NPDN News

Volume 12 Issue 5, May 2017

BELTSVILLE WORKSHOPS KEEP GOING STRONG!

Karen L. Snover-Clift and Mary Ann Karp, Cornell University and Mark Nakhla, USDA-APHIS-PPQ-Science & Technology, Beltsville Laboratory

The NPDN Diagnostics Program Area Committee (PAC) and members of USDA-APHIS-PPQ-Science & Technology collaborated to provide numerous workshops again this year. Seven workshops encompassing six different topics were offered within a four-week period beginning March 6th and finishing on April 5th. The 2017 workshops included Bioinformatics, Phytoplasmas, which was offered for the third year in a row; *Phytophthora* 101 with focus on *P. ramorum* and *P. kernoviae*; Citrus Greening, and *Plum Pox Virus*. This project continues to be a great resource for the NPDN diagnosticians and a great collaborative effort between the NPDN and the Beltsville Laboratory.

The NPDN offered these workshops to all its State and Territory members and collaborators. In total 45 people attended the seven workshops offered. Over the thirteenth year period that we have offered these types of workshops, this collaboration between the Beltsville Laboratory staff, NPDN, Cornell University and numerous funding sources, most recently the Farm Bill, this team effort of significant pathogen, advanced training has offered 14 topic areas in 78 workshops to 515 NPDN and collaborating diagnosticians. Woop Woop!

We need to thank **Mary Ann Karp of Cornell University** for providing all the participants with their travel arrangement information, coordinating changes as issues arose, working closely with the Beltsville staff so they could prepare, ensuring travel reimbursements were submitted promptly and updating the National Repository database for record keeping purposes. This is a huge effort that can be especially overwhelming to new coordinators but Mary Ann jumped right in and handled every issue that arose with ease. She did an exceptional job in organizing the whole process and we can't thank her enough!

We also need to recognize another year of extraordinary effort by **the Beltsville Laboratory training staff**. Even though they have provided these workshops for many years, they continue to strive to make the workshop content the very best it can be. They present fresh information, add new content to the workshop activities, share materials with an outstanding notebook of resources and provide laboratory exercises whenever possible. The NPDN participants always praise their trainers and can't say enough about how much they appreciate the quality of the training they receive at these workshops! All the Beltsville Laboratory staff are such welcoming hosts and making all that attend feel at home! Building these connections between the Beltsville Laboratory staff members and NPDN diagnosticians is a critical component to ensure our preparedness for possible sample surge situations. Again…thank you all for everything you do!

NPDN
National Plant Diagnostic Network

Issue Highlights

We will send out a survey to participants to gain valuable feedback about their experiences and look for a second survey that will go out to all NPDN members in the next couple of months requesting ideas about future workshops for the Beltsville trainings. We are extremely happy to announce that we received Farm Bill funding to offer travel expense reimbursements to our members in 2018! Be sure to look for announcements about next year's workshops in future newsletter articles and through your regional listservs'. If you have suggestions, questions or are interested in future workshops, please contact Mary Ann Karp mah31@cornell.edu or Karen Snover-Clift, kls13@cornell.edu.

March 6–8, 2017, Phytophthora 101

Participants: Colette Gabriel (Ohio State), Sharon Reed (University of Missouri), Jennifer Schoener (Nevada Department of Agriculture), Gaelle Hollandbeck (Kansas Department of Agriculture), Paulina Rychlik (Cornell University Long Island Horticulture Research Station), Yuhong Li (Missouri Department of Agriculture), Mary Ann Karp (Cornell University), Jordie Ocenar (Hawaii), Emma Wallace (CPHST-BL Visitor)

March 14–15, 2017, Potato Cyst Nematode

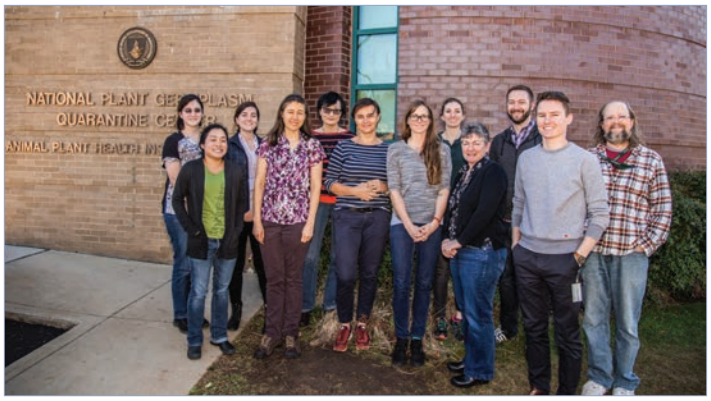
Participants: Rachel Bomberger (Washington State University), Ron French (Texas A&M), Joan Allen (University of Connecticut), Ed Zaworkski (Iowa State), Glorimar Marrero (USDA CPHST Beltsville), Clinton Greub (USDA CPHST Beltsville), Caleb Ayin, (USDA CPHST Beltsville)

