Landscape Ontario
HORTICULTURAL TRADES ASSOCIATION

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Advancing the horticulture industry

Phytophtora ramorum, Sudden Oak Death – is your nursery at risk?

What is *Phytophthora ramorum*?

***Phytophthora ramorum* is a quarantine disease.** This fungus-like organism causes the disease called Sudden Oak Death (SOD), Ramorum blight or Ramorum dieback.

Currently the disease is not found in Ontario. So the only way you can get it onto your nursery is from infected plants sourced from areas where the disease has been found.

Susceptible plants:

P. ramorum attacks a wide variety of woody, herbaceous and tropical foliage plants. These are listed in Table 1. High risk woody plants that have been associated with the spread of this disease are *Rhododendron* (rhododendron and azalea), *Camellia*, *Kalmia* (sheep laurel), *Viburnum*, *Pieris* and *Syringa* (lilac).

Why you need to be concerned:

This is a quarantine pest. If it is found at your nursery by the CFIA through a trace forward, all plant shipments will be stopped until CFIA has identified and quarantined all infected plants. Infected plants and surrounding plants in a prescribed 2 m buffer area will be destroyed. All host plants within 10 m of the infected plants cannot be sold or moved until tested and results are received. Infected plants will be destroyed according to CFIA protocols. Plants from infected sources have been shipped or "traced forward" to Ontario by CFIA. Fortunately no infected plants have been found.

Where has *Phytophthora ramorum* been found?

Table 2 lists areas that are currently regulated by the CFIA. These include the European Union countries, and certain counties in California and Oregon. In addition to the quarantined counties, all other counties in California, Oregon and Washington that are not quarantined are regulated by the United States Department of Agriculture (USDA).

It has been traced forward and identified in British Columbia and several other states (Alabama, Connecticut, Florida, Georgia, Indiana, Maine, Mississippi and Pennsylvania). These areas are not currently regulated.

The Canadian Nursery Certification Institute has a nursery certification program for *Phytophthora ramorum.* This program ensures that best management practices are in place and followed at certified nurseries to keep nurseries free of *P. ramorum*. A list of certified British Columbia nurseries can be found at: *www.canadanursery.com/Page.asp?PageID=122&ContentID=824&SiteNodeID=102&BL_ExpandID=*

What is your risk? Answer these following questions & circle your ranking:	Yes	No
1. Refer to Table 1 and 2. Do you purchase any of the host plants, listed in table 1, from any of the following regions: • the CFIA regulated areas, listed in table 2, or • USDA regulated areas in California, Oregon or Washington, or • Trace forward areas: British Columbia, Alabama, Connecticut, Florida, Georgia, Indiana, Maine, Mississippi and Pennsylvania. If you answered **Yes**, go to Question 2. If you answered **No**, go to Question 3.	3	1
2. If you answered **Yes** to Question 1 above: are they grown under a USDA or an industry recognized certification program that can be validated by the supplier?	2	3
3. If you answered **No** to Question 1: can your supplier demonstrate that the host plants you purchased are: • from sources not located in the regions listed in question 1, or • from sources located in the regions listed in question 1 & grown under a recognized certification program?	1	3
Sub total in each column		
Combined total: Add "Yes" column to "No" column		

Your combined total:	Risk level	Actions:
6	High	• Purchasing host plants from these sources places your nursery at a high exposure risk and should be avoided.
4-5	Medium	• Purchasing host plants from these sources exposes you to some risk. Implement the plant segregation, inspection, monitoring and sanitation best management practices list on page 3 list to reduce your exposure.
2	Low	• Purchasing host plants from these sources are low risk and can be handled as usual.

How you can reduce your risk exposure: Best Management Practices (BMP).

If you purchase host plants from regulated regions or from regions that have confirmed trace forwards, implement the following BMP's to assist you in mitigating your exposure to risk. These have been adapted from the *P. ramorum* Canadian Certification Program.

BMP's for all host plants:

- Develop a *P. ramorum* management plan for your nursery. Start by reviewing the *P. ramorum* Canadian Certification Program.
- Document all your BMP activities.
- Visually inspect and document inspection of all host plants from quarantine and trace forward regions as shipments arrive at your nursery.
- Isolate and segregate host plants sourced from regulated and trace forward regions from your main nursery production facility.
- Avoid contiguous beds or plantings of host plants
- Collect and remove fallen plant debris and materials from incoming shipments on loading docks, trucks and shipping yards.
- Dispose debris from external sources by packaging in poly bags and disposing off-site.
- Ensure that this debris does not enter a composting facility.
- All host plants must be grown in areas with minimal standing water.
- Regularly monitor these blocks for leaf diseases and document observations.
- Control leaf diseases as required. Document treatments.

Additional BMP's for high risk host plants:

- Have a 2 m buffer (canopy to canopy) between high and from low risk plants.
- Limit the movement of people and equipment through the segregated high risk host plant area.
- Schedule normal cultural procedures for the end of the day so staff leave the nursery from this area and disinfect tools and equipment.
- Clearly identify high risk host plant blocks.
- Keep high-risk plants practically free from weeds.
- Minimize leaf wetness. Watering mid morning will help restrict leaf wetness to less than 6 hours per day.
- Minimize plant movement from the segregation area.
- Avoid mixing with non-host plants.
- No returns of any high risk host plants to the facility.

