

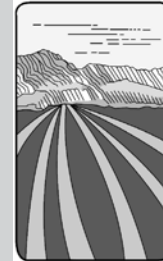
Nursery News

September 2009

Horticulturists:

Debbie Driesner Dan Hawks Lisa Rehms Eric Reusche
John Ekberg Karl Puls Sherree Lewis Scott Rose
Dennis Magnello Gary Garth Bev Clark Susan Schouten
Christy Brown Melissa Boschee

Gary McAninch, program supervisor; Jan Hedberg, lead horticulturist;
Sue Nash, program assistant; Kim Lawson, office specialist;
Christy Brown and Bev Clark, editors.



Oregon
Department
of Agriculture

Phytophthora ramorum: the road ahead

By Jan Hedberg and Christy Brown, ODA horticulturists

It was in December 2004 that the USDA issued the federal order regulating California, Oregon and Washington for Phytophthora ramorum. The Oregon Department of Agriculture (ODA) in cooperation with Oregon nurseries, now has more than five years of experience working to ensure that customers in other states do not receive infected plants. We have all done an excellent job meeting the challenges of this disease, but the road ahead could prove to be rocky.

From the start, other states were understandably wary that *P. ramorum* could be spread through the nursery trade. The southeastern states in particular have a diverse flora comprised of many known host species, including an understory of shrubs such as *Kalmia* and *Rhododendron*, and a canopy including many valuable oak species.

The federal order in effect protects our nursery industry from possible state-level quarantines. The federal order also provides one of the best safeguarding programs against the spread of *Phytophthora ramorum* by the regular inspection, testing and certification of susceptible host plants.

The certification system has a remarkable success rate for ensuring that plants shipped out-of-state are free of *Phytophthora ramorum*. Thousands of shipments of nursery stock have been safely shipped over the last five years. ODA *P. ramorum* survey crews find less plant material symptomatic of *Phytophthora* diseases than in previous years. However, there have been several occasions when plants shipped out of Oregon have tested

positive for *P. ramorum*. There is growing resistance from some states in the east. Twelve concerned states have submitted a letter to the USDA asking for exemption to the federal order. If such an exemption were granted, these states would be free to implement their own quarantines regarding *P. ramorum*. In the worst-case scenario, this could severely limit shipments of host material from Oregon. The recent notification rule from South Carolina (see article on page 8) might be a sign of changes coming.

To ensure that the federal order remain the standard for all intrastate trade it is vital that nurseries carefully abide

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by their signed compliance agreements for *Phytophthora ramorum*. Also, any measures that can be taken to reduce *Phytophthora* species at nurseries should be implemented. Below are four things to consider that will help protect Oregon's intrastate shipping industry.

1. Record keeping

Consider making improvements to the way your records are kept. The timely tracking of all shipments from the source to the final destination is critical to containing any possible infection. From our observations, record keeping is probably the number one facet of the *P. ramorum* compliance agreement that could stand improvement. Should your nursery be found with *P. ramorum* infected plants, you would be required to provide trace back and trace forward information on all host and associated host plants (HAP) for the past 12 months. The information would need to be supplied within 10 working days of disease confirmation. It should be in a form that is not only transmittable, but also searchable (an electronic spread sheet is encouraged). We have found that if the information can be searched and sorted easily, the USDA will kindly segregate records so that each state's regulatory authority only receives information pertinent to their state. The records should include; receivers name, address and contact information, date of the shipment, what material was shipped and how many were sent. Remember that fungicide records are also required.

2. Certification

All plants sold out-of-state must come from a nursery with a signed compliance agreement and federal shield. Special attention needs to be paid to buy-in plants. Many nurseries that operate in Oregon do not ship out-of-state and therefore have not received the mandatory level of testing required for a federal shield. It is okay to buy plants from these nurseries, but that plant material needs to be segregated, safeguarded and held from sale until it has been inspected and tested by the ODA. Nurseries that sell to intrastate shippers on a regular basis need to request that they be added to the federal testing program so that they can get their own federal shield.