March 16-17, 2017, Plum Pox Virus

Participants: Jennifer Olson(Oklahoma State University), Tongyan Tian (California Department of Food and Agriculture), Sladana Bec (University of Florida), Julie Beale (University of Kentucky), Lina Rodriguez-Salamanca (Iowa State)

March 20–22, 2017, Bioinformatics

Participants: Gail Ruhl (Purdue University), Sladana Bec (University of Florida), Israfiel Mohammed (California Department of Food & Agriculture), Cora Yates (Auburn University), Karen Rane (University of Maryland), Monica Negrete (California Department of Food & Agriculture), Consuelo Estevez De Jensen (University of Puerto Rico), Jennifer Street (Idaho State Department of Agriculture), Kevin Ong (Texas A&M)



Pictured above: 2017 Phytophthora Workshop participants (picture provided by John Bienapfl): (left to right) Colette Gabriel, Jordie Ocenar, Emma Wallace, Elizabeth Dorman, Yuhong Li, Paulina Rychlik, Jennifer Shoener, Gaelle Hollandbeck, Mary Ann Karp, John Bienapfl (instructor), Jeremy Sutherland, and Kurt Zeller (instructor)

Pictured above: 2017 Phytoplasma Workshop participants (picture provided by Stefano Costanzo): Weili Cai, Consuelo Estevez De Jensen, Colette Gabriel, Gail Ruhl, Jake Ueckert,Christine Bechtel, Stefano Constanzo, David McCann, Cora Yates, John Rascoe

Pictured above: 2017 Plum Pox Virus Workshop participants (picture provided by Vessela Mavrodieva) Tanisha Robinson (BL Lab: assisted with the training); Sladana Bec (UFL); Vessela Mavrodieva (instructor); Julie Beale (University of Kentucky), Tongyan Tian (CDFA) on the first row. Second row: Lina Rodrigez-Salamanca (Iowa State University), Jennifer Olson (OK State), Benjamin Adducci (USDA)

Pictured above: 2017 Potato Cyst Nematode participants (picture provided by Gang Wei) Gang Wei (instructor), Glorimar Marrero, Rachel Bomberger, Ed Zaworski, Joan Allen, Clinton Greub, Nora Tsai, Caleb Ayin, Ron French

Pictured above: 2017 Bioinformatics Session #1 participants (picture provided by Gang Wei) Front, sitting; Gang Wei, Michael Stulberg, Mark Nakla, Gloria Abad, Consuelo Estevez De Jensen, Yazmin Rivera, Stefano Costanzo. Back, standing: Marco Galvez, Avijit Roy, Kevin Ong, Jeremy Sutherland, Karen Rane, Sladana Bec, Gail Ruhl, Jennifer Street, Monica Negrete, Israfiel Mohammed, Cora Yates, John Rascoe

March 23–24, 2017, Phytoplasmas

Participants: Gail Ruhl (Purdue University), Christine Bechtel (Bartlett Tree North Carolina), Cora Yates (Auburn University), Consuelo Estevez De Jensen (University of Puerto Rico), Colette Gabriel (Ohio), David McCann (Ohio), Jake Ueckert (Texas A&M)

March 30–31, 2017, Citrus Greening

Participants: Katie Posis (California Department of Food & Agriculture), Michele Wiseman (Oregon State University), Glorimar Marrero (USDA CPHST Beltsville), Clinton Greub (USDA CPHST Beltsville), Caleb Ayin, (USDA CPHST Beltsville)

2017 Citrus Greening no image available

Pictured above: 2017 Bioinformatics Session #2 Participants (picture provided by Gang Wei) Front, Sitting; Diego Viteri, Rachel Bomberger, Michelle Wiseman, Mark Nakhla, Gloria Abad, Katie Posis. Back, standing; Gang Wei, Marco Galvez, Michael Stulberg, Tom Creswell, Jennifer Falacy, Telissa Wilson, Nathan Chambers, Yazmin Rivera, Mary Helen Ferguson, Tesfamarium Mengitsu, Stefano Costanzo, John Rascoe

April 3–5, 2017, Bioinformatics

Participants: Jennifer Fallacy (Washington State Department of Agriculture), Katie Posis (California Department of Food & Agriculture), Nathan Chambers (Washington State Department of Agriculture), Rachel Bomberger (Washington State), Michelle Wiseman (Oregon State University), Mary Helen Ferguson (Louisiana State University), Telissa Wilson (Washington State Department of Agriculture),Tesfamariam Mengistu (University of Florida), Diego Viteri (University of Puerto Rico), Tom Creswell (Purdue University)

