

# Powdery Mildew

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# **Powdery Mildew**

## ***Podosphaera leucotricha***

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- Serious fungal disease of apples in ON
- Affects young tissue, including shoots, leaves, blossoms and fruit
- Reduces vegetative shoot growth vigour, winter hardiness and productivity
- Susceptible varieties:

Cortland  
Idared  
Paulared  
Gala

Honeycrisp  
Mutsu  
Fuji  
Russet

# Shoot Symptoms

- Result of OW infections in dormant buds
- Break dormancy later than healthy buds
- Chalky or fuzzy appearance
- Feathered, pointed or shriveled



**Healthy**



**Powdery mildew**





## Leaf Symptoms

- White, felt-like patches of fungal growth
- Typically lower surface of leaves colonized first
- Leaves narrow, become brittle and have pinkish-red discoloration on margins
- May drop prematurely

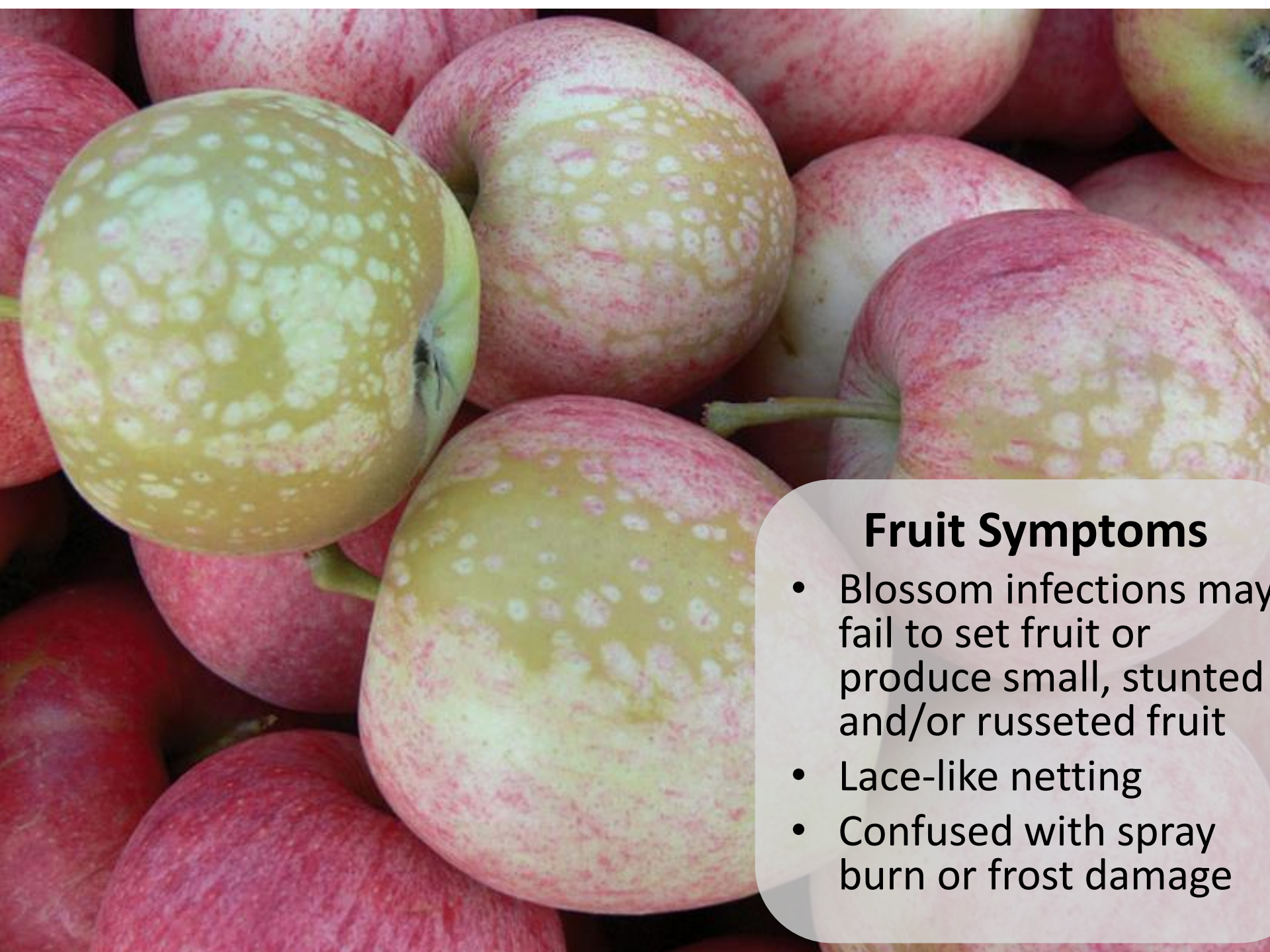




White, chalky or felt-like appearance of leaves



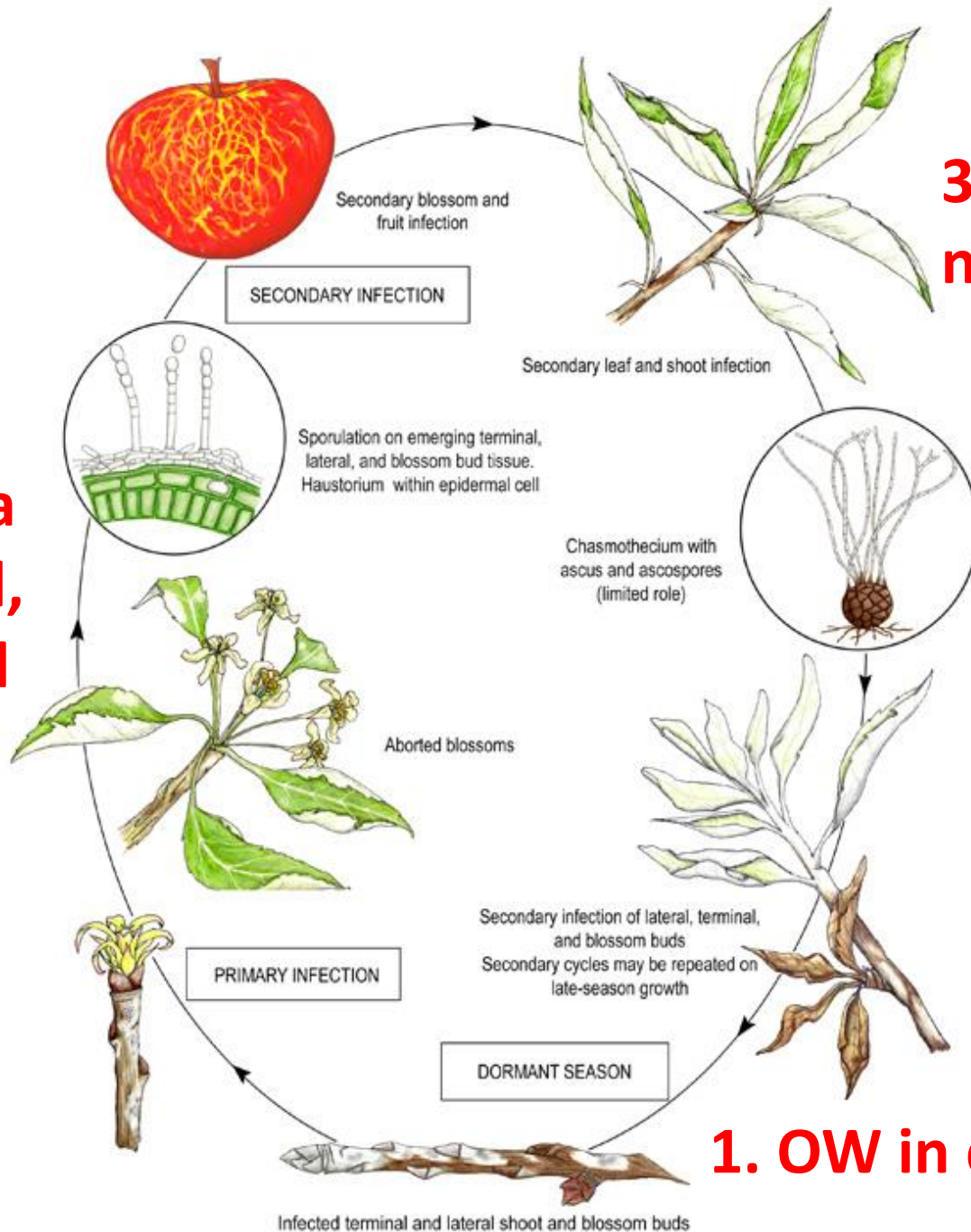
Leaves  
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## **Fruit Symptoms**

- Blossom infections may fail to set fruit or produce small, stunted and/or russeted fruit
- Lace-like netting
- Confused with spray burn or frost damage

