

# PLANT DISEASE CONTROL NOTES

EXTENSION DIVISION • VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY

## GUIDE FOR THE CONTROL OF THE DISEASES OF RHODODENDRONS AND AZALEAS

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Control Series 165

### Introduction

Diseases of azaleas and rhododendrons are numerous. Root rots and stem die-backs are the most serious, but leaf spots, flower blights, rusts, and leaf galls are damaging. Successful culture should begin with the selection of adapted varieties which are resistant to temperature extremes that occur both in winter and summer.

Of utmost importance is the purchase of a healthy plant. Dark green foliage and the absence of symptoms such as wilt, stem die-back and leaf spots are factors to consider. Attention should be given to proper planting, fertilizing, watering, mulching, pruning, pinching, and blossom removal; especially when petal blight is a problem. Hand picking of galled petals and leaves may be desirable.

Fungicides to prevent diseases are important propagation, necessary in container nursery culture, and occasionally used in home and public landscape plantings. The rates and method of application are subject to change and are revised annually in the Virginia Extension Publications: Pest Management Guide 7 "Pest Management Guide for Ornamental Plants in the Home Grounds", and Pest Management Guide 10 "Chemical Control of Diseases, Insects, and Weeds in Nursery Ornamentals."

<u>DISEASE</u>	<u>SYMPTOMS</u>	<u>LOCATION OF PATHOGEN</u>	<u>EFFECT OF ENVIRONMENT</u>	<u>CONTROL</u>
Phytophthora root rot (Phytophthora <u>cinnamoni</u> , Phytophthora spp.)	Azaleas stunted with leaves smaller than normal and off-green. The roots of diseased plants are brown and rotted. The leaves of rhododendrons wilt following root rot. Dark brown discoloration of the wood at the base of the main stem.	Causal fungus survives in the soil and in the roots of infected plants.	Favored by excess soil moisture and temperature between 70-79°F.	Apply Lesan to 20 sq ft area. Follow with additional water to allow penetration to 3 to 5 inches. Repeat every 10 to 14 days. See Control Series 90. CONTAINER AND BEDGROWN PLANTS: Mix Truban or Terrazole 8 oz with 100 gal of water per 400 sq ft or apply in sufficient amount to saturate the soil mixture, such as 1/2 pt/6 inch pot. Irrigate immediately with additional water equal to at least half the volume of the fungicidal drench for improved soil penetration of the fungicide. Retreat at 4 to 12 week intervals if necessary. See Control Series 90.

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<u>Cylindrocladium root rot (Cylindrocladium scoparium)</u>	Leaf spot. Roots on azalea are brown and rotted. "Quick wilt" of top.	Fungus survives in the soil and in the leaves and roots of infected plants.	Favored by high humidity.	Sanitation and benomyl (Benlate®) drenches in propagation, 1 lb/100 gal water; drench container plants with benomyl at same rate.
<u>Rhizoctonia leaf blight (Rhizoctonia solani)</u>	Small brown to tan water-soaked spots on the leaves. Spots enlarge so that 1/2 the leaf may be affected. Oldest and lowest leaves blight and remain suspended in clusters from branches. Stems of some varieties are killed.	Fungus survives in the soil, and in infected leaves and stems.	Favored by high humidity.	Avoid crowding of container plants. Provide for air movement. Avoid overhead irrigation.
<u>Ovulinia petal blight (Ovulinia azalea)</u>	Circular to irregular blotches on the petals. Affected petals become slimy and fall apart when gently rubbed. Diseased petals dry and cling to the plant after they are dead.	Sclerotia of the fungus over-winter in the soil.	Infection favored by high humidity and air temperature of 50-70°F.	<u>Foliage.</u> Apply benomyl when flowers start to show color and at 5 day intervals or spray with zineb or mancozeb 3 times each week during bloom or apply Bayleton to all flower buds to point of run off. Application should be made during the expanded bud stage (color showing) a second application may be needed. <u>Ground.</u> Begin Terraclor as a ground spray prior to opening of buds and repeat 3 to 4 weeks through bloom period.
<u>Botryosphaeria stem canker and die-back (Botryosphaeria dothideae)</u>	Leaves on affected branches droop and roll downward along the mid-vein. Reddish-brown to black sunken cankers girdle the stems and cause die-back. Discoloration of the bark early but the wood and pith become reddish-brown in the later stages of disease. Some hybrids like Nova Zembla are more susceptible than others.	Fungus is systemic in infected plants and may be spread from infected plants by air-borne spores or contaminated pruning equipment.	Lack of moisture in the summer or cold injury may predispose plants to infection.	Prune out diseased branches making pruning cuts below discolored stem tissue preferably at last flush. Pruning to shape plants should be done when the plants are dormant. Because the disease can be spread on pruning implements, consider surface sterilizing them in dilute household bleach (1:9) or 70% alcohol.

