

# The Backyard Orchard – Citrus Diseases – Module 5.4 Other Diseases Part 1



LSU AgCenter Backyard Orchard  
Certificate Course

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# Foot rot/Root rot/Gummosis

- The disease is most frequently encountered on the trunks and roots of citrus trees in Louisiana.
- The disease is caused by a soil-borne water mold known as *Phytophthora* spp., a fungal-like organism.
- The pathogen produces motile spores called zoospores that splash with irrigation or rain water and invade the trunk at the bud union resulting in foot rot.
- Wounds or injuries caused to lower trunk near soil line provide entry sites for the pathogen.
- Wet conditions during the spring favor foot rot development.
- Above ground symptoms include wilting, yellowing of the leaves followed by defoliation and twig dieback.

# Foot rot/Root rot/Gummosis

- Rapid defoliation may occur on severely infected trees under favorable environmental conditions.
- Foot rot symptoms start with water soaking of the bark that appears as a dark spot on the trunk. At first, the bark appears firm, but with age it becomes cracked and may shred as it dries.
- Gummosis (gum exudates from the trunk) often accompanies advanced stages of foot rot.
- Root rot interferes with the water and nutrient uptake resulting in the poor health of the trees.
- Infected roots become soft, brown or discolored and fibrous roots slough losing their cortex.
- Root injury caused by larvae of citrus root weevil, *Diaprepes abbreviatus* provides infection sites for *Phytophthora* spp.



# Citrus Root Weevil (*Diaprepes abbreviatus*)



A. Eggs B. Larva C. Orange Form Adult D. White Form Adult



# Foot rot/Root rot/Gummosis symptoms



Rapid defoliation may occur on severely infected trees.



# Foot rot/Root rot/Gummosis symptoms



Dead citrus tree in a commercial orchard.



# Foot rot/Root rot/Gummosis symptoms



Dark spot near  
the bud union



Gummosis and bark  
shredded bark



# Foot rot/Root rot/Gummosis management

- Remove and discard dead trees along with the stumps.
- Avoid planting new trees in the sites where disease have occurred previously.
- Avoid injury to the trunk near soil line during and after planting.
- Maintaining adequate drainage and avoid water logging conditions.
- The pathogen survives in the soil and moves in running or splashing water. Manage irrigation to restrict the pathogen movement.
- Prune lower limbs off the ground to allow air movement around the tree.
- Fungicide containing mono- and di-potassium salts of phosphorous acid as an active ingredient may be applied as pre-plant soil drenches.
- Commercial growers should consult LSU AgCenter Plant Disease Management Guide.



# Heart rot

- Several species of wood rotting fungi called *Ganoderma* can cause heart rot of citrus.
- Heart rot occurs when the fungus invades the tree trunk through wounds or injury at or near the soil line and kills the sapwood.
- The pathogen kills the tree from inside out.
- After some time, conks or mushrooms appear on the trunk of infected trees.
- Other symptoms related to heart rot include, yellowing of leaves, defoliation, twig dieback and general decline of the trees.
- Infected trees eventually die and the tree trunks disintegrate and decompose over time.



# Heart rot symptoms



Mushroom conk



# Heart rot management

- There is no chemical control available for heart rot.
- Completely remove infected trees along with roots and stumps.
- Avoid planting in the same spot where an infected tree has been removed.
- Avoid injury to the tree trunk at or near soil line during and after planting.
- Complete care of the trees help avoid infection and spread of heart rot.
- Maintain adequate nutrition and follow a proper irrigation program.
- Avoid any drought stress especially during summer months.

