for KB is immediately after wheat harvest, however, grain samples may be collected at any time. An important element to remember when evaluating the timing of sample collection is that the longer after harvest the samples are collected and analyzed the greater the chance of having to regulate a much larger area if a sample tests positive, due to grain movement which may have already occurred. Samples can be taken from local elevators before the harvest is complete if the sample taken is representative of the county in which it was taken and meets the minimum requirements in sampling protocol.

SAMPLING INTENSITY

Samples will be collected in parallel with the wheat harvest and in proportion to wheat production from producing counties. Counties where KB has not been detected will be sampled every other year. A yearly survey can be maintained by sampling one half of the state's wheat producing counties every year. The minimum sampling requirement is one 4-pound sample from a selected county with 1 million bushels of production. A 4-pound sample should be taken for every 1 million bushels of production. Each 4-pound sample represents approximately 1 million bushels of host crop. Samples will be collected at points of aggregation near their production areas (local elevators).

A sample will consist entirely of one species; grain of different susceptible species should not be mixed. To the extent possible, samples should be composites of grain from a production area not larger than a county and each sample should contain grain from a single county. To insure a good representative sample, subsamples, which are represented in the composite sample, should represent at least 10 different producers whenever possible. When there are several counties within a State where each produces less than 1,000,000 bushels of host crop, the State may want to take samples from each county and combine them into a 4-pound composite sample. If this is done, a 250-gram reserve sample from each county should be held by the State. Once the 4-pound composite sample has been determined free of KB, the 250-gram reference samples may be discarded. If a multi-county composite sample is positive for KB, the individual county reference samples will be tested to help determine which county produced the bunted kernel. These reference samples should be disposed of utilizing the USDA method (Table 3).

Another sampling method that may be used is collecting samples from the storage or transfer bins at county elevators. ***This is not a preferred method as it is much harder to establish the identity of growers represented.*** If samples are to be collected in this manner, then samples of host material should be taken from each accessible bin in the elevator. The collector should ask the elevator to run grain onto the belt for a short time and then take a sample of grain from the belt (or any other accessible point). Each bin would represent a composite sample, all bin samples would then be combined, mixed and the official composite 4-pound sample taken.

SAMPLE PROCESSING LABORATORIES

The USDA-APHIS-PPQ National KB Sample Processing Laboratory is located in Casa Grande, AZ. Samples are processed as they arrive, in the order they are received, and the results provided to the submitting State and APHIS KB Program Managers. The standard for analysis is bunted kernel examination.

States may opt to screen and analyze their own samples. The standard that must be used for sample analysis is the bunted kernel analysis. All facilities must be approved by APHIS prior to analyzing KB samples (Table 4). PPQ does not provide resources to States for processing samples, except for those States with regulated areas.

PACKAGING of SAMPLES

Place grain samples in a new heavy-duty paper bag. Double bag the samples if heavy duty bags are not available. Roll down the top of the bag to squeeze out as much air as possible, then staple the bag shut. Place each paper-bagged sample in a plastic bag along with a completed "Sample Information Form" (Appendix A) and seal the bag. Six to eight samples should be packaged in a sturdy box for shipment.

SHIPPING of SAMPLES

For States that opt to utilize the PPQ Casa Grande, AZ sample processing laboratory, *samples should be shipped within 48 hours of being collected via overnight carrier to the below address for analysis:*

USDA APHIS PPQ
C/O: Gary Russell - State Operations Coordinator
3640 E. Wier Ave
Phoenix, AZ 85040
Phone: 602-431-3202
Fax: 602-414-9870
Gary.Russell@aphis.usda.gov

An account has been established with United Parcel Service (UPS) for use by cooperators and federal personnel when shipping National KB Survey samples to Casa Grande, AZ for analysis (Table 5).

