WHAT IS

Xylella fastidiosa?

- *Xylella fastidiosa* is a bacterium that infects xylem vessels in a number of woody, broad leaf, and annual grass plants.
- Infection by *X. fastidiosa* disrupts the normal functioning of transportation of minerals and water through xylem vessels, leading to leaf scorch, dieback, and death.
- However, in many hosts the bacterium can remain symptomless.

Disease symptom on grape. *Source: msfruitextension.wordpress.com*

Bacterial leaf scorch of red maple. *Source: www.apsnet.org*

The pathogen is considered native to warmer regions in North America such as the southeastern USA. In recent years, *X. fastidiosa* has been reported in Asia, Europe, and South America.

In October 2015, *X. fastidiosa* was detected for the first time in Oregon infecting 'Perry' pear trees. Previously, *X. fastidiosa* was reported infecting pear only in Taiwan.

REPORTING

Xylella fastidiosa

- Report plants exhibiting suspicious symptoms to the Oregon Department of Agriculture (1-800-INVADER).
- Please take photos of symptoms and details of the suspect plant's location and the conditions its being grown under.
- Nurseries may contact their official Nursery Inspector for assistance.
- Samples from suspect plants must be submitted to lab testing for accurate diagnosis.
- An appropriate sample for diagnostic testing consists of a twig about as thick as a pencil with symptomatic leaves still attached.

MORE INFORMATION ON THE DISEASE

edis.ifas.ufl.edu/in174
nature.berkeley.edu/xylella

SAMPLE COLLECTION

Oregon Department of Agriculture
Nursery Inspection Program
(503) 986-4644

PATHOGEN DIAGNOSIS

Oregon Department of Agriculture
Plant Health Laboratory
(503) 986-4620

Oregon State University Plant Clinic
(541) 737-3472

OREGON DEPARTMENT OF AGRICULTURE

Market Access & Certification
Plant Health Program
635 Capitol St NE, Salem, OR 97301
(503) 986-4620 — www.oregon.gov/ODA

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PLANT DISEASE ALERT

Xylella fastidiosa

Bacterial leaf scorch on blueberry, caused by the bacterium *Xyella fastidiosa*. *Source: apps.caes.uga.edu/gafaces*

COMMON NAMES

Pierce's disease, California vine disease, Anaheim disease (grapevine), dwarf (lucerne), phony disease (peach), leaf scald (plum), leaf scorch (almond, elm, maple, mulberry, pear, plane, and oak), variegated chlorosis (citrus)

Oregon Department of Agriculture

DISTRIBUTION

The disease is mainly distributed in the western hemisphere.

North America: Mexico, USA (Alabama, Arizona, California, Florida, Georgia, Kentucky, Louisiana, Mississippi, Missouri, Oregon, New York, North Carolina, South Carolina, Texas, and West Virginia).

Central America and Caribbean: Costa Rica, probably most countries in Central America.

South America: Argentina, Brazil, Paraguay, and Venezuela

EPPO region: France, Italy, and Netherlands

Asia: India and Taiwan

THREAT TO OREGON

Oregon produces a number of seed, fruit, and horticultural crops known to be susceptible to *X. fastidiosa*. The European Union and other countries prohibit or severely restrict importation of plant materials where *X. fastidiosa* is known to occur. Measures to exclude this pathogen from disease-free areas in Oregon are the best control options.

Controls may include the removal of host trees and best management practices to limit disease spread within specific areas and prevent spread to non-infested areas.

MAJOR HOSTS

About 200 plant species are susceptible to *X. fastidiosa*. Some of the common hosts are almond, American sycamore, annual bluegrass, apricot, blackberry, blueberry, elm, grape, lucerne, maple, northern red oak, peach, periwinkle, plum, raspberry, red mulberry, ryegrass, and strawberry.

SYMPTOMS

X. fastidiosa causes different symptoms on different hosts. The most common symptom is leaf scorch. The margin or edge of the green leaf suddenly starts to dry, a symptom similar to moisture stress, or damage from wind, salt, air pollutants, toxic metals, or nutrient extremes. Later these leaves die and turn brown.

Symptoms are irregular in shape. In general, a bright yellow or red band appears between the healthy and scorched tissue. As the disease progresses, the whole leaf may shrivel and drop, leaving a bare petiole attached to the plant. Infected trees are often stunted in height due to shortened internodes and have greener, denser foliage than healthy trees. Symptoms may vary depending on the infected host.

Bacterial leaf scorch of elm. *Source: www.apsnet.org*

Bacterial leaf scorch of shingle oak. *Source: www.apsnet.org*

DIAGNOSIS

Leaf scorch symptoms resemble stress caused by many abiotic factors such as moisture stress, or damage from wind, salt, or air pollutants. Specific lab testing is required for accurate disease diagnosis.

DISSEMINATION

X. fastidiosa can be disseminated locally through mechanical and insect transmission. Using pruning shears on an infected plant and then pruning a healthy plant can transmit the pathogen.

The most common dissemination is by xylem-feeding insects, which acquire the bacterium while feeding. Leafhoppers, sharpshooters, and spittlebugs or froghoppers are common vectors in North America. Potential vectors in Oregon include the blue-green sharpshooter (*Graphocephala atropunctata*) and common spittlebug (*Philaenus spumarius*). In addition, infected plant parts such as bulbs tubers, corms, rhizomes, and seeds can harbor the pathogen and lead to long distance dispersal.

Blue-green sharpshooter. *Source: www.forestryimages.org*

Common spittlebug. *Sources: americaninsects.net and wanda.uef.fi*