3. Knowledge is power

The *Phytophthora* online course (<http://oregonstate.edu/instruct/dce/phytophthora>) was developed by Oregon State University in cooperation with the ODA and the USDA. The course is free and will give the user a good understanding of the biology of *Phytophthora* diseases in general and information about *P. ramorum* disease in particular. One third of the course deals with techniques to stop or slow the spread of *Phytophthora* in your nursery. Even if you feel knowledgeable about this disease you are sure to learn something new. It is advised that as many nursery workers as possible take the course. Even workers that aren't in the position to make big decisions can still affect the overall sanitation of the nursery in the small daily decisions they make. An optional exam is available at the end of the course for \$100. The course has also been translated into Spanish.

4. Take it up a notch

Complete a sanitation audit of your nursery and implement a control plan. The easiest way to do this is to join the ODA Grower Assisted Inspection Program (GAIP) by calling Melissa Lujan at 503-510-5529. The GAIP program has made *Phytophthora* control more systematic by identifying points of contamination in the nursery. For example, you should consider such things as sanitized nursery containers, sanitary potting media storage, disease-free water supplies, and clean buy-in plants. Best management practices are recommended to mitigate areas that are risky. The GAIP program is based on recent research on the spread of *Phytophthora* in nurseries. It puts to use the information that is provided in the *Phytophthora* online course.

In the face of uncertainty there is still a lot of good news about *Phytophthora ramorum* control in our nurseries. In recent years a lot of money and time has been devoted to research. As a result we know much more about the spread of the disease and it's genetic diversity. The critical control points outlined in the online course and used in the GAIP program can make real differences in the amount of disease and plant loss in your nursery. Ultimately, if we can't find *Phytophthora* in your nursery, then we can't find *Phytophthora ramorum* in your nursery either.

Testing protocols, laboratory equipment and skills have also improved with the help of national research done in the last five years. You should feel assured that our tests for the disease are accurate. The Salem plant health laboratory passes a strenuous certification test each year. If we detect *P. ramorum* in a sample, we rerun the test and

Phytos enter the digital age

If your nursery ships plants out of the United States, then this article is for you!

There is a new online system for requesting and producing a Federal Phytosanitary Certificate (FPC, also known as a 'phyto'). The system is called PCIT (Phytosanitary Certificate Issuance and Tracking System). Its use and acceptance has grown rapidly across various commodities since it was first deployed in December 2005.

PCIT is a national online system administered by the United States Department of Agriculture and Plant Health Inspection Service (USDA APHIS). Exporters electronically submit an application for a FPC online. ODA staff then access the system, complete the application and print out a FPC on special dedicated paper issued by the USDA. If an import permit is required for the shipment, the shipper must scan and attach that import permit into PCIT when they submit their request. Currently all federal agencies that issue FPCs *require* the use of PCIT. Eventually, the old handwritten phyto certificates will be phased out by all state agencies as well. The online system can be accessed at: https://pcit.aphis.usda.gov/pcit/faces/pcit_signIn.jsp

Oregon nurseries that ship internationally are slowly coming onboard and becoming regular and familiar users of PCIT. Currently there are 25 nurseries using

the system, 3 Christmas tree growers (486 phytos issued last year) and 10 lumber companies. Most agree that they really like the PCIT system. The ODA is planning to have all nurseries with 10 or more international shipments per year on PCIT by the summer of 2010.

USDA APHIS will start charging a fee, called the "pass-through" fee, to issue FPCs. The charge for nurseries utilizing PCIT will be \$3.00 per phyto as opposed to \$6.00 for handwritten phytos effective October 1, 2009 through September 30, 2010. On October 1, 2010 the fee will increase to \$6.00 for PCIT-issued phytos and \$12.00 for handwritten phytos. This USDA fee is in addition to the \$15.00 fee charged by the ODA to issue a FPC. Eventually USDA APHIS will collect both the federal and state fees with PCIT through a secure online account. Nurseries will deposit money into their PCIT account and the fees will be withdrawn, as with a debit, as services are rendered.

This just in!

ODA will no longer be able to bill for phytos because of the way the USDA will collect fees for PCIT. Starting October 1, 2009, nursery inspectors will be required to collect phyto fees at the time that handwritten certificates are issued. This new arrangement will be quite a hassle for nursery inspectors, as well as nurseries, and you may find that your inspector has an increased interest in getting you on the PCIT system as soon as possible.