Table 4. APHIS Approved Karnal Bunt Sample Processing Laboratories.					
State	Location	Contact	Phone	Fax	Email
Arizona	USDA-APHIS-PPQ 3640 E. Chipman Rd Phoenix, AZ 85040	Gary Russell	(602) 431-3202	(602) 414-9870	gary.russell@aphis.usda.gov
	USDA-APHIS-PPQ 25144 W. Hwy 85 Buckeye, AZ 85326	Cindy Pellechia	(623) 386-4514	(520) 836-6088	cindy.f.pellechia@aphis.usda.gov
	USDA-APHIS-PPQ 3009 N. Rockwell Ave. Suite 8, Casa Grande, AZ	Vacant	(520) 836-5192	(520) 836-6088	Vacant
	USDA-APHIS-PPQ Parker/Poston, AZ	Glen Ball	(928) 248-3246	(928) 783-1058	glen.a.ball@aphis.usda.gov
California	California Dept. of Food and Agriculture Plant Pest Diagnostics Center (PPDC) 3294 Meadowview Road Sacramento, CA 95832	Susan McCarthy	(916) 262-1104	(916) 262-1190	susan.mccarthy@cdfa.ca.gov
Delaware	University of Delaware Cooperative Extension Plant Diagnostic Lab 151 Townsend Hall Newark, DE 19716	Nancy Gregory	(302) 831-1390	(302) 831-0605	ngregory@udel.edu
Oklahoma	Oklahoma State University Entomology & Plant Pathology Department 311B NRC Stillwater, OK 74078	Bob Hunger	(405) 744-9958		bob.hunger@okstate.edu

Table 5. Contact Information for UPS Shipment of National Karnal Bunt Survey samples to the PPQ National KB Sample Processing Laboratory.				
Title	Name	Phone	Fax	Email
Primary Contact	Gary Russell	(602) 431-3202	(602) 414-9870	Gary.Russell@aphis.usda.gov

SAMPLE ANALYSIS

National survey samples submitted to Casa Grande, AZ will be analyzed using an optical seed sorting machine. The high speed optical seed sorter removes suspect bunted kernels from samples. The optical sorter can process a 4-pound sample in less than a minute and typically will reduce the number of kernels that need to be examined to about 8% of the original sample. All suspect kernels are then visually examined by trained personnel.

APHIS approved laboratories may also use grain inspection machines and visual examinations by trained personnel to analyze samples for bunted kernels.

NEGATIVE SAMPLE REPORTING

The laboratory conducting the sample analysis will report negative sample findings to the State KB Coordinator of the submitting State (Table 6). The report will be forwarded at the end of each week via e-mail or fax to the State KB Coordinator with a copy sent by email to the National Policy Manager (lynn.e.goldner@aphis.usda.gov), and the National Operations Manager (phillip.a.mason@aphis.usda.gov) (Table 7).

Once the State KB Coordinator notifies the laboratory conducting the analysis that the harvest season for the State is complete, the laboratory will issue a summary report for that State within 10 days of the last samples received for analysis. A copy of this report will also be sent by email to the National Managers and appropriate state contact listed (Table 6).

Data will be entered into IPHIS by the State KB Survey Coordinator or another official designee of the State.

