

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

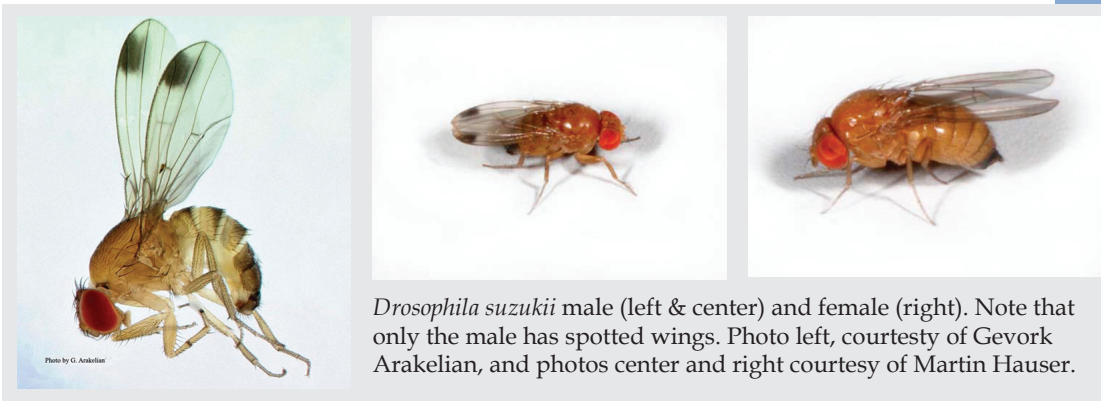
years of research, Dr. Tisserat was able to isolate an organism, and worked with an entomologist, Dr. Whitney Cranshaw, who identified an insect vector. Dr. Tisserat named the disease, thousand cankers disease (TCD), due to the numerous cankers produced by the sustained introductions of the fungus. The 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. 🌿

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.¹ The reports note that the larvae are found in ripe but undamaged looking fruit. The skin of the fruit has small holes resembling ovipositor



Drosophila suzukii male (left & center) and female (right). Note that only the male has spotted wings. Photo left, courtesy of Gevork Arakelian, and photos center and right courtesy of Martin Hauser.

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.

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

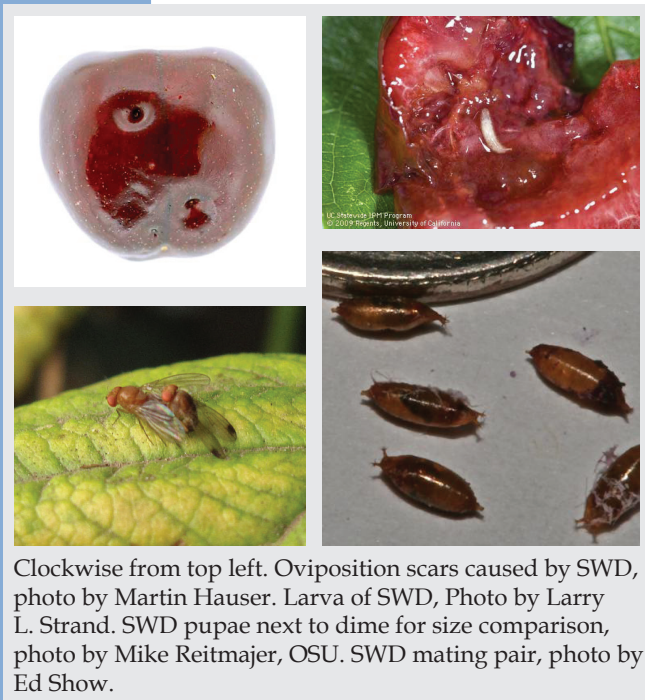
Infestation in cherry initially is manifested by scars in the fruit surface left by “stinging” (ovipositing) females. As egg hatch time is very short (about 1 day), larvae soon begin feeding inside the fruit. Within as little as 2 days, the fruit begins to collapse around the feeding site. Thereafter, 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/>. 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>.

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.



Clockwise from top left. Oviposition scars caused by SWD, photo by Martin Hauser. Larva of SWD, Photo by Larry L. Strand. SWD pupae next to dime for size comparison, photo by Mike Reitmajer, OSU. SWD mating pair, photo by Ed Show.