Sentinel Plant Network

DETECTION
DIAGNOSIS
PROTECTION
EDUCATION

Sentinel Plant Network northwest workshop

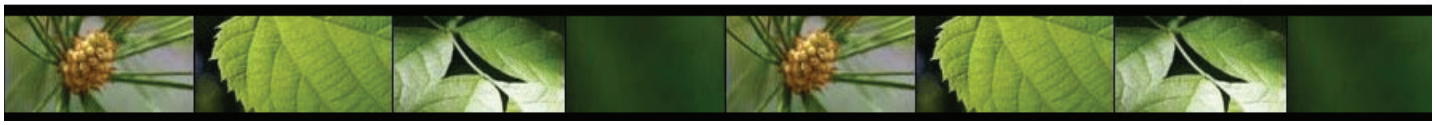
We are looking for entomologists to participate in our upcoming workshop at the Hoyt Arboretum in Portland, OR on July 11–12. If you are interested, please email rachel.mccarthy@cornell.edu or call 607-255-7871 right away! The hotel deadline is June 8!

Gardens from the following states will be participating in this event: CA (north from Fresno), OR, WA, ID, MT, WY, NV, UT, AK, as well as British Columbia and Alberta, Canada.

NPDN National Plant Diagnostic Network

NPDN National Repository

CERIS CENTER FOR ENVIRONMENTAL AND REGULATORY INFORMATION SYSTEMS



Introducing revised NPDN diagnostic confidence level terms and how to use them

Clarissa Balbalian, Plant Diagnostic Lab, Department of Biochemistry, Molecular Biology, Entomology and Plant Pathology, Mississippi State University Extension Service

NPDN diagnosticians assign levels of confidence to each diagnosis that is uploaded to the National Data Repository at CERIS. Based on the results of a survey of the NPDN membership last year, an ad hoc committee revised the definitions for the confidence level terms and also changed the name of one term. The NPDN membership vetted and supported these changes and they were accepted September 2016 for official implementation at the IT/Diagnosticians meeting. Depending on which lab management system you use, you may already be using the revised terminology, but some of you may be seeing it soon for the first time. The changes in terminology will not affect any historic data in the NPDN repository.

The most obvious change is that the term **Inconclusive** has been phased out and its definition has been incorporated into a new term—**Undetermined**. The definitions for the terms appear at the end of this article and will be posted on the NPDN website. Depending on which lab management system you use, you may see the definition appear in a box on your screen when you hover your mouse over the term.

Survey results revealed confusion among diagnosticians regarding how to apply the confidence level terms to a diagnosis. Here are some tips:

1. The confidence term assigned applies to the chosen taxon level, including Order, Family, Genus, species and/or race or pathovar. **For example:** If you select Family: Aphididae from the NPDN pest list and you are confident in this determination, then you would assign the term Confirmed. There is no need to assign a confidence term to Genus, or species in this example because those taxonomic levels are not relevant when something is being identified only to Family. If your lab management system shows the Family name in a field that is labeled Genus, just ignore the Genus label (it is only a label and has nothing to do with the behind the scenes computer code that you cannot see) and focus on the fact that you have selected a Family from the pest list and therefore whatever confidence term you assign is being applied to the Family level. Some lab management systems may require a confidence level be assigned to species sp. or spp., but that data is ignored by the repository.
2. If you have selected an organism from the NPDN pest list that has a defined Genus but no defined species, then the only confidence level that will be recorded by the National Repository is the one that is assigned to Genus. **For example:** If you select *Pythium* sp. from the NPDN pest list, then a confidence level should be assigned to the genus *Pythium*, but no confidence assignment is necessary for the species level. Some lab management systems may require a confidence level be assigned to species sp. or spp., but that data is ignored by the repository.
3. The National Repository records the confidence levels and assigns an overall confidence level to a diagnosis based on the lowest level. For example: If you select from the NPDN pest list Leaf spot: *Bipolaris cynodontis*. And, if you then assign a confidence level of confirmed to the genus *Bipolaris* and a confidence level of suspected for the species *cynodontis*, then the national repository will record this diagnosis as leaf spot: *Bipolaris cynodontis* SUSPECTED.

See next page for the revised confidence level terms...

revised NPDN confidence level terms

TERM	DEFINITION
CONFIRMED	The diagnosis was derived using molecular technologies, serological testing, morphological observations, and/or other techniques as listed in the NPDN Lab Method Dictionary—https://npdn.ceris.purdue.edu/index.php—which allowed for the confirmation of the organism to a taxonomic level including Order, Family, Genus, species and/or race or pathovar. The confidence term assigned applies to the chosen taxon level. The species term is not relevant to taxonomic confirmations at the level of Order or Family, so assignment of confirmation terms to sp. or spp. is unnecessary.
NOT DETECTED	The pathogen/pest was not detected on this sample at the time of testing using molecular technologies, serological testing, morphological observations, and/or other techniques as listed in the NPDN Lab Method Dictionary—https://npdn.ceris.purdue.edu/lab_method.php The sample may have been submitted as a suspect sample or as part of a survey project or the sample may have been checked for a specific pathogen/pest frequently associated with that host.
SUSPECTED	Symptoms of a specific plant problem were present but evidence of that causal agent could not be confirmed at this time. In pest and plant identification situations, this term is used when specific characteristics of a specimen are insufficient for confirmation. This term may also be used at the species level if confirmations cannot be made. This term is frequently used with abiotic entries when confirmatory evidence based on additional tests such as tissue/soil/water analyses, and/or information is not available.