KARNAL BUNT SURVEY COORDINATORS

Table 6. State Karnal Bunt Survey Coordinators.		
State	Name, Title, Address	Phone, Fax, Cell, Email
Alabama	Ralph (Lee) Tuten Domestic Program Coordinator 447 Butler Mill Road Montgomery, AL 36105	Phone: (334) 288-6058 Cell: (334) 850-3143 Ralph.l.tuten@aphis.usda.gov
Arizona	Gary Russell State Operational Support Officer USDA-APHIS-PPQ 3640 E. Chipman Rd Phoenix, AZ 85040	Phone: (602) 431-3202 Fax: (602) 414-9870 Cell: (602) 751-0166 gary.russell@aphis.usda.gov
Arkansas	Thomas E. Hill PPQ Officer USDA-APHIS-PPQ 1200 Cherry Brook Drive, Suite 100 Little Rock, AR 72211	Phone: (501) 324-5258 Fax: (501) 324-5230 Cell: (501) 993-6672 thomas.e.hill@aphis.usda.gov
California	Norm Mullaly State Operations Coordinator USDA- APHIS-PPQ 650 Capitol Mall, Suite 6-400 Sacramento, CA 95814	Phone: (916) 930-5510 Fax: (916) 930-5518 Norm.Mullaly@aphis.usda.gov
Colorado	Patrick W. McPherran State Plant Health Director USDA-APHIS-PPQ 3950 N. Lewiston, Suite 104 Aurora, CO 80011-1555	Phone: (303) 371-3355 Fax: (303) 371-4774 Cell: (303) 808-4344 patrick.w.mcpherran@aphis.usda.gov
Delaware	Colleen Kitzmiller State Plant Health Director USDA-APHIS-PPQ 500 W Loockerman Street, Suite 310 Dover, DE 19904	Phone: (302) 744-1800 Fax: (302) 734-7814 Cell: (302) 632-6434 colleen.kitzmiller@aphis.usda.gov
Georgia	Philip Bailey Domestic Supervisor 1506 Klondike Road, Suite 306 Conyers, Georgia 30094	Phone: (478) 752-1734 Fax: (478) 752-1734 Cell: (770) 315-2409 robert.d.grant@aphis.usda.gov
Idaho	Paul Castrovillo Program Manager Idaho State Dept of Ag. Plant Industries Division 2270 Old Penitentiary Road Boise, ID 83701	Phone: (208) 334-8627 Fax: (208) 334-2283 Paul.Castrovillo@agri.idaho.gov

Illinois	Laura Ettema-Khan Domestic PPQ Officer USDA-APHIS-PPQ 1817 South Neil Street Illinois Plaza, Suite 105 Champaign, IL 61820	Phone: (217) 398-1698 Fax: (217) 398-1732 Cell: (217) 417-4355 laura.ettema-khan@aphis.usda.gov
Indiana	Gary Simon State Plant Health Director USDA-APHIS-PPQ 1305 Cumberland Ave., Suite 102 West Lafayette, IN 47906	Phone: (765) 497-2859 Fax: (765) 497-2879 Cell: (765) 337-2681 gary.w.simon@aphis.usda.gov
Iowa	Jose Granada, Acting State Plant Health Director 11213 Aurora Ave. Urbandale, IA 50322 Phone: (515) 251-4083 Fax: (515) 251-2093	Phone: (515) 251-4083 Fax : (515) 251-4093 Cell : (515) 371-1179
Kansas	Jeff Vogel State Plant Regulatory Official Kansas Department of Agriculture Building 282, Forbes Field Topeka, KS 66619-0282	Phone: (785) 564-6699 Mobile: (785) 207-0586 Fax: (785) 862-2182 Jeff.Vogel@kda.ks.gov
Kentucky	Harold Hempfling SPPQO USDA,APHIS, PPQ 1973 Burlington Pike Hebron, KY 41048	Phone: (502) 439-7043 Fax: (859) 689-2001 Cell: (502) 439-7043 Harold.Hempfling@aphis.usda.gov
Michigan	Michelle Mikula Pest Survey Specialist USDA-APHIS-PPQ 5936 Ford Ct., Ste. 200 Brighton, MI 48116	Phone: (810) 844-2732 Fax: (810) 844-0583 Michelle.G.Mikula@aphis.usda.gov
Minnesota	Geir Friisoe State Plant Regulatory Official Plant Protection Division Minnesota Dept of Agriculture 625 Robert St., St. Paul, MN 55155	Phone: (651) 201-6174 Fax: (651) 201-6108 geir.friisoe@state.mn.us

