Thousand Cankers Disease Discovered in Native Populations of Black Walnut

Karen Snover-Clift, Cornell University, Department of Plant Pathology and Plant-Microbe Biology

On August 5, 2010, the Tennessee Department of Agriculture announced the discovery of thousand cankers disease of black walnut in their state. This was a significant announcement as it was the first find of this disease in the native range of black walnut, Juglans nigra. It is very disconcerting to hear that scientists believe the disease may have been present in Knox County for quite some time, possibly 5-10 years.

Thousand cankers disease has been a problem in introduced, black walnuts that were plant in Colorado, New Mexico, Arizona, Utah, Idaho, Washington, Oregon and California in recent years. Dr. Ned Tisserat of Colorado State University began working on a decline of black walnut in 2004. At the time, he was not aware of what was causing the problem but he was told, and found through research, that black walnuts in the west had been declining for up to 10 years, and a paper stated black walnuts in New Mexico had been declining since 2002. After two

continue on pg 2...

Sweet Orange Scab Detected in Texas and Louisiana

On July 23, 2010, APHIS-PPQ confirmed the identification of the fungal pathogen, Elsinoë australis, causal agent of Sweet Orange Scab (SOS), on residential lemon and tangerine trees in Harris County, TX. The detections in Harris County are approximately 320 miles from the lower Rio Grande Valley where most of the commercial citrus production in Texas is located. This is the first confirmation of SOS in the United States. On August 20, 2010, APHIS confirmed the presence of SOS in Orleans Parish, LA as part of the CHRP citrus greening sentinel site survey. The detection was located on a single residential lime tree. The detection in Orleans Parish is approximately 15-20 miles from commercial citrus production areas in Louisiana.

Read the full letter here…

Issue Highlights:

- Spotted wing drosophila found in CA, OR and WA
- APS - NPDN highlights
- Diagnostic Tip - Isolating Geosmithia morbida
- Upcoming Beltsville training
- Training and Education updates
- IT security tip - Data encryption
- PDIS 2.0 - Three ways to sample search
- European grapevine moth
years of research, Dr. Tisserat was able to isolate an organism, and worked with an entomologist, Dr. Whitney Cranshaw, who identified an insect vector. Dr. Tisserat named the disease, thousand cankers disease (TCD), due to the numerous cankers produced by the sustained introductions of the fungus. The fungus, Geosmithia morbida, resides just beneath the bark in the cambium, but it needs the help of the walnut twig beetle, Pithophthorus juglandis, to gain initial entry into the black walnut. Since they began their work on this disease in 2004, virtually all the black walnuts in Colorado Springs and Denver are gone, only a few survivors remain. The insect can introduce the pathogen and for many years, possibly 10-15 years, no symptoms will be produced. However, when symptoms of flagging do occur, additional symptoms of dieback progress quickly and the tree may have only 1-3 years of life left. A tree’s life sentence does vary a bit depending on where in the west it happens to be growing at the time it contracts the thousand cankers disease. If it resides in the upper far western part of the country, such as Oregon, the decline tends to take much longer from when the initial, visual symptoms of flagging are seen. It can take 10 years or more for a tree to die there versus the 1-3 years in Colorado. This variation is probably due in part to variations in rainfall, temperature, tree variety, tree health, and other factors. In addition to flagging in the upper canopy, other symptoms to look for are branch dieback and bleeding or staining of the bark. Entrance and exit holes of the walnut twig beetle can be noted on the twigs that are larger than one inch in diameter. Keep in mind that these beetles are extremely small and that you will need a hand lens to see them. Not moving firewood and not cutting down suspected, infected trees (so potentially infected wood is not moved) are the only management recommendations given at this time.

The finding in the native range is of great concern to many researchers and extension educators. Of course, all laboratories should remain diligent, but those in the native range should take a second look at black walnuts that enter their laboratories with symptoms that match those listed here. We are in the process of preparing a diagnostician’s standard operating procedure for how to process samples and it will be available as soon as it can be reviewed. We are also in the process of putting together first detector materials.

TCD Discovered in Native Populations cont. from pg 1...

