Pierce's Disease of Grape

Xylella fastidiosa Wells *et al.*1987 (Bacteria, Xanthomonadaceae)

Primary hosts
Grapevine, peach, Japanese plum, fox grape, almond

Symptoms on grape leaves
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Symptoms
On grape the early sign of infection is leaf scorch, or sudden drying of a green leaf which turns brown, and adjacent tissues turn yellow or red. This may spread to the whole leaf which will shrivel and fall off, leaving the petiole attached. Diseased stems have patches of brown tissue and green tissue. Mature infected plants may produce stunted, chlorotic shoots. Highly susceptible cultivars may not survive more than 2-3 years. More tolerant cultivars may survive more than 5 years. Young vines are more susceptible.

Life Cycle
X. fastidiosa proliferates only in xylem vessels, in roots, stems and leaves. The bacteria may spread raplidy through the plant. The vessels are ultimately blocked by bacterial aggregates and by tyloses and gums formed by the plant. Pierce's disease strains of the bacterium are acquired by vector insects, with no latent period, and persist in infective adult insects indefinitely. All sucking insects that feed on xylem fluids are potential vectors. Leafhoppers (Cicadellidae) and froghoppers (Cercopidae) are the most important in North America. Such insects live in permanent pastures beside vineyards that contain weed hosts of the bacteria. Persistence of the disease is determined by mild winter temperatures. Freezing temperatures eliminate the bacteria in plant tissue. Survival of insect vectors is a determining factor in reinfection.

Insect vector, bluegreen sharpshooter (Cicadellidae)
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Current geographic distribution
Pierce's Disease has been confirmed in all states along the Gulf of Mexico from Florida to Texas; New Mexico, Arizona and California; northern Mexico and Costa Rica, but probably throughout Central America; Venezuela.

Impact in Oregon
Not reported in Oregon.

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