

Bramble Pest Management

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Bramble Pest Management

Growing Healthy Brambles

- Managing bramble diseases requires using a “toolkit” with many different tools
 - Suitable varieties: Choose varieties adapted to your site, with disease resistance where possible
 - Healthy stock: Buy clean, virus-indexed plants from a reputable source
 - Sound cultural practices from site selection through postharvest handling of fruit
 - Appropriate chemical controls: Use a season-long pest specific protectant/reactive program for pests that respond to chemical controls

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Viral Diseases



**Raspberry Mosaic
Disease Complex
(BR/RR, aphids)**



**Raspberry Leaf Curl
(BR/RR, aphids)**



**Tomato Ringspot
(RR, nematodes)**

Purchase Virus free stock!

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Bacterial Diseases



Crown & Cane Gall



Fire Blight

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Phytophthora Root Rot



Verticillium Wilt

Soilborne Diseases

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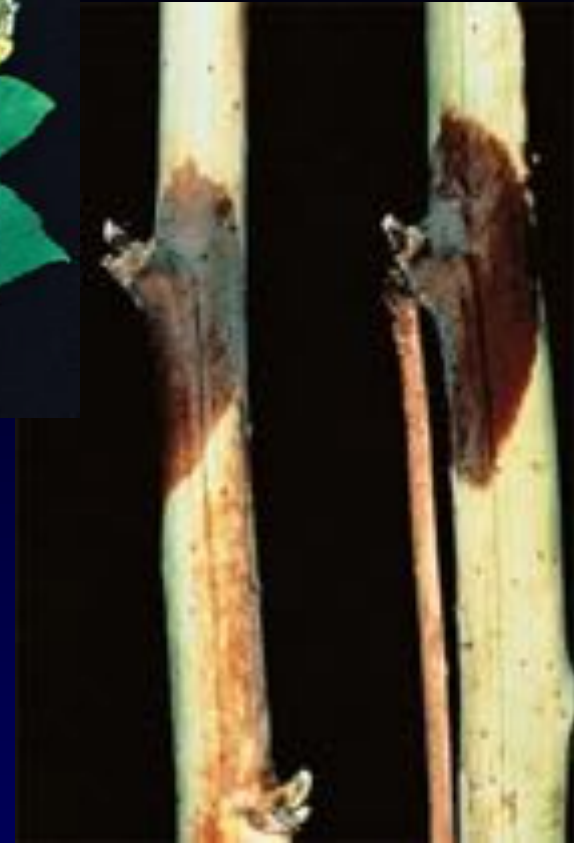
Cane Blights



Cane Blight



Anthracnose



**Spur Blight
(RR)**

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Orange Rust
BB/BR

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Powdery Mildew

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**Late Leaf Rust
(RR)**



Fruit Rots



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Fruit Rots



**Botrytis Fruit Rot
(Gray Mold)**

Spores



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Spotted Wing Drosophila (SWD)



