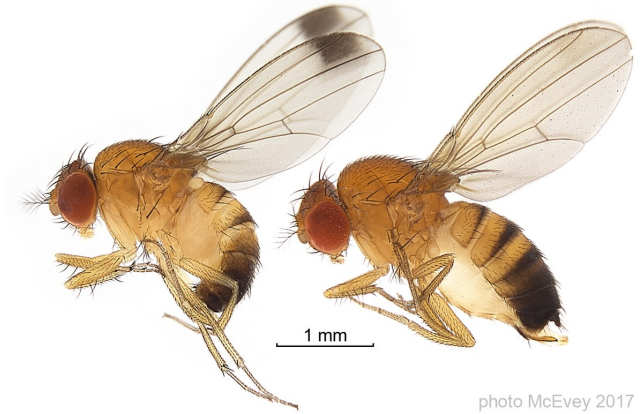


# 2017 SWD Task Force Accomplishments



Julianna Wilson, Tree Fruit Integrator  
Department of Entomology



# Spotted Wing Drosophila Timeline

- 2008 – first SWD captured in California
- 2009 – first SWD identified in North America
- 2010 – first SWD adult caught in Michigan
- 2011 – first year SWD disrupted MI fall red raspberries
- 2012 – first year SWD disrupted MI blueberries
- 2015 – first year SWD disrupted MI tart cherries
- 2017 – earliest first trap catch and population surge recorded in MI



# Funding



United States Department of Agriculture  
National Institute of Food and Agriculture

Specialty Crop Research Initiative  
Organic Research and Extension Initiative

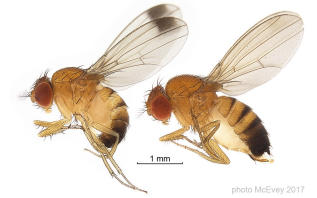


Specialty Crop Block Grant



Rapid Outcomes from  
Agricultural Research

# SWD Research at MSU



- Alternate food/hosts
  - SWD reared out of grape, pear, and apple fruit wastes – Bal (Grieshop Lab)
  - Honeysuckle near blueberry associated with higher SWD pressure in crop – Leach (Isaacs Lab)
  - SWD in traps higher in SW wooded edges than in cherry orchards but not in WC or NW – Rothwell, Jones, and Haas (Gut Lab)



Eurasian bush honeysuckle with fruit



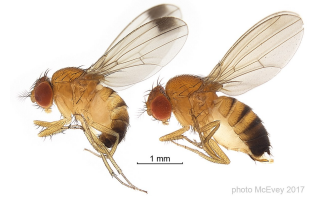
# SWD Research at MSU



- Fruit susceptibility/preference
  - Undamaged peaches are not preferred; when plums reach 3.5 lbs pressure, they become susceptible, pick plums early to avoid infestation (Jones)
  - SWD will infest tart cherries just starting to color, but given a choice, will select sweet cherries or other berries over tart cherries; yellow processing cherries, not preferred (Rothwell)



# SWD Research at MSU



- Overwintering habitat
  - SWD found in greater numbers in pine groves than in other habitats during the winter near organic blueberry plantings in MI, FL, GA – Bal (Grieshop Lab)



# SWD Research at MSU



- Microclimate manipulation

- Raspberries in high tunnels: no effect on infestation as a result of increased pruning – Fanning (Isaacs Lab)
- Blueberries: pruning (lowers humidity) or use of black weed fabric (increases temp) both reduced infestation – Fanning (Isaacs Lab)
- Tart cherries: reported later – Rothwell

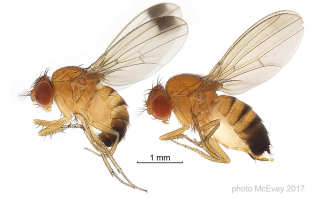
25% more pruning  
than grower's  
standard



Grower's  
standard



# SWD Research at MSU

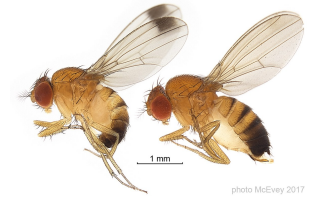


- Interactions with other pests
  - Grapes: SWD infestation may result in higher infestation by other drosophila, but did not increase fruit rots – Mason (Isaacs Lab)
  - Blueberries: control of SWD has led to an increase in gall wasps because of a loss of the natural enemy that once suppressed them – Fanning (Isaacs Lab)





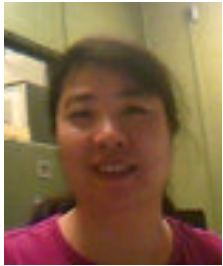
# SWD Research at MSU



- Parasitoids/biocontrol
  - Completed 2 years of collections to identify parasitoids already attacking SWD, will be used as baseline when new parasitoids are proposed for introduction – Leach (Isaacs Lab)



# SWD Research at MSU



- Screening yeast strains for baits
  - Seven yeast strains tested; so far none attract better than Scentry lures – Huang (Gut Lab)
- Attract & kill technologies
  - Tart cherries: pouch style units worked in lab trials, but so far no success in field trials – Huang (Gut Lab)
  - Blueberry: ISCA-Splat product appears to work – (IR4 - Wise)



- Repellents
  - Evaluated a number of essential oils or their components in tiny arenas; scaling up to wind tunnels with Gut Lab to see if effects hold – Dong Lab