Mississippi	Miriam Allred Domestic Program Coordinator 986 West Ridge Drive Jackson, MS 39209	Phone: (601) 573-5534 Miriam.l.allred@aphis.usda.gov
Missouri	Collin Wamsley State Entomologist Missouri Department of Agriculture 1616 Missouri Blvd. Jefferson City, MO 65109	Phone: (573) 751-5505 Fax: (573) 522-1109 Collin.Wamsley@mda.mo.gov
Montana	Gary D. Adams State Plant Health Director USDA-APHIS-PPQ 1629 Ave D, Suite A-5 Billings, MT 59102	Phone (406) 657-6282 Fax: (406) 657-6293 Cell: (406) 431-6531 gary.d.adams@aphis.usda.gov
Nebraska	Kate Kneeland Nebraska Dept of Agriculture P. O. Box 94756 Lincoln, NE 68509	Phone: (402) 471-2351 Fax: (402) 471-6892 Kate.kneeland@nebraska.gov
Nevada	Alana Wild Domestic Program Coordinator USDA-APHIS-PPQ 8775 Technology Way Reno, NV 89521	Phone: (775) 332-3222 Fax: (775) 851-8828 Cell: (775) 225-9935 alana.l.wild@aphis.usda.gov
New Jersey	Tom Denholm, Pest Survey Specialist USDA-APHIS-PPQ 350 Corporate Boulevard Robbinsville, NJ 08691	Phone: (609) 259-5249 Fax: (609) 259-5241 Cell: (609) 377-1402 Tom.denholm@aphis.usda.gov
New Mexico	Shawn Carson Plant Health Safeguarding Specialist USDA-APHIS-PPQ 270 S. 17 th Street Las Cruces, NM 88005	Phone: (575) 527-6985 Fax: (575) 527-6986 Cell: (575) 642-5300 Shawn.R.Carson@aphis.usda.gov
North Carolina	Patsy Waszak Supervisory Plant Health Safeguarding Specialist USDA-APHIS-PPQ 920 Main Campus Dr., Suite 150 Raleigh, NC 27606	Phone: (919) 855-7603 Fax: (919) 855-7611 Cell: (919) 349-6878 patricia.a.waszak@aphis.usda.gov
North Dakota	Carrie Larson State Plant Regulatory Official North Dakota Dept of Ag. State Capital 600 E. Blvd., Bismarck, ND 58505-0020	Phone: (701) 328-4723 Cell: (701) 214-7704 Fax: (701) 328-4567 cllarson@nd.gov

Ohio	John Burch State Plant Health Director USDA-APHIS-PPQ 8995 East Main Street, Suite 202 Reynoldsburg, OH 43068	Phone: (614) 322-4700 Fax: (614) 322-4704 Cell: (614) 582-1060 john.m.burch@aphis.usda.gov
Oklahoma	Blaine Powell State Plant Health Director USDA-APHIS-PPQ 301 NW 6th Street, Suite 101 Oklahoma City, OK 73102	Phone: (405) 609-8840 Fax: (405) 609-8841 blaine.powell@aphis.usda.gov
Oregon	Nancy Osterbauer Oregon Department of Agriculture Plant Health Section 635 Capitol St. NE Salem, OR 97301-2532	Phone: (503) 986-4620 nosterbauer@oda.state.or.us
South Carolina	Allen Dawson PPQ Officer USDA-APHIS-PPQ 137 Airport Road, Suite F Mullins, SC 29574	Phone: (843) 423-2967 Fax: (843) 423-5612 allen.l.dawson@aphis.usda.gov
South Dakota	Dale Anderson South Dakota Department of Agriculture 523 E. Capital Ave. Pierre, SD 57501	Phone: (605) 773-6389 Fax: (605) 773-3481 dale.anderson@state.sd.us
Tennessee	Gregory Aydelotte PPPQ Officer USDA-APHIS-PPQ 1410 Kensington Square Court, Suite 101 Murfreesboro, TN 37130	Phone: (615) 907-7805 Fax: (615) 907-8168 Cell: (970) 631-5550 Gregory.R.Aydelotte@aphis.usda.gov
Texas	George Nash Supervisory PPQ Officer USDA-APHIS-PPQ 903 San Jacinto Blvd. Suite 270 Austin, TX 78701-2450	Phone: (512) 916-5241 Fax: (512) 916-5243 Cell: (512) 925-8054 george.h.nash@aphis.usda.gov
Utah	Greg Abbott Domestic Program Coordinator USDA-APHIS-PPQ 65 South 100 East Richfield, UT 84701	Phone: (435) 896-4772 Fax: (435) 896-8164 Cell: (435) 896-3842 gregory.c.abbott@aphis.usda.gov

