What's That Spot On My Tree?

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CITRUS IN THE HOME LANDSCAPE

Take Home Messages

- Identifying diseases seems easy on paper, but outside it can be challenging
- Cultural management is the important first step to managing diseases in the home landscape

Outline

- Common citrus diseases expected in study
 - Citrus canker
 - Greasy spot
 - Melanose
- Review of diseases

Citrus Canker

- Caused by bacterium *Xanthomonas citri* subsp. *citri*
- Rain accompanied by wind are the best conditions for canker spread
- Winds from tropical storms can cause disease in tissue that would not normally be infected



Leaf Lesions

- Leaves susceptible when partially expanded
 - Half expansion
- Leaf lesions are visible on both sides of the leaf
- Initial lesions are pin-point spots
 - 2-10 mm (> ¼ ½ in)
 - Slightly raised, tiny blister-like lesions
 - Very subtle
- Circular to irregular in shape
 - Corky, raised on both sides of leaf
 - Prominent yellow halo
 - Necrotic center as lesion ages





More Examples



Leaf Lesions

- Center of the lesion becomes raised and corky
 - Lesions flatten with age
- As lesions age, turn tan to dark brown to gray
 - Water-soaked margin forms surrounded by a yellow ring or halo
 - Margins become brown
- Leaf miner damages can be come colonized
 - Amplifies the amount of inoculum







Always Turn Leaves Over!





Old Leaf Lesions



Younger Fruit Lesions

- Infection most severe when fruit diameter > 0.25 inches and < 1.25 inch
- Can be subtle and easily missed
 - Start as small blisters on fruit surface
 - Become raised
- If infected when fruit are small, lesions can expand rapidly
- Water-soaked margin common
- Yellow halos start after watersoaked margin





Older Fruit Lesions

- Lesions darken to brown and black
 - Often surrounded by yellow halos
 - Water-soaked margins can form
 - Get flatter as they age and are sometimes sunken
- Fruit can be green around lesions
- Lesions cause blemishes and early fruit drop
 - Usual culprits occur early in season or are close to the stem (peduncle)



Stem Lesions

- Immature stem lesions are very difficult to spot
 - Bacteria can exude from these lesions for up to 4 years
- Mature stem lesions appear scabby or corky
 - Usually indicate the bacteria has been present for a long time
 - Can be difficult to see although present



Citrus Canker Management

- Keep trees in protected area to block wind
- Remove leaves or branches if in small portion of canopy
 - Bag and dispose according to local guidelines
- Do not work with clean trees after infected trees
- Clean your tools between trees or locations
 - 1 fluid ounce bleach to 1 gallon water
 - Make fresh daily
 - Will not be effective on dirty tools
- Apply copper every 2 weeks (based on copper formulation available to general public)
 - From April through August for oranges
 - From April through October for grapefruit

Greasy Spot

- Caused by fungus *Zasmidium* citri-griseum
- Spores are formed in the leaf litter
 - Lesions from previous season
 - Ejected from litter float in air currents
- Grows on plant surfaces and infects in late summer
- Plant surface growth vulnerable in mid- to late spring
 - May to mid-June



Greasy Spot

- Initial symptoms are yellow mottle on leaf surface
 - Matching yellow to orange blister on underside of leaf
 - Most of the chlorosis will disappear as lesions mature
- Eventually, lesions become slightly raised and darker
 - Dark brown to black with a very greasy appearance
 - Smooth to the touch
- Infected leaves often drop prior to forming dark lesions



Greasy Spot Rind Blotch

- Necrotic specks on the rind between the oil glands
 - Dead guard cells of the stomates and other cells surrounding stomatal chamber
 - Can affect large areas on the rind
- Lesions start light pink but become brown to blue-black
- Mostly a problem on grapefruit
 - Most cultivars, damage too small or light to cause blemish
 - Can cause rind to remain green



Greasy Spot Management

- Remove leaf litter from around trees
 - Cover to compost or dispose in waste stream of your municipality
- Time treatments to affect plant surface growth
 - Late May to mid-June
- Horticultural oil (1 to 4% per volume) will keep leaves of oranges clean
- Copper (use label rate) every two weeks from May until mid-June

Melanose

- Lesions on fruit, twigs, and leaves
 - Small, red brown, discrete lesions
 - Yellow halos present at first but they re-green
 - Young flush can be distorted if infection severe
 - Leaves and twigs feel like sandpaper
- Fruit lesions vary in size depending on age when infected
 - Larger if young fruit infected
 - Can coalesce to form large areas
 - Cracking of large lesions can occur
 - Termed mudcake melanose
 - Tear streaking occurs on fruit







Melanose Management

- Remove as many dead twigs as possible
 - Target those smaller than the diameter of a pencil
 - Dispose of dead wood with yard waste
- Grapefruit is particularly susceptible
 - Symptoms do not harm fruit edibility
 - Can be unsightly
- Copper applications best chemical control
 - Applications should start in late April and continue to mid-July every 2 weeks

Let's Review!

Identify the disease.



Melanose

Citrus canker

Greasy spot



Is this citrus canker?





Which fruit has canker?







Is this melanose?



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Is this citrus canker?



Yes

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Is this greasy spot?



Yes

No

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Identify the disease.



Citrus canker Greasy spot

Melanose



Identify the disease.



Melanose A

Citrus canker **B**

Greasy spot

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Any questions?

Thank you!





CITRUS IN THE HOME LANDSCAPE

Photo Credits

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