

COMING EVENTS

	43°F	50°F
Current DD accumulations		
(Geneva 1/1-7/23):	2449	1691
(Geneva 1/1-7/23/2011):	2203	1524
(Geneva "Normal"):	2011	1323
(Geneva 1/1-7/30 predicted):	2514	1741
(Highland 1/1-7/23/12):	2536	1703
(Highland 1/1-7/23/11):	2269	1549

Upcoming Pest Events – Ranges (Normal +/- Std Dev):

American plum borer

2nd flight peak1991-2549 1339-1755

Apple maggot flight peak.....2102-2602 1408-1794

Codling moth 2nd flight peak.....1931-2735 1278-1892

Comstock mealybug

2nd gen. crawlers emerge.....2234-2624 1505-1781

Comstock mealybug

2nd gen. crawlers peak2380-2624 1658-1737

Obliquebanded leafroller

2nd flight begins.....2255-2655 1516-1838

Oriental fruit moth		
2nd flight subsides	2016-2529	1368-1766
Oriental fruit moth		
3rd flight begins	2326-2746	1577-1901
Redbanded leafroller		
2nd flight subsides	2182-2742	1471-1891
San Jose scale 2nd flight peak.....	2118-2496	1426-1746
STLM 2nd flight subsides	1986-2378	1306-1