P ramorum continued from page 2

get a third positive confirmation from the official USDA laboratory in Beltsville, Maryland prior to contacting the nursery. The ODA is sensitive to the fact that a positive test result has hard economic consequences.

We hope we never find *P. ramorum* in a nursery, but if we do, it is in everyone's best interest to find it quickly and make sure it is not shipped. By informing yourself about *Phytophthora ramorum*, what is required by the compliance agreement you have signed, and the regulations that will come into effect if your nursery is found to be positive with the disease, you can help limit the negative impact at your nursery and to the Oregon nursery industry.

Buddleja revived

More changes are coming this fall for the popular nursery plant Buddleja. Oregon Department of Agriculture (ODA) plans to amend the noxious weed quarantine, allowing certain sterile hybrid varieties of Buddleja to be grown and sold in Oregon. Plant labels specifying the approved varieties will also be required. ODA encourages those with an interest to review the proposed changes and submit comments. Proposed changes to the quarantine, label requirements, and instructions for submitting comments are found in the Buddleja amendment proposal at http://oregon.gov/ODA/PLANT/NURSERY/buddleja_amend.shtml

Notification rules

Our nursery inspection program works most efficiently when we know what kind of plant material is entering the state and when. Such information, supplied through notification rules, helps us protect the Oregon nursery industry from the introduction of exotic pests, diseases and weeds. Notification gives ODA horticulturists the opportunity to inspect shipments of high-risk nursery stock shortly after it arrives. Inspections are conducted to confirm that quarantine requirements have been met and to help assure that no hitchhiking pests have been included.

There is frequent confusion about the notification requirements. Sometimes there is uncertainty about which party is responsible for notification. Other times the distinction between pre-notification and post-notification is lost. Pre-notification (required before the shipment arrives) sometimes identifies a certification problem before the plant material has left the shipping nursery. This allows for corrections to be made and prevents the material from being held once it arrives. Nurseries should review the notification rules to determine if their out-of-state plant purchases fall under these regulations.

1. Notification of trees and shrubs (pre-notification or post-notification)

This is the broadest reaching notification rule. It was adopted in 2004 as a reaction to *Phytophthora ramorum*, but is very useful in assuring compliance with a range of quarantines. Recipients of woody plant material (trees and shrubs) imported into the state of Oregon from any out-of-state source are required to notify the ODA. Notification must be received by the ODA no earlier than two business days prior to arrival of the shipment and no later than two business days after the plants arrive. The ODA will contact nurseries within one business day of receipt of notification if the nursery stock requires inspection. Reported shipments without all of the required information will be held until that information is obtained. A fax load or order list with the certification supplied by the grower is an easy way to comply with this rule. Note that it is the responsibility of the receiving nursery to provide the notification.

2. Japanese beetle quarantine (pre-notification and post-notification)

Advance notification is required for any nursery stock with roots being shipped into Oregon from states infested with Japanese beetle (JB). An official from the shipping state must certify that the plants meet certain sanitation requirements to prevent the introduction and spread of JB. The certifying official is then responsible for notifying the ODA of the shipment. The shipper must remind the receiving nursery to hold the plants for inspection by the ODA. Lastly, the receiver must notify the ODA when the commodities actually arrive in Oregon. It should be noted that live Japanese beetles have been found upon inspection of certified incoming nursery stock. Without notification ODA personnel would not have been able to target the shipment and a possible JB infestation could have resulted.

For more information go to http://oregon.gov/ODA/PLANT/NURSERY/reg_jb.shtml

3. Grape nursery stock quarantine (pre-notification)

Advanced notification is required for all grape stock (*Vitis* spp.) being shipped into Oregon. An official from the shipping state must certify that the grape plants meet specific sanitary requirements. Written notification needs to be sent by the shipper at least one day prior to the shipment. The ODA may require that shipments be held until inspected and released.

