



Spotted Wing Drosophila Biology and management

Richard S. Cowles

Valley Laboratory
The Connecticut Agricultural Experiment Station

Photo credits:

Shearer, P. W., H. Thistlewood, R. van Steenwyk, V. Walton, and S. Acheampong. 2010. *Drosophila suzukii*, a new pest of stone fruits in Western North America. PowerPoint presentation.

Walton, V., J. Lee, D. Bruck, A. Dreves, P. Shearer, J. DeFrancesco, H. Rogg, L. Coop, and P. Jepson. 2010. Spotted wing drosophila: Biology and Management Plan. PowerPoint Presentation.

Beverly Gerdeman, Washington State University



Overview

Biology

Management

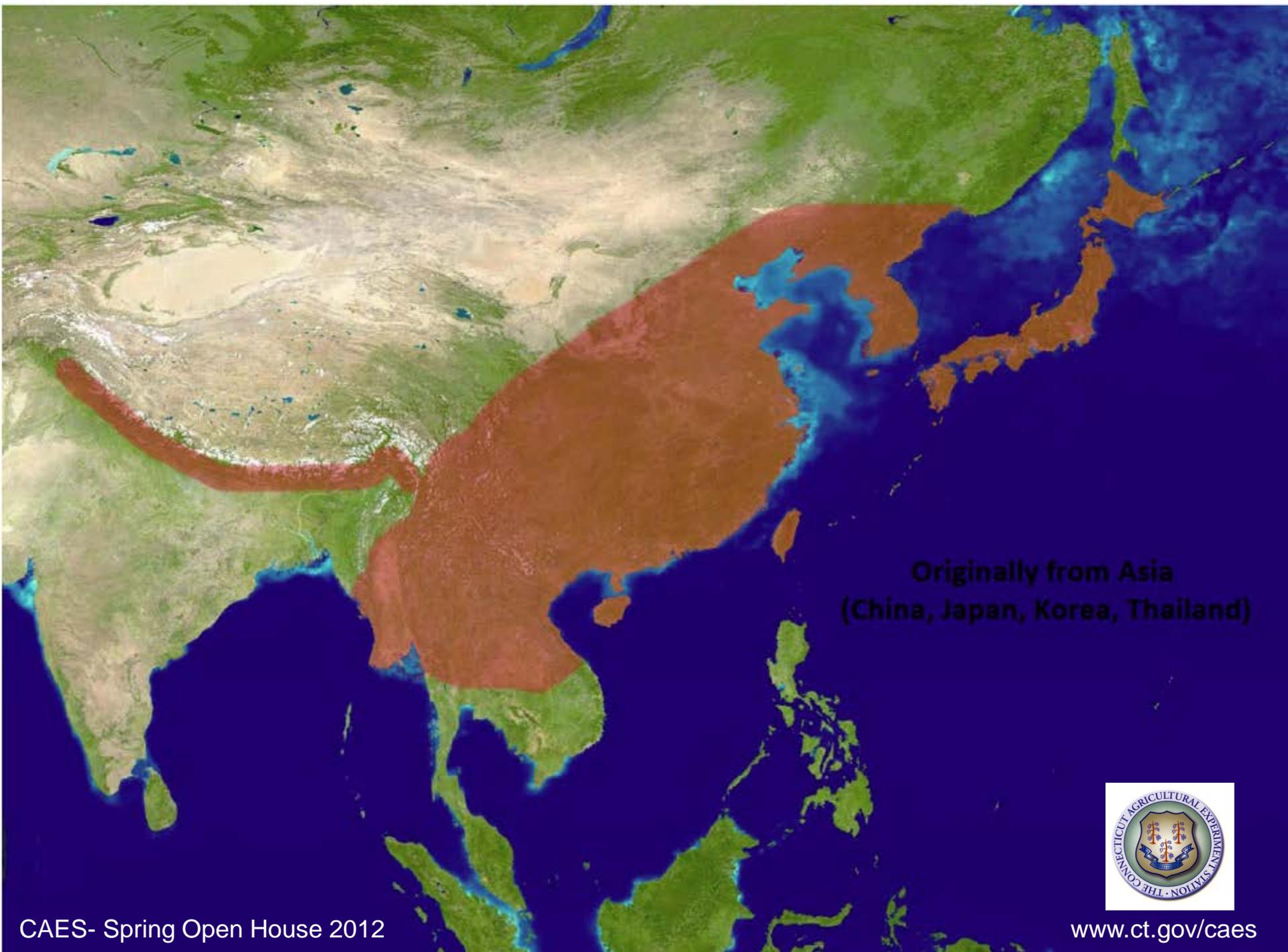
Mass trapping

Sanitation

Exclusion

Insecticides and baited sprays



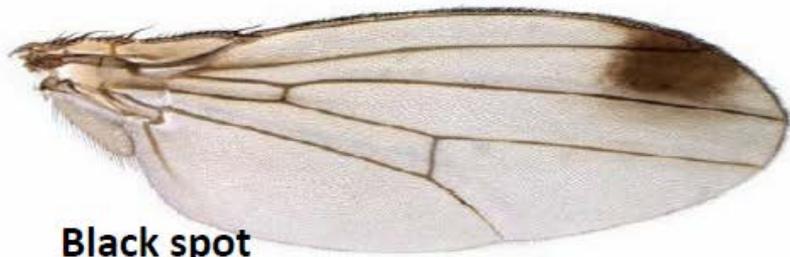


**Originally from Asia
(China, Japan, Korea, Thailand)**

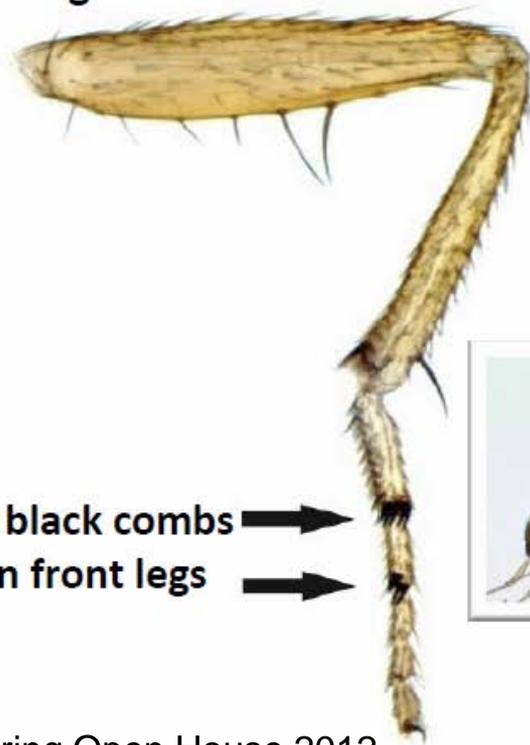


