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Apple IPM Intensive Workshop

Apple Diseases Targeted by IPM

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Apple scab

- Cool & wet climate : considerable disease pressure
- Susceptible cultivars: favored by consumer and producer
- Requires more than 10 fungicide applications/season
- Urea & Shredding to reduce inoculum on leaves
- Delayed-dormant copper to reduce inoculum in buds

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Apple scab

- Fungicide resistance in all key chemistries registered in except SDHIs
- No curative or reach back activity
- Constant application of protectants: captan & mancozeb

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Fire Blight

- Fire blight increasingly problematic
  - High-density tall/super spindle plantings (1000 – 1200/A) = $high-value acreage
  - Young productive trees: protracted bloom & vigorous susceptible shoot tissue
  - Resistant rootstocks not always helpful: once fire blight hits leader > tree gone
  - New popular scion varieties susceptible

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Fire Blight

- Blossom blight
  - Reduces current season's crop
  - Managed forecasted antibiotic applications
- Shoot blight
  - Reduces bearing wood for following season
  - Managed by pruning and treatment with growth regulator prohexadione-calcium (Apogee)

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Fire Blight

- Rootstock blight
  - Systemic infection of rootstock from suckers or blossom/shoot blight
  - Managed by resistant rootstocks
- Trauma blight
  - Results from wounds caused by hail, wind, & animals
  - Managed by antibiotics or copper

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IPM: Powdery Mildew

- Warm dry periods in the spring and summers
- Susceptible cultivars: favored by consumer and producer
- Continues unchecked towards harvest: fungicides not applied for mildew in summer

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IPM: Powdery Mildew

- Fungicide resistance?
- DMI fungicides: “never see mildew” > “doesn’t solve the problem”
- QoI fungicides: less effective than 1990s
- SDHI fungicides – not as effective strong
- Frequent sulfur applications

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Summer Foliar Diseases

- Glomerella leaf spot, Marsonina leaf blight, Frogeye leaf spots, Alternaria leaf spot
- Managed by apple scab fungicide programs > Infection timings overlap, sometimes
- Problem in organic operations or those heavily reliant on multi-site protectant fungicides

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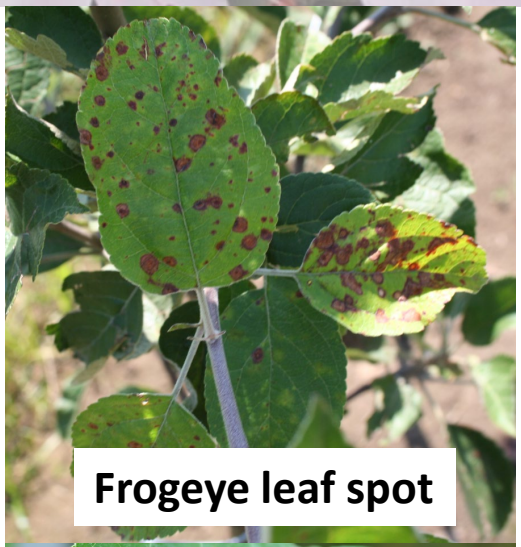
Summer Foliar Diseases

- Single-site fungicides QoIs, SDHIs, and DMI fungicides - provide a high level of control – no fungicide resistance
- Sanitation, summer cover applications, and cultivar selection likely important


Frogeye leaf spot


Marsonina leaf blight


Glomerella Leaf Spot

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Summer fruit diseases

- Fly Speck Sooty Blotch, Bitter rot (anthracnose), Black and white rot (Botryosphaeria)
- Latent infection from bloom to early fruit development
- Pre-harvest: fall rains or wounding of mature fruit (birds & herbicides)
- Post-harvest/ in storage: Lead to pack out rejections


Black rot


Fly Speck & Sooty Blotch

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Summer fruit diseases

- Problem in warmer sandy regions: Hudson Valley
- Problem in organic operations or those heavily reliant on multi-site protectant fungicides
- Managed by 1) petal fall fungicides 2) summer fungicide programs: Extended intervals 14-21 days, and 3) pre-harvest single-site fungicide application

Bitter rot