Virginia	Dustin R. Grant State Plant Health Director USDA-APHIS-PPQ 5657 South Laburnum Avenue Richmond, VA 23231-4536	Phone: (804) 226-5262 Fax: (804)226-5263 dustin.r.grant@aphis.usda.gov
Washington	Clinton Campbell State Operations Support Coordinator USDA-APHIS-PPQ 33400 9 th Ave S., Suite 201 Federal Way, WA 98003	Phone: (206) 592-9207 Fax: (206) 592-9043 Cell: (206) 592-9043 clinton.l.campbell@aphis.usda.gov
West Virginia	Justin Thaxton Domestic Program Coordinator USDA-APHIS-PPQ 275 Gus R. Douglass Lane Charleston, WV 25312	Phone: (304) 343-8585 Fax: (304) 343-8586 justin.b.thaxton@aphis.usda.gov
Wisconsin	JoAnn Cruse State Plant Health Director USDA-APHIS-PPQ One Gifford Pinchot Dr., Rm 229 Madison, WI 53726	Phone: (608) 286-3604 Fax: (608) 231-9581 Cell: (608) 209-5680 joann.m.cruse@aphis.usda.gov
Wyoming	Larry T. Cain Pest Survey Specialist USDA-APHIS-PPQ 5353 Yellowstone Road Cheyenne, WY 82009	Phone: (307) 432-7979 Fax: (307) 432-7970 Cell: (307) 421-1202 Larry.t.cain@aphis.usda.gov

NATIONAL CONTACTS

Table 7. National Karnal Bunt Program Contacts.		
State	Name, Title, Address	Phone, Fax, Cell, Email
National Managers		
Maryland	Lynn Evans-Goldner National Policy Manager USDA-APHIS-PPQ 4700 River Road, Unit 160 Riverdale, MD 20737	Phone: (301) 734-7228 Fax: (301) 734-8724 Cell: (240) 535-4540 lynn.e.goldner@aphis.usda.gov
Colorado	Dr. Phillip Mason National Operations Manager USDA-APHIS-PPQ 2150 Centre Ave, Bldg B., 3E10 Fort Collins, CO 80525	Phone: (970) 494-7565 Fax: (970) 494-7501 Cell: (970) 390-9000 phillip.a.mason@aphis.usda.gov
National Mycologist		
	Dr. John McKemy National Mycologist National identification Services USDA- APHIS-PPQ-PHP-PSPI Rm. 327, Bldg. 010A, BARC-West 10300 Baltimore Ave. Beltsville, MD 20705-2350	Phone: (301) 313-9390 Fax: (301) 504-5810 john.mckemy@aphis.usda.gov
Domestic Diagnostic Coordinator		
Maryland	Stephen Bullington , acting Domestic Diagnostics Coordinator National identification Services USDA-APHIS-PPQ 4700 River Road, Unit 52 Riverdale, MD 20737	Phone: (301) 851-2153 Fax: (301) 734-8693 Cell: (301) 832-5181 stephen.w.bullington@aphis.usda.gov

SUSPECT POSITIVE SAMPLES

Sample Preparation and Shipment

When a suspect positive sample is detected by the lab in Casa Grande, AZ or an APHIS-approved KB laboratory, a sample must be sent to the USDA-APHIS-PPQ National Identification Services (NIS) for confirmation (Table 7). A bunted kernel specimen and a microscope slide with teliospores will be prepared according to procedures outlined in Appendix D of the USDA Karnal Bunt Manual.