SWD larvae

Hearkandnews.com



Umn.edu

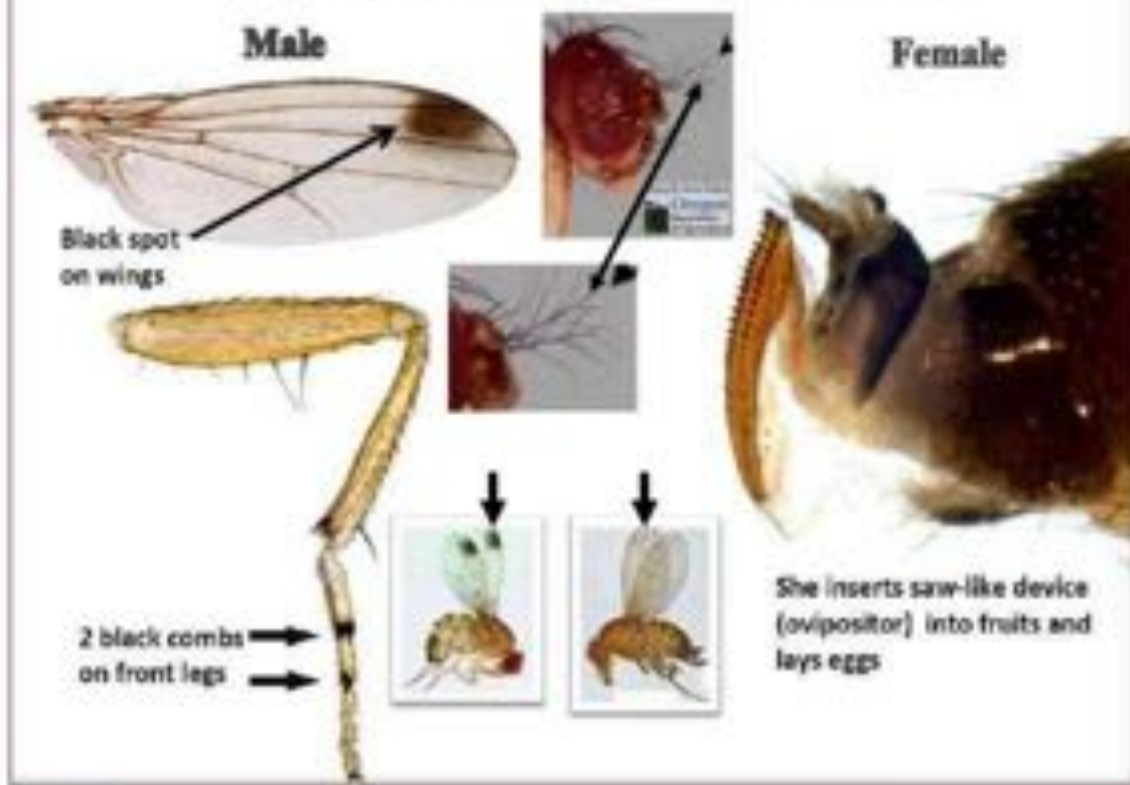


Entomophily.wordpress.com



Ucanr.edu

SWD Identification – key characters



SWD egg



Male:

- ✓ Black spot on the end of the first wing vein
- ✓ Two sets of combs on the front legs
- ✓ Antenna with many hairs (branched)
- ✓ Large red eyes

Female:

- ✓ No black spot on wing
- ✓ Sclerotized, double serrated ovipositor (>12 teeth per side)
- ✓ Antenna with many hairs (branched)
- ✓ Large red eyes

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SWD

- SWD preference:
 - Prefer cultivated BB than blueberry or wild BB
- High risk for SWD fruit infestations:
 - BB, primocane BB and RB
- Other SWD hosts:
 - Wild plum, wild cherry, night shade, wild BB, holly, poke weed
- Yeast or Trécé lure baited traps captured 1st SWD 1 wk before 1st infested berry detected (Johnson, AR; Loeb, NY)
- For every 8 SWD flies in traps, there are at least 92 SWD eggs, larvae of pupae in fruit

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SWD

- > 40% > insecticide apps compared to before SWD (NJ)
- SWD infestations are higher on fruit in the lower canopy
- 5 to 7 day insecticide spray program with a registered product
- Efficacy of different insecticides
 - Spray coverage is vital
 - Conventional insecticides gave > 3 day kill
 - OMRI insecticides gave < 3 day kill

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SWD

- > 40% > insecticide apps compared to before SWD (NJ)
- 5 to 7 day insecticide spray program with a registered product
- Efficacy of different insecticides
 - Spray coverage is vital
 - Conventional insecticides gave > 3 day kill
 - Malathion, Delegate, Mustang Max and Entrust effective
 - OMRI insecticides gave < 3 day kill
 - Pyganic (poor to fair efficacy – degrades in 1 day)

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Management of SWD

1. Thin or open up canopy to improve spray coverage
2. Monitor traps weekly for SWD flies starting 3 wks before ripening
3. **Spray if SWD found and fruit are ripening**, apply recommended insecticide every 5 to 7 days (re-apply after 1" rain) and rotate mode of action to delay resistance development in SWD
4. Evaluate spray effectiveness = look for SWD eggs/larvae in fruit
5. Exclude SWD using screen or row cover (mesh < 1 mm holes)
6. **Pick daily, refrigerate** fruit immediately and keep cold until processed or eaten (2-3 days at 34°F kills SWD eggs and larvae)
7. Sanitation: pick leftover or damaged fruit and solarize in black bags to reduce SWD food source
8. **Stay informed** – visit SWD web sites and attend grower meetings

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**Narrow
“|”
Trellis**

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Proteknet 80g Exclusion Netting



Dale Ila M. Riggs, The Berry Patch
of Stone Wall Hill Farm, LLC in
Stephentown, NY



New Liskeard, Ontario blueberries

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