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

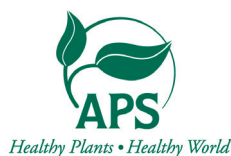
effective. A compressed air sprayer will give more reliable coverage than a hose end sprayer.¹ Before making a chemical application, be sure the product is registered for your crop. The permissible rate of application is subject to change, so consult the label and all updates before application.

¹ Dreves, A.J., Walton, V. Fruit fly, "Spotted Wing Drosophila," identified in wine grapes" Oregon State University, Extension Service News. October 13, 2009.

² Caprile, J., Flint, M.L., Bolda, M.P., Coates, W.W., Grant, J.A., Zalom, F.G., Van Steenwyk, R. Spotted Wing Drosophila, *Drosophila suzukii*: A New Pest in California. University of California, UC IPM Online. June 18, 2010. www.ipm.ucdavis.edu/EXOTIC/drosophila.html

³ Steck, G.J., Dixon, W, Dean, D. "Spotted Wing Drosophila, *Drosophila suzukii* (Matsumura) (Diptera: Drosophilidae), a fruit pest new to North America." Florida Department of Agriculture and Consumer Services. Division of Plant Industry. 2009. www.doacs.state.fl.us/pi/enpp/ento/drosophila_suzukii.html

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



Jim Stack and Lee Duynslager at APS. Photo by Karen Scott, Cornell University.



Visitors at the NPDN booth at APS. Photos by Karen Scott, Cornell University.

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. 🌿

Diagnostic Updates



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,



Cankers can be seen by carefully shaving off the outer bark. Note how they extend beyond the beetle galleries and coalesce to blight large, irregular areas of the phloem. *Geosmithia* can be isolated from anywhere in the necrotic phloem.

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 thermotolerant 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 $\frac{1}{2}$ 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.

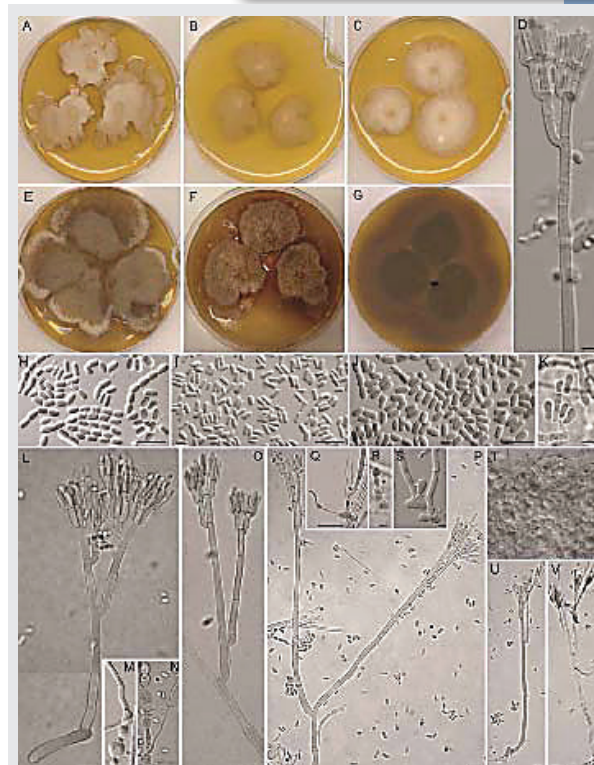
Species- specific PCR primers have not been developed for this *Geosmithia*. One reason is that this fungus can easily be identified based on morphological characteristics and the ease by which it can be isolated from diseased tissue. Look for a buff-colored colony on PDA or MEA, penicilliate conidiophores, 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. 🌿



The bark has been completely removed from this branch to show the extent of cankering. However, most of the damage is in the phloem, so I have removed most of the necrotic tissue by shaving this deep. Note the white sporulation of *Geosmithia* in the coalescing cankers (right side of picture).



Typical colony morphology of *Geosmithia* growing out of bark chips on $\frac{1}{4}$ strength PDA.



Geosmithia from *Juglans nigra*. Photo courtesy of Miroslav Kolařík Institute of Microbiology; Czech Republic.