SWD Identification – key characters

Male



**Black spot
on wings**



**2 black combs
on front legs**



Female

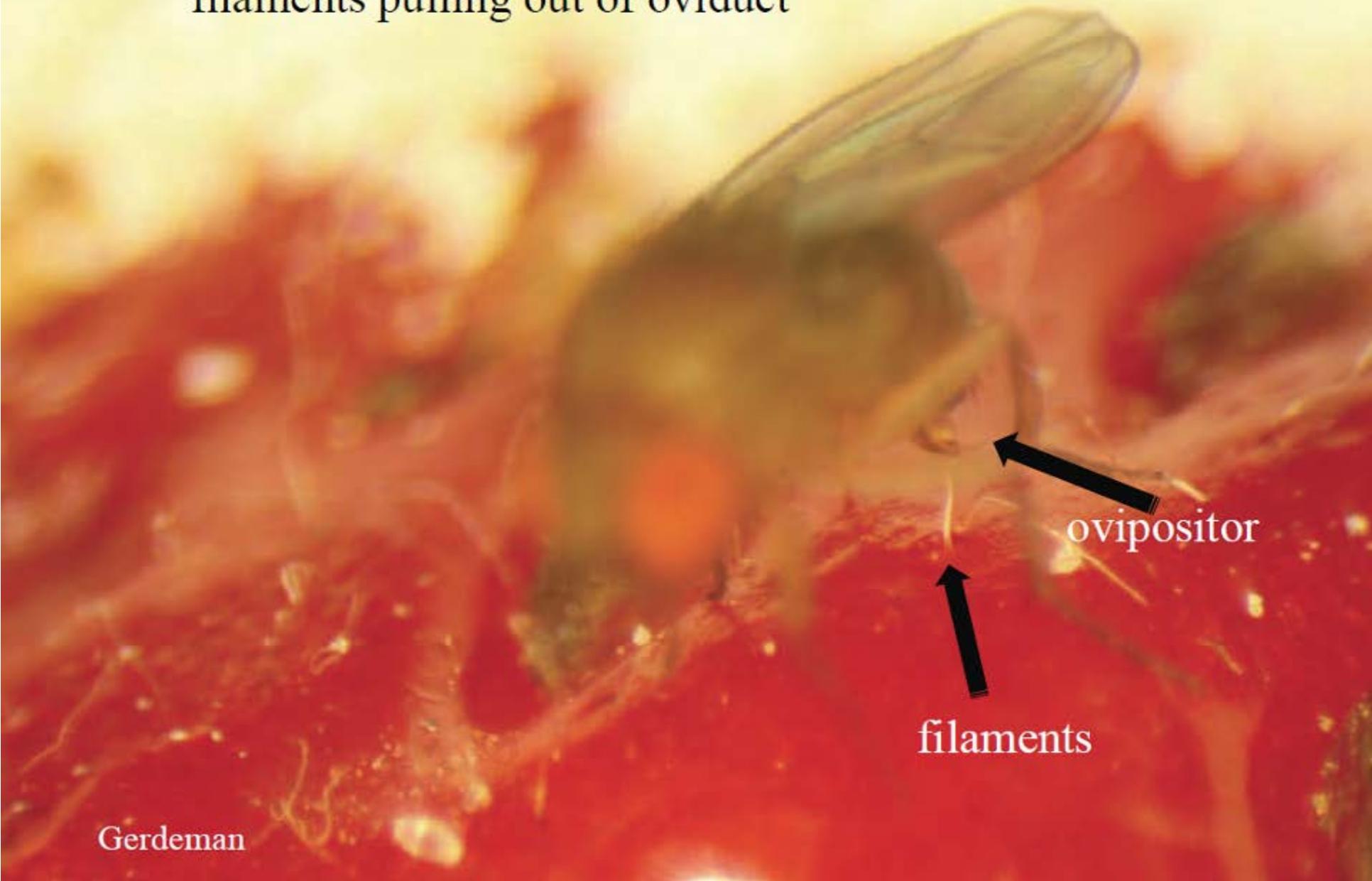


**She inserts saw-like device
(ovipositor) into fruits and
lays eggs**





Final stage of oviposition
filaments pulling out of oviduct



ovipositor

filaments

Life stages

Eggs (1 – 3 days)



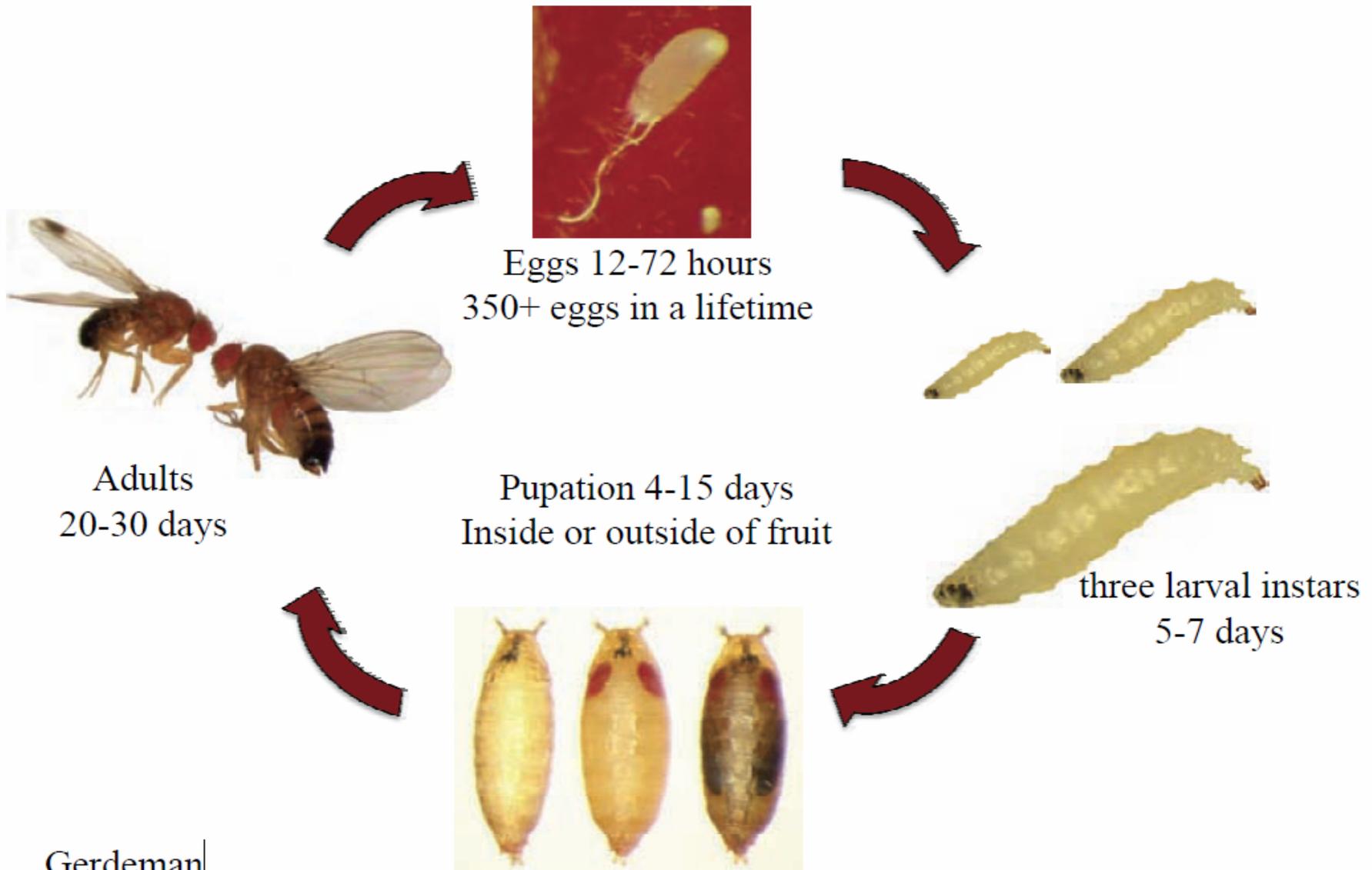
Larvae (5 – 7 days)