If you apply registered fungicides:

- Manage resistance by alternating fungicides. Contact your supplier of the plants and find out they were applying prior to shipping.
- Apply preventative fungicide program to protect plants particularly during high risk periods.

If you suspect *Phytophthora ramorum*, Contact your regional CFIA office immediately.

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More information about the biology, managing and the risks associated with *Phytophtora ramorum* can be found at the following links:

- CFIA Phytophthora ramorum site: www.inspection.gc.ca/english/plaveg/pestrava/phyram/sodmsce.shtml
- Canadian Nursery & Landscape Association (CNLA) *Phytophthora ramorum* Certification Program: www.canadanursery.com
- USDA APHIS www.aphis.usda.gov/ppq/ispm/pramorum/resources.html
- California Oak Mortality Task Force (COMTF) http://nature.berkeley.edu/comtf/

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Table 1. Host plants as of Dec 7, 2006.

Bolded names are considered high risk host plants.
***** indicates a species regulated because it is a synonym for a species in a regulated genera.
Updates can be found at:
www.inspection.gc.ca/english/plaveg/protect/dir/sodmsce.shtml

Scientific Name	Common Name	Scientific Name	Common Name
Abies	True firs	*Magnolia*	magnolia
Acer	maple	*Maianthemum*	false Solomon's seal (formerly classified in genus Smilacina)
Adiantum	maidenhair fern	*Manglietia*	Manglietia
Aesculus	buckeye, horse-chestnut	*Michelia*	Michelia
Arbutus	madrone, strawberry tree	*Nerium*	Oleander
Ardisia	coralberry, spiceberry, marlberry	*Nothofagus*	Noble beech
Arctostaphylos	manzanita, bearberry kinnikinnick	*Osmanthus*	devil-weed, devilwood, American olive, wild olive, fragrant olive, sweet olive, tea olive, holly olive, Chinese holly, false holly, Phillyrea vilmoriniana*, Phillyrea decora*, Osmarea*
Calluna	heather, common heather, ling, Erica vulgaris*	*Osmorhiza*	Osmorhiza
Calycanthus	Spice Bush	*Parrotia*	Persian parrotia or ironwood
Camellia	**camellia**	*Parakmeria*	Parakmeria
Castanea	chestnut	*Photinia*	Photinia
Castanopsis	giant chinkapin	***Pieris***	**Pieris, lily of the valley shrub**
Ceanothus	blueblossom, ceanothus, New Jersey tea, redheart, redroot, snowbrush, whitethorn	*Pittosporum*	Victorian box, pittosporum
Cinnamomum	Cinnamon, camphor	*Prunus*	apricot, almond, cherry, peach, nectarine, plum

Scientific Name	Common Name	Scientific Name	Common Name
Clintonia	clintonia, bluebead lily, queen's cup	*Pseudotsuga*	Douglas fir
Cornus	dogwood	*Pyracantha*	Firethorn
§ Corylopsis	Winter Hazel	*Quercus*	oak, Cyclobalanopsis*
Corylus	hazelnut, filbert	***Rhododendron***	**rhododendron, azalea**
Distylium	Distylium	*Rosa*	rose
Drimys	winter's bark	*Rubus*	salmonberry, raspberry, blackberry
Dryopteris	wood fern, spinulose wood fern, spinulose shield-fern	*Salix*	willow
Eucalyptus	Eucalyptus	*Schima*	samak, puspa
Euonymus	spindle tree, strawberry bush, wahoo	*Sequoia*	coast redwood
Fagus	beech	***Syringa***	**Lilac**
Frangula	Cascara, coffeeberry, Rhamnus*	*Taxus*	yew
Fraxinus	European ash	*Torreya*	Torreya
Gaultheria	checkerberry, salal, shallon, waxberry, wintergreen	*Toxicodendron*	poison oak
Griselinia	New Zealand privet	*Trientalis*	western starflower
Hamamelis	witch hazel	*Umbellularia*	California bay laurel, Oregon myrtle, pepperwood
Heteromeles	Christmas berry, toyon, California holly	*Vaccinium*	blueberry, huckleberry, foxberry
Ilex	holly	*Vancouveria*	Vancouveria
Kalmia	**mountain laurel, calico bush, western laurel, alpine laurel**	***Viburnum***	**arrow wood, snowball bush, nannyberry, European cranberry, common snowball, Japanese snowball, laurustinus**
Laurus	laurel		
Leucothoe	leucothoe		

Table 2. CFIA Regulated areas as of Dec 7, 2006.

Updates are available at:

www.inspection.gc.ca/english/plaveg/protect/dir/sodmsce.shtml

Regulated areas in Europe	United States	
	Counties in California	**Counties in Oregon**
All countries of the European Union Norway Switzerland	Alemeda Contra Costa Humboldt Lake Marin Mendocino Monterey Napa San Francisco San Mateo Santa Clara Santa Cruz Solano Sonoma	Curry