

*The National Plant Diagnostic Network Standard Operating Procedure
for: APHIS-PPQ Pest of Concern Scenario – General SOP*

*** rev May 7, 2010*

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The National Plant Diagnostic Network Standard Operating Procedure for:

*APHIS-PPQ Pest of Concern Scenario – General SOP ** rev May 7, 2010*

Note: One purpose of this document is to be certain that State and Federal Agencies (including the Forest Service), as well as University diagnostic laboratories are included in the need-to-know communication group when appropriate.

Note: It is recommended that confidential information be communicated only by direct personal or phone conversation. E-mail and phone messages should be kept simple without mentioning the pest of concern or any confidential information. For example: “This message is regarding a biosecurity event. Please call me immediately.”

Step 1: Sample Submission

Step 1a - Grower, Pest Advisor or other Sample Submitting Entity brings sample and submits diagnosis request to state department of agriculture, APHIS-PPQ, or university staff. It is preferred that when possible, the sample submitter should phone the diagnostician to notify that a suspect sample is enroute, with time of arrival and method of delivery.

Step 1b - State department of agriculture, APHIS-PPQ, or university staff delivers sample to National Plant Diagnostic Network Triage Lab (there is at least one in every state and it may be a State Department of Ag lab or a land grant university lab.).

Step 2: Sample Receipt

Step 2a - Triage Lab staff acknowledges receipt and enters the sample into the system assigning a unique lab ID number to the sample.

Step 2b - Triage Lab staff examines sample.

Step 2c - If the sample is determined to be of suspect regulatory significance, or is a survey sample from a government agency. it should then be stored in a secure location with limited access so that it can be proven who had access to the sample and who did not in a court of law. Original sample information and chain-of-custody forms as initially submitted should be kept and included in the sample information entered into the database as well as transferred with the sample should it leave the laboratory. Care should be taken to maintain the same resolution of information documentation as that when the sample arrives (do not bulk or combine with other unique samples). Follow the survey sample chain-of-custody and collection protocols carefully.

Step 2d - Triage Lab staff contacts state of origin SPRO, APHIS-PPQ SPHD, State Department of Agriculture Lab (if not triage lab), NPDN Regional Director, the Hub Laboratory and APHIS-PPQ Confirming Diagnosis Designate to inform them that Triage Lab has received a presumptive positive sample and is requesting confirming diagnosis. If the sample is part of a government survey, also contact the [FS] Survey Coordinator.

The triage staff provides the state of origin SPRO or SPHD with a copy of the sample submission form submitted with the presumptive positive sample.

If the triage laboratory is unavailable for testing and the sample is sent to the Regional Hub laboratory for initial testing, the Regional Hub laboratory should make every effort to contact the triage diagnostician with the presumptive positive results. If the triage laboratory diagnostician is unavailable, the regional hub laboratory should contact the state of origin SPRO and/or SPHD, and [FS] Survey Coordinator, when a government [FS] Survey, that the sample is a presumptive positive and is being forwarded for confirming diagnosis.

The APHIS-PPQ Confirming Diagnosis Designate may be USDA-APHIS National Identification Service Molecular Diagnostic Laboratory (plant samples) or USDA-ARS Systematic Entomology Laboratory Communications and Taxonomic Services Unit (CTSU) (insect samples) or an NPDN Regional Hub or Expert Lab diagnostician as designated by the NIS.

For plant disease sample CDD, please contact Dr. Mary Palm, USDA/APHIS/PPQ/PHP/PSPI Molecular Diagnostic Lab by email (mary.palm@aphis.usda.gov) or telephone (301-504-7154 or 505-5700 ext. 327). Also notify the NIS Urgent Team by email (ppq.nis.urgents@aphis.usda.gov) with a PDF of the PPQ form 391 or fax a copy to the attention “NIS Urgent Team” (fax number: 301-734-5276).

For insect or mite samples CDD, please contact Geoffrey White, USDA/ARS Systematic Entomology Lab by email (Geoffrey.white@ars.usda.gov) or telephone (301-504-7041). Also notify the NIS Urgent Team by email (ppq.nis.urgents@aphis.usda.gov) with a PDF of the PPQ form 391 or fax a copy to the attention “NIS Urgent Team” (fax number: 301-734-5276).