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-CPHST-NGBTL. If you are interested in participating in any of these workshops please contact Karen Snover-Clift at kls13@cornell.edu. 🌿

Training and Education

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

OPERATIONS COMMITTEE

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.

DIAGNOSTICS COMMITTEE

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.

EDUCATION COMMITTEE

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



Training and Education, continued from pg 8...

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 ahodges@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



Amy Peterson Dunfee is the new Training and Education Coordinator for the NCPDN.

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. 🌿

IT News

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. 🌿

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/Phxcl.

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.

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

New Way to Keep PDIS Users Informed

Lee Duynslager, Michigan State University, Department of Plant Pathology

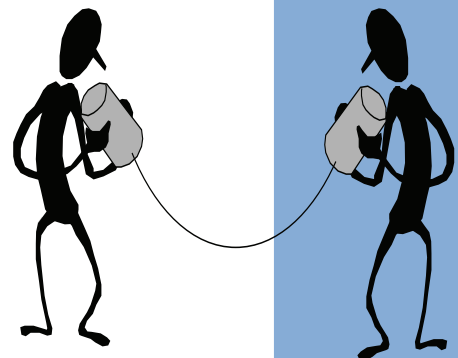
New PDIS Notifications from PDIS Programmers / Support Staff / PDIS Change Management Committee:

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 listserve. 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. 🌿

PDIS Users -
Check this out!



Sample Search in PDIS 2.0

Judy Dizon, Kansas State University, Department of Plant Pathology


There are three ways to conduct a sample search in PDIS 2.0. Search from the Diagnostics Menu, search by using the filter function of a Datagrid, and search using Sample Navigator.

1


Sample Search from the Diagnostics Menu

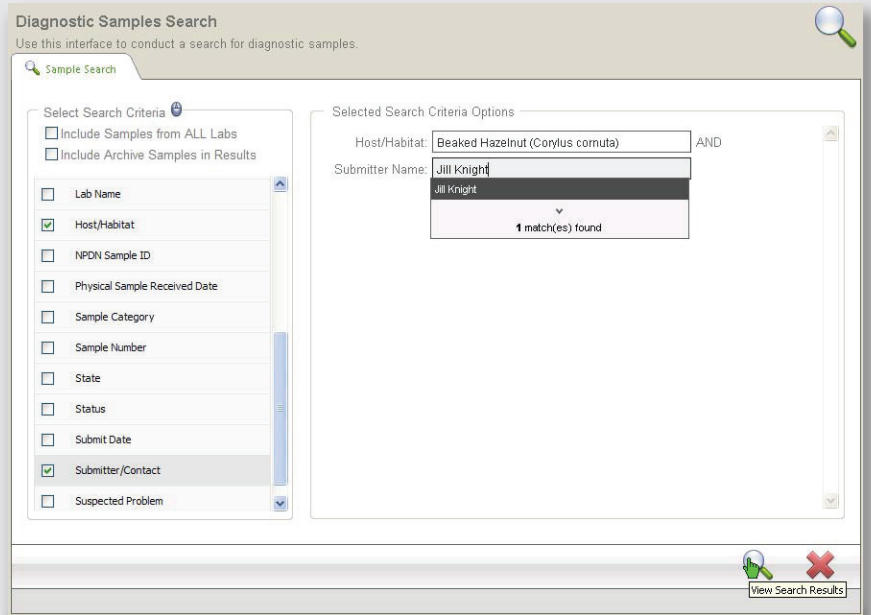
Diagnostics can search for a sample from the Diagnostics Menu (Diagnostics: <Lab Name> → Sample Search).

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.



Diagnostic Samples Search

Use this interface to conduct a search for diagnostic samples.

