

Phytophthora Related Diseases

Photo Credit: M.M. Dewdney, J.D. Yates, J.H. Graham



Damage to trunk



Shoot dieback



Yellow veins



Brown rotted fruit on grove floor



Brown rot on Hamlin orange



Brown rot on grapefruit



Fruit drop caused by brown rot



Phytophthora Foot Rot

Scientific Name: *Phytophthora nicotianae*

Initial Symptoms: yellow foliage fall/winter and poor growth to shoot dieback

Terminal Symptoms: leaf drop; fruit drop; further dieback leading to tree death

Trunk Symptoms: bark cracking; gumming; lesions can girdle trunk; found near the crown to below soil line; some healing can occur

Residential Management: resistant rootstocks like Swingle or trifoliolate oranges, plant bud union above soil; do not overwater; *Diaprepes* control

Brown Rot

Scientific Name: *Phytophthora palmivora*

Symptoms: light brown leathery decay; white fungal growth on surface when humid; infected fruit have strong, sharp smell; can spread in container once fruit is harvested

Residential Management: remove premature fallen fruit, raise tree skirts; no overhead irrigation; apply preventative sprays of phosphites or copper in late July (if a long rainy season, a second application in October)

Phytophthora Related Diseases

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Photo Credit: J.H. Graham, L.W. Duncan

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Healthy Roots



Damaged Roots



Root damage impairs the water and nutrient uptake



Root damage can deplete stored carbohydrate



Adult weevil is about 3/8 to 3/4 inch



Adult weevil feeds on young leaves causing a notching on the leaf margin



Root girdling by the *P. nicotianae-Diaprepes* complex on sour orange (Desoto County)



Leaf notching caused by *Diaprepes* root weevil

Phytophthora Root Rot

Scientific Name: *Phytophthora nicotianae* or *P. palmivora* in wet soil

Symptoms: soft, water soaked root cortex; cortex sloughs off (comes off to touch) to leave thread-like tips; little to no water or nutrient uptake leading to wilting; mature trees difficult to diagnose; reduced fruit size and/or number; leaf loss; twig dieback; reduced yield over several years

Residential Management: resistant rootstocks like Swingle or trifoliolate oranges; plant bud union above soil; do not overwater; *Diaprepes* control

Diaprepes Root Weevil

Scientific Name: *Diaprepes abbreviatus*

Symptoms: adults cause leaf notching, but larvae feed on roots; feeding allows the *Phytophthora* spp. to cause root damage

Residential Management: when planting new trees, place landscaping cloth around tree base; adults have trouble getting into soil and it stops the larvae from emerging

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