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Spotted Wing Drosophila found in California, Oregon, Washington, and British Columbia

Richard Hoenisch, University of California at Davis, Department of Plant Pathology

Spotted wing drosophila (SWD), Drosophila suzukii (Matsumura) has recently been found in many West Coast areas infesting ripening cherry, raspberry, blackberry, blueberry, and strawberry crops. It has also been observed attacking other soft-flesh fruit such as boysenberry, plum, plumcot, peach, nectarine, apple and persimmon. As of October 13, 2009, the Oregon Department of Agriculture (ODA) reports that it is also found in wine and table grapes. The reports note that the larvae are found in ripe but undamaged looking fruit. The skin of the fruit has small holes resembling ovipositor

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Read the August 5th press release from the State of Tennessee Department of Agriculture here.
scars. SWD is native to China, Korea, and Thailand. Adults and maggots closely resemble the common vinegar fly, *Drosophila melanogaster*, and other Drosophila species that primarily attack rotting or fermenting fruit. The spotted wing drosophila, however, readily attacks undamaged fruit. See this key to SWD from the ODA for help with distinguishing this pest from other flies.\(^2\) [www.ipm.ucdavis.edu/PDF/PMG/SWD-ID-Dsuzukii.pdf](http://www.ipm.ucdavis.edu/PDF/PMG/SWD-ID-Dsuzukii.pdf).

SWD was detected by the California Department of Food and Agriculture (CDFA) in fresh cherries near Gilroy CA in 2009. It now has been detected all along the west coast, including Oregon, Washington, and British Columbia. On August 4, 2009, SWD was also detected in Florida.\(^3\) It has been in Hawaii since 1986.

**BIOLOGY**

In Japan, 13 generations have been observed per year. Three to ten generations are predicted for most Californian production climates. It is believed that this fly can have several generations per season in Oregon. Flies are most active at temperatures of 68°F. Activity, longevity, and egg laying decrease at higher temperatures (above 86°F). They thrive at cool temperatures typically experienced during most of early summer and fall, but do poorly at temperatures above 86°F. A single life cycle can be as short as 8-14 days, depending on the weather. Flies can be active from April to November. In mid-season, adult life span is 3-9 weeks. Late summer or fall emerging flies can overwinter. They will lay eggs during the following summer on early ripening fruit. Females typically will insert their ovipositor into the fruit, lay 1-3 eggs per fruit, 7-16 eggs per day, and greater than 300 eggs in their lifetime. Pupation can take place both inside and outside of fruit in about 3 to 15 days.\(^4\)

**DAMAGE**

Infestation in cherry initially is manifested by scars in the fruit surface left by “stinging” (ovipositing) females. As egg hatch time is very short (about 1 day), larvae soon begin feeding inside the fruit. Within as little as 2 days, the fruit begins to collapse around the feeding site. Thereafter, mold and infestation by secondary pests may contribute to further damage. Oregon State University has an excellent SWD website, updated frequently, at: [http://swd.hort.oregonstate.edu/](http://swd.hort.oregonstate.edu/). The California Department of Food and Agriculture (CDFA) has a Power Point presentation on the biology and damage by SWD: [http://cesonoma.ucdavis.edu/files/27739.ppt](http://cesonoma.ucdavis.edu/files/27739.ppt).

**MANAGEMENT**

Spotted wing drosophila attacks ripening fruit, and unfortunately is often not noticed in commercial and backyard trees until fruit is being harvested. Sprays at this time will not protect the crop, because maggots are already in
the fruit. In the immediate post-harvest period, remove any fruit that has fallen on the ground and any infested fruit remaining on trees. This may reduce populations of flies that might infest next year’s crops or later ripening varieties. This remaining fruit should be bagged and buried. Composting may not be a reliable way to destroy eggs and larvae in fruit.

Because this pest is so new to the West Coast and Florida, there has been limited research on treatments to manage SWD.

Malathion is one mode of control of SWD. Application should be made about 2 weeks before harvest. Sprays must kill adults before they lay eggs. Malathion will not control larvae in fruit. An alternative to malathion with fewer negative environmental effects would be Spinosad (Monterey Garden Insect Spray); however, it is not believed to be as effective against the fruit fly adults as malathion. Two sprays may be required at about 14 days and 7 days before harvest to get satisfactory control. As with malathion, all foliage and fruit on the tree must be covered with the spray. Partial coverage will not be effective. A compressed air sprayer will give more reliable coverage than a hose end sprayer. Before making a chemical application, be sure the product is registered for your crop. The permissible rate of application is subject to change, so consult the label and all updates before application.