Sample Search

Select Search Criteria

- Include Samples from ALL Labs
- Include Archive Samples in Results
- Lab Name
- Host/Habitat
- NPDN Sample ID
- Physical Sample Received Date
- Sample Category
- Sample Number
- State
- Status
- Submit Date
- Submitter/Contact
- Suspected Problem

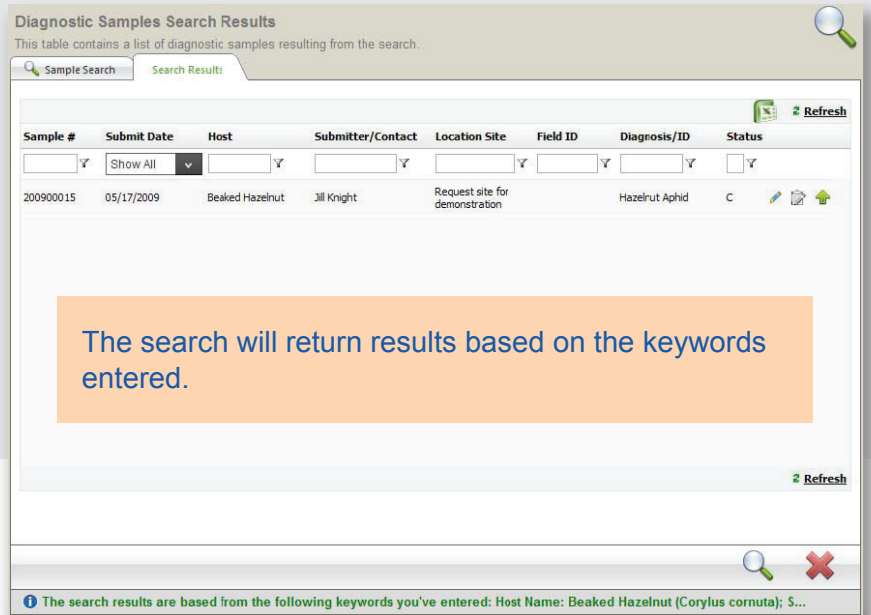
Selected Search Criteria Options

Host/Habitat: Beaked Hazelnut (Corylus cornuta) AND

Submitter Name: Jill Knight

1 match(es) found

View Search Results



Diagnostic Samples Search Results

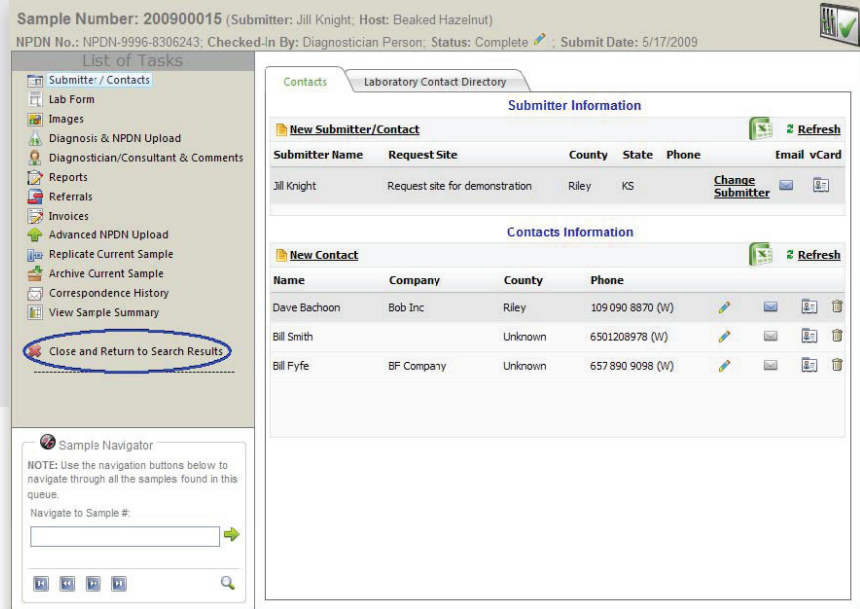
This table contains a list of diagnostic samples resulting from the search.

Sample #	Submit Date	Host	Submitter/Contact	Location Site	Field ID	Diagnosis/ID	Status
200900015	05/17/2009	Beaked Hazelnut	Jill Knight	Request site for demonstration		Hazelnut Aphid	C

The search will return results based on the keywords entered.

The search results are based from the following keywords you've entered: Host Name: Beaked Hazelnut (Corylus cornuta); S...

If you wish to return to the sample search results page, click on 'Close and Return to Search Results' task.