# 2017 SWD Trapping Network



## Trap Checking Team:



Chris  
Adams



Harit  
Bal



Brad  
Baughman



Phil  
Fanning



Carlos  
Garcia-Salazar



Mike  
Haas



David  
Jones



Danielle  
Kirkpatrick



Heather  
Leach



Keith  
Mason



Karen  
Powers



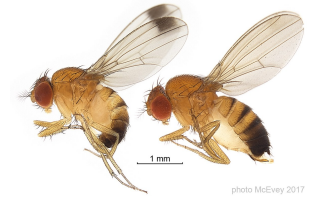
Bob  
Tritten



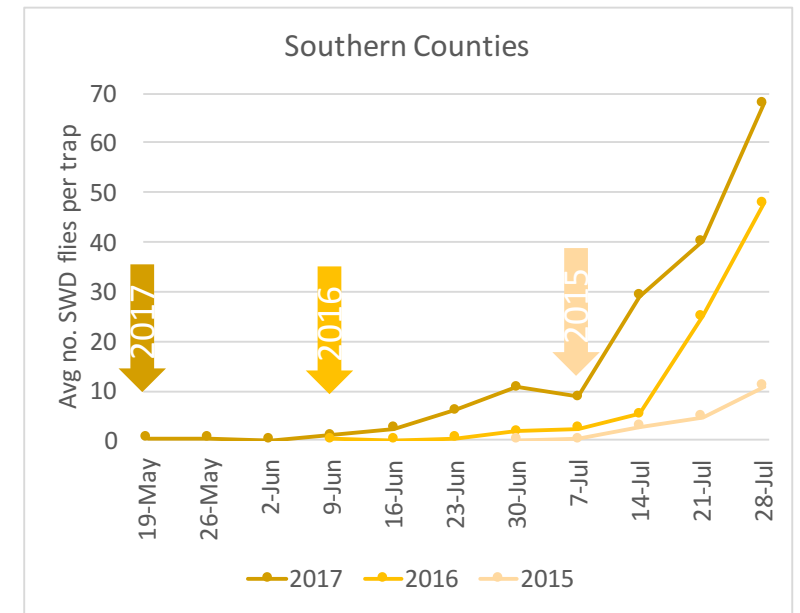
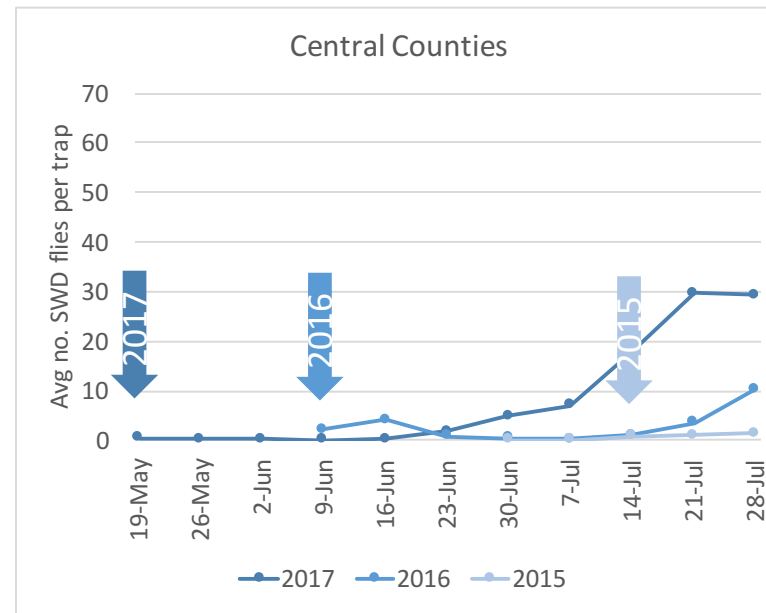
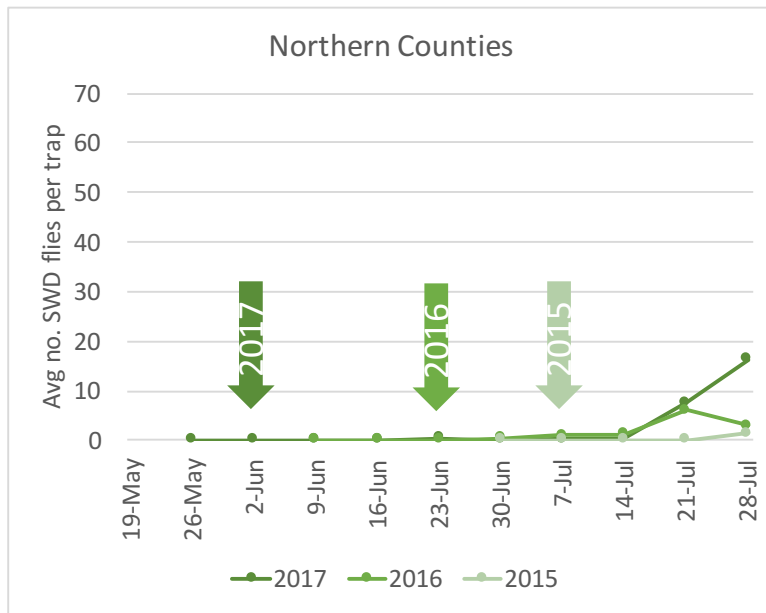
Steve  
Van Timmeren



# Main Findings



- High pressure year
- First sustained catch 3 weeks earlier than last year
- Summer population surge 4 weeks earlier than last year in southern and central regions



# SWD Research at MSU

Presented later this morning:

- Improving/understanding trapping – Gut
- Screening for insecticide resistance – Fanning
- Rainfastness of insecticides – Wise
- Efficacy trials and orchard modification - Rothwell
- Winter morphs – Leach
- Evaluating spray programs – Pochubay