SPRO or SPHD of the state of origin initiates taking official samples maintaining chain of custody. This sample can be sent to NIS, CPHST or CTSU immediately or upon positive confirmation of the initial sample.

In the case of a Forest Survey sample, the sample is split prior to arrival in any lab and sent concurrently to a FS predesignated “Forest Survey Local Lab” for culture and possibly PCR as well as sent to a FS predesignated “Forest Survey Regional Lab” for PCR testing. There may be specific government survey protocols that do not require splitting samples.

Step 2e - Triage Lab staff, NPDN Regional Hub Lab staff and APHIS-PPQ Confirming Diagnosis Designate may conduct live web-based distance diagnosis examination of sample and microscope mounts, if Triage Lab has this distance diagnosis capability. Or the diagnostician can take a digital image and email to the other two diagnosticians if web cam is not available. FS Regional Labs may also be included in this process for Forest Survey samples if recommended by the FS.

Step 2f - Triage lab staff sends the sample to the APHIS-PPQ Confirming Diagnosis Designate for diagnosis, unless the Designate indicates to the Triage Lab to send the sample to the NPDN Regional Hub or Expert Lab instead. If requested by the APHIS-PPQ Diagnosis Designate, the sample can be split and a portion of the sample is stored in the Triage Lab in the event of shipment problems. The shipping lab may request a copy of the receiving lab's APHIS-PPQ Form 526, Application for Permit to Move Live Plant Pests or Noxious Weeds, from the receiving lab, to keep on file at the shipping lab.

Step 2g – If a Triage Lab, Expert Lab, or Hub Lab receives a sample and it is not located in the state of origin of the sample, the Diagnostician contacts its own state's SPRO, SPHD and Regional NPDN Director to inform them that they have a presumptive positive sample in the laboratory. State of origin is not disclosed.

Step 2h – Sample packaging

If a plant sample, the sample is double bagged in zippable bags and sealed in a sturdy box with tape. Ensure that bags are properly labeled with a waterproof marker. Ship samples via overnight carrier to the appropriate APHIS Confirming Diagnosis Designate. Shipping samples on Friday is not recommended because they will not arrive until Monday and may result in deterioration of the sample unless otherwise instructed by APHIS CDD.

If an insect sample, killed insects are placed in a vial with the appropriate fluid or mounted as specified by the CTSU-SEL. Package insects in appropriate crush proof packaging. If only one insect was submitted, the entire sample should be submitted to the Confirming Diagnosis Designate. [PPQ sample submission form 391](#) or local sample submission form is included in the box. For samples being sent to the USDA-ARS SEL CTSU also use a PPQ form 391, but the [ARS-748 form](#) is also acceptable. Mark that the reason for identification is “suspected pest of regulatory concern” and write in the remarks section “urgent ID requested.”

The diagnostician's business card should also be included in with the sample. The FedEx, UPS, or US Postal Service box should be marked as “Plant samples for diagnosis”. Late afternoon and evening Fed Ex pickup locations can be found at www.fedex.com if needed.

If a sample is not a regulatory sample, nor a survey sample, and does not have chain-of-custody documentation when submitted to the triage lab, this should be specified on the sample submission form for the confirming lab (391 or 748). On the sample submission form, it is important to request that the confirming diagnosis include information that there is a lack of chain of custody as a non-regulatory sample, with the results of the diagnosis when the results are communicated through out the chain of communication. If a survey sample for the Forest Service, it is important to request on the form that the results of the diagnosis be communicated to the appropriate APHIS, NPDN and State Department of Agriculture personnel and State Forester, as well as the Forest Service Survey Coordinator, including existing chain-of-custody and the associated documentation, sample identity/submission forms and site collection information, following FS sample chain-of-custody and collection protocols carefully, so that the FS can retrieve all of the survey information including FS sample number with the results.

Step 2i – Sample shipment

Triage Lab informs state of origin SPRO, APHIS-PPQ SPHD, APHIS-PPQ Diagnosis Designate, NIS and NPDN Regional Hub or Expert Lab of presumptive positive sample shipment time and delivery method, including tracking number and sample number. If a sample is a Forest Survey sample, the Forest Survey Coordinator also is notified with shipment information.

