Nursery News

October 2005

Oregon Department of Agriculture

Pest alert—resistant whitefly

Contributed by Robin Rosetta, OSU

Growers in Oregon should be aware of a potential new pest, the Q biotype whitefly. This whitefly is less susceptible to many of the insecticides currently used to manage the A and B biotypes of whitefly, Bemesia tabaci [= Bemesia argentifolii]. An ongoing industry-coordinated survey has resulted in identification of B. tabaci in several states in the United States with more state pest detections likely. Its presence has so far been confirmed in Arizona, California, Georgia, Michigan, New York, and Oregon.

Dan Hilburn, Administrator of the Plant Division at the Oregon Department of Agriculture (ODA), emphasizes that this is not a quarantine pest but rather a management issue. The ODA wants growers to be aware of the possible presence of the whitefly and be prepared if they have to adjust their management practices. An educational meeting was held on Wed. Oct 19 at Oregon State University's North Willamette Research and Extension Center to inform greenhouse growers about the whitefly. A pest alert has been developed with information and resources for growers: http://oregonstate.edu/dept/nurspest/Q-biotype%20alert.pdf. Further educational activities are planned.

The Oregon Association of Nurseries (OAN) is supporting efforts to inform Oregon's greenhouse growers. John Aguirre, the Executive Director of the OAN, has organized a cooperative effort of the OAN, ODA, OSU, and interested growers to educate the Oregon greenhouse and nursery industry to this new challenge.

"It's clear that many greenhouse growers will have to adjust if they want to achieve effective control for this pest and to avoid costly crop losses. Traditional whitefly spray programs won't work."

It is important for growers to be aware of their whitefly populations and be ready to modify their management of these pests should they encounter problems. Growers in Europe, Oregon and other states with populations of Q biotype report an ability to manage this pest using a combination of tactics and an emphasis on resistance management based on the current knowledge of resistance of the Q biotype.

One of the best sources of information is the Web site developed by the Technical Advisory Committee (TAC) http://www.mrec.ifas.ufl.edu/LSO/bemisia/bemisia.htm.

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Muddled by mildew?

Scott Rose—ODA horticulturist

Got mildew? They're not all the same. Downy mildew is showing up more frequently. This pathogen differs significantly from powdery mildew. Powdery mildews are true fungi. Downy mildews are fungus like organisms more closely allied with water molds such as phytophthora and pythium. For the most part, powdery mildews are quite obvious. We have all seen them. The fungus may appear on the upper and lower leaf surface and other soft succulent plant parts. In contrast, downy mildew generally shows up on the underside of leaves. This does not mean that downy mildew is restricted to the leaves. Some have concluded that downy mildew can go systemic and be associated with buds, the crown, stems and even seed. Downy mildew fruiting bodies can erupt from leaf stomata. This is not the case with powdery mildews, which tend to be more superficial. This is probably why powdery mildews are more easily controlled with common fungicides.

Both powdery mildew and downy mildew can overwinter on abscised plant parts. Fallen plant debris can increase the likelihood that both of these diseases will carry over to the next year. Distinguishing between the two distinct pathogens is paramount in deciding what management strategy is necessary to bring these diseases under control.

Mildews, in general, are somewhat specific in regards to the hosts they attack. Some species infect a number of plants in their related plant families. This is not always the case. In some instances a specific pathogen only attacks a single species of plant. Downy mildew of alyssum, *Peronospora parasitica*, may infect closely related plants like stock and cabbage, but will not infect roses, though roses are susceptible to their own downy mildew, *Peronospora sparsa*. Downy mildew of hops, *Pseudoperonospora humuli*, does not appear to cross over to any other type of plant.

