

Updates on Managing Peach Diseases: Emphasizing Brown Rot

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Peach Yield in 2020

2020 Was a Big Peach
Year in Illinois

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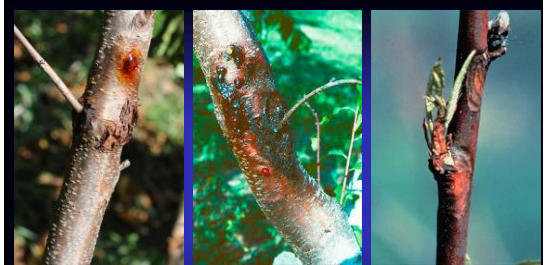
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Major Peach Diseases in Illinois in 2020

- Leucostoma Canker - 2019
- Bacterial spot - 2020
- Brown rot - 2021

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Wounds and cankers of peach

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Leucostoma Canker: Management

- No resistant cultivars are available
- No registered fungicide; captan + Topsin-M may be effective
- Select well-drained soil; plant cold tolerant
- Avoid excessive nitrogen; fertilize in spring
- Prune in spring and burn dead woods
- Remove small cankers
- Control insect pests and rodents

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Peach Bacterial Spot

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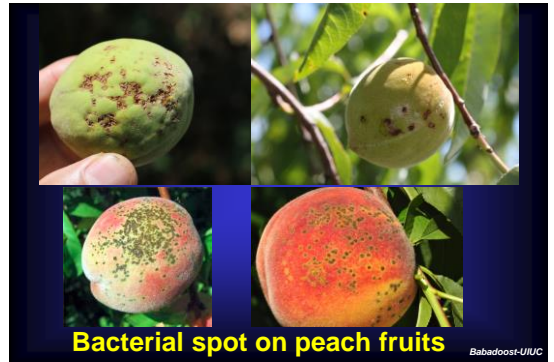
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Peach bacterial spot in Illinois

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Bacterial spot on peach fruits

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Management of Bacterial Spot

- Plant resistant/tolerant cultivars
- Cultural practices
 - ❖ **Avoid nutrient stress:** Lower disease severity
 - ❖ **Avoid excessive growth:** Lower moisture
 - ❖ **Drying plant:** Avoid low and shaded area
 - ❖ **Sandy soil:** Prevent sand blowing
- Chemical use: **copper, oxytetracycline**

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Applications of Copper Sprays

2.0-2.5 lb Cu/A	1.5-2.0 lb Cu/A	1.0 lb Cu/A
Early bud-break	Pink-bud	Blossoms opening

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Applications of Copper and Mycoshield

0.50 lb Cu/A	0.10-0.25 lb Cu/A (+ Mycoshield)
Petal-fall	Shuck-split/Shuck-off

Copper phytotoxicity may occur

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Bacterial Spot of Peaches

- Registered chemicals
 - ❖ Copper compounds (**Kocide-3000, Cuprofix Ultra, Badge SC; FRAC: M**)
 - ❖ FireLine (**oxytetracycline-hydrochloride; FRAC: 41**)
 - ❖ Mycoshield (**oxytetracycline-calcium; FRAC: 41**)

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Controlling Bacterial Spot (Summary)

- Bacterial spot occurs on twigs, leaves, and fruit.
- Infections of fruit can cause significant economic loss.
- Fruit infection is most severe in years when frequent periods of rainfall occur during the 3 to 4 weeks following petal fall (until pit-hardening).
- Sprays of fixed copper from dormant bud through shuck split can reduce fruit infection. Cover sprays containing Mycoshield and/or low rates of copper can reduce fruit loss.
- Time of applications is critical; sprays should be applied prior to rainfall but with sufficient time for the chemicals to dry.
- Chemical sprays, however, are not totally effective on highly susceptible cultivars in years when conditions for bacterial spot are very favorable.

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Peach Brown Rot

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Peach infections by *Monilinia* spp.