UNDETERMINED	Although a suitable sample was received, a reliable result could not be achieved. Example cases where this term is appropriate:
	
	• Inconclusive test results
	  ◦ Testing procedure (ie molecular technologies, serological testing, morphological observations, and/or other techniques as listed in the NPDN Lab Method Dictionary—https://npdn.ceris.purdue.edu/lab_method.php) may not have worked correctly and there was no sample material remaining to perform the test again.
	  ◦ The testing protocol was not available to run the test
	• The pathogen or pest could not be identified to genus and/or species level, including in situations such as lack of key resources/expertise, difficulty identifying life stage or sex, or the known presence of cryptic species.
	• The abiotic/biotic causal factor could not be determined and suspected is not an acceptable option

According to the year-end NPDN-SPN survey, many people indicated they did not know **how to code samples** from member gardens in PDIS. Read this article from the *NPDN News* archive to learn how...

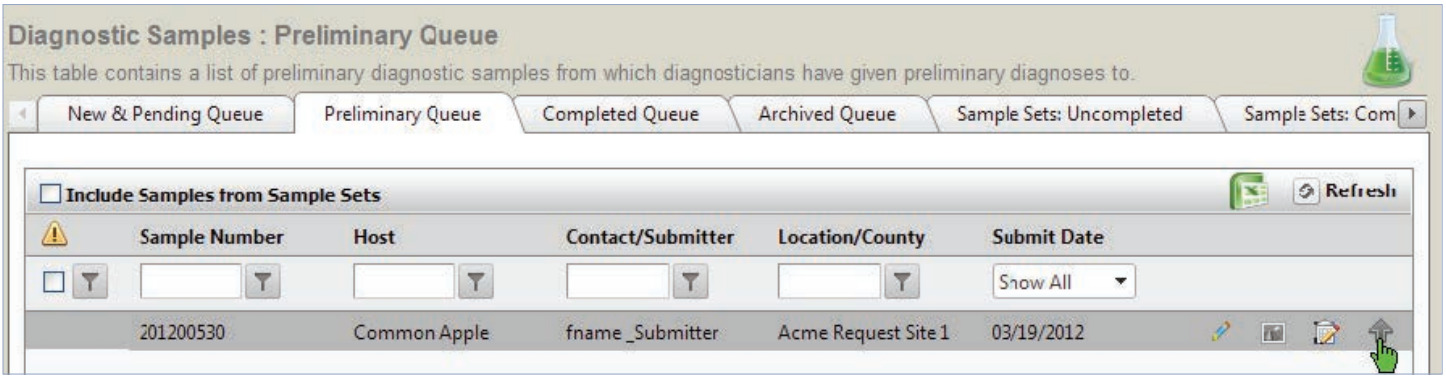
Uploading Sentinel Plant Network data

Judy Dizon, PDIS, Kansas State University

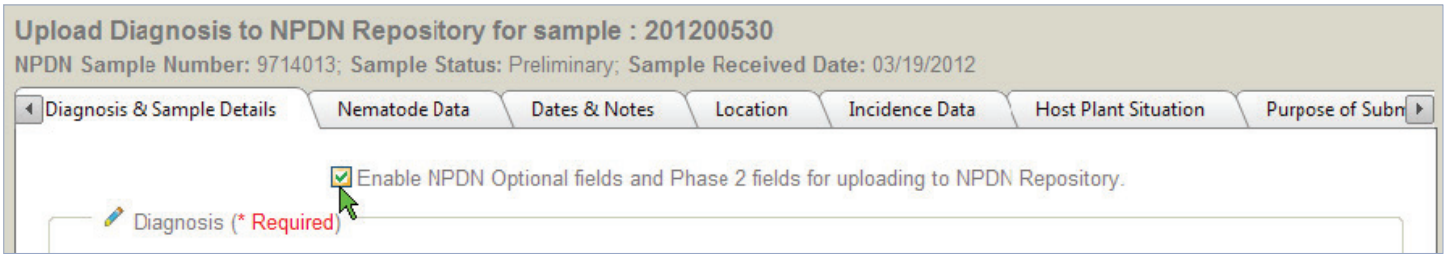
Diagnosticians have the option to upload Sentinel Plant Network data to the National Repository from PDIS. This can be done either from the sample queues page or from the sample dashboard page. Instructions for each method are outlined here.

