



## The Plant Doctor's LANDSCAPE TIPS

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### PHYTOPHTHORA ROOT & STEM ROT OF RHODODENDRON

#### INTRODUCTION:

A variety of Phytophthora species (*P. cinnamomi*, *P. cactorum*, *P. syringae*, *P. citricola*, etc.) cause root and stem rots on Rhododendron. Some species may also cause leaf blights. Phytophthora used to be considered a watermold fungus. More recently, it was classified as a fungus-like organism, more closely aligned with algae. Diseases caused by Phytophthora sp. are very devastating on Rhododendron and other ornamental plants. Some of the Phytophthora species have large host ranges, attacking other nursery/landscape plants as diverse as azalea, dogwood, various pines, various fruit and ornamental fruit trees, camellia, yew (*Taxus* sp), heather, mountain laurel, and firs, to name a few.

#### SYMPTOMS AND DIAGNOSIS:

The first symptom of Phytophthora root and stem rot on Rhododendron is off-color foliage (Photo 1). Subsequently, foliage on specific stems will usually wilt (Photo 2). Sectioning the stem will reveal internal reddish-brown discoloration, typically associated with Phytophthora stem rot (Photo 3). Depending on the stage of the disease, examination of the roots may also reveal rotted roots. Cankers may also develop on the upper stems as the fungus moves upwards through the plant. Phytophthora may already exist in landscapes or may be introduced on infected plants. The fungus is carried on plants, in soil, in water and can also be airborne (Photo 4).

Phytophthora root rot may be mistaken for other common maladies associated with Rhododendron. Winter injury (Photo 5), nutritional and/or moisture excesses and deficiencies, and black vine weevil injury to roots may also cause wilt and decline of Rhododendrons.

#### MANAGEMENT:

There are significant differences in susceptibility of Rhododendrons to Phytophthora; for example, "Caroline," "Martha Isaacson," "Professor Hugo de Vries" and "Red Head" are reported to be resistant to Phytophthora. Other varieties are more tolerant while others are highly susceptible. It is advisable to avoid planting Phytophthora-susceptible plants in sites where Phytophthora has previously killed plants. Of primary importance, avoid purchasing Phytophthora-infected plant material. Also avoid injuring plants, as well as excessive fertilization. Because Phytophthora is a water-loving organism, avoid excess irrigation or wet sites which can not only predispose plants to infection, but which may also help the fungus to spread and attack other nearby plants. On occasion, it is believed that Phytophthora infections may be suppressed by fungicide applications in nurseries or primary producers; once the plant is installed in a landscape and the fungicide "wears off," Phytophthora may resume its disease-causing activities. Fungicides such as metalaxyl (sold as Subdue 2E, etc.) and Fosetyl-Al (sold as Aliette) offer suppressive, temporary protection against Phytophthora-incited diseases. ■



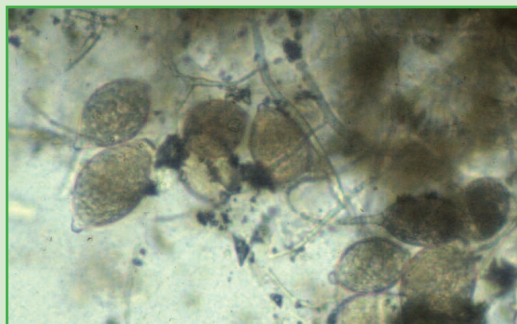
**Photo 1:** The Rhododendron on the right shows the early symptoms of Phytophthora root and stem rot: off-color, droopy foliage.



**Photo 2:** Rhododendrons with Phytophthora root and stem rot will eventually exhibit wilt on specific stems.



**Photo 3:** Sectioning the stem with a pocket knife will reveal the typical reddish-brown discoloration associated with Phytophthora root and stem rot.



**Photo 4:** Phytophthora may spread in a variety of ways. Lemon-shaped spores of the organism, known as sporangia, may be airborne or may be carried on plants, in soil and in water.



**Photo 5:** Winter injury may also cause wilt similar to Phytophthora; winter injury symptoms include wilted foliage and a very hard internal gray stem discoloration.