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Brown Rot of Stone Fruits

- Pathogen: fungi *Monilinia* spp.
- Major symptoms:
 - ❖ Blossom blight and spur blight
 - ❖ Fruit rot
- Inoculum sources: mummies, twig canker

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Importance of Peach Brown Rot

- Worldwide occurrence
- Pathogen is active season-long: causes blossom blight, spur blight, and fruit rot (orchard and post-harvest)
- More than one species of pathogen
- Very important disease in Illinois

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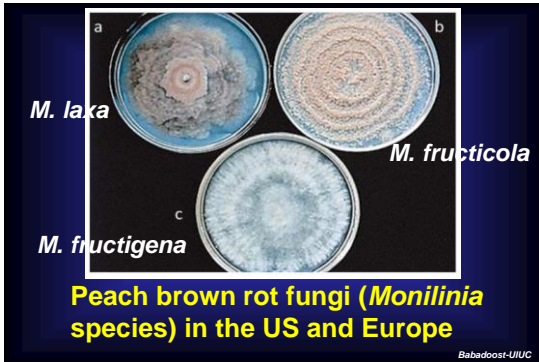
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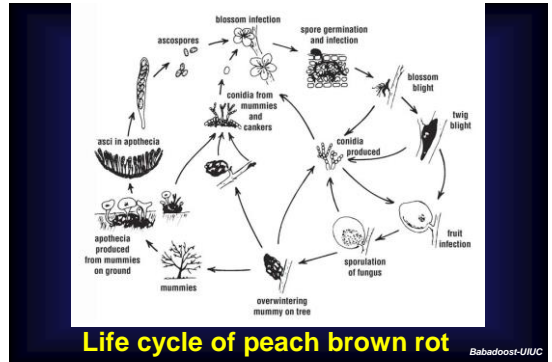
Peach brown rot worldwide

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Managing Peach Brown Rot

- Cultural practices
 - ❖ Remove mummies
 - ❖ Prune blighted twigs
 - ❖ Disk the ground in spring to prevent spore production on mummies
 - ❖ Remove wild and neglected stone fruit trees

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Fungicide Efficacy for Peach Brown Rot

Fungicide	Brown R. Bloom	Brown R. Fruit	Fungicide	Brown R. Bloom	Brown R. Fruit
Adament	E	E	Pristine	G	G
Bravo	G	---	Procure*	G	G
Captan	G	F-G	Quash	G	G
Captevate	E	E	Rally*	E	---
Elevate	E	E	Rovral	E	E
Fontelis	E	E	Scala	G	G
Indar*	E	E	Sulfur	F	P
Inspir Super	E	E	Syllit*	---	P
Luna Sensa.	E	E	Topguard	E	E
Merivon	E	E	Topsin-M*	E	E
Orbit*	E	E	Vanguard	G	G

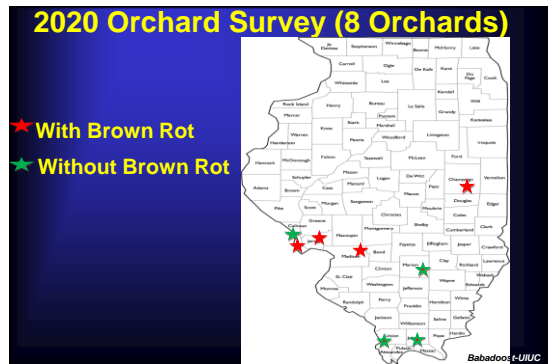
P = poor; F = fair; G = good; E = excellent; --- = unknown.
 * = resistance reported (not in Illinois).

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Research on Peach Brown Rot

- In 2020, we initiated a research project on peach brown rot
- Objectives of the project
 - ❖ Orchard survey to assess brown rot incidence
 - ❖ Identify species of pathogen(s) of brown rot
 - ❖ Evaluate efficacy of fungicides with different modes of action in the laboratory
 - ❖ Evaluate efficacy of potential fungicides for managing blossom blight, shoot infection, and fruit rot

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