4 Dreves, A.J., Fisher, G., Walton, V. A new pest attacking healthy ripening fruit in Oregon: Spotted Wing Drosophila, Drosophila suzukii (Matsumura). Regional Pest Alert (Submitted as OSU Extension Publication) 09-09-09ajd
NPDN Town Hall Meeting at APS 2010 National Meeting
Rick Bostock, University of California at Davis, Department of Plant Pathology

The NPDN Town Hall meeting was held at this year’s APS National Meeting in Charlotte, NC on Monday, August 9th. NPDN Executive Director, Rick Bostock, welcomed the group and briefly reviewed some of the year’s highlights and current issues. These included formalization of the NPDN Governance Charter, our highly successful national meeting in Miami in December, progress on the “STAR-D” lab accreditation program, engagement with the National Plant Board on data sharing, and the NPDN’s participation to assist APHIS in a recent Phytophthora ramorum trace back/trace forward program. He also mentioned the ongoing planning for our next national meeting to be held November 6-9, 2011 in San Francisco. Dr. Phil Berger, Director of the Center for Plant Health Science and Technology at USDA APHIS PPQ in Raleigh, then gave an excellent overview of the purpose, procedures, and goals of the APHIS diagnostic laboratory proficiency testing program, including examples of the progress made by our NPDN laboratories in the program.

NPDN Wrap up from APS
Ray Hammerschmidt, Michigan State University, Department of Plant Pathology

The NPDN was once again well-represented at the recent APS meeting in Charlotte, NC. The theme of this year’s booth focused on diagnostics, SOPs and activities of the diagnostic committee. The booth was a big draw, with 234 individuals taking the quiz that covered a range of diagnostic topics. Several times during the meeting the booth area was packed with individuals taking the quiz and talking with the NPDN folks who staffed the booth. A special thanks to all who spent time helping at the booth, with a special thank you to Karen Scott, Lee Duynslager and Mike Hill. Our Executive Director, Rick Bostock, convened the annual Town Hall meeting and covered a variety of topics ranging from lab accreditation to the next national meeting. Phil Berger from the USDA APHIS Center for Plant Health and Science Technology (CPHST) provided an overview of the lab proficiency panel tests process.
Method for Isolating and Maintaining Cultures of *Geosmithia* from *Juglans nigra*

Ned Tisserat, Colorado State University, Department of Bioagricultural Sciences and Pest Management

*Geosmithia* is relatively easy to isolate from walnut cankers of all sizes. However, you need to make sure the submitter supplies you with the proper sample. Galleries and cankers are much more abundant in branches greater than 1 inch diameter and rarely occur in small diameter twigs at the ends of branches. Thus, the name walnut twig beetle is somewhat misleading in the case of black walnut. Samples should be collected from branches showing dieback or wilting. Although beetle galleries will be numerous in dead branches, the cankers will be difficult to delineate because the walnut bark oxidizes and turns brown at death. Cankers caused by *Geosmithia* usually are 3 – 6 inches in length and surround the beetle galleries. They rapidly coalesce to cause large irregular areas of phloem necrosis. The beetle galleries, and cankers often are more numerous on the bottom side of branches and the west side of the trunk. Young cankers may not extend all the way to the cambium, so be careful not to cut under the cankers and remove them. Eventually cankers will extend to the cambium. In all cases, the cankers will be covered by outer bark, even in advanced stages of the disease. Thus, you will not see the typical open-faced, target cankers we associate with diseases like butternut and Nectria canker.

After selecting a sample, remove the outer bark. The bark surface may be disinfested with ethanol but this isn’t essential. Aseptically shave off the outer bark with a sterile scalpel to expose the brown to black diseased phloem surrounding the beetle galleries. Cut small bark chips approximately 5-10 mm long and 3-5 mm wide from canker margins and place directly on ¼ strength potato dextrose agar amended with 100 mg/L streptomycin sulfate and 100 mg/L chloramphenicol (¼ PDA++). It is not necessary to disinfest the bark chips in sodium hypochlorite prior to placing on the agar surface. The fungus initially grows very rapidly out of the wood chips and colonies commonly exceed 20-40 mm in diameter after 3-5 days at 25°C. Conidia may be formed on the bark chips in as little as 2 days. The fungus is thermostolerant and will grow at 32°C. Isolations from trunk cankers may be more difficult if the bark is macerated. *Fusarium solani* and other *Fusaria* may be isolated from these tissues.