For plant disease samples, please contact Dr. Mary Palm, USDA/APHIS/PPQ/PHP/PSPI Molecular Diagnostic Lab by email (mary.palm@aphis.usda.gov) or telephone (301-504-7154 or 505-5700 ext. 327). If Mary Palm is not available, contact National Mycologists John McKemy or Joe Bischoff by e-mail (john.mckemy@aphis.usda.gov or joe.bischoff@aphis.usda.gov) or telephone (301-504-5280 or 301-504-5327).

Inform Dr. Palm of the suspected taxon of the disease. She will advise the submitter if the diagnosis is more appropriate for morphological confirmation, molecular, or perhaps both.

Also notify the NIS Urgent Team by email (ppq.nis.urgents@aphis.usda.gov) with a PDF of the PPQ form 391 or fax a copy to the attention “NIS Urgent Team” (fax number: 301-734-5276).

For molecular confirmation, send plant disease samples to the following address:

Dr. Mary E. Palm
USDA/APHIS/PPQ
PPQ Molecular Diagnostic Lab
9901 Powder Mill Rd.
B-580, BARC-East
Beltsville MD 20705

Phone: 301-504-7154 or 504-5700 ext 327

For morphological confirmation, send plant disease samples to the following address:

Drs. John McKemy / Joe Bischoff
USDA/APHIS/PPQ
Rm. 329, Building 011A
BARC-West
Beltsville MD 20705 - 2350

Phone: 301-504-5280 or 301-504-5327

For insect or mite samples, please contact Geoffrey White, USDA/ARS Systematic Entomology Lab by email (Geoffrey.white@ars.usda.gov) or telephone (301-504-7041). Also notify the NIS Urgent Team by email (ppq.nis.urgents@aphis.usda.gov) with a PDF of the PPQ form 391 or fax a copy to the attention “NIS Urgent Team” (fax number: 301-734-5276).

For insects or mites, send the samples to the following address:

Location Leader
Systematic Entomology Laboratory
Attn: Communication and Taxonomic
Services Unit
Building 005, Room 137, BARC-West
10300 Baltimore Avenue
Beltsville, MD 20705

Phone: (301) 504-7041

Step 2j - Triage Lab staff contacts its own Campus Safety Officer to inform of presumptive positive sample in the system. If sample is from out-of-state, state of origin is not disclosed.

Step 3: State SPRO Response

Step 3a - State of origin SPRO contacts state of origin APHIS-PPQ SPHD staff to discuss plans and prepare for response if the presumptive positive sample in the system is confirmed to be positive, but neither implement response until confirmed positive diagnosis is received. Forest Service, Director of Forest Health Protection and State Forester personnel should also be included in the planning when dealing with forest or tree insects and pathogens.

Step 3b - State of origin SPRO and APHIS-PPQ SPHD may choose to communicate with regulatory officials in neighboring states in planning and/ or activating response strategy.

Step 3c – State of origin SPHD contacts APHIS-PPQ Assistant Regional Director (ARD) to inform of presumptive positive sample in system.

Step 4: Regional Hub/Expert Lab Sample Receipt

Step 4a - If an NPDN Regional Hub or Expert Lab receives a presumptive positive sample, Expert Lab Staff acknowledges sample receipt to Triage Lab.

Step 4b - NPDN Regional Hub or Expert Lab staff examines presumptive positive sample.

Step 4c - NPDN Regional Hub or Expert Lab staff may contact Local expert, for additional input, but does not disclose state of origin.

Step 4d - Local Expert may examine sample.

Step 4e - Local Expert may make preliminary diagnosis in collaboration with NPDN Regional Hub or Expert Lab staff.

Step 4f - Local Expert contacts NPDN Regional Hub or Expert Lab Diagnostician with conclusions/results.

Step 4g - NPDN Regional Hub or Expert Lab Diagnostician contacts NPDN Regional Director and APHIS-PPQ-Confirming Diagnosis Designate with preliminary conclusions/results.

