

Identification and Treatment of Fruit Rots and Other Diseases



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Berry Rots

- Soft rots of berries
 - Ripe Rot
 - Bitter Rot
 - Macrophoma Rot
- Cankers on berries
 - Black Rot

Berry Rot Life Cycle

Winter – survives in pedicels and mummy berries.



Summer – rapid spread of disease with ripening.



Spring - latent infection of young berries during rainy weather.

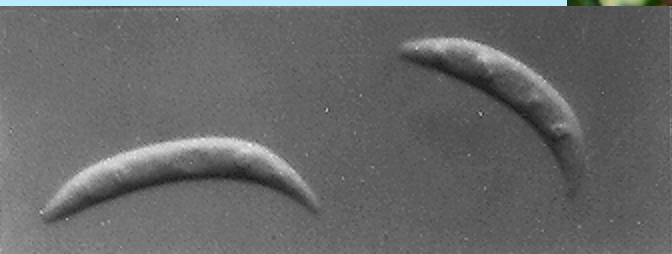


Ripe Rot

- *Colletotrichum spp.* (anthracnose)
- Infect a wide range of crops plants (grapes, apple, peach, kiwi, papaya, mango etc.)
- Likes warm and wet conditions.
 - needs 6-8 hours wetness for infection.
- Conidia spread by wind and rain and feeding insects.
- Can cause latent infections in immature fruit.
 - Can lead to rot in storage.
- Overwinters on mummified berries and berry pedicels.
- Particularly common on Higgins, Magnolia, Summit, Carlos, Fry, and Scuppernong.

Ripe Rot

- Identification
 - Infection only visible on ripening berries.
 - Soft rot of berries.
 - Salmon or cream colored spots on rotting fruit.



Bitter Rot

- *Greeneria uvicola*
- Can infect leaves, flowers, and berries, but does not sporulate on leaves.
- Gives a bitter flavor to wines and juices, hence the name.
- Invades berries from the pedicel.
- Symptomless berries may have a shorter shelf life.
- Overwinters as mummified berries and on infected pedicels.
- Flush of spores during flowering and again at fruit ripening.
- ‘Higgins’ and ‘Fry’ extremely susceptible.

- Leaf infections occur early in the year.



Bitter Rot

- Identification
 - Pin head black spots on rotting berries.
 - Small black spots on leaves, flowers, and tendrils.
 - Tends to rot whole berry versus a specific lesion.



Macrophoma Rot (Bot Rot)

- *Botryosphaeria dothidea*
- Fungus in this genus also cause dead arm disease.
- Wide host range and infects many woody plants.
- Common on Fry, Higgins, Summit, and Triumph and Carlos.
- Control with early cover sprays of Captan.

Macrophoma Rot (Bot Rot)

- Identification

- Rot appears as berries reach full size.
- Starts as a firm tan to brown lesion.
- Generally identified by the lack of salmon (ripe rot) or black (bitter rot) spots.
- Results in a hollow shell of a berry.

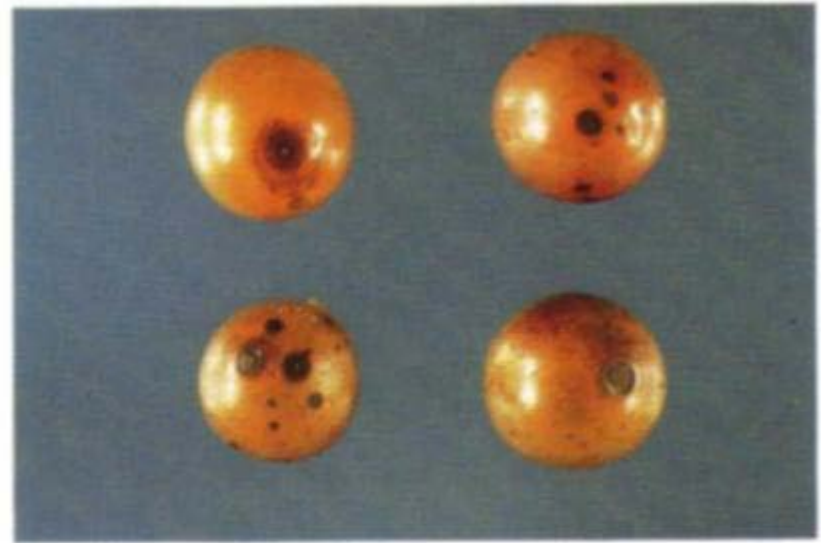


Fig. 5. Various stages of Macrophoma rot on muscadine grapes caused by *Botryosphaeria dothidea*.