**2. Chains of conidia produced, dispersed by wind**



**3. Infection of new growth**

**4. Cycle continues until terminal bud set**

**1. OW in dormant buds**

- Monitor leaves and terminals from **green tip to terminal bud set**, especially susceptible varieties
- Ideal conditions for infection:
  - Warm (19-22°C), high relative humidity (90%)
  - **Leaf wetting not necessary – LIKES DRY WEATHER!**
  - Conidia will not germinate in standing water
  - Rains wash conidia off leaf surface
- **No threshold** established
  - Management preventative



## **Cultural control**

- Infected buds killed below  $-24^{\circ}\text{C}$  whereas healthy buds survive  $-26$  to  $-30^{\circ}\text{C}$ 
  - Although lateral buds remain susceptible to infection for longer periods, terminal buds more likely to harbour fungus overwinter
  - Prune out signs of infected branches
- Common cultivars vary in susceptibility – handout

## **Chemical control**

- Most common scab fungicides (except Group M) control mildew
  - Include sulphur (low rate) where limited efficacy of other products



## In summary...

- Fungus overwinters in infected buds and can become active at bud break in high pressure orchards
- Occurs during hot, humid weather when scab risk low; coverage just as important during this time
- Obligate fungus, requires living host material to survive and ceases germination when young susceptible tissue no longer present (terminal set)



**Thank You!**

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