Step 4h - NPDN Regional Hub or Expert Lab staff contacts own SPRO and APHIS-PPQ SPHD to inform them that a presumptive positive sample is housed in NPDN Regional Hub or Expert Lab until shipment to APHIS-PPQ Confirming Designate or until it is destroyed following diagnosis. The state of origin is not disclosed to NPDN Regional Hub or Expert Lab's state SPRO or SPHD.

Step 4i - NPDN Regional Hub or Expert Lab staff contacts its own Campus Safety Officer to inform of presumptive positive sample in the lab. State of origin is not disclosed.

Step 4j - If APHIS-PPQ Confirming Diagnosis Designate requests NPDN Regional Hub or Expert lab to send sample for confirmation, then NPDN Regional Hub or Expert Lab contacts APHIS-PPQ Confirming Diagnosis Designate and Triage lab indicating that they are sending the presumptive positive sample to APHIS-PPQ Confirming Diagnosis Designate Lab including shipment date, method, tracking number and sample number. If CDD does not request the

NPDN Hub or Expert Lab to send a sample, the NPDN Hub or Expert Lab notifies the CDD and Triage lab of the results and the Triage Lab communicates the results as in Step 7.

Step 4k - NPDN Regional Hub or Expert Lab ships sample to APHIS-PPQ Confirming Diagnosis Designate, unless Designate specifies that shipment is not necessary.

Step 5: Regional NPDN Director Response

Step 5a - Regional NPDN Director from region of diagnosis of the sample contacts NPDN Program Leader indicating that the presumptive positive sample is under diagnosis. State of origin is disclosed. The Regional Director reminds the NPDN National Program Leader to consult with the APHIS-PPQ Program Manager for that pest/disease on whether to inform other Regional Directors and other labs or not. If confirming diagnosis may be more than 7 days, or if other special conditions exist which make it possible that similar samples will appear in other labs before a public announcement is made, contacting other NPDN labs to be watchful for similar samples may be appropriate.

Step 6: APHIS-PPQ Official Diagnosis & Notifications
Step 6a - APHIS-PPQ Confirming Diagnosis Designate acknowledges receipt of presumptive positive sample to Triage Lab, Hub Lab and /or Expert Lab. APHIS-PPQ Confirming Diagnosis Designate also states approximate expected date and time of notification of results.

Step 6b - If confirmation will be more than 7 days later and / or if deemed appropriate by APHIS-PPQ Program Manager in consultation with NPDN Program Leader, Regional NPDN Director of affected region immediately contacts other NPDN Regional Directors to inform them that a presumptive positive sample is in the system. Origin of sample is not disclosed.

Step 6c - If confirmation will be more than 7 days later and / or if deemed appropriate by APHIS-PPQ Program Manager in consultation with NPDN Program Leader, Regional NPDN Directors contact diagnosticians in their respective regions at NPDN labs in each state to inform them that a presumptive positive sample is under diagnosis in an unknown location in the nation and to be alert for similar samples that may be appearing in other labs.

Step 6d - APHIS-PPQ Confirming Diagnosis Designate conducts diagnostic procedures on presumptive positive sample and makes confirming diagnosis.

Step 6e - APHIS-PPQ Confirming Diagnosis Designate contacts APHIS PPQ National Identification Service in Riverdale, MD with confirmed diagnosis results.

Step 6f - APHIS-PPQ NIS e-mails the confirmation with the PPQ form 391 to the APHIS PPQ Emergency and Domestic Programs (EDP) staff (John Bowers, or designee) in Riverdale, MD with confirmed diagnosis

Step 6g - APHIS-PPQ EDP (John Bowers or designee) forwards the confirmation to the appropriate APHIS-PPQ headquarters and regional program managers, state of origin APHIS-PPQ SPHD and SPRO and Forest Service, Director of Forest Health Protection (if dealing with forest or tree insect or pathogen) with confirmed diagnosis results as below:

Not new to the US, not significant:

To: PPQ National Program Manager
PPQ Regional Program Manager
SPHD (affected State)
SPRO (affected State)

cc: CPHST Director
CPHST NSPL
Insects / invertebrates or
Plant pathogens / weeds
NIS
If the sample is from a Forest Service, or other government agency, the [FS] Survey Coordinator is also notified.