Environmental conditions favorable to mildews

Powdery mildews generally favor dryer conditions. Downy mildews develop better under moist regimes. Cool moist conditions are necessary for downy mildews. Downy mildews need a relative humidity greater than 85% and temperatures are ideal when in the 60s. Once the temperatures increase consistently and relative humidity falls below 85% the disease's ability to spread is significantly reduced. Many powdery mildews are spread by the wind whereas downy mildews spread by splashing water. In some instances, a film of water suppresses powdery mildew development. So, to help control downy mildew, eliminating or reducing overhead watering, if possible, is useful in managing the disease. Unfortunately, our spring rains and temperatures can be ideal for the disease. Also, greenhouse conditions can favor both diseases under certain circumstances.

Cultural control

When possible, plant varieties that are more resistant. Learn what the various pathogens symptoms are and avoid infected stock. In some instances precautionary treatments are warranted. Some downy mildews appear to presently be limited in their distribution. Therefore, you can avoid a lot of problems by not introducing it to your locality. Some downy mildews overwinter on wild hosts. If you discover this, and it is reasonable, make an attempt to eliminate these weeds. Many powdery mildews are more widespread already and management options are more limited.

Symptoms

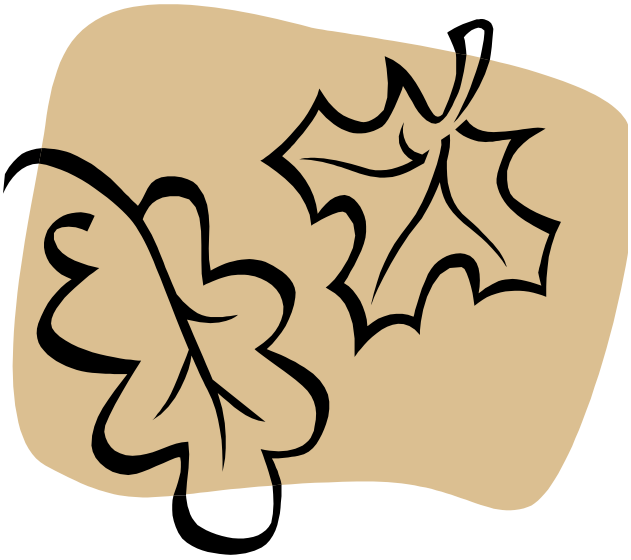
There are for the most part, four distinct genera of downy mildews. The downy mildew genera include; *Peronospora*, *Bremiella, Plasmopara,* and *Pseudoperonospora*. *Peronospora* spp. are by far the most numerous. All species and genera manifest themselves somewhat differently, however, some common characteristics can be observed. Downy mildews, under the right conditions, form a gray to near white fuzz, often appearing as a felt-like mat on the underside of the leaf. The quantity and appearance varies depending on which particular pathogen is involved and the existing environmental conditions. Some downy mildews, like *Peronospora sparsa*, downy mildew of rose, produce less noticeable evidence of the pathogen, thereby the specific name "sparsa'. From above, infected leaves can show chlorotic blotches. Sometimes the blotches can be purple and actively growing plant parts can be distorted and swollen. Sometimes leaf drop occurs. Many ornamental plants are susceptible to downy mildew. Common vegetable and field crops, in addition to grapes, are attacked by downy mildews. When in doubt, collect a sample and submit it for laboratory analysis.

Continued on page 3.

Downy mildews to be aware of on ornamentals

Alyssum	*Peronospora parasitica*
Bachelor's Button	*Bremia lactucae*
Boston Ivy	*Plasmopara viticola*
Geum	*Peronospora lactucae*
Hebe	*Peronospora potentillae*
Hop	*Pseudoperonospora humulii*
Lamium	*Peronospora lamii*
Lupine	*Peronospora trifoliorum*
Pansy	*Bremiella megaspora* and *Peronospora violae*
Phlox	*Peronospora phlogin*
Rose	*Peronospora sparsa*
Salvia	*Peronospora lamii*
Snap dragon	*Peronospora antirrhina*
Stock	*Peronospora parasitica*
Virginia creeper	*Peronospora viticola*

Other downy mildews exist and are being discovered. Downy mildews have been reported on status, sunflower, foxglove, delphinium, and rosemary. Fungicide applications for powdery mildews may not be effective against downy mildews. Be sure to check the label to confirm that the product is labeled for the specific disease you want to control.