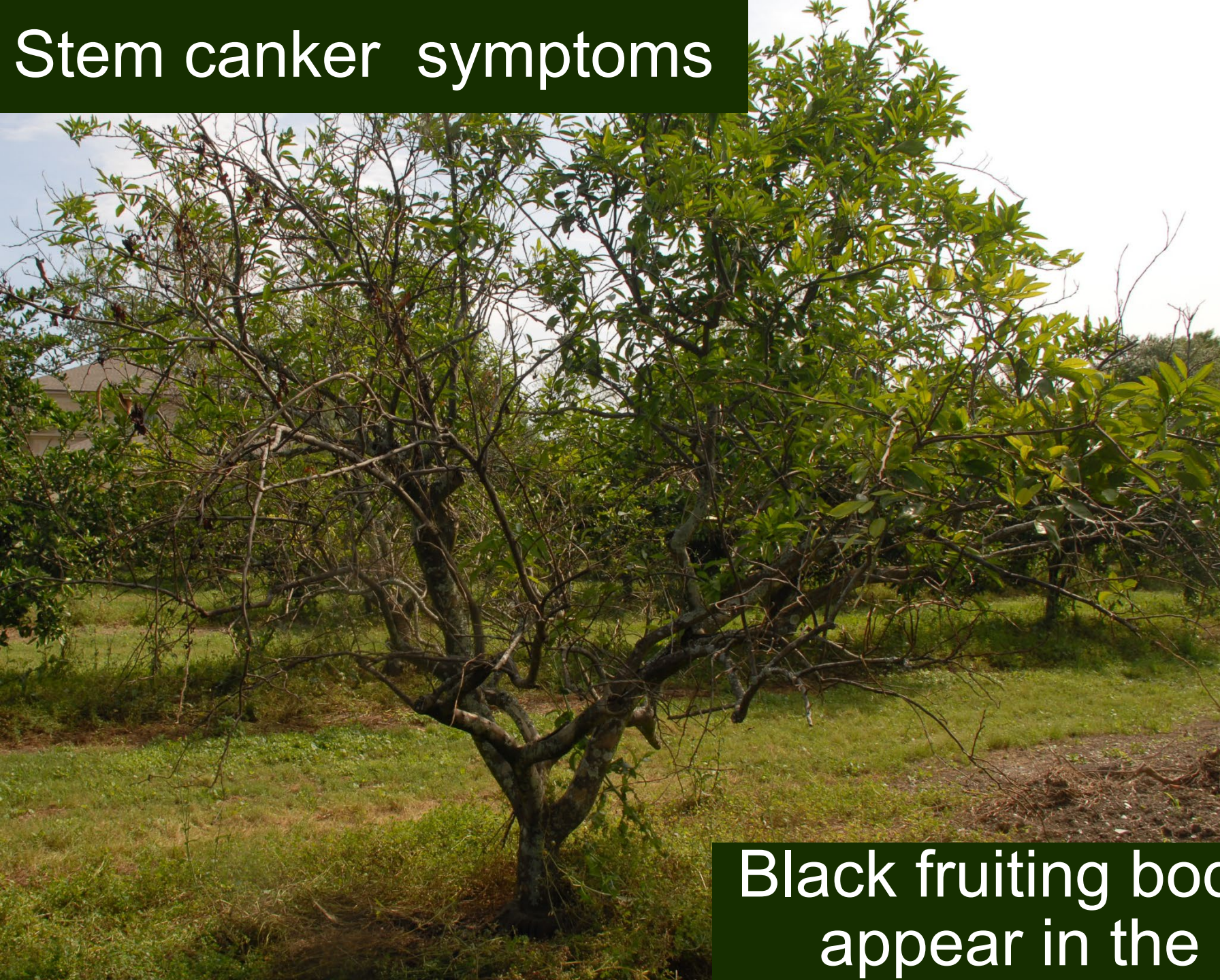


# Stem canker

- Stem canker caused by *Botryodiplodia* sp. is a fungal disease.
- Symptoms start with wilting of the leaves and twig dieback occurs.
- Wilted leaves may remain on the tree for several days.
- Infected tissue becomes lighter in color than the rest of the bark.
- Black fruiting bodies of the fungus appear in the cankered area.
- The fungus may produce cankers on both lateral shoots and main trunk.
- Under favorable environmental conditions, canker can girdle the entire trunk resulting in a rapid decline and death of the tree.



# Stem canker symptoms



Black fruiting bodies of the fungus appear in the cankered area



# Stem canker management

- Remove and discard affected twigs/branches.
- Avoid unnecessary injury during pruning of trees.
- Clean pruning and cutting tools with disinfectant between cuts.
- There is no effective chemical control available for stem canker.
- Maintain healthy vigorous trees with adequate nutrition and proper irrigation.





Please post all your questions and results to the message board that was emailed to you.

