

PHYTOPHTHORA (ROOT ROT)

(Multiple *phytophthora* species)

DESCRIPTION

Phytophthora is a genus of oomycetes that are similar to fungi. There are 59 species of Phytophthora, all of which cause disease in plants. *Phytophthora ramorum* is the species responsible for Sudden Oak Death. Phytophthora are natural and universally occurring soil organisms which attack roots in poorly drained or anaerobic soils. As infected roots discolor and decay, the result is wilt, canopy dieback, cankers on the trunk, general decline and death. Phytophthora species are host specific attacking many types of trees including ash, cherry, pine, spruce, hemlock, fir, pear and dogwood.

SYMPTOMS

Leaves will appear drought-stressed, sometimes turning dull green, yellow, red or purple as they wilt. Infected bark is water-soaked, with red-brown discoloration and a disagreeable odor. Bleeding cankers form at the base of the trunk and eventually lead to death. Phytophthora root rot infection is often followed by beetle infestation and/or an alternate pathogen infection.

TREATMENT

Arborjet recommends the use of PHOSPHO-jet, a systemic fungicide for treatment of Phytophthora Root Rot. Arborjet recommends a two pronged approach.

1. Micro-injection of PHOSPHO-jet into susceptible host trees.
2. Amend the soil around the tree with humates (high quality organic matter). Phytophthora thrives in poorly drained and anaerobic soils. The addition of humates will help to increase soil aeration and make the root environment less conducive to disease development. Arborjet recommends a product such as Biostarter which includes beneficial bacteria that will create a less hospitable environment for Phytophthora.

PHOTOS

A: Phytophthora collar rot (*Phytophthora sp.*) on a young apple tree.

B: Bleeding canker caused by *Phytophthora cinnamomi*.

Photo A taken by: William M. Brown Jr., Bugwood.org

Photo B taken by: Joseph O'Brien, USDA Forest Service, Bugwood.org



PHYTOPHTHORA (ROOT ROT)

WHEN TO TREAT

Generally, the best seasons for injection are fall and spring, as uptake occurs when trees are transpiring. The environmental conditions that favor uptake are adequate soil moisture and relatively high humidity. Soil temperature should be above 40°F for trunk injection. Hot weather or dry soil conditions will result in a reduced rate of uptake, so trees should be watered if applications are made when soil is extremely dry. If treating trees in the summer, inject in the morning for the quickest uptake. Tree health will affect treatment efficacy, so assess tree health prior to treating. For example, a declining tree (>50% canopy dieback) is a poor candidate for treatment.

WHAT TO EXPECT AFTER TREATMENT

Tree recovery will be dependent upon the severity of the Phytophthora infection at the time of trunk injection. PHOSPHO-jet acts as a fungicide and as an added benefit, stimulates new root growth. The addition of humates will create a soil environment that favors root growth over disease development

WORLD CLASS FORMULATIONS

For treatment of Phytophthora (Root Rot), use PHOSPHO-jet.

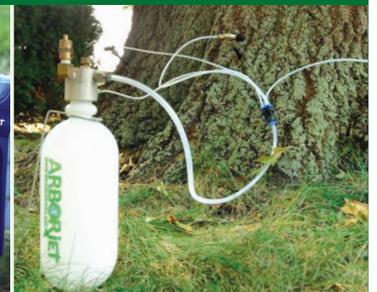
PHOSPHO-jet is a systemic fungicide and plant health elicitor formulated for the suppression of various plant diseases including anthracnose, black spot, phytophthora (including Sudden Oak Death), stem canker, apple scab, fireblight, root rot, bud rot and powdery mildew.

Our products can be purchased at your local Arborjet distributor. For a distributor near you visit arborjet.com/distributor



QUIK-JET INJECTION

TREE I.V. INJECTION



ARBORJET DELIVERY SYSTEMS

Arborjet's delivery systems are designed to be fast, affordable and effective. Contact us today to determine the right system for your needs. To find a distributor near you, go to www.arborjet.com.



QUIK-jet Kit



TREE I.V. 2-Pack Kit



QUIK-jet Pro Kit



Arborjet Deluxe Kit

781-935-9070 • Visit us on the web at www.arborjet.com

99 Blueberry Hill Road, Woburn, MA 01801 Arborjet, Inc. All Rights Reserved 2014

