

Phytophthora

Root and crown diseases are very common in the greenhouse and nursery and may be caused by several pathogens. It is very important to accurately identify the causing organism to avoid applications at the wrong time and with the wrong material. Typically, this requires laboratory diagnosis. Phytophthora root rot symptoms are similar to those caused by Pythium and other pathogens. Phytophthora symptoms vary with the host plant and may include large, wet looking leaf spots and blacked stem cankers. Phytophthora diseases develop very rapidly (seemingly overnight) when conditions are warm to hot.

Phytophthora are water molds which require wet conditions to colonize and spread. They have mobile spores (zoospores) which move with water, hence the name water mold. They can infect roots, stems and leaves, but the most common infections occur in the crown zone. To minimize infections, growers should avoid excess nitrogen and high soluble salts. Avoiding overhead irrigation will decrease the likelihood of disease spreading through splashing and foliar infections.

Sanitation and good drainage are critical to controlling diseases caused by *Phytophthora* spp. which multiply rapidly under water-logged conditions. Infection patterns will usually follow water use, especially if there is runoff or splashing from irrigation. If possible keep pots off the floor and avoid situations where they are sitting in water.

Control is difficult and most fungicides only offer protection and not eradication of Phytophthora crown and root rot. However, Terrazole L and Terrazole L CA have curative action on existing Phytophthora root and crown infections. When conditions are favorable for crown and root rots, it is very important to use a fungicide rotation to avoid fungicide resistance. Under favorable conditions for disease development applications should be made at 14 to 28 day intervals for crown or root rot and 7 to 14 days for foliar diseases.



Brown rotted roots on forsythia (plant on left)



Petunia crown rot caused by Phytophthora



Liriope crown rot caused by Phytophthora

(Photos all courtesy of A. Chase)

OHP Products Registered for Phytophthora Root and Crown Rot Control

Products	Chemical Class	MOA Group	REI	Residual Control
Terrazole® L	Thiadiazole	14	12	28 days
FenStop®	Imidazolinone	11	12	14 days
Aliette® WDG	Ethyl Phosphonate	33	12	30 days
Segway® O	Cyano-imidazole	21	12	7 to 28 days
Compass® O	Strobilurin	11	12	7 to 28 days

OHP Suggested Prescription Solution Program for Phytophthora Root and Crown Rot Control

Prevention

Application	Rate per 100 gallons	Remarks
1.) Terrazole® L Terrazole® L CA	3.5 to 6 fl. oz.	Drench volume specific to pot size
2.) Compass® O or 2.) FenStop®	1 to 2 oz. 7 fl. oz.	As a drench or spray
3.) Segway® O	3 fl. oz.	Drench to wet the upper 1/2 of growing media
4.) Aliette® WDG	2.5 lbs.	Monthly interval

Eradication

Application	Rate per 100 gallons	Remarks
1.) Terrazole® L	10 fl. oz.	Drench volume specific to pot size (not for use in CA)
2.) Aliette® WDG	2.5 to 5 lbs.	Foliar spray
3.) Segway® O	3 fl. oz.	Drench to wet the upper 1/2 of growing media
4.) FenStop®	14 fl. oz.	14 to 28 day interval

TBS = tablespoon tsp = teaspoon mL = milliliter 1 fl oz = 29.6 mL 1 tsp = 5 mL

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