2

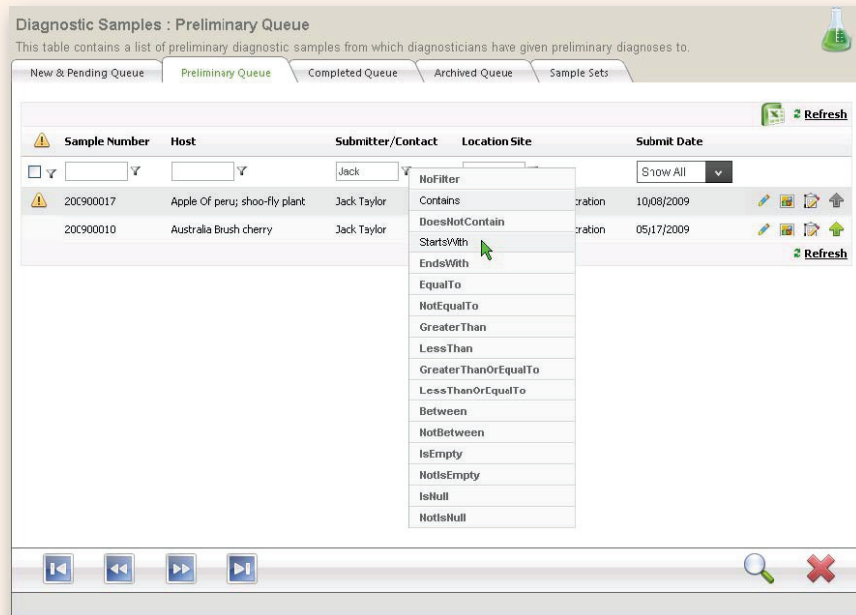
Sample Search by using the filter function of a Datagrid

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:

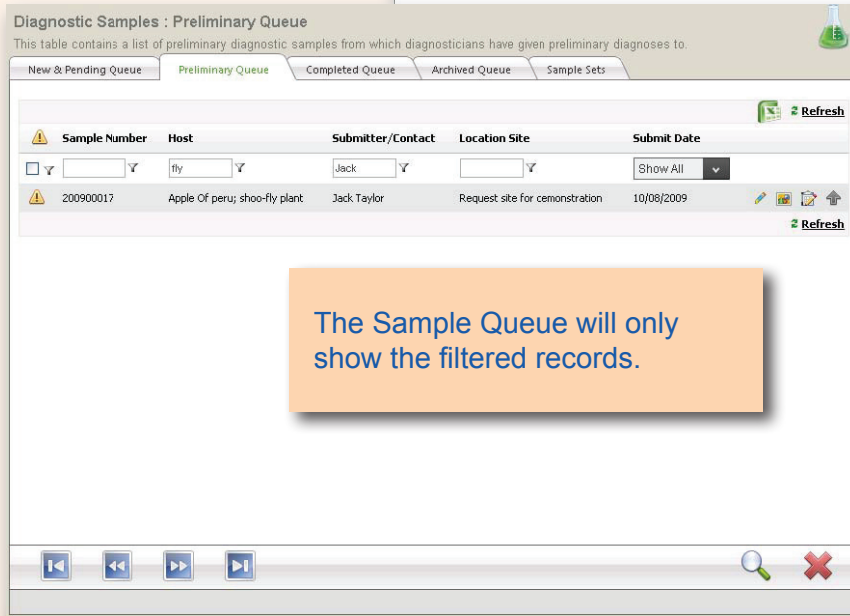
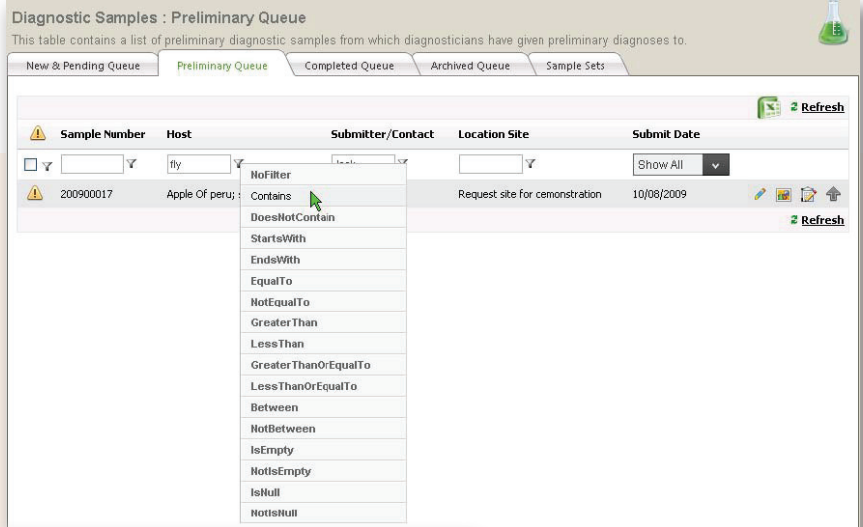
- Submitter/Contact that starts with "Jack"
- Host that contains "fly"