Black Rot

- *Guignarida bidwellii* f. *muscadinii*
- Produces large brown lesions on leaves.
- Superficial scab produced on berries.
- Often common, seldom severe.
- Prevalent on Cowart and Carlos.



Berry Rot Control

- Control
 - Chemical control starting at cap fall.
 - Early harvest of fruit.
 - Control of feeding insects.
 - Remove mummified berries and clusters.
 - Avoid bronze cultivars.
 - Flail mow crop debris during winter.
 - Avoid overhead irrigation.



Leaf Spots

- Angular Leaf Spot
- Bitter Rot
- Black Rot

Angular Leaf Spot

- *Mycosphaerella angulata*
- Only affects muscadine grapes.
- Infections occurs after midseason.
- Results in leaf loss and exposure of grapes to sun scald.
- Weakens vines and makes them more susceptible to cold damage

Angular Spot Life Cycle

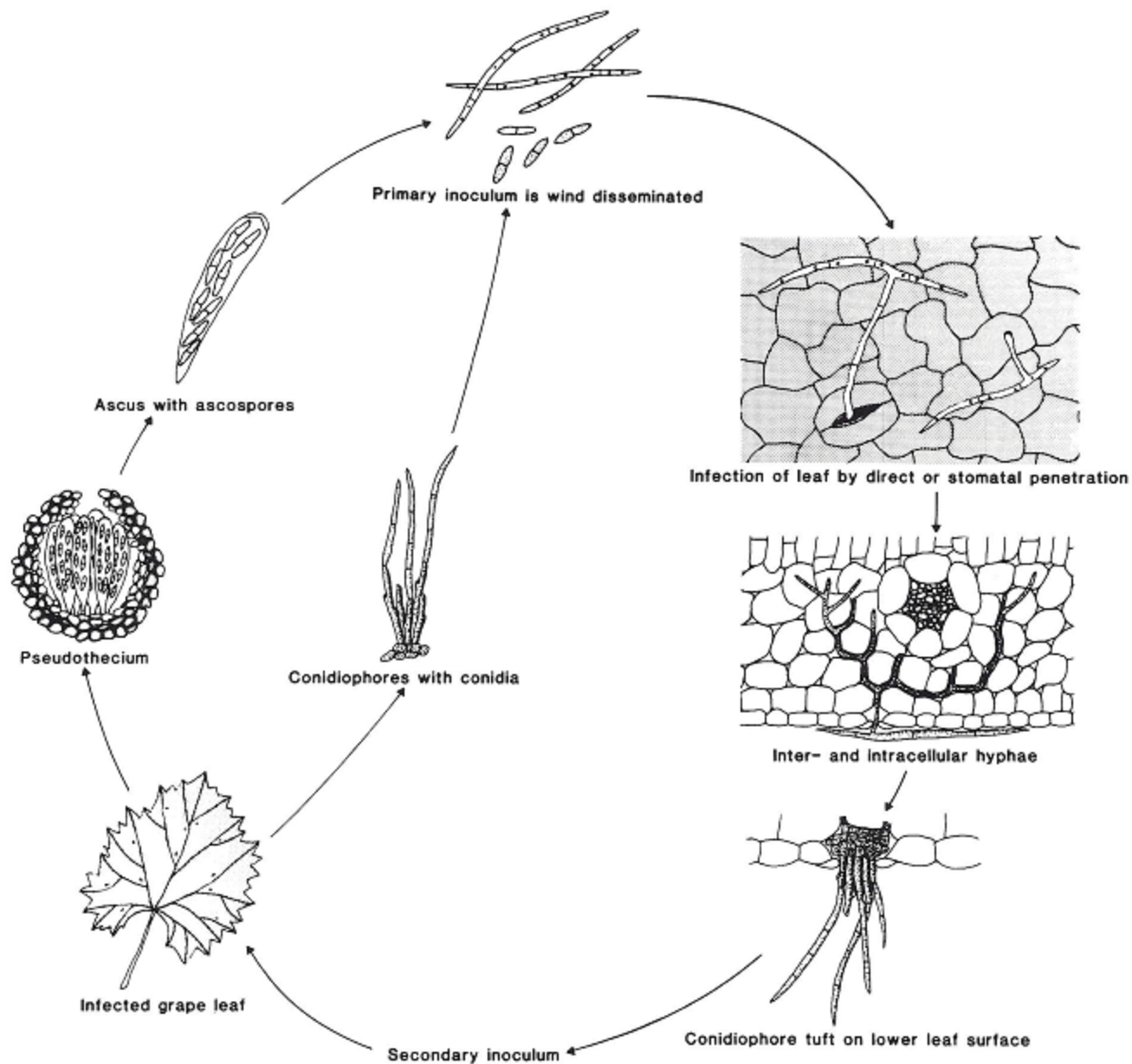


Fig. 22. Disease cycle of angular leaf spot of muscadine grape, caused by *Mycosphaerella angulata*. (Drawing by M. E. Daykin)

Angular Leaf Spot

- Control
 - Destroy crop residue.
 - Remove nearby wild muscadine vines.
 - Apply fungicides, especially mid to late season.
 - Keep vines healthy.



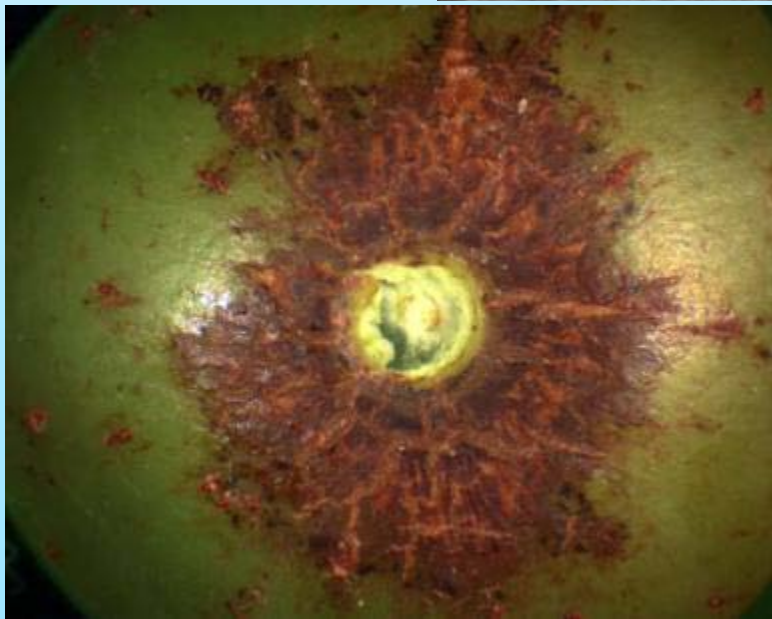
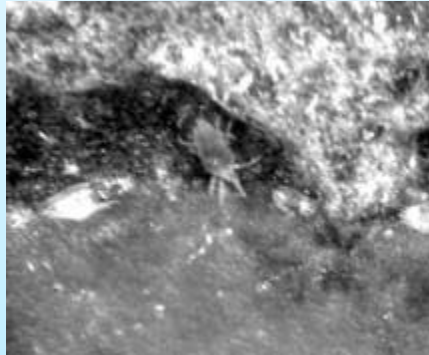
Miscellaneous Diseases

- Powdery Mildew
 - *Uncinula necator*