Slides and specimens should be packed carefully in small cardboard boxes so they do not break during shipping. Packaged specimens should be placed within a larger box with ample packing material. Inside the box a completed "PPQ Form 391 - Specimen for Determination" (Appendix B) *must* be included along with a copy of the original National Karnal Bunt Wheat Grain Survey form (Appendix A) which was submitted with the original grain sample.

The package should be labeled "**Urgent**" and "**Fragile**" and sent via overnight mail to the following:

Dr. John McKemy
USDA-APHIS-PPQ
Rm. 327, Bldg. 010A, BARC-West
10300 Baltimore Ave.
Beltsville, MD 20705-2350
Phone: (301) 313-9390

Suspect Positive Notification

When a suspect positive is sent to NIS for confirmation, the USDA-APHIS-PPQ Domestic Diagnostics Coordinator (Stephen Bullington, Acting) *must* be notified concurrent to shipment of the suspect sample (Table 7).

Fax a copy of the PPQ Form 391 and a notification of the suspect positive KB (*Tilletia indica*) sample going forward for confirmation to 301-734-3621.

Final Identification Notification

PPQ Emergency and Domestic Programs (EDP) staff are responsible for communicating presumptive and confirmatory KB identifications to internal and external parties. EDP staff receives the identification information from NIS staff and results will be communicated via the protocol outlined detailed in Appendix C. This official communication protocol is intended to assure timely transmission of pest identification notifications, either by e-mail or telephone, to internal and external parties who coordinate actions to address this information, including a possible response to a KB detection outside of the current U.S. regulated area.

DATA MANAGEMENT

For some time KB survey data was maintained in the National Agricultural Pest Information System (NAPIS) database <http://ceris.purdue.edu/caps/> . While data can still be entered into NAPIS, the Karnal bunt cooperative agreement now requires that data be entered into the “Integrated Plant Health Information System” (IPHIS).

Data Entry into IPHIS

States are responsible for entering their own data into IPHIS. While samples may be processed by the Casa Grande, AZ lab, the lab has no authority to enter data into IPHIS. Each state is responsible for entering their data into IPHIS within 30 days of receiving results.

Type of Data to Enter

- Four-pound samples that represent a selected county with 1,000,000 bushels of production or more. (A 4-pound sample should be taken for every 1,000,000 bushels of production).
- Four-pound samples that represent several counties which have a combined total of 1,000,000 bushels of production or more. This is only done if each individual county has less than 1,000,000 bushels of production.

How to Enter Data

Data for KB national survey samples will be entered based on county. Three possible scenarios are:

1. Sample ST100 was drawn from one county in **one** location therefore it is entered once.
2. Sample ST101 was drawn from one county with **several** locations. This sample is a composite however it should be entered once. It is drawn in accordance with National Survey protocol.
3. Sample ST102 was drawn from four counties from several locations. This sample would be entered four times under each individual county. This is done so that each county receives credit for participating. *Indicate in the remarks section that each sample entry represents a composite with entries for the counties, and indicate their names.*

Data entry questions should be referred to:

David Kowalski

USDA-APHIS-PPQ
2150 Centre Ave Bldg. B,
Ft. Collins, CO 80526-8117
Phone: (970) 494-7510 Cell: (970) 214-2729
David.G.Kowalski@aphis.usda.gov

