2014-15-203: Spotted Wing Drosophila Trap Network—coordinated monitoring and information delivery

USDA NIFA Federal Capacity Fund Impact Report

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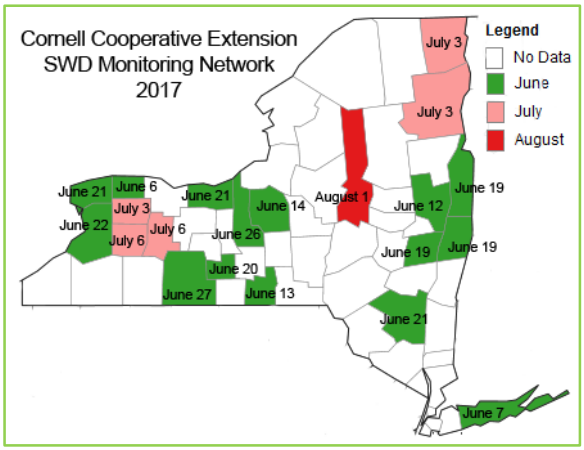
Clockwise: A male SWD on a raspberry with a dimpled drupelet; infested fruit sloughing off the receptacle; and a female preparing to lay her egg in ripening fruit.

THE NEED: Spotted Wing Drosophila (SWD) can destroy unprotected, susceptible fruit crops. SWD is an invasive insect from East Asia. Found in New York in 2011, in 2012 it caused severe damage to berry crops — raspberries, blackberries, blueberries. Without control measures, SWD caused upwards of 80% crop loss. SWD can lay eggs directly into ripening fruit, before harvest. After only a few days, the fruit dimples, shrivels, disintegrates, and rots. For growers to protect their fruit from SWD, they must treat repeatedly with insecticides throughout the harvest period resulting in significant economic and environmental costs. Data suggested growers could wait to spray insecticide until SWD was found in traps in a regional location and still protect their crops.

THE APPROACH: We implemented a monitoring network and delivered SWD information on the web. Extension educators in the Lake Ontario Fruit Program, the Eastern NY Commercial Horticulture Program and nine County Associations (Erie, Genesee, Herkimer, Livingston, Steuben, Suffolk, Tioga, Ulster and Wyoming) collaborated with Carroll. The SWD monitoring network provided early warning of SWD in over 20 counties in NY in 2015, 2016, and 2017.

- 55 raspberry, 47 blueberry, 7 blackberry, 5 grape, and 3 strawberry plantings were monitored
- trap catch data alerted the presence of SWD in New York
- 43 SWD blog posts / year, reaching > 250 growers and educators
- SWD distribution map displayed cooperators' contributed data
- developed IPM information for protecting crops against SWD
- created insecticide quick guides and how-to guides for SWD IPM
- improved our monitoring methods as research advanced
- SWD monitoring data shared with researchers across the U.S.



Sustained catch — early in 2017 along with warm, humid weather favored SWD infestations and contributed to high losses in berries and the first significant tart cherry infestations in New York.

IMPACTS: The SWD trap network gave growers accurate, timely information about SWD presence and risk via the SWD blog and distribution map. Cornell Fruit Resources SWD webpages improved their knowledge about the selection and timing of insecticide sprays, SWD biology, monitoring, sampling fruit, and alternative management tactics. We promoted IPM adoption and helped growers reduce crop losses from SWD.

Learning how to check fruit for SWD infestation using salt flotation.

WEB SITES: blogs.cornell.edu/swd1/ & fruit.cornell.edu/spottedwing/

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