From the Sample Queues page

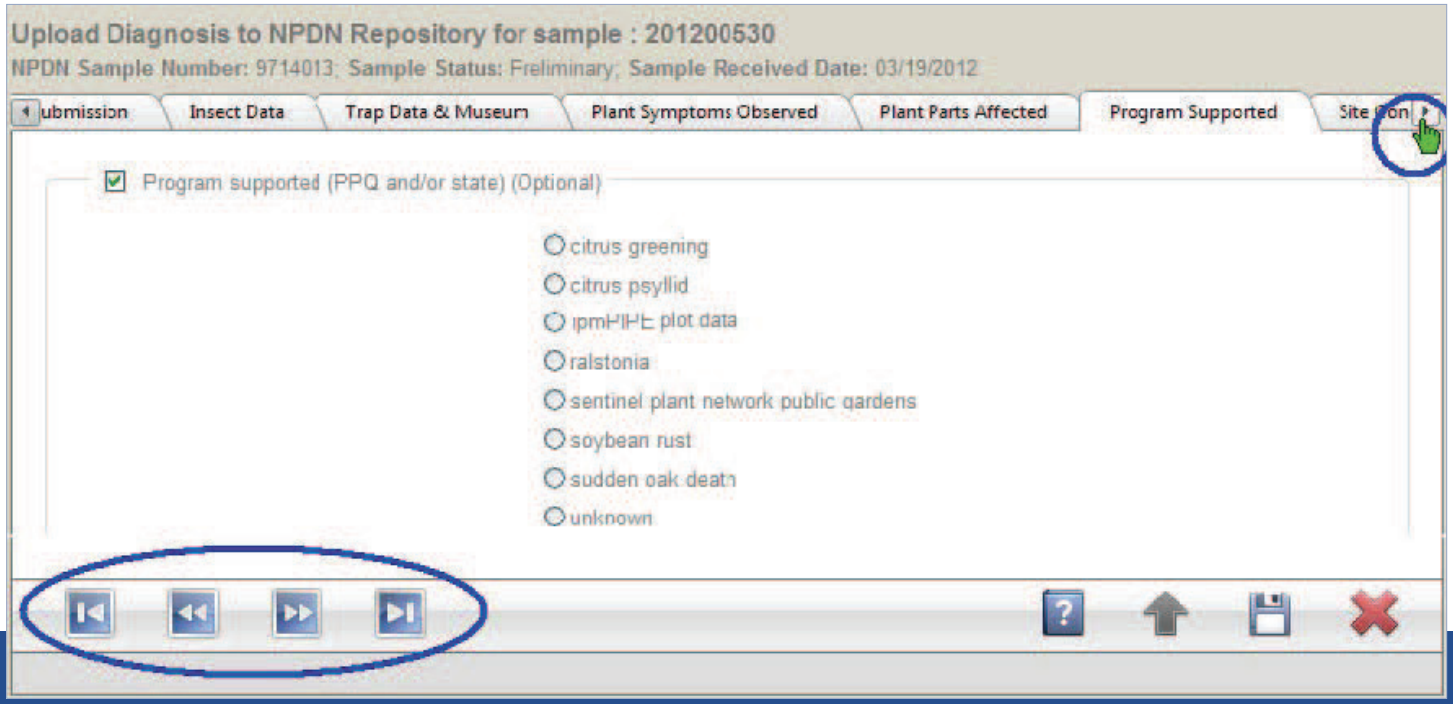
1. Select a Sample Queue from the Diagnostics Menu (Diagnostics: <Lab Name> → Sample Queues)
2. Click on the upload icon of the selected diagnostic sample