For more information go to http://oregon.gov/ODA/PLANT/NURSERY/reg_pd.shtml

4. Blueberry nursery stock quarantine (pre-notification or post-notification)

Notification is required for blueberry plants (*Vaccinium corymbosum* and any other *Vaccinium* species shown to be a host of blueberry scorch virus) entering Oregon. An official from the shipping state must certify that the blueberry stock meets specific sanitary requirements. Written notification needs to be sent by the shipper. The ODA may require that shipments be held until inspected and released.

For more information go to http://oregon.gov/ODA/PLANT/NURSERY/reg_bsv.shtml

All notifications need to include the consignee's name and address, the shipper's name and address, the species and number of plants being shipped, and all official certification. Notifications must be mailed, faxed or e-mailed to: Administrator, Plant Division, Oregon Department of Agriculture, 635 Capitol Street NE, Salem, Oregon 97310, Phone: 503/986-4640, Fax: 503/986-4786, Email: quarantine@oda.state.or.us

Special surveys conducted by ODA this summer

The nursery program received federal funds to conduct the following surveys this summer.

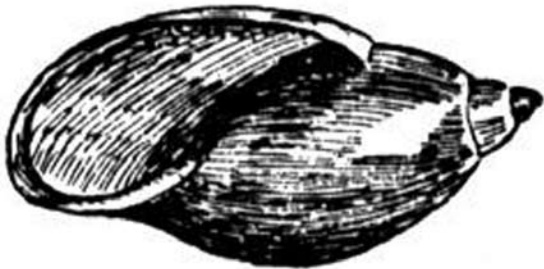
Amber snail survey

Plant shipments are increasingly being stopped by our trade partners due to the presence of amber snails. These mollusks are exotic to the United States, and have been introduced into this country from such places as Haiti and the Dominican Republic. They have established a toehold in the Pacific Northwest.

Previously it was thought that amber snails were only feeding on the algae associated with plants and their containers. They were not considered a pest of plants. Now evidence is suggesting otherwise, and eyewitnesses have seen them feeding on phormium, euonymus, and hibiscus.

Amber snails are extremely hard to identify visually, and it is unknown if there are more than one species found in Oregon. In order to know how to proceed with regulations and control measures it is important to know which species of snails are actually present and where they are found. A survey of amber snails in Oregon nurseries was conducted this summer. Samples were collected at twenty nursery sites around the state. The specimens were sent to a specialist at the University of Hawaii for DNA identification. Once the species are identified, further studies will be implemented to determine their potential threat to the nursery industry.

More information on these and other snails can be found at <http://oregonstate.edu/dept/nurspest/snails.htm>



Columbia root knot nematode (CRKN) survey

The ODA participates in an ongoing program to test soil associated with nursery stock for Columbia root knot nematode (*Meloidogyne chitwoodi*), a quarantine pest of significance to Canada. CRKN destroys plants with tubers. Potatoes are the most commonly known host, but they can also infest grasses and other ornamental plants. The nematode has never been found in Oregon nurseries to date, although some positive fields are known to exist in the eastern parts of the state associated with potato production. This year ODA nursery inspectors sampled soils from seven fields in their territory to again test for CRKN. Test results for the summer 2009 were all negative, allowing Oregon nursery stock to continue to be shipped to Canada.

Grape nursery disease survey

In 2007, several nurseries requested that the ODA survey certified grapevine nursery stock for viruses of regulatory concern. Washington State recently conducted a similar survey after a quarantine virus was detected in a shipment of Washington certified nursery stock.

Federal funding was used this summer to conduct a survey of Oregon's certified grapevine blocks. Grape leaves with petioles attached were collected and will be tested for grapevine virus A, grapevine leafroll-associated virus (GLRaV), grapevine fanleaf virus (GFLV) and tomato ringspot virus using ELISA test kits specific for the target viruses. If a positive sample is found, additional samples will be pulled and tested to confirm the diagnosis and verify how widespread the virus is within the block.

The goal of this survey is to maintain Oregon's "free from" status for viruses of regulatory concern. Recent reports of GLRaV in the northeastern part of the state, a suspicious mealybug (virus vector) in the south, and GFLV in northern California have raised the importance of this survey. Reinforcing the official visual inspections with periodic laboratory tests will help maintain continued acceptance of Oregon's official certification program by other states and countries.