Fungal colonies of *Geosmithia* on half-strength PDA are cream-colored to tan, and tan to yellow-tan on the reverse side of the plate. However, colonies may become attenuated (<20-30 mm diameter after several weeks) with appressed margins following successive transfers on ½ strength PDA. The fungus sporulates profusely.
in culture producing dry conidia on multi-branched, verticillate, verrucose conidiophores. Conidiophore morphology is similar to *Penicillium*, although this genus is not closely related. *Geosmithia* conidia are tan *en masse*, cylindrical to ellipsoid, 2 to 6 x 6 to 14 (mean 2.7 x 6.5) µm, and form in chains. *Geosmithia* can be transferred and maintained on ½ strength PDA or malt agar.

The fungus will produce a yeast phase. This is more apparent if the conidia are streaked across a plate in a manner similar to streaking bacteria. This, in fact, is a good method for developing single spore isolates and for isolating the fungus from the beetles. Streaking beetle parts (thorax, elytra, entire beetle, etc.) across the agar will result in multiple yeast colonies. The yeast phase will revert back to mycelial growth within a few days.

Species-specific PCR primers have not been developed for this *Geosmithia*. One reason is that this fungus can easily be identified based on morphological characteristics and the ease by which it can be isolated from diseased tissue. Look for a buff-colored colony on PDA or MEA, penicilliate conidiophores, and barrel shaped conidia. The identity of the fungus can be confirmed by sequencing the rDNA ITS region using the primers ITS1 or ITS5 and ITS4. There are at least 8 different ITS haplotypes associated with the *Geosmithia* from walnut.
NPDN-USDA APHIS 2010
Fall Training Sessions-
Phytophthora ramorum 101,
Ralstonia solanacearum R3B2
and Additional Bio-informatics Sessions
Karen L. Snover-Clift, Cornell University
and Laurene Levy, USDA-APHIS-PPQ-CHPST-NPGBL

The NPDN Diagnostics Program Area Committee and members of USDA-APHIS-PPQ-CHPST-National Plant Germplasm and Biotechnology Laboratory (NPGBL) are offering training sessions on Phytophthora ramorum 101 and Ralstonia solanacearum R3 B2 this fall. The P. ramorum 101 sessions are offered the weeks of October 4-8, 2010 and October 18-22, 2010. The sessions are 4 ½ days long and cover DNA extraction, conventional PCR (nested and multiplex), real-time PCR (ITS and Elicitin), and interpretation of results that participants have found very helpful. The R. solanacearum R3 B2 session is offered November 9-11, 2010. The session will cover Immunostrip, isolation, real-time PCR and Biovar testing. If this session fills up, there is a possibility of a second session being added for November 16-18, 2010. The Bio-informatics hands-on course has been well received and participants have been enthusiastic about the course contents. The NPGBL is considering offering two more classes (2.5 days each) the week of December 6th, please let me know if you are interested as soon as possible so we can plan whether we should go ahead with these sessions. Participants of these training sessions are expected to cover their travel, lodging and meal expenses. There is no registration charge for the training sessions or for meeting materials. These expenses are covered by our colleagues at USDA-APHIS-PPQ-CHPST-NGBTL. If you are interested in participating in any of these workshops please contact Karen Snover-Clift at kls13@cornell.edu.

Training and Education Subcommittee Update
Amanda Hodges, University of Florida, Entomology and Nematology Department

The last several months the NPDN Training and Education Subcommittee has been busy with website changes, module reviews, and the development of new e-learning modules. The NPDN training site (http://cbc.at.ufl.edu/) will soon have a new interface and improved features for state and regional training and education coordinators interested in viewing data. The current NPDN training and education site has very limited information for users regarding reasons for creating an account, logging in, or completing the NPDN e-learning courses. The revised site includes learning objectives regarding all modules, dates of publication, and revision details. Several changes to the NPDN Training Site are anticipated...
Visit the NPDN homepage at www.npdn.org for more information on specific Program Area Committees. 

**Login and password required**

*Announcements ~ Membership information ~ Committee reports and meeting minutes ~ Documents and SOPs*

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**Operations Committee**

Rick Bostock, Committee Chair, University of California, Davis, Department of Plant Pathology

Ray Hammerschmidt hosted an Operations Committee conference call on August 26, 2010 and the following agenda items were discussed:

- Planning for Ops Comm meeting in Phoenix (coordinated with IT/Diagnosticians meeting)
- Update on contract renewals
- Lab accreditation update
- Data sharing
- Revisions to chain of communication/custody -- Sharon and Carla

The next conference call is scheduled for September 23, 2010.