APPENDIX A – Sample Information Form

NATIONAL KARNAL BUNT WHEAT GRAIN SURVEY SAMPLE INFORMATION FORM	
STATE	SURVEY YEAR:
NAME OF FACILITY WHERE SAMPLE WAS TAKEN	
CITY AND STATE OF FACILITY	
PRODUCTION COUNTY AND STATE	
TYPE OF GRAIN (HARD RED WINTER, DURUM WHEAT, TRITICALE, SOFT WHITE WINTER, Etc.) Please Specify	
DATE SAMPLE WAS TAKEN	
SAMPLE TAKEN FROM (GRAIN ELEVATOR, TRUCK, MILL, RESEARCH, FARM STORAGE, RAIL CAR, Etc.)	
NAME, AND TELEPHONE # OF PERSON TAKING SAMPLE	
AGENCY OF PERSON TAKING SAMPLE (FEDERAL, STATE, UNIVERSITY)	
STATE SURVEY SAMPLE IDENTIFICATION NUMBER (EXAMPLE TX -100)	

Each State Karnal Bunt Survey Coordinator should establish and assign State Survey Sample Identification numbers for their State. The sample number will consist of the two letter State abbreviation plus a sequential three digit number beginning with 100 (i.e. TX-100). Original form should be completed on site as sample is taken. Additional copies can be made for the State Plant Health Director's file and a copy for the State Plant Regulatory Official. The original form should be forwarded with the sample.

Appendix B- PPQ Form 391 - Specimen for Determination

This report is authorized by law (7 U.S.C. 147a). While you are not required to respond your cooperation is needed to make an accurate record of plant pest conditions. See reverse for additional OMB information. FORM APPROVED OMB NO. 0579-0010

U.S. DEPARTMENT OF AGRICULTURE ANIMAL AND PLANT HEALTH INSPECTION SERVICE SPECIMENS FOR DETERMINATION		Instructions: Type or print information requested. Press hard and print legibly when handwritten. Item 1 - assign number for each collection beginning with year, followed by collector's initials and collector's number. Example (collector, John J. Dingle): 83-JJD-001. Pest Data Section - Complete Items 14, 15 and 16 or 19 or 20 and 21 as applicable. Complete Items 17 and 18 if a trap was used.		FOR IIB/III USE LOT NO. PRIORITY			
1. COLLECTION NUMBER		2. DATE MO DA YR		3. SUBMITTING AGENCY <input type="checkbox"/> State Cooperator <input type="checkbox"/> PPQ <input type="checkbox"/> Other _____			
SENDER AND ORIGIN	4. NAME OF SENDER		INTERCEPTION SITE	5. TYPE OF PROPERTY (Farm, Feedmill, Nursery, etc.)			
	6. ADDRESS OF SENDER			7. NAME AND ADDRESS OF PROPERTY OR OWNER			
	ZIP			COUNTRY/ COUNTRY			
PURPOSE	8. REASON FOR IDENTIFICATION ("X" ALL Applicable Items)						
	A. <input type="checkbox"/> Biological Control (Target Pest Name _____)		E. <input type="checkbox"/> Livestock, Domestic Animal Pest				
	B. <input type="checkbox"/> Damaging Crops/Plants		F. <input type="checkbox"/> Possible Immigrant (Explain in REMARKS)				
	C. <input type="checkbox"/> Suspected Pest of Regulatory Concern (Explain in REMARKS)		G. <input type="checkbox"/> Survey (Explain in REMARKS)				
D. <input type="checkbox"/> Stored Product Pest		H. <input type="checkbox"/> Other (Explain in REMARKS)					
9. IF PROMPT OR URGENT IDENTIFICATION IS REQUESTED, PLEASE PROVIDE A BRIEF EXPLANATION UNDER "REMARKS".							
HOST DATA	10. HOST INFORMATION NAME OF HOST (Scientific name when possible)			11. QUANTITY OF HOST NUMBER OF ACRES/PLANTS			
				PLANTS AFFECTED (insert figure and indicate <input type="checkbox"/> Number <input type="checkbox"/> Percent):			
	12. PLANT DISTRIBUTION		13. PLANT PARTS AFFECTED				
	<input type="checkbox"/> LIMITED <input type="checkbox"/> SCATTERED <input type="checkbox"/> WIDESPREAD		<input type="checkbox"/> Leaves, Upper Surface <input type="checkbox"/> Leaves, Lower Surface <input type="checkbox"/> Petiole <input type="checkbox"/> Stem <input type="checkbox"/> Trunk/Bark <input type="checkbox"/> Branches <input type="checkbox"/> Growing Tips <input type="checkbox"/> Roots <input type="checkbox"/> Bulbs, Tubers, Coms <input type="checkbox"/> Buds <input type="checkbox"/> Flowers <input type="checkbox"/> Fruits or Nuts <input type="checkbox"/> Seeds				
PEST DATA	14. PEST DISTRIBUTION		15. <input type="checkbox"/> INSECTS		<input type="checkbox"/> NEMATODES		
	<input type="checkbox"/> FEW <input type="checkbox"/> COMMON <input type="checkbox"/> ABUNDANT <input type="checkbox"/> EXTREME		<input type="checkbox"/> MOLLUSKS				
	NUMBER SUBMITTED		LARVAE	PUPAE	ADULTS	CAST SKINS	EGGS
	ALIVE						
DEAD							
16. SAMPLING METHOD		17. TYPE OF TRAP AND LURE			18. TRAP NUMBER		
19. PLANT PATHOLOGY - PLANT SYMPTOMS ("X" one and describe symptoms) <input type="checkbox"/> ISOLATED <input type="checkbox"/> GENERAL							
20. WEED DENSITY <input type="checkbox"/> FEW <input type="checkbox"/> SPOTTY <input type="checkbox"/> GENERAL		21. WEED GROWTH STAGE <input type="checkbox"/> SEEDLING <input type="checkbox"/> VEGETATIVE <input type="checkbox"/> FLOWERING/FRUITING <input type="checkbox"/> MATURE					
22. REMARKS							
23. TENTATIVE DETERMINATION							
24. DETERMINATION AND NOTES (Not for Field Use)					FOR IIB/III USE		
					DATE RECEIVED		
					NO. LABEL SORTED PREPARED		
					DATE ACCEPTED		
SIGNATURE _____ DATE _____					RR		