New to the US, not significant:

To: as above

cc: as above, plus
CPHST NSPL
Response and Recovery
NPAG
FS, Director of Forest Health Protection (if sample is of forest or tree insect or pathogen)

New to the US, recognized as significant

To: as above

cc: as above, plus
PPQ Executive Team
PPQ PIM Director
PPQ LPA Public Affairs Director
National Plant Board President

Step 6h– APHIS PPQ Regional Program Manager or Regional ARD, if no program exists, contacts NPDN Regional Director to discuss diagnostic needs

and capabilities. If sample is a Forest Survey sample, they discuss whether the FS National Survey Coordinator has been contacted and who has or will do so.

Step 6i – If the state of origin is not in the same NPDN region as the diagnosing lab, then the NPDN Regional Director of the diagnosis region notifies the NPDN Regional Director of the state of origin with the Diagnostic results. State of origin and confirmatory result are disclosed, but other details of the sample are not disclosed without permission of the state of origin SPRO.

Step 6j – APHIS PPQ Regional Program Manager, or Regional ARD contacts SPHD and SPRO to determine who will contact triage diagnostic laboratory with confirming results.

Step 6k - State of origin SPRO contacts State Department of Agriculture laboratory (if not the triage lab) with confirmed diagnosis results. State of Origin SPRO considers contacting NPDN Regional Director, own state (state of origin) NPDN diagnostic lab and /or SPRO and/or NPDN Regional Director of diagnosing state to coordinate diagnostic response support.

Step 6l - State of origin SPRO and/or SPHD contacts Triage Lab staff with results of confirmed diagnosis.

Step 6m – Triage Lab staff and University Extension discuss with SPRO and SPHD to whom, how and when Sample Submitting Entity and grower are contacted with results. The state of origin APHIS-PPQ SPHD and SPRO have authority to decide whom, how and when Sample Submitting Entity is contacted with diagnostic results. It is strongly encouraged that they consult with Triage lab staff and University Extension as they make this decision. If Forest Service Survey sample, the FS National Survey Coordinator is included in this discussion. The SPRO and SPHD will contact the State Forester.

Step 7: Triage Lab Notification

Step 7a - Triage Lab staff contacts NPDN Regional Director with acknowledgement of positive or negative result. NPDN Regional Director verifies that Triage Lab staff have contacted the state of origin SPRO.

Step 7b - Triage Lab Diagnostician contacts NPDN Regional Hub diagnostician and, if engaged, Expert lab staff with confirmed diagnosis results.

Step 7c - Regional NPDN Director contacts NPDN Program Leader with confirmed diagnosis results.

Step 7d - Regional NPDN Director in state of origin contacts other NPDN Regional Directors, if engaged at the discretion of APHIS-PPQ in consultation with NPDN Program Leader, w/ positive or negative results. State of origin not

disclosed, however, it is disclosed to the NPDN Regional Director of the state of origin, if different than the Region of diagnosis.

Step 7e - Regional NPDN Directors contact Regional NPDN Labs, if engaged at the discretion of APHIS-PPQ in consultation with NPDN Program Leader, w/positive or negative result. State of origin is not disclosed.

Step 7f- Triage Lab staff contacts its own Campus Safety Officer w/ positive or negative result and assurance of sample destruction. State of origin is not disclosed.

Step 7g – If part of the sample was retained by the triage lab, the confirmed positive sample is destroyed by placing all packing material and the sample in an autoclave for at least 20 minutes if the sample is a plant disease sample **unless otherwise directed by a regulatory official**. If it is an insect, the dead insect specimen(s) may be preserved and mounted appropriately to serve as a reference in an insect collection. During storage, sample and its packing material should be stored in clean, new bags, double sealed, with paper toweling between leaves. If the sample was confirmed positive as a select agent, the diagnostician completes and submits, within 7 days, [APHIS/CDC Form 4](#), Report of the Identification of a Select Agent or Toxin in a Clinical or Diagnostic Laboratory.