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**Diagnostics Committee**

Karen L. Snover-Clift, Committee Chair, Cornell University, Department of Plant Pathology and Plant-Microbe Biology

Since the last newsletter, the Diagnostics Committee held a conference call on August 19, 2010. During this meeting, a number of issues were addressed. Please refer to the website, http://npdn-portal.ceris.purdue.edu/diagnostics, for complete minutes of this meeting.

- Introduced new chairman and secretary
- Reviewed APS town hall meeting review
- Basic technique workshop survey
- SOP updates
- Beltsville trainings
- 7th IT-Diagnosticians meeting, Phoenix, AZ
- Lab accreditation update

The next conference call will be held on Thursday, September 9, 2010.

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**Training and Education Committee**

Amanda Hodges, Committee Chair, University of Florida, Entomology & Nematology Department

The Training and Education Committee held a conference call on August 23, 2010 and the following agenda items were discussed on the call:

- New officers
- NPDN Training and Education subcommittee page
- NPDN e-Learning First Detector author guidelines
- Reviewing and revising modules - for chilli thrips and *Ralstonia*
- The Emerald Ash Borer (EAB) modules
- The Protect U.S. website
- The NPDN training site
- NPDN e-Learning Promotional Video Status
- Pathology module, Rachel McCarthy
- Sentinel Plant Network, Rachel McCarthy
- Entomology modules, Natalie Hummel

The next conference call is scheduled for September 27, 2010.
Exercise Subcommittee
Sharon Dobesh, Committee Chair, Kansas State University, Department of Plant Pathology

The Exercise Committee conducted a conference call on August 25, 2010 and the following agenda items were discussed:

• Full Scale Exercise report from Maryland and functional exercises in Delaware, Indiana, and Ohio
• SOP Changes
• ETKnet wrap-up
• South Dakota exercise upcoming

The next conference call is scheduled for Monday, September 13, 2010.

Visit the NPDN homepage at www.npdn.org for more information on specific Program Area Committees.

Announcements ~ Membership information ~ Committee reports and meeting minutes ~ Documents and SOPs

Congratulations new officers!

Diagnostics
Anne Vitoreli- Chairperson
Gail Ruhl- Secretary
Karen Snover-Clift- Program Area Manager

Epidemiology
Carla Thomas- Chairperson/Program Area Manager

Exercise
Sharon Dobesh- Chairperson/Program Area Manager

IT
Mike Hill- Chairperson
Eileen Luke- Program Area Manager

National Database
Nancy Gregory- Chairperson
Nancy Taylor- Secretary
Karen Snover-Clift- Program Area Manager

Training & Education
Dick Hoenisch- Chairperson
Sharon Dobesh- Secretary
Amanda Hodges- Program Area Manager

Web
Karen Scott- Chairperson/Program Area Manager
in September of 2010, and include the following:

- Release of a series of e-learning modules on the Emerald Ash Borer, *Agrilus planipennis*
- Revised NPDN Training Site interface (http://cbc.at.ufl.edu/)
- Updated and revised chilli thrips, *Scirtothrips dorsalis* module

The NPDN Training and Education Subcommittee is also pleased to announce the election of new officers, beginning on September 1, 2010. Richard Hoenisch, UC-Davis, WPDN Training and Education Coordinator, and Sharon Dobesh, Kansas State University, GPDN Training and Education Coordinator, will serve as the new chair and secretary of the subcommittee. Amanda Hodges, SPDN, will transition to the role of NPDN Training and Education Program Area Manager.

Interested in additional subcommittee updates? Minutes and other documents are posted on the subcommittee page (www.npdn.org/, NPDN login required).

**NPDN e-Learning Author Guidelines Revised**

The NPDN e-learning authorship guidelines, initially released in July of 2009, have been revised. A PDF of e-learning authorship guidelines is posted on the NPDN First Detector Information page www.npdn.org/first_detector. Contact Amanda Hodges achodges@ufl.edu if you have further questions.

**NPDN Partner Program Highlight—Protect U.S.**

The NPDN is a member of a new educational initiative, Protect U.S. http://protectingusnow.com/, the community invasive species network. Other Protect U.S. partners include the Regional IPM Centers, USDA-APHIS-PPQ, USDA-NIFA, the National Plant Board, local Cooperative Extension Offices, and other organizations involved in exotic species extension and regulatory activities. The NPDN e-learning platform (http://cbc.at.ufl.edu/) will be used for delivery of e-learning content associated with Protect U.S. NPDN Training and Education Subcommittee Members Rachel McCarthy, Cornell University, and Dr. Stephanie Bloem, USDA-APHIS-PPQ, have already served as reviewers for the narrated PowerPoint versions of the first two draft Protect U.S. modules:

- **Invasive Species: Why Care and Who’s Involved?**
  - Authors: Amanda Hodges and Stephanie Stocks, SPDN, Protect U.S., University of Florida/IFAS

- **Laurel Wilt and the Redbay Ambrosia Beetle, *Xyleborus glabratus***
  - Author: Carrie Harmon, SPDN, University of Florida/IFAS

Another subcommittee member, Dr. Natalie Hummel, has provided lead authorship for a recently submitted in-review narrated PowerPoint:
• Citrus Greening Disease (Huanglongbing) and the Asian Citrus Psyllid, *Diaphorina citri*
  ◦ Authors: Natalie Hummel and Don Ferrin, Louisiana State University AgCenter

There are a number of other Protect U.S. modules planned, and you can learn more by visiting the website (http://protectingusnow.com/). Questions about the program should be primarily directed to the Protect U.S. coordinator, Stephanie Stocks sstocks@ufl.edu. Ms. Stocks began working in the Entomology and Nematology Department at the University of Florida on July 1, 2010, as an Assistant-In, Extension Scientist. She has an M.S. in biology with a diverse background in educational design and classroom instruction. Ms. Stocks will lead authorship on several of the Protect U.S. modules, coordinate the review of other modules, and provide leadership for e-learning conversion. As she will be working extensively with the NPDN e-learning platform, Ms. Stocks will also provide some additional end-user support for NPDN Training and Education programmatic efforts.

Funding for the Protect U.S. educational initiative has been provided by Farm Bill Section 10201, FY09 and FY10. Funding administered by USDA, NIFA as cooperative agreements with SPDN, University of Florida/IFAS and the North Central IPM Center, University of Illinois.

Introducing - Amy Peterson Dunfee

Ray Hammerschmidt, Michigan State University, Department of Plant Pathology

Please join me in welcoming Amy Peterson Dunfee who recently joined the NCPDN as Training and Education Coordinator. Amy received her B.S. in Botany and M.S. in Plant Pathology from Michigan State University. Following the completion of her degrees, Amy worked at a Burlington, Vermont garden centerfielding plant diagnostic concerns. She also did site visits throughout Vermont and parts of New York and New Hampshire when ornamentals or fruit trees purchased from the garden center showed signs or symptoms of disease. Part of her duties also involved establishing scouting and pest management methods for a seven acre nursery and developing plant diagnostic educational material for use by employees of the garden center and customers.

Security Tip of the Month: Data Encryption

Michael Hill, Purdue University, CERIS

Last month I discussed the importance of backing up your data to prevent data loss. One way that data loss can occur is when your portable device (laptop, USB key, external hard drive) gets lost or stolen. This unfortunate event not only creates the opportunity for data loss, but also creates an opportunity for data breach. If a data breach occurs it can result in embarrassment to the organization, damage to the organization’s reputation, and/or reprimand to the employee.
that had their device lost or stolen if negligence is determined.

One of the best ways to prevent this type of data breach is to encrypt the sensitive information on your portable devices. A free tool that I recommend is TrueCrypt which is available at www.truecrypt.org. This tool allows you to create an encrypted container where you can place all of your sensitive files. TrueCrypt uses known strong cryptographic algorithms to ensure the data is protected. TrueCrypt is available for most modern platforms including Windows, Mac OS X, and Linux.

New Way to Keep PDIS Users Informed
Lee Duynslager, Michigan State University, Department of Plant Pathology

New PDIS Notifications from PDIS Programmers / Support Staff / PDIS Change Management Committee:

In order to keep users of PDIS updated with the latest information, programmers at Kansas State University have established a mailing list that includes PDIS Diagnosticians and Data Entry personnel. The list will be used to keep users informed about scheduled maintenance and unscheduled downtime for PDIS and might likely be used to send out information on newly implemented features.

The institution’s IT person should inform the PDIS team regarding new users, so that new users will get added to the listserv. This will allow PDIS users to more efficiently schedule their use of PDIS and allow the programmers and change management committee to communicate better to the PDIS user community.

Invitations to attendees will be sent by the regional directors soon. Please stay tuned to the newsletter for additional information in the coming months.

Save the Dates

NPDN IT/Diagnosticians/Epidemiology Meeting
Eileen Luke, Purdue University, CERIS

The IT/Diagnosticians/Epidemiology meeting will take place on October 12-13, 2010. The afternoon of Wednesday October 13th will be a combined meeting with the NPDN Operations Committee. Following on Thursday October 14th the NPDN Operations Committee will meet.

