Ontario Ministry of Agriculture, Food & Rural Affairs

Fly Speck & Sooty Blotch

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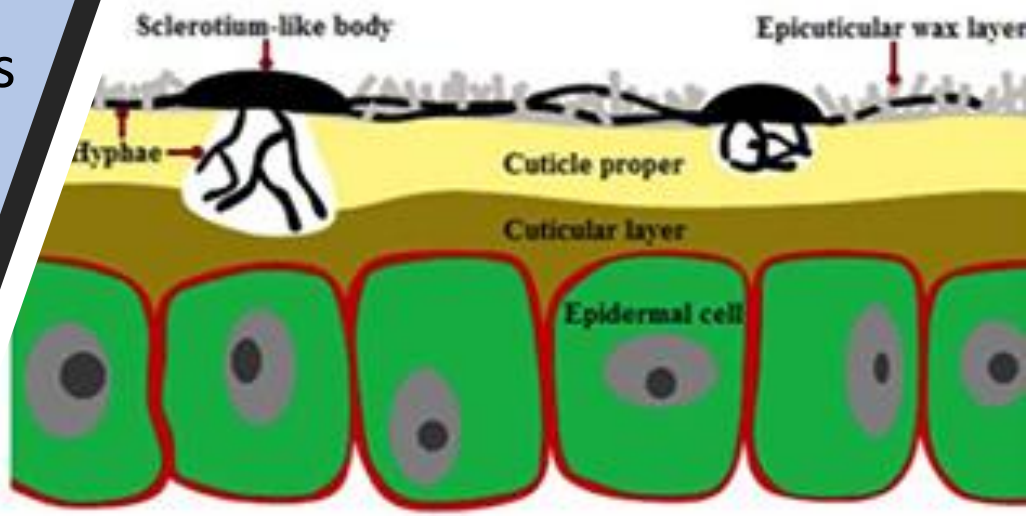
Ontario

Fly Speck and Sooty Blotch (FSSB)

- Two different diseases, often on same fruit
  - Referred to as a complex
- Mid-summer to harvest
- Superficial infection, can usually be scrubbed off
- Often yellow- or light-skinned varieties, late-maturing varieties or fruit with thick cuticle
- No impact to yield, but reduces market value of fruit
  - SB can shorten storage life because of increased water loss (shrivel)



Fly speck, *Schizothyrium pomi*

- Group of few to several small (~0.5 mm), shiny black fungal bodies on fruit surface
- Connected by mycelium to form colonies in round or irregular groups (1-3 cm diameter)

Sooty blotch, various species

- Brown to olive green, cloudy blotches with irregular margins
- Variable in size, coalesce to cover large areas of fruit
- Can be confused with sooty mould

- OW on twigs, culled fruit, brambles and other woody hosts
- Spores dispersed by wind or rain for 1-2 months beginning after bloom
- Favour warm and wet / humid
  - Unsprayed, SB appears first because of shorter incubation period (~2-3 weeks after petal fall vs 4-6 weeks for FS)
  - Sprayed, FS appears first likely because able to tolerate slightly higher fungicide residues than SB
- Ideal infection season includes cool, wet springs and late summer rains
  - In hot, dry summers, symptoms may not appear on fruit until close to harvest


S. Villani, NCSU

Sooty Blotch

- Fruit infections occur approx. 2-3 weeks after petal fall
- First symptoms occur approx. 20-25 days after infection, but can appear 8-12 days under optimal conditions
- Shorter incubation time than fly speck so can appear earlier

Fly Speck

- Fruit infection occurs approx. 175 accumulated wetting hours after petal fall (AWPF)
  - Approx. 4-6 weeks after petal fall
- Fruit symptoms occur approx. 350 AWPF, or mid-July
  - 10-12 days after infection under optimal conditions up to one month

Note: Hours of wetting below are from string, not electronic devices. For electronic wetness sensors, use 175 hr, not 270 hr.