PPQ FORM 391 Previous editions are obsolete. (AUG 02)

OMB Information

According to the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0579-0010. The time required to complete this information collection is estimated to average .25 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

Instructions

Use PPQ Form 391, Specimens for Determination, for domestic collections (warehouse inspections, local and individual collecting, special survey programs, export certification).

BLOCK	INSTRUCTIONS
1	<p>1. Assign a number for each collection beginning the year, followed by the collector's initials and collector's number</p> <p>EXAMPLE In 2001, Brian K. Long collected his first specimen for determination of the year. His first collection number is 01-BLK-001</p> <p>2. Enter the collection number</p>
2	Enter date
3	Check block to indicate Agency submitting specimens for identification
4	Enter name of sender
5	Enter type of property specimen obtained from (farm, nursery, feedmill, etc.)
6	Enter address
7	Enter name and address of property owner
8A-8L	Check all appropriate blocks
9	Leave Blank
10	Enter scientific name of host, if possible
11	Enter quantity of host and plants affected
12	Check block to indicate distribution of plant
13	Check appropriate blocks to indicate plant parts affected
14	Check block to indicate pest distribution
15	<ul style="list-style-type: none"> • Check appropriate block to indicate type of specimen • Enter number specimens submitted under appropriate column
16	Enter sampling method
17	Enter type of trap and lure
18	Enter trap number
19	Enter X in block to indicate isolated or general plant symptoms
20	Enter X in appropriate block for weed density
21	Enter X in appropriate block for weed growth stage
22	Provide a brief explanation if Prompt or URGENT identification is requested
23	Enter a tentative determination if you made one
24	Leave blank

Distribution of PPQ Form 391

Distribute PPQ Form 391 as follows:

1. Send Original along with the sample to your Area Identifier.
2. Retain and file a copy for your records.