This year’s meeting will be held at the Courtyard by Marriott hotel located in Chandler, AZ. Reservations can be made by contacting the hotel at (480)855-8600 and mentioning NPDN to receive the group block rate of $99/night. Please make your reservations by Friday September 24, 2010 in order to ensure the group room rate. Additional information on the hotel can be found by visiting their website at www.Marriott.com/Phxcf.

You fly in to the Phoenix airport (Phoenix Sky Harbor airport) and the blue SuperShuttle rate for round trip is $44. You can make your shuttle reservation online at www.supershuttle.com.

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Sample Search from the Diagnostics Menu

Diagnosticians can search for a sample from the Diagnostics Menu (Diagnostics: <Lab Name> → Sample Search).

For example, you want to search for diagnostic samples with Host as “Beaked Hazelnut” that were submitted by “Jill Knight”...

Select “Host/Habitat” and “Submitter” criteria by checking on their respective checkboxes. Then type in the search keywords for each of the textbox fields provided in the “Selected Search Criteria Options” panel. Click on the search icon.

Note: If you want to search for samples from all labs, mark the “Include Samples from ALL Labs” option. If you want to include archived samples in the search results, mark the “Include Archive Samples in Results” option.

You can go to Sample Dashboard by editing the sample by clicking on pencil icon.

The search will return results based on the keywords entered.
If you wish to return to the sample search results page, click on ‘Close and Return to Search Results’ task.

Sample Search by using the filter function of a Datagrid

You can filter records by entering a text keyword in the filter textbox provided beneath the column headers.

For example, you want to search for samples with the following criteria:

-Submitter/Contact that starts with “Jack”
-Host that contains “fly”

For this, you need to enter “Jack” in the textbox provided below the Submitter/Contact header column and click on the filter icon and select “Starts With” option from the list.
Then you need to enter “fly” in the textbox provide below the Host header column and click on the filter icon and select “Contains” option from the list.

The Sample Queue will only show the filtered records.

3 Sample Search using Sample Navigator

Select a diagnostic sample from any of the queues (New & Pending, Preliminary, Complete, Archived) by clicking on the pencil icon.
The European Grapevine Moth
Richard Hoenisch, University of California at Davis, Department of Plant Pathology

The European Grapevine Moth (EGVM), *Lobesia botrana*, has been detected to date in 6 counties in California. EGVM is a serious pest of grape, *Vitis vinifera*, a preferred host, although it is reported from other cultivated and wild hosts as well. It was first described in 1775 from specimens from southern Italy. This moth spread into Austria and is now distributed throughout Europe, North and West Africa, the Middle East, and eastern Russia. More recently, it was inadvertently introduced to Japan. In April, 2008, it was reported in Chile and later in Argentina, the first occurrence in the New World. EGVM was first detected in September 15, 2009 in the Rutherford/
Oakville region of Napa County CA, marking its first occurrence in North America. Because the vines were going into winter dormancy at that time, it was hard to detect the presence of the EGVM. The EGVM pupates during the winter under the bark of the vine. With bud break, the pupae hatch and the adults begin to mate and lay eggs in the flower clusters of the vine. “Its unique biology causes significant damage to clusters and reduces yields. Eggs are laid singly and almost exclusively inside grapevine clusters and larvae feed on and inside developing flowers and berries. In the second generation, females lay their eggs individually on berries. Initially the larvae will form a silken tunnel by the cluster rachis, tie several berries together and feed on berry surfaces. Larvae penetrate mid-size berries where two berries touch.”