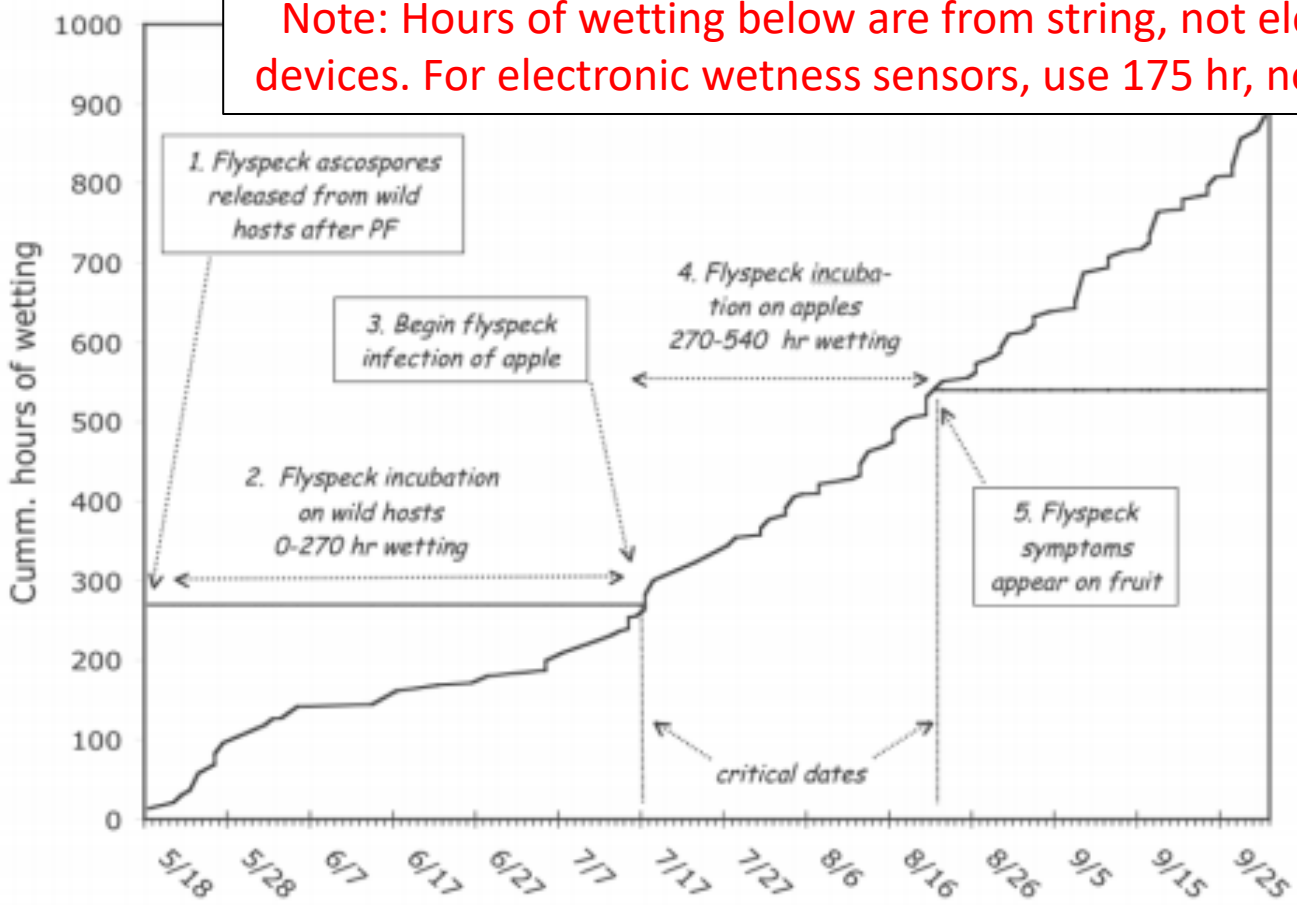


Fig. 2. General chronology for flyspeck development in trees left unsprayed after mid-June. The cumulative hours of wetting shown in this example were based on hours of wetting measured after apple trees reached petal fall at the Hudson Valley Lab in Highland, NY in 2004.

Rosenberger & Meyer, 2007

- More common and severe **late summer or early fall** by secondary infection
  - Late summer rains remove fungicide prior to harvest
- Able to go dormant during unfavourable (hot, dry) conditions
  - Appear most often during harvest, though infections may have occurred much earlier

Monitoring

- Mid-season to harvest, check fruit for signs of infection
- Monitor **25 fruit in interior canopy x 10 trees**
- Symptoms more likely in poorly pruned trees and/or wetter, slow-drying areas
- Accumulate **leaf wetness hours from petal fall** (175-185 hr)
  - Subsequent sprays based on rainfall (>2 inches) and time since last application (14-21 days)

Management strategies for FSSB

Cultural controls

- Prune and thin clustered fruit for better air circulation and improve fungicide coverage
- Remove alternate hosts, esp brambles from orchard and surrounding hedgerows
- No cultivar resistance known but late-maturing cultivars more susceptible

Chemical controls

- Usually appear in orchards with reduced summer fungicide program due to lack of scab
- Apply fungicides regularly after 175 AWPF or sooner
  - Do not extend beyond 14-21-day intervals
  - 21-days only during dry conditions
  - Re-apply in late Aug or Sept if >2 inches rain since the last application and fruit are 25-30 days from harvest
- Fungicides applied in early summer do not eradicate pre-existing infections
  - Can resume growing, become visible late season when residues are depleted

Thank You!

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