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.



Search, Datagrid
continued...

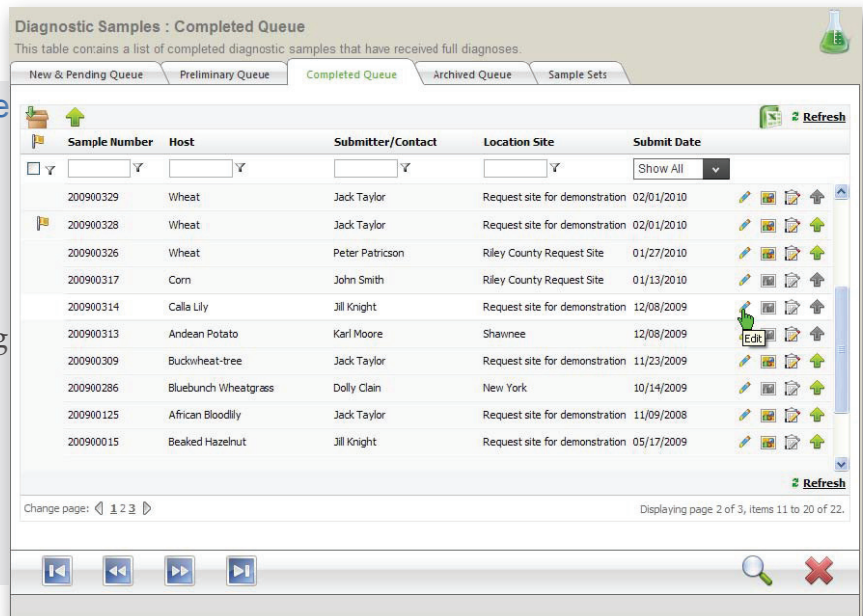
Then you need to enter "fly" in the textbox provide below the Host header column and click on the filter icon and select "Contains" option from the list.



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.



Search using Sample Navigator continued...

Sample Number: 200900314 (Submitter: Jill Knight; Host: Calla Lily)
 NPDN No.: NPDN-9996-8680183; Checked-In By: Diagnostician Person; Status: Complete; Submit Date: 12/8/2009

List of Tasks

- Submitter / Contacts
- Lab Form
- Images
- Diagnosis & NPDN Upload
- Diagnostician/Consultant & Comments
- Reports
- Referrals
- Invoices
- Advanced NPDN Upload
- Replicate Current Sample
- Archive Current Sample
- Correspondence History
- View Sample Summary
- Close Current Sample Dashboard

Contacts Laboratory Contact Directory

Submitter Information

Submitter Name	Request Site	County	State	Phone	Email	vCard
Jill Knight	Request site for demonstration	Riley	KS			

Contacts Information

Name	Company	County	Phone
Bill Smith		Unknown	6501208978 (W)

Diagnostic Samples Search Results

This table contains a list of diagnostic samples resulting from the search.

