nysipm.cornell.edu 2018

hdl.handle.net/1813/56379

Disease and Insect Resistant Ornamental Plants

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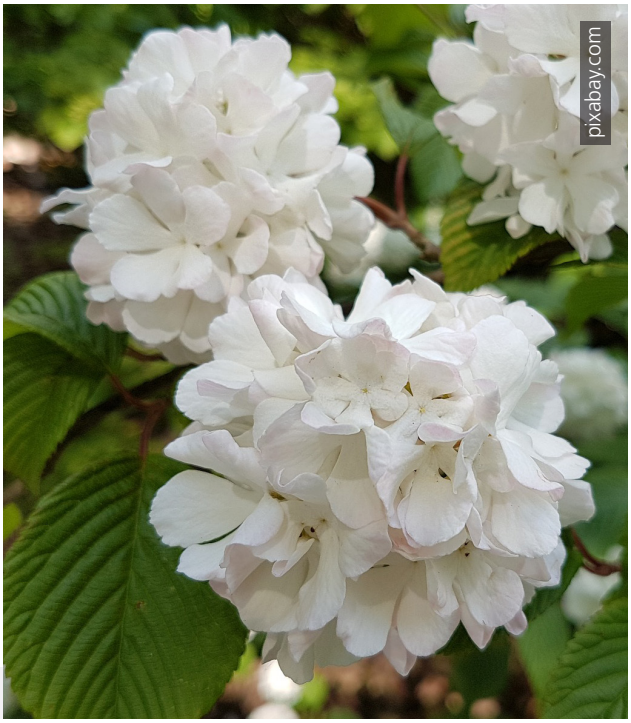
Viburnum

Viburnum



Viburnum is a genus of about 150 species of deciduous, evergreen and semi-evergreen shrubs or small trees. Widely used in landscape plantings, these versatile plants offer diverse foliage, colorful fruit and attractive flowers.

Viburnums are relatively pest-free, but in some parts of the US the viburnum leaf beetle can be a serious pest in both landscape and natural settings. Potential diseases include bacterial leaf spot and powdery mildew.

INSECTS

Viburnum Leaf Beetle, *Pyrrhalta viburni*, is a leaf-feeding insect native to Europe and Asia. In North America, the beetle became established around Ottawa, Canada in the 1970's and was first detected in the United States in Maine in 1994 and in New York in 1996. It has since spread through much of the northeastern US (15). Reports of viburnum leaf beetle in the Midwest include Ohio, Michigan, Wisconsin and Illinois (1) and Washington and British Columbia, Canada in the Pacific Northwest (7).

The beetle is host-specific and feeds only on *Viburnum*, but there are preferences within the genus (6). Species with thick leaves tend to be more resistant and feeding is more likely to occur on plants grown in the shade (17). Feeding by both larvae and adults causes tattered leaves and may result in extensive defoliation – repeated defoliations can kill the plant.

Viburnum Leaf Beetle				
Species/Hybrids	Cultivar	Reference		
		Resistant	Moderately Susceptible	Susceptible
Viburnum acerifolium			14, 15	
Viburnum burkwoodii		14, 15		
Viburnum carlesii		14, 15, 16		
Viburnum dentatum				2, 6, 14, 15
Viburnum dilatatum			15	

Viburnum Leaf Beetle				
Species/Hybrids	Cultivar	Reference		
		Resistant	Moderately Susceptible	Susceptible
Viburnum lantana			14, 15	
Viburnum lantanoides/alnifolium		14		
Viburnum lentago			14, 15	
Viburnum macrocephalum			14	
Viburnum opulus				2, 6, 14, 15
Viburnum plicatum f. *tomentosum*		14, 15		
Viburnum plicatum f. *tomentosum*	Mariesii	15		
Viburnum prunifolium			14, 15	
Viburnum prunifolium	Early Red		16	
Viburnum rafinesquianum				5, 15
Viburnum rhytidophyllum		14, 15		
Viburnum sargentii				2, 14, 15
Viburnum sargentii	Susquehanna			16
Viburnum setigerum		15		
Viburnum sieboldii		14, 15, 16		
*Viburnum trilobum**				2, 15
Viburnum trilobum	Bailey's Compact			16
Viburnum x *carlcephalum*		15	14	
Viburnum x *juddii*		15		
Viburnum x *pragense*			14, 15	
Viburnum x *rhytidophylloides*		14, 15, 16		

* = *V. opulus* var. *americanum*

Japanese Beetle, *Popillia japonica*, is a common foliage feeder of many ornamental plants. Occasional feeding has been observed on *V. opulus*, while *V. dentatum* is commonly fed on resulting in moderate damage (5).

DISEASES

Bacterial Leaf Spot of viburnum is a disease caused by *Pseudomonas syringae* pv. *viburnum*. While not common in the Northeast, it may be a problem during cool, wet springs in other parts of the country, including the Pacific Northwest (8). Also known as bacterial blight, the disease causes yellow to brown spots on leaves which coalesce into larger blotches. Severe infections can result in shoot dieback and defoliation.

Bacterial Leaf Spot		
Species/Hybrids	Cultivar	Reference
		Resistant
Viburnum lantana	Mohican	10
Viburnum x *burkwoodii*	Mohawk	11
Viburnum x *burkwoodii*	Conoy	4

Bacterial Leaf Spot		
Species/Hybrids	Cultivar	Reference
		Resistant
Viburnum x *carlcephalum*	Cayuga	12
Viburnum x *juddii*		2
Viburnum x *rhytidophylloides*	Alleghany	2, 13
Viburnum x	Eskimo	3

Powdery Mildew of viburnum is a disease caused by the fungus *Erysiphe viburni* that forms powdery white patches noticeable on upper leaf surfaces. It is most likely to occur in regions where prolonged periods of warm days, cool nights and high humidity are common. Plants in shady sites with poor air circulation are more likely to be infected. *V. prunifolium*, *V.* x *burkwoodii* 'Mohawk' and *V.* x *carlecephalum* 'Cayuga' are reported to be resistant (2, 11, 12).

Ramorum Blight of viburnum is a disease caused by *Phytophthora ramorum*, the same pathogen that causes sudden oak death of *Quercus* spp. The disease has a wide host range which includes five high risk genera of common nursery stock – *Camellia*, *Kalmia*, *Pieris*, *Rhododendron* and *Viburnum* (9). Symptoms on non-oak hosts include foliar blight and stem lesions which are unsightly and may diminish ornamental value. Of greater concern is the risk of spreading the disease to oaks. To prevent introduction through the shipment of nursery stock, it is important to confirm the source has been tested. Federal regulations regarding *P. ramorum* can be found at aphis.usda.gov/aphis/ourfocus/planthealth/plant-pest-and-disease-programs/pests-and-diseases/phytophthora-ramorum.

Use of tolerant or resistant species and cultivars can help limit the spread of this pathogen. Researchers at the USDA evaluated 24 commercially available *Viburnum* species or cultivars for their susceptibility to *P. ramorum*. While all were susceptible to some degree, *V. opulus* 'Notcutt' and *V.* x *rhytidophylloides* were most tolerant – *V. tinus* and *V.* x *carlcephalum* were most susceptible (18).

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New York State Integrated Pest Management Program

Cornell Cooperative Extension

Produced by the New York State Integrated Pest Management Program, which is funded through Cornell University, Cornell Cooperative Extension, the New York State Department of Agriculture and Markets, the New York State Department of Environmental Conservation, and USDA-NIFA. Design by Karen English, New York State IPM Program. Cornell Cooperative Extension provides equal program and employment opportunities. Posted 4/2018 at hdl.handle.net/1813/56379