Trading grapes

By Christy Brown, ODA Horticulturist

Grapes, particularly wine grapes, are one of the most valued cultural and economic crops in the world. But as luck would have it, grape plants are plagued by a litany of natural enemies. It's no surprise that regulations governing the trade of grape plants are some of the most strict and complicated in the business. This article will help sort out the details.

There are too many individual diseases and insect pests of grapes to give a thorough summary here, but there are some that stand out as being the most dangerous and widely regulated. Historically, one of the most important pest outbreaks on grapes began in 1860 in Europe. A tiny aphid-like organism called grape phylloxera was accidentally introduced from North America and spread throughout Europe. Grape phylloxera feed on leaves and roots of grape plants. The resulting damage causes root girdles that lead to severe decline or death of plants. North American grapes (*Vitis labrusca*) are fairly resistant to phylloxera but European wine grapes (*Vitis vinifera*) are highly susceptible. France in particular lost nearly 90 percent of all of its vines by the late 1800s. As a solution, grape plants throughout Europe were replaced with vines grown on North American rootstock.

More recently and closer to home, *Xylella fastidiosa*, the bacterium that causes Pierce's disease, gained a lot of attention in California. The disease has actually been in California since the late 1800s, but it didn't cause much of a problem until the 1990s. That was when a leafhopper called the glassy-winged sharpshooter was accidentally introduced into California from the southeastern United States. Pierce's disease was able to spread rapidly with the aid of this vector insect. The disease destroys the water-conducting xylem of grape plants, leading to plant death in one to five years. California mounted an extensive control effort against the sharpshooter that appears to be paying off. There are currently hotspots of Pierce's disease in Napa and Sonoma counties, and in other countries such as Mexico and Venezuela.

Another major concern for grape plant sanitation is viruses. Some resources claim that there are over 50 viruses known to infect grapes throughout the world. Viruses are especially worrisome because they can be difficult to detect, easy to spread, and difficult to control. Some grape viruses such as grapevine fanleaf virus (GFLV) and tobacco ringspot virus are vectored by nematodes (nepoviruses). Others such as grapevine leafroll-associated viruses (GLRaV) and corky bark disease are vectored by insects like leafhoppers and mealybugs. GLRaV is of special concern to Oregon at this

time. The virus stunts plants and can reduce crop yield by as much as 40 percent. While GLRaV has already spread to all grape-growing regions of the world, it has a limited distribution in the Pacific Northwest.

To complicate matters, a new insect vector called vine mealybug (*Planococcus ficus*) was recently introduced into California from Europe or Mexico. This mealybug is more effective in spreading GLRaV than other vectors, and also excretes much more honeydew than other mealybug species. The honeydew alone can ruin a grape harvest. Vine mealybug has rapidly spread through California since it was first detected in 1994, but it has never been found in Oregon. The ODA recently adopted an emergency quarantine order for vine mealybug on grapes being transported into Oregon for crushing or as table stock.

Summary of grape plant regulations

To start with, international trade in grape stock is highly restricted. Individual regulations vary by country but an import permit is nearly always required. Our principal nursery trade partner, Canada, will only permit grape stock from virus-indexed plants from the states of California, Oregon, and Washington. Oregon currently has 15 nurseries that are virus-certified every year and therefore have registered grape blocks that meet Canada's requirements. British Columbia also requires that plants be treated for nematodes and grape phylloxera. As for the European Union, importing grape plants is simply prohibited.

The United States controls grape vine health through the maintenance of foundation blocks that are regularly indexed for grape viruses. Foundation blocks serve the wine and grape industry by providing high quality



certified stock to growers. There are only two certified foundation blocks in the United States (University of California in Davis, and the NRSP5 facility associated with Washington State University in Prosser), although two other regional blocks (one at Cornell University in NY, and one in SW Missouri) may be added in the future. The only way that grape plants can be imported into the United States is through the Northwest Grape Foundation Service located in Prosser, WA, or through the USDA Plant Germplasm Quarantine Program in Beltsville, MD.