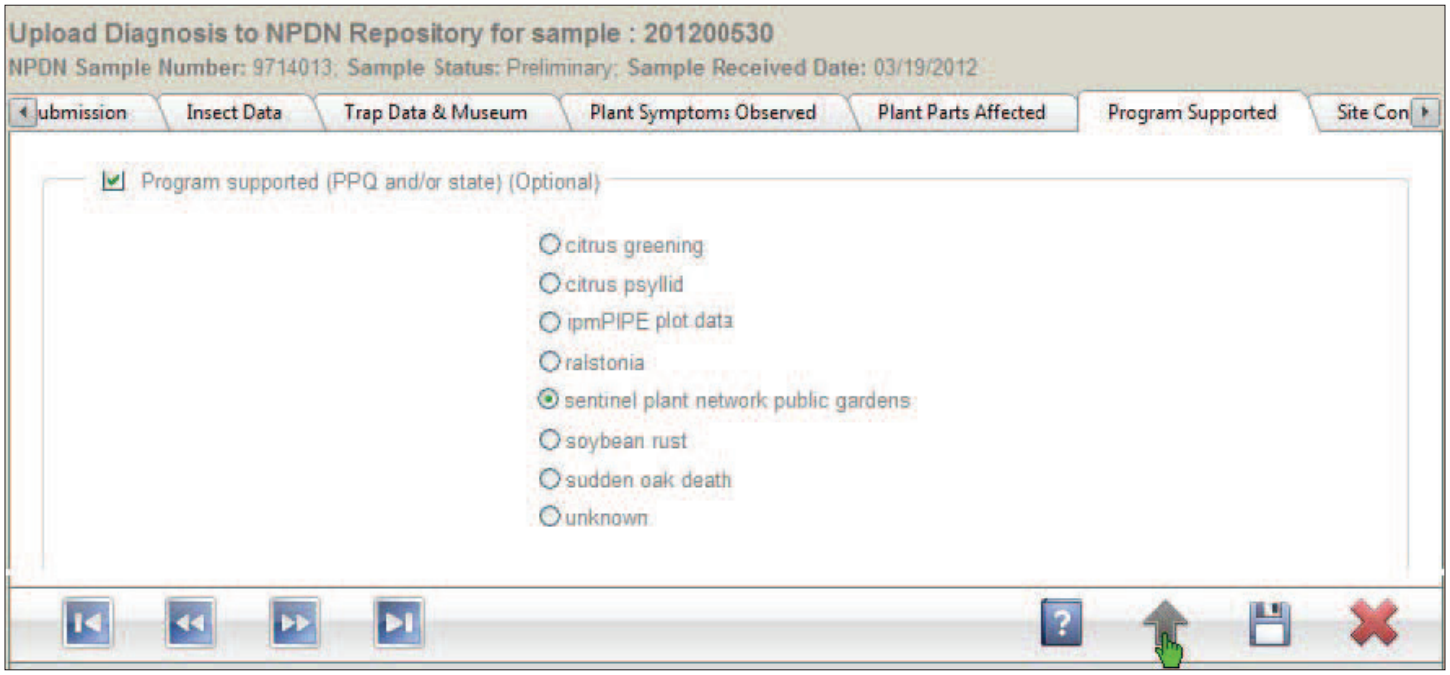
3. Mark the option "Enable NPDN Optional fields and Phase 2 fields for uploading to NPDN Repository"



4. Navigate to the "Program Supported" Tab by using either the horizontal scroll or the navigation buttons

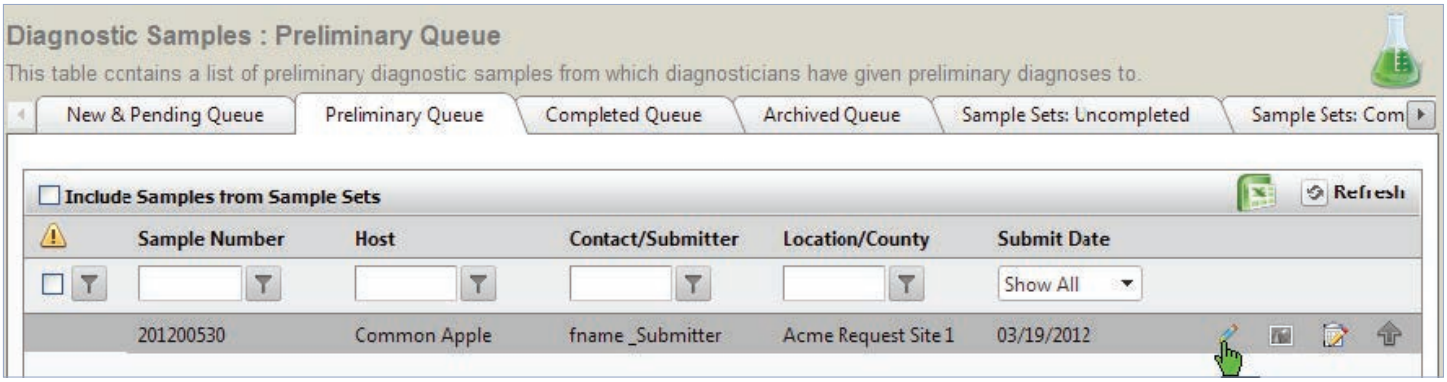


5. Select the "Sentinel Plant Network public gardens" option then click on the upload button (NOTE: The grey button will turn into green when the sample gets uploaded)