Massachusetts to prohibit invasive plants

Christy Brown—ODA horticulturist

On July 11, 2005, Massachusetts announced its plans to roll out a new prohibited plant list. The list of 140 plants includes federal noxious weeds and local invasive species. Twelve of the listed plants are ornamentals that are still in the nursery trade. These are: Norway maple (Acer platanoides); Sycamore maple (Acer pseudoplatanus); Japanese barberry (Berberis thunbergii); burning bush (Euonymus alatus); yellow iris (Iris pseudacorus); Honeysuckles (Lonicera japonica, L. maackii, L. morrowii, L. tatarica, and Lonicera x bella; plume grass (Miscanthus sacchariflorus) and forget-me-not (Myosotis scorpioides). The proposed ban includes all named cultivars of listed plants.

The ban is slated to go into effect January 1, 2006 and would prohibit the importation of all 140 plant species on the list to the state of Massachusetts. As a courtesy to their own nursery industry MA has outlined a phase-out period for the 12 ornamental plants listed above. Under the proposed plan the herbaceous species could be sold within-state until January 1, 2007 and the woody species could be sold within-state until January 1, 2009. This would give nurseries in MA a fair chance to phase out production and inventory of the prohibited plants.

The Massachusetts proposal comes as no surprise. Awareness of invasive species has increased steadily in recent years, especially in light of high-profile invasive pests such as the Asian longhorned beetle, zebra mussel and kudzu. In fact, Massachusetts is not the first state to tackle legislation against Norway maple, Japanese barberry and burning bush. In New Hampshire legislation is already in place to prohibit the sale of these plants starting January 1, 2007. The current trend indicates that more states are likely to ban known invasive plants. It would be wise for growers to consider this trend and calculate adjustments in production as needed.

More information can be obtained from Massachusetts Department of Agricultural Resources at: http://www.mass.gov/agr/farmproducts/proposed_prohibited_plant_list_release.htm

Notification rule

Sherree Lewis, ODA horticulturist

Sudden oak death (Phytophthora ramorum) has been found in Oregon, associated with imported nursery stock in several shipments. To help reduce the threat of additional introductions, the Oregon Department of Agriculture adopted a notification rule (OAR 603-054-0027), allowing department inspectors the opportunity to inspect shipments of high-risk nursery stock shortly after they arrive. This rule requires recipients of imported tree and shrub nursery stock to notify the Oregon Department of Agriculture of the shipment's arrival. Notification can be by way of mail, FAX (503-986-4564), or e-mail (quarantine@oda.state.or.us) and must occur no later than two business days after its arrival. The department will contact nurseries within one business day of receipt of the notification if the imported tree and shrub nursery stock must be held for inspection.

603-054-0027
Notification of Imported Trees and Shrubs

(1) Recipients of tree and shrub nursery stock imported into the state of Oregon from any out-of-state source are required to notify the Oregon Department of Agriculture. Notification shall be via mail, FAX (503-986-4564) or e-mail <quarantine@oda.state.or.us> to: Nursery Program Supervisor, Plant Division, Oregon Department of Agriculture, 635 Capitol St. NE, Salem, OR 97301.

(2) For purposes of this section, "tree and shrub nursery stock" means woody forest and ornamental trees, shrubs and vines grown or kept for propagation or sale, including bareroot, balled and burlaped, and containerized plants, liners, budwood, and cuttings. Fruit, seeds and tissue culture plantlets are not included.

(3) Notice under (1) of this section must be received by ODA no earlier than two business days prior to arrival of the shipment and no later than two business days after its arrival. Notification shall include the species of plant(s), quantities, source, and recipient's contact information. Copies of regular shipping documents, e.g. load lists, with this information are encouraged.

