



# Symptom Identification of Citrus Brown Wood Rot

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## BWR Facts

- Also known as brown heartwood rot or brown heart rot.
- Wood decaying disease caused by basidiomycete *Fomitopsis meliae*.
- The fungus sporulates on colonized wood under humid condition.
- Spread by airborne fungal spores.
- Initial infections require a wound for ingress.
- All citrus varieties are susceptible with lemon being the most susceptible.

- Wilting or dead leaves on badly affected limbs.
- Canopy dieback, sparse or see-through canopy, premature tree aging and structure failure of the trees.

## Branch Symptoms

- Branch death and often is partially broken from the tree.
- Gummosis (i.e. exudation of gum) of branch or trunk, sugary powder deposit often is observed at active infection site.
- Bark or wood splitting.
- The fractured infected wood is brown in color.
- Exposed wood often covered with white mycelium.

## Tree Canopy Symptoms

- Leaf chlorosis and yellowing as well as twig dieback on a BWR affected limb.
- Leaves on BWR girdled limb fall off.



Leaf yellowing, yellow vein Dead



Dead branch with brown leaves



Branch dieback with yellow leaves



Defoliation with sparse canopy



Gummosis with brown wood



Scaffold branch splitting from trunk



Dead tree trunk covered with white mycelium



Basidiomata developed on fully colonized wood



Partially broken twig with oozing sap and wilting leaves



Complete branch break away with profuse gummosis



Decayed wood covered with white mycelium



Twig break away with light brown wood



Brown wood with sugary powder



Bark splitting with oozing sap



Wood splitting with oozing sap



Dead tree trunk covered with white mycelium



Twig dieback at lower canopy



Twig dieback at upper canopy



Broken branch with decayed brown wood



Brown lesions in the heartwood of a 3 year old young tree



Broken branch with oozing sap



Profuse gummosis of branch at upper canopy



Oozing sap from a branch at lower canopy



Canopy yellowing with progressive decline in vigor



Branch death with wilted leaves in a young lemon tree



Oozing sap with sugary powder



2 year old lemon tree killed by BWR



Partially broken branch with leaf yellowing



Splitting branch with BWR infection



Branch break away with sugary powder



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