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Phomopsis die-back ( <u>Phomopsis</u> sp.)	Principally on 'Indica' azaleas. Wilting of branches and death of lower leaves. Affected leaves turn reddish-brown. The wood of infected stems is discolored usually on one-side.	The fungus survives on infected branches.	Unknown.	Prune out diseased branches. Make pruning cuts at least 2 inches below discolored wood.
Stem cutting rot and root rots. (Phytophthora sp, Pestalotia sp., Pythium sp., <u>Rhizoctonia solani</u> , <u>Cylindrocladium scoparium</u> and Fusarium sp.)	Cut ends of stem cuttings discolor and decay. Callus tissue fails to form. Roots turn brown and die.	Pathogen contaminated rooting media or misting water, unsanitary benches or diseased stock plants.	Favored by rooting media kept wet and soggy or too frequent applications of toxic rate of fungicides that cause root or stem injury.	Use pathogen-free rooting media like Perlite®, Weblite®, peat moss or pine bark. Steam sterilize propagating flats or benches. Use benomyl for the prevention of root rots caused by <u>Rhizoctonia solani</u> and <u>Cylindrocladium scoparium</u> . Use Truban® or Terrazole® for root rot caused by Phytophthora and Pythium spp. See Propagating and Growing Disease Free Plants, MR-37.
Powdery mildew ( <u>Microsphaera alni</u> )	White powdery coating of fungus spores on the lower surface of rhododendron leaves. Particularly severe on certain deciduous azalea cultivars.	Fungus overwinters on diseased leaves.	Occurs in late summer or in fall during overcast periods of weather or in semi-shade.	Remove diseased leaves from vicinity of plant. Apply benomyl at 1/2 lb/100 gal beginning when disease first appears on the leaves.
Nematode stunt (Stunt nematodes Tylenchorhynchus)	Stunting of tops. Leaves are smaller than normal and light green to reddish.	Nematodes overwinter in soil and roots of infected azaleas.	-----	Vydate L® is registered for commercial use. Use according to the label on the container.
Witches broom (cause undetermined)	On a section of the plant, the leaves are much smaller than normal and stem internodes are shortened, resulting in bristly clusters of branches resembling brooms.	Cause undetermined.	Unknown.	Prune out affected portions of plants.
Septoria leaf spot ( <u>Septoria rhododendri</u> )	Small angular reddish-brown spot on leaves. Defoliation may be heavy.	Fungus survives on diseased leaves.	Favored by high humidity.	Avoid overhead irrigation. Avoid crowding of plants. Remove diseased leaves from vicinity of plant. Apply benomyl at 1 lb/100 gal water throughout the growing season.

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Exobasidium leaf and flower gall ( <u>Exobasidium vaccinii</u> )	Youngest leaves and flower buds become fleshy, curled and thick. A whitish bloom forms on the infected leaves. Certain azalea cultivars are very susceptible.	Systemic in developing buds.	Favored by high humidity.	Hand pick galled leaves on current season's growth.
Pestalotia leaf spot ( <u>Pestalotia rhododendrii</u> )	Leaf spot at first white in the middle with a dark brown margin, later it becomes a blotch. Small black bodies appear in the spots.	Fungus survives on diseased leaves.	Follows cold injury to leaves, sunscald, or other chemical or mechanical injury.	Prevent leaf injury or insect damage.
Phytophthora die-back ( <u>Phytophthora cactorum</u> , <u>Phytophthora citricola</u> )	Terminal buds and youngest leaves wilt, become blackened and shriveled. Some hybrids like Nova Zembla and Chinoides are highly susceptible.	Fungus survives on plant and in the soil.	Favored by high humidity.	Avoid overhead irrigation.

Trade and brand names are used only for the purpose of information and the Virginia Cooperative Extension Service does not guarantee nor warrant the standard to the product, nor does it imply approval of the product to the exclusion of others which may also be suitable.

#### KEYS TO PROPER USE OF PESTICIDES

1. Read the label on each pesticide container before each use. Follow instructions to the letter; heed all cautions and warnings, and note precautions about residues.
2. Keep pesticides in the containers in which you bought them. Put them where children or animals cannot get to them, preferably under lock and away from food, feed, seed, or other material that may become harmful if contaminated.
3. Dispose of empty containers in the manner specified on the label. If disposal instructions are not printed on the label, burn the containers where smoke will not be a hazard, or bury them at least 18" deep in a place where water supplies will not be contaminated.

SEE YOUR DOCTOR IF SYMPTOMS OF ILLNESS OCCUR DURING OR AFTER USE OF PESTICIDES

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