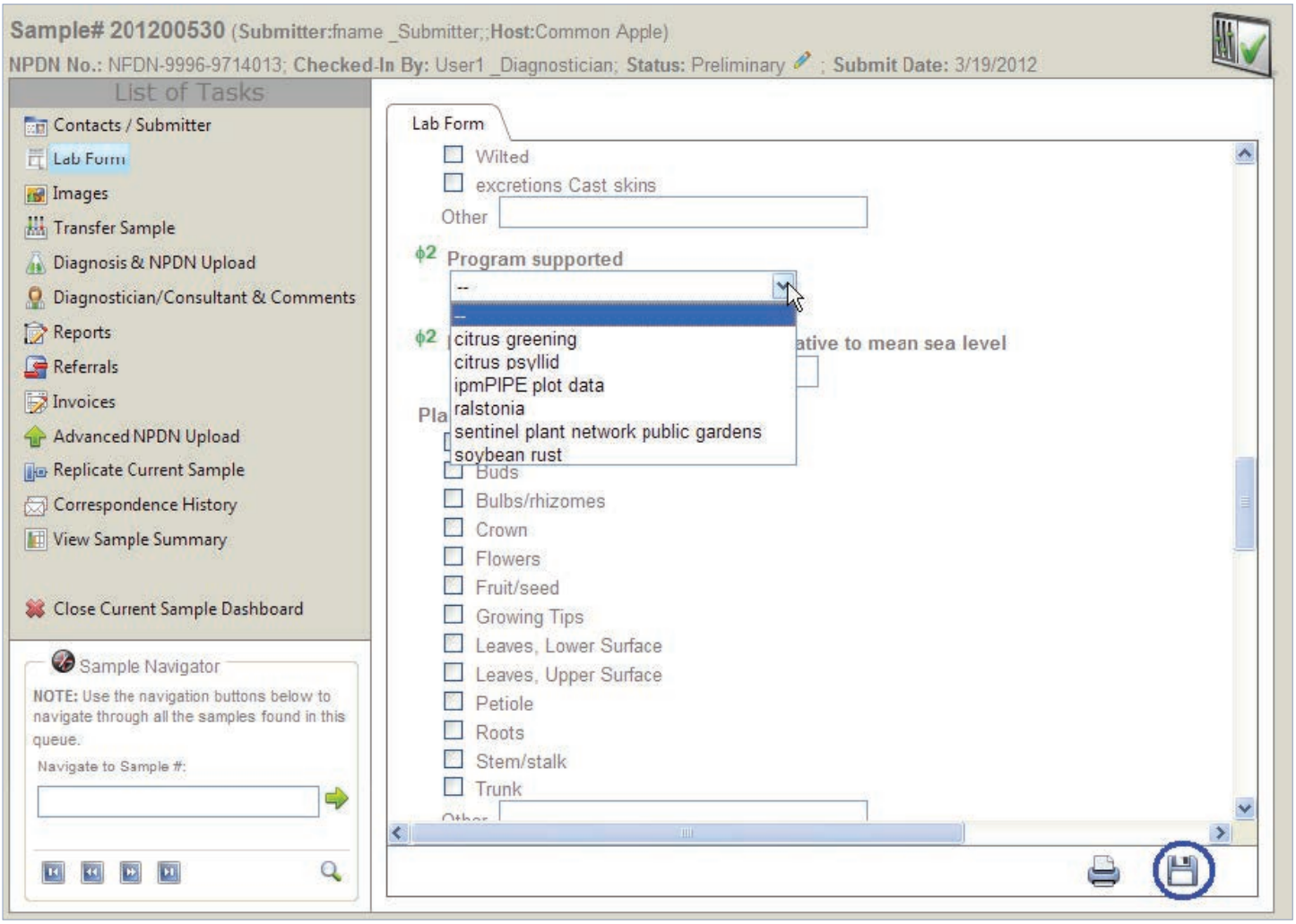


From the Sample Dashboard page

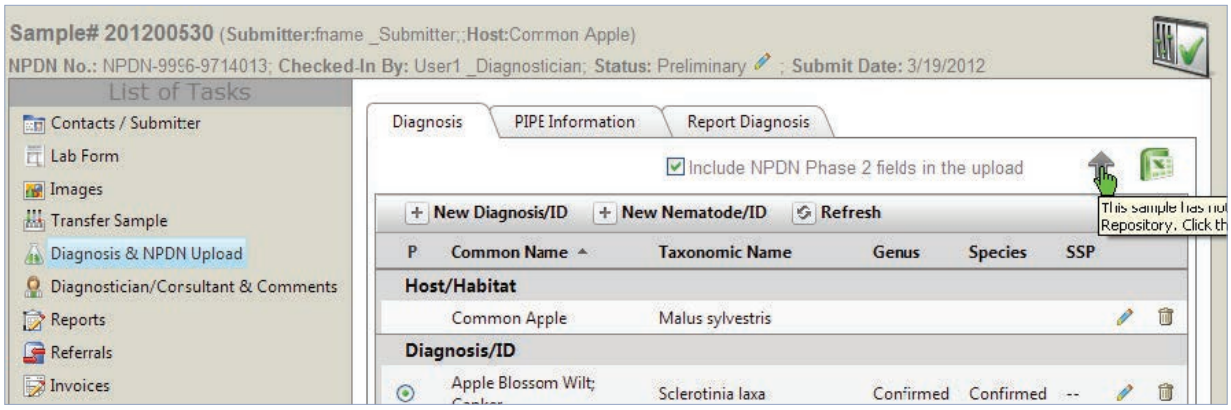
1. Select a Sample Queue from the Diagnostics Menu (Diagnostics: <Lab Name> → Sample Queues)
2. Click on the edit icon of the selected diagnostic sample



3. Select "Lab Form" from the Task List. Choose an option for the "Program supported" field and click on the save button. (NOTE: The "Program supported" option will be available on this interface if it is saved as part of your laboratory's lab form questions. Refer to your respective lab settings under the Administration Module)



4. Select "Diagnosis & NPDN Upload" from the Task List then mark the "Include NPDN Phase 2 fields in the upload" option. Click on the upload button. (NOTE: The grey button will turn into green when the sample gets uploaded)



Louisiana State University

AgCenter Assistant/Associate/Professor (Commercial Ornamental Horticulture) posting R00011060

APPLICATION DEADLINE: June 15, 2017 or until a suitable applicant is located.