Step 8: Regional Hub/Expert Lab Record (only if engaged)

Step 8a - If engaged, NPDN Regional Hub and Expert Lab staff contacts own SPRO and SPHD with positive or negative result and assurance of sample destruction. State of origin is not disclosed. If sample was confirmed positive as a select agent, diagnostician completes and submits, within 7 days, [APHIS/CDC Form 4](#), Report of the Identification of a Select Agent or Toxin in a Clinical or Diagnostic Laboratory.

Step 8b - If engaged, NPDN Regional Hub Lab or Expert Lab staff contacts its own Campus Safety Officer w/ positive or negative result and assurance of sample destruction as described in Step 7i. State of origin is not disclosed.

Step 9: Triage Lab Diagnosis Record

Step 9a - Triage Lab staff submits record to NPDN databases at state, regional and national CERIS-NPDN National Repository.

Step 9b - State of origin SPRO submits record to state, regional and/or CERIS NAPIS-CAPS database.

Step 9c – **If a Forest Service or other government survey sample, the Survey Coordinator ensures that the results are entered into the appropriate government [FS] survey database.**

Criteria for evaluation:

- Information flows through the appropriate nodes of pathway
- All essential participants are informed of sample status at the appropriate time
- Feed back loops are complete at each step
- Decision makers and regulators are informed immediately upon confirmation of diagnosis
- Diagnostic time line is as rapid as possible
- Information flow time line is as rapid as possible
- Regional, state and NAPIS data entry is performed in a timely manner.

Glossary of Terms used in SOP.

Sample Submitting Entity. The sample submitting entity includes a county extension agent, private crop consultant, or industry field inspector, grower or any other person who brings a sample into a diagnostic lab for diagnosis of a malady. Since some of these individuals are not the grower but are acting in the interest of the grower, the grower is also included in any actions or communications that are delivered to or by the sample submitting entity.

NPDN Regional Hub Lab. The key coordinating lab for an NPDN region. Currently, these labs are located at the California Department of Food and Agriculture (WPDN), Kansas State University Department of Plant Pathology (GPDN), Cornell University Department of Plant Pathology (NEPDN), Michigan State University Department of Plant Pathology (NCPDN), and University of Florida Department of Plant Pathology (SPDN). These labs provide coordination, training, funding, and surge capacity support to the NPDN triage labs within their region and occasionally to other regions.

Triage Lab. The state facility designated to receive and examine suspect samples. This lab is a Land Grant University Lab, State Department of Agriculture lab or University Experiment Station Lab. In some states, all more than one type of triage lab may exist and be a member of the NPDN.

Expert Lab. A lab which has been approved or provisionally approved by APHIS-PPQ to conduct a specific diagnostic test. These diagnosticians receive additional training from APHIS-PPQ diagnosticians and the labs are equipped to handle surge overflow from triage labs.

SPRO. State Plant Regulatory Official. Highest ranking state plant regulatory official. The SPRO is employed by the state department of agriculture.

SPHD. APHIS-PPQ State Plant Health Director. Highest ranking federal plant regulatory official in a state. The SPHD is employed by USDA APHIS-PPQ but has scope of practice in only one state.

CSREES – Cooperative State Research, Extension and Education Service, the branch of USDA that coordinates with University Cooperative Extension in Land Grant Universities. This branch funds NPDN.

APHIS-PPQ. Animal and Plant Health Inspection Service, Plant Protection and Quarantine. Administered by the USDA. This branch has regulatory responsibility for plant health.

APHIS-PPQ-NIS. National Identification Service. The USDA-authorized lab for national confirming diagnosis of plant diseases (fungal and viral). This lab also coordinates insect diagnosis with SEL for triage and hub labs.

APHIS-PPQ-CPHST. Center for Plant Health, Science and Technology. The USDA-authorized lab for training and developing national confirming DNA diagnosis (PCR) and bacterial diagnosis of plant diseases.

