Apple Fruit Rot Diseases

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Fruit Rot Diseases

- Pre- and postharvest rots

- Disease management begins at the end of June
  - Fruit rots can result in total crop loss
  - Fruit blemishes can decrease market value
  - Postharvest rots can reduce consumer confidence

- Fungicides and sanitation practices are the main control method
  - Spray program shifts from 7 day (early season apple diseases) to 14 day intervals

Preharvest Fruit Rot Diseases

- Bitter rot
- Black rot
- White rot

*also occur postharvest

Bitter Rot

Colletotrichum gloeosporioides

Bitter Rot

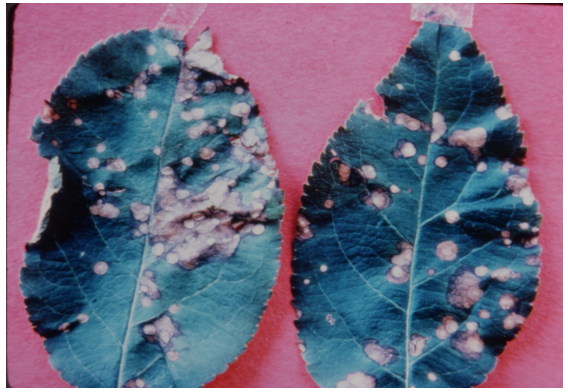
- No wound required to penetrate apple skin

- Spores produced on overwintering material
  - mummified fruit
  - dead wood

- Spores released during hot (80 F) and humid (80-100% RH) conditions

Black Rot Diseases

- *Botryosphaeria obtusa*
  - Fruit rot (also pear and quince)
  - Leaf spot (frogeye leaf spot)
  - Canker
    - Main disease in Northeastern US



Black Rot on Fruit

- Occurs late in the season
- Fungus requires a wound for infection to occur
- Fungus enters fruit through calyx causing core rot
- Spores released during warm (68-75 F) and wet weather
- Spores overwinter in cankers, fallen leaves and on mummies

White Rot Diseases

- *Botryosphaeria dothidea*
  - Fruit rot (also crabapple and pear)
  - Canker
    - Associated with stress and winter injury

White Rot of Fruit

- Requires a wound for infection to occur
- Infection goes to the core
- Spores released during hot (80-90 F) and wet weather
- Spores overwinter on cankers or mummies

N. Ward, UKAg Extension

Fruit Rot Management

- No resistant varieties

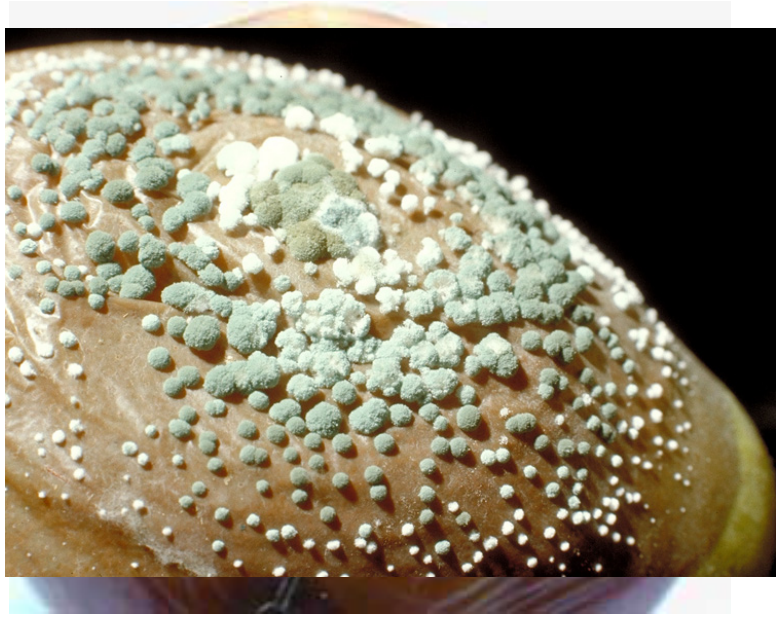
- Cultural practices that maintain healthy trees
  - Annual pruning
  - Balanced fertility (adequate calcium)

- Sanitation
  - Removal and disposal of dead wood
  - Removal and disposal of plant debris and mummies
    - chopping with flail mower

Fungicide Spray Program for Fruit Rots of Apple

- First cover through harvest
  - 7-10 days until third cover spray
  - 10-14 days through harvest
- Broad spectrum protectants most effective against summer rots
- Apply harder chemistries (i.e. Merivon or Pristine) just before harvest to prevent rot during storage

Post-harvest Fruit Rots



Blue Mold
Penecillium expansum

Grey Mold
Botrytis cinerea

Mucor Rot
Mucor piriformis

Post-harvest Fruit Rot Management

- Harvest fruit at proper maturity
- Harvest fruit carefully to avoid bruising or wounding
- Use clean harvest and storage bins
  - Plant debris and soil are sources of inoculum

Post-harvest Fruit Rot Management

- Keep fruit cool after harvest

- Maintain constant chlorine concentrations in dump tank and flume water
  - Temperature (equal to or warmer than the apples
  - pH (6-7.5)
  - ORP (>750) and/or free chlorine (100 ppm for dump tank, 30 ppm flume)
  - Turbidity

*chlorine dioxide and PAA can also be used to treat tank and flume water

Chlorine Monitoring Tools

$179

$555

$3600-7500

Fruit Pathology Laboratory

u.osu.edu/fruitpathology/

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Ohio Fruit News

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Thank You!

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