There are no federal regulations in the United States for trade of grape nursery stock among states, so individual states are free to adopt their own regulations. Five states with large grape industries have their own regulations for importing grape plants:

Oregon

Certification for freedom from glassy-winged sharpshooter and *Xylella fastidiosa* is required from regions where the insect is known to exist. Field grown grape plants are prohibited. Potting media must be treated for root pests such as vine mealybug. Plants must be certified free from dangerous pests and diseases. The ODA must be notified at least one day prior to shipment of grape plants into Oregon.

California

There is no general exterior quarantine on grape plants. Regulation is at the county level. Plants must be certified free from grape phylloxera, grape leaf skeletonizer, and glassy-winged sharpshooter into various counties. The Pierce's disease control program is in effect.

Washington

Grape plants must meet regulations for freedom from phylloxera and vine mealy bug. Plants must be tested for viruses (including GFLV, GLRaV, stem pitting and corky bark) through an official certification program. The Washington State Department of Agriculture must be notified prior to shipment of grape plants.

Idaho

Vitis vinifera (European wine grapes) need certification for freedom from virus diseases. All grape species need fumigation or heat treatment for pests harmful to grapes.

New York

Certification is required for freedom from GFLV, GLRaV, corky bark disease and the phytoplasma *Flavesence dorée*.

Online resources

Northwest Grape Foundation Service

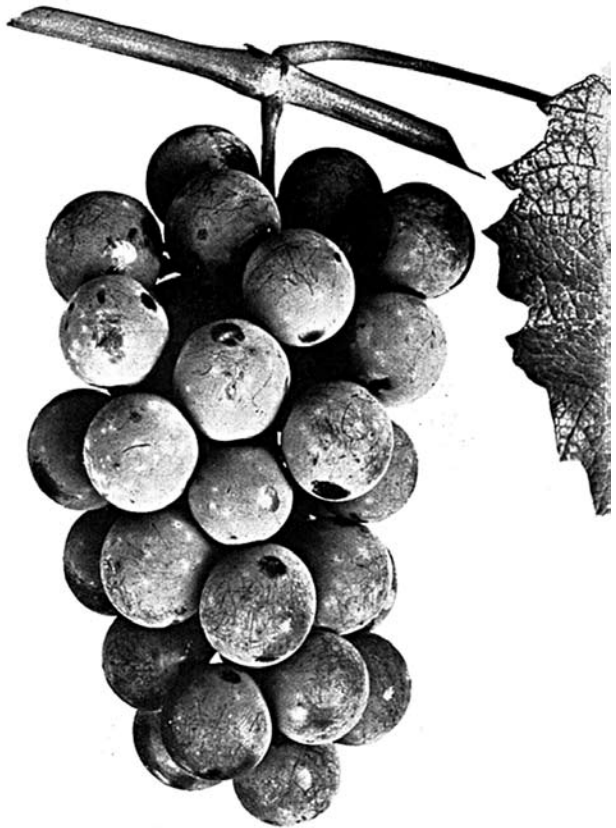
<http://nwgfs.wsu.edu/fai.html>

University of California, Davis, Foundation Plant Services

<http://fpms.ucdavis.edu/>

USDA Animal Plant Health Inspection Service, Plant Protection & Quarantine, Plant Germplasm Quarantine Program:

http://www-mirror.aphis.usda.gov/import_export/plants/plant_imports/quarantine/index.shtml



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South Carolina now requires a state phyto and prior notification

The state of South Carolina now requires a state phytosanitary certificate and prior notification for shipments of *Phytophthora ramorum* host and associated-host plant material. This new regulation went into effect June 26, 2009 and may expire March 21, 2010 unless re-approved or made permanent.

This regulation requires that a shipping nursery request a state phyto from their nursery inspector. This phyto must list the **type and quantity of plants, the shipper's address, the name and address of the recipient, the date and results of the last *P. ramorum* test, and contact numbers of the shipper and recipient.**

Additionally, pre-notification of the shipment must be sent at least 24 hours prior to arrival of shipment. Notification may be made by mailing, faxing or e-mailing a copy of the state phytosanitary certificate to:

Clemson University Department of Plant Industry

511 Westinghouse Road

Pendleton, SC 29670

FAX: 864-646-2135

E-mail: nedward@clemson.edu

Failure to comply with these requirements may result in commodities being returned to point of origin or destroyed at the expense of owner.