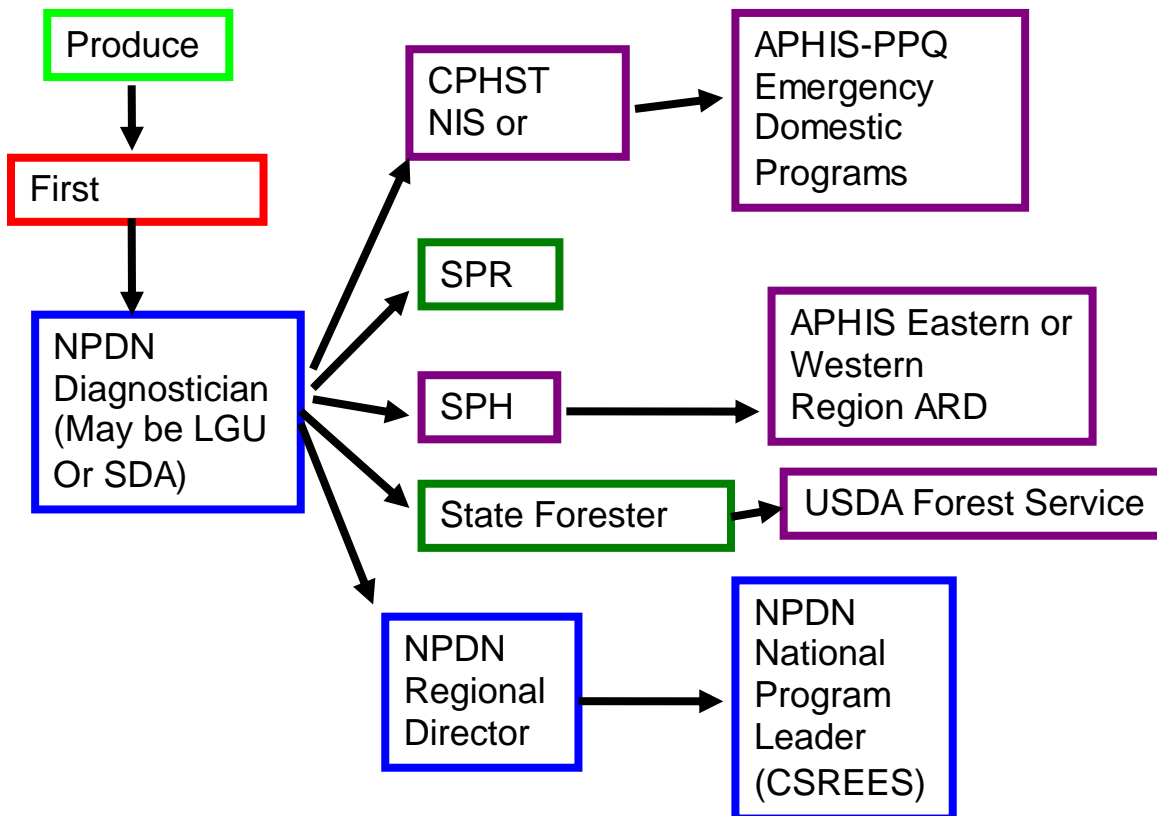
USDA-ARS SEL CTSU: Systematic Entomology Laboratory, Communication and Taxonomic Services Unit. The USDA authorized lab for national confirmation identification of high risk and regulatory insects.

APHIS-PPQ Confirming Diagnosis Designate. The person authorized to make a confirming diagnosis for a high risk pest. This diagnosis must withstand legal scrutiny if challenged in court. This lab may be one of the APHIS-PPQ labs (NIS or CPHST) in Beltsville, MD or the USDA-ARS Systematic Entomology Laboratory or it may be one that has been approved or provisionally approved by APHIS-PPQ or APHIS-CPHST.

Flow Chart of Communications

Not to be used as a stand alone chart. This chart is to be used in conjunction with the *The National Plant Diagnostic Network Standard Operating Procedure for: APHIS-PPQ Pest of Concern Scenario – General SOP ** rev May 1, 2009. Failure to do so is likely to result in an incomplete communication and chain of custody protocol.*

NPDN Notification Presumptive Positive



Not to be used as a stand alone chart. This chart is to be used in conjunction with the *The National Plant Diagnostic Network Standard Operating Procedure for: APHIS-PPQ Pest of Concern Scenario – General SOP ** rev May 1, 2009. Failure to do so is likely to result in an incomplete communication and chain of custody protocol.*

NPDN Communication Flow Chart