Pupae (3 – 15 days)



Life Cycle of the Spotted Wing Drosophila *Drosophila suzukii* (Matsumura)







Respiratory filaments projecting through the fruit skin allow the number of eggs to be counted.

The perfect looking fruit had ~500 eggs.





What to do?

1. Trap the adult flies
2. Remove and dispose of infested fruits
3. Exclude flies with netting
4. Use an effective insecticide



Monitoring trap used in Oregon and British Columbia in 2009-10

Attractant bait:
apple cider vinegar, as
“rough” as possible

Cheap plastic cup/lid
with holes near rim

Support wires

Fluid changed weekly



Current management guidelines

Is sanitation practical?



Photo: Bolda

Dubois ProtekNet 80 g/m²
1 x 0.85 mm woven mesh, \$0.95 / m²



Photo: University of Arkansas



Effective insecticides for homeowners

Spinosyn-based products

Surround wetable powder
(kaolin)





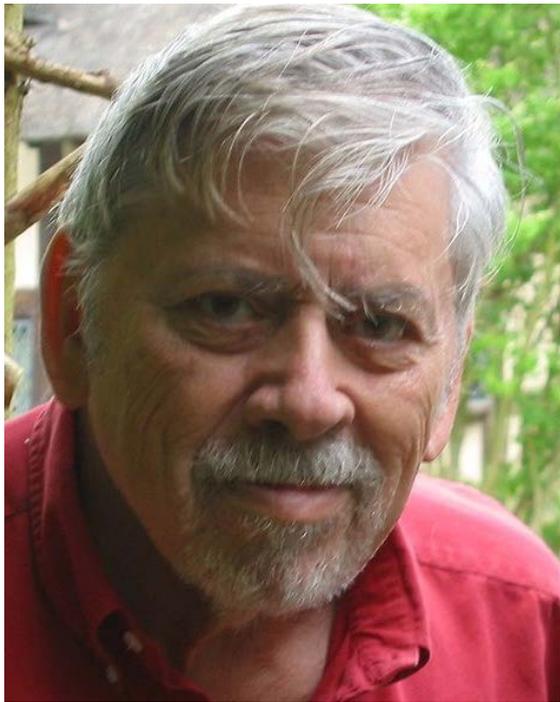
Female SWD filled
with berry juice

How much sugar is necessary?

0.1%, or 1,000 parts per million

Above threshold for fly detection
of dried spray residue





Robert B. Sherman 1925 – March 6, 2012

Lyricist for “A Spoonful of Sugar” in Mary Poppins

3.5 g sugar in one gallon is about one teaspoon full!



Richard S. Cowles
Valley Laboratory Department
153 Cook Hill Rd.
P. O. 248
Windsor, CT 06095



Phone: (860)683-4983
Email: Richard.Cowles@ct.gov
Website: www.ct.gov/caes