Detection at the adult stage is done by the California Department of Food and Agriculture (CDFA) and the USDA placing EGVM pheromone traps across the state and keeping careful record of the catches. “Grapes are our state’s top crop,” said CDFA Secretary A.G. Kawamura. “We have set an array of more than 40,000 traps statewide to determine exactly where the infestations exist. Detecting the pest is an important first step toward controlling it, and quarantines are the next step in the process. These regulations allow us to protect surrounding uninfested areas by preventing movement of the insects on crops, harvesting equipment and related articles.” In Sonoma County, there are 16 traps per vineyard square mile. If two or more adult male moths are caught in traps placed no further than three miles apart, then quarantine is established by CDFA. Quarantine is also triggered if more than one adult moth is caught in a single trap. The quarantine encompasses a five-mile radius from the trap(s) that caught moths. Trapping density increases to 25 traps per vineyard square mile inside a quarantine area. Traps are serviced every two weeks. As of May 1, 2010, there have been over 40,000 EGVM moths found in Napa County. Monica Cooper, Cooperative Extension Director for Napa Co., maintains an excellent website with updates on trapping and control of the EGVM at: http://cenapa.ucdavis.edu/newsletterfiles/newsletter2084.htm. A significant portion of Napa, Sonoma, Solano, Fresno, and Mendocino counties are currently under quarantine for this pest (see map page 19). UC IPM, Grape Pest management guidelines, describes the damage cause by EGVM: In May and June, first-generation larvae web and feed on the flower clusters. Second-generation larvae (July-August) feed on green berries. The first report of the second generation adult was made on June 10 from EGVM traps in Oakville and Rutherford, Napa County. Young larvae penetrate the berry and hollow them out, leaving the skin and seeds. Third-generation larvae (August-September) cause the greatest damage by webbing and feeding inside berries and within bunches which become contaminated
with frass (excrement). Third generation larvae can cause the most damage to clusters, preventing them from being harvested for wine and table grape production. Larvae penetrate and feed on ripening fruit immediately after hatching. Additionally, feeding damage to berries after veraison exposes them to infection by Botrytis and other secondary fungi such as Aspergillus, Alternaria, Rhizopus, Cladosporium, and Penicillium. Secondary pests such as raisin moth (Cadra figulilella), fruit flies, and ants may also be attracted to damaged berries.”

Previously quarantined areas in Napa, Solano and Sonoma counties are expanding by approximately 900 square miles. New quarantine areas are being created in Fresno County (approximately 96 square miles) and in Mendocino County (approximately 140 square miles). The state’s total EGVM quarantine area now stands at approximately 1395 square miles. Maps are at: www.cdfa.ca.gov/phpps/PE/InteriorExclusion/egvm_quarantine.html

The EGVM has recently been detected in Monterey Co. (Soledad area) on May 10th and Merced Co. (Snelling) on May 13th. View the video on the home page demonstrating the size and number of EGVMs with Greg Clark www.cdfa.ca.gov/phpps/egvm/index.html. This site also has several links about the pest.

Control of EGVM: First it is imperative to know the life cycle of the EGVM. In fall, pupae overwinter under the bark of the vine. With warming temperatures coinciding with bud break, the adults emerge from the pupal stage under the bark and begin to mate. The adults fly at dusk when the temperature is 54°F or more, mating occurs in flight, and most females mate once per lifetime.

The fertilized female lays her eggs in grape flower clusters. She is also attracted to other flowers, especially olive. At this point mating disruption with pheromone traps confuses the mating cycle. ISOMATE®-EGVM pheromone dispensers use the insect’s own communication system to its detriment. In the wild, female moths release a sex pheromone into the air to attract male moths. Male moths detect the pheromone “scent” and follow it upwind to locate and then mate with the females. In plantings treated with ISOMATE®-EGVM dispensers, the dispensers emit, over a 120-180-day period, the same pheromone as the female moths. This small amount of additional pheromone confuses and disorients the male, delaying or preventing him from finding and subsequently mating with the female.

Sanitation of equipment will be critical to minimize movement of this insect from infested vineyards to non-infested vineyards and to avoid the spread to other regions of California. Equipment should be washed prior to leaving an infested property, preferably with a high pressure sprayer and hot water. This is especially important for all machinery and containers that come in contact with fruit during harvest. Larvae can hide in tight places, and fully formed larvae may form a cocoon and pupate in any protected place. When hiring an outside company to harvest fruit, verify that the contractor follows good sanitation practices. Loads will need to be covered during shipment to the winery, and winery waste that does not undergo fermentation will need to be composted.

### National Events

**September 20-24, 2010**

17th Ornamental Workshop on Disease and Insects

Hendersonville, NC

**October 12-13, 2010**

IT/Diagnosticians/Epidemiologists Meeting and

**October 13-14, 2010**

Operations Committee Meeting

Chandler, AZ

**December 1-3, 2010**

National CAPS Meeting

Kansas City, MO

**December 12-15, 2010**

ESA Annual Meeting

San Diego, CA

**November 6-8, 2011**

NPDN National Meeting

San Francisco, CA

### Regional Events

**October 19-20, 2010**

GPDN/SPDN Meeting

College Station, TX

**February 22-24, 2011**

NPDN Meeting

New Haven, CT