 - Attacks berries just after fruit set, causing a fruit russett.
 - More common in the northern regions.
 - Causes a brown russetting of fruit skin.
 - Don't confuse with flat mite damage that causes a russett primarily around the stem.



Flat Mite Damage

- Feeding damage concentrated around the stem scar.



Miscellaneous Diseases

- Sooty Mold
 - *Peltaster fructicola*
 - Dark superficial discoloration, can be rubbed off.
 - Common on 'Fry'.
 - Caused by aphid honeydew building up on leaves and fruit.



Miscellaneous Diseases

- Pierce's Disease
 - *Xylella fastidiosa*
 - Bacteria grow in xylem and prevent water flow, producing a leaf scorch.
 - Not very common on muscadine.
 - Can be a problem in 'Carlos'.



Fungicide Scheduling

- Check with your plant pathologist.
 - Early season sprays are very important, berries can become infected and not show it until ripening.
 - Start when shoots are 6-10 inches and continue every 2 weeks. Early application important with bitter rot.
 - Alternate Nova with Captan.
 - If ripe rot is prevalent replace Captan with Abound.
 - If you wish to avoid spraying, concentrate on growing dark colored varieties. Alachua, Nesbitt, Polyanna, Southern Home, Noble, Supreme.
 - In bronze types, generally thicker skins give more protection. Triumph