Sample #	Submit Date	Host	Submitter/Contact	Location Site	Field ID	Diagnosis/ID	Status
200900367	03/03/2010	Blackroot	Jill Knight	Request site for demonstration		Phytophthora Root Rot	Pr
200900365	03/02/2010	Household; Domestic dwellings	Jill Knight	Request site for demonstration		Eggplant Fruit Borer	C
200900364	03/02/2010	Eggplant	Jill Knight	Request site for demonstration			C
200900363	03/02/2010	Leafy Spurge; wolfs milk	Jill Knight	Request site for demonstration			Pe
200900362	03/02/2010		Jill Knight	Request site for demonstration			Pe
200900361	03/02/2010	Adam's Needle	Jill Knight	Request site for demonstration			C
200900336	02/08/2010	Wheat	Jill Knight	Request site for demonstration		Basal Glume Rot (Wheat)	C
200900336	02/08/2010	Wheat	Jill Knight	Request site for demonstration		Bud/wheat Downy Mildew	C

Change page: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 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2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034 2035 2036 2037 2038 2039 2040 2041 2042 2043 2044 2045 2046 2047 2048 2049 2050 2051 2052 2053 2054 2055 2056 2057 2058 2059 2060 2061 2062 2063 2064 2065 2066 2067 2068 2069 2070 2071 2072 2073 2074 2075 2076 2077 2078 2079 2080 2081 2082 2083 2084 2085 2086 2087 2088 2089 2090 2091 2092 2093 2094 2095 2096 2097 2098 2099 2100 2101 2102 2103 2104 2105 2106 2107 2108 2109 2110 2111 2112 2113 2114 2115 2116 2117 2118 2119 2120 2121 2122 2123 2124 2125 2126 2127 2128 2129 2130 2131 2132 2133 2134 2135 2136 2137 2138 2139 2140 2141 2142 2143 2144 2145 2146 2147 2148 2149 2150 2151 2152 2153 2154 2155 2156 2157 2158 2159 2160 2161 2162 2163 2164 2165 2166 2167 2168 2169 2170 2171 2172 2173 2174 2175 2176 2177 2178 2179 2180 2181 2182 2183 2184 2185 2186 2187 2188 2189 2190 2191 2192 2193 2194 2195 2196 2197 2198 2199 2200 2201 2202 2203 2204 2205 2206 2207 2208 2209 2210 2211 2212 2213 2214 2215 2216 2217 2218 2219 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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



European grapevine moth female, photo by Jack Kelly Clark, courtesy of UC Statewide IPM Program.

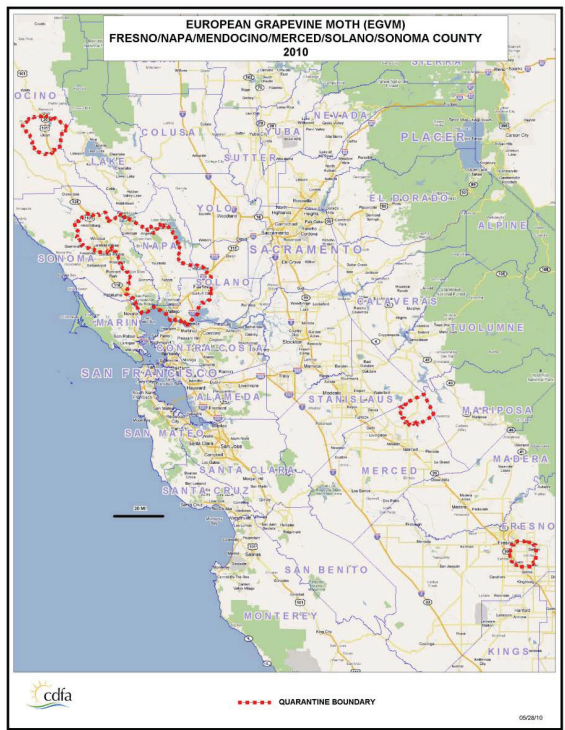
generation larvae (August-September) cause the greatest damage by webbing and feeding inside berries and within bunches which become contaminated

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

are at: www.cdffa.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.cdffa.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.



Map showing quarantined counties for EGVM.

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



EGVM larva in the grape flower cluster before bloom. Note the webbing. Photo by Bolezni.

The result is a reduction of mating success and suppression of the target pest population. There is much more to learn about the biology and control of this new pest. See http://cenapa.ucdavis.edu/newsletterfiles/European_Grapevine_Moth21006.pdf and http://cenapa.ucdavis.edu/newsletterfiles/European_Grapevine_Moth21060.pdf

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. 🌱

Upcoming Events

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
NEPDN Meeting
New Haven, CT