The individual will maintain an 80% extension / 20% research 12-month tenure-track appointment working in the area of commercial ornamental horticulture. This includes the nursery grower, greenhouse grower, retail garden center and professional landscape segments of Louisiana's horticulture industry. Principal responsibilities will include: (1) timely communication of research findings in the form of social media, web postings, news articles, newsletter articles, farm visits, and in-person presentations; (2) develop and participate in statewide and multi-state horticulture educational program efforts for the industry (field days, industry open houses/tours, garden tours, plant conferences, trade show events, certification workshops, etc.); (3) cooperate with plant pathology, entomology and weed science faculty on recommendations and best management practices; (4) provide leadership for the extensive landscape plant evaluation trials program; (5) provide leadership for the Louisiana Super Plant program and work with the consumer horticulture specialist and master gardener coordinator to market recommended landscape plants to consumers; (6) establish cooperative working relationships with the Louisiana Nursery and Landscape Association, Louisiana Department of Agriculture and Forestry, Louisiana Farm Bureau Federation and other in-state organizations. Applicants will be expected to conduct activities appropriate for publication in referred journals, publish findings, and actively pursue extramural funding. Read the full job description with instructions for how to apply at https://lsu.wd1.myworkdayjobs.com/LSU

Michigan State University

Sugarbeet position

APPLICATION DEADLINE: June 16, 2017 and until a suitable candidate is identified.

Michigan State University seeks to hire a Sugarbeet Research and Extension Specialist to work collaboratively with sugarbeet growers and researchers at MSU and Michigan Sugar Company to develop and disseminate information on important agronomic issues including: variety selection, application of new technologies, and practices to optimize sugarbeet productivity and profitability. This is a full-time 50% Extension and 50% Research position supported by the Michigan Sugarbeet Advancement Coalition, Michigan State University Extension, and AgBioResearch. Qualified individuals will have a Master's degree or higher in Crop and Soil Sciences or related field. Excellent oral and written communication skills are essential and required. Crop production and farm experience is desirable and experience with sugarbeet is not required. Application review will begin June 16, 2017 and continue until a suitable candidate is identified. Applicants can apply for this position via the link at http://careers.msu.edu (posting #434448). Questions can be directed to Christy Sprague, Chair of the Search Committee, sprague1@msu.edu.

Dry Bean position

APPLICATION DEADLINE: June 16, 2017 and until a suitable candidate is identified.

Michigan State University seeks to hire a Dry Bean Research and Extension Specialist to work collaboratively with dry bean growers, the dry bean industry and researchers at MSU to develop and disseminate information on important agronomic issues including: variety selection, application of new technologies, and practices to optimize dry bean productivity and profitability. This is a full-time 50% Extension and 50% Research position supported by the Michigan Bean Commission, Michigan State University Extension, and AgBioResearch. Qualified individuals will have a Master's degree or higher in Crop and Soil Sciences or related field. Excellent oral and written communication skills are essential and required. Crop production and farm experience is desirable and experience with dry beans is not required. Application review will begin June 16, 2017 and continue until a suitable candidate is identified. Applicants can apply for this position via the link at http://careers.msu.edu (posting #433586). Questions can be directed to James Kelly, Chair of the Search Committee, kellyj@msu.edu.

UPCOMING EVENTS

Meetings

August 5–9, 2017
2017 APS Annual Meeting
San Antonio, Texas

August 12–17, 2017
National Plant Board 2017 Annual Meeting
Savannah, Georgia

November 5–8, 2017
Entomology 2017
Denver, Colorado

March 19–22, 2018
Ninth International Integrated Pest Management (IPM) Symposium
Baltimore, Maryland

PHOTO OF THE MONTH

viburnum leaf beetle damage (*Pyrrhalta viburni*)

www.bugwood.org

CONTRIBUTE

Share Tips and News with Your Colleagues
Recently write an article for a trade journal? Do you have a tip, announcement, regional news or network update you would like to include in the *NPDN News*? Email Rachel McCarthy at rachel.mccarthy@cornell.edu

CONNECT

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Rachel McCarthy, layout editor
NPDN, Training and Education Coordinator
Cornell University

NPDN National Plant Diagnostic Network

USDA National Institute of Food and Agriculture