(4) ODA will contact nurseries within one business day of receipt of notification if the tree and shrub nursery stock must be held for inspection under ORS 571.220 and 570.305. Recipients are not obligated to hold the imported tree and shrub nursery stock for inspection unless contacted directly by an ODA inspector, except that the imported tree and shrub nursery stock must not be sold or distributed to untraceable buyers, e.g. final consumers, for one business day after notifying ODA

(5) Failure to comply with this rule shall be deemed to be a violation of ORS 571.220 and could result in criminal penalties authorized in 571.991 of up to $5,000. Violation of this rule by a licensed nursery may also result in license suspension or revocation.

(6) Review of this Quarantine: The continued necessity for this regulation and its effectiveness will be reviewed by the department and other interested parties by December of 2005.

Useful Web sites

http://oregon.gov/ODA
ODA Web site. Includes nursery information, alerts, updates, quarantine information, pesticide information, noxious weed list, links to other sites of interest.

http://insects.ippc.orst.edu/pnw/insects
Pacific Northwest Insect Management Handbook's online version.

http://plant-disease.orst.edu
Pacific Northwest Plant Disease Control Handbook's online version.

http://weeds.ippc.orst.edu/pnw/weeds
Pacific Northwest Weed Management Handbook's online version.

http://oregonstate.edu/Dept/nurspest
Pacific Northwest Nursery IPM Homepage. Includes recent pest sightings among other things.

http://www.ecy.wa.gov/programs/wq/plants/plantid2/index.html
Online freshwater plant identification manual

http://www.aphis.usda.gov/npb/F&SQS/sqs.html
Federal and State Plant Quarantine Summaries. Last updated in 1999, but mostly accurate. Check with your nursery inspector to make sure.

http://www.aphis.usda.gov/ppq/permits/fnwsbycat-e.html
Federal noxious weed list.

http://egov.oregon.gov/ODA/PLANT/weed_index.shtml
ODA's noxious weed site. Includes pest alerts, noxious weed list, etc.

http://oregonstate.edu/dept/nursery-weeds
Weed Management in Nursery Production – Oregon State University – NWREC

http://cropandsoil.oregonstate.edu/weeds/id.html
Weed Identification in Oregon – Oregon State University Dept. of Agronomy

http://www.oardc.ohio-state.edu/weedguide/listallscifi.asp
Weed identification in Ohio – Ohio State University (the other OSU)

http://elib.cs.berkeley.edu/photos/flora
Digital Library Project –type the name of a weed and see dozens of images, useful when you think you know the name of a weed, and want to verify it.

http://www-aes.tamu.edu/mary/Wdid.htm
Links to virtually every weed id web site, some good, some bad.

http://www.cdfa.ca.gov/phpps/pe/sod_survey/
California SOD-free nursery list.

http://egov.oregon.gov/ODA/PLANT/sod_free.shtml
Oregon SOD-free nursery list.

http://agr.wa.gov/Plantsinsects/Diseases/SOD/default.htm
Washington SOD-free list.

http://anrcatalog.ucdavis.edu/InOrder/Shop/ItemDetails.asp?ItemNo=8156
A guide to *P. ramorum* on ornamental plants.

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Salem, Oregon 97301-2532

Noxious weed alert

Orange Hawkweed (*Hieracium aurantiacum*)

Orange hawkweed is a perennial weed that, once established, quickly develops into a patch that continues to expand until it covers the site with a solid mat of rosettes. A dense mat of hawkweed has the potential to outcompete other vegetation, posing a serious threat to native plant communities and can dominate pastures, lawn and roadsides. It is unpalatable as forage.

This weed is becoming an increasing problem in Oregon. At this point, it is limited to a few sites in Clackamas and Deschutes counties. Because it has striking flowers, plant enthusiasts are assisting in the spread of this weed.

An information letter will be, or has been, mailed out with color photos to aid in identifying orange hawkweed. Please report suspected sites or finds to:

Oregon Department of Agriculture
Noxious Weed Control Program
503-986-4621 or 1-866-INVADER
http://oregon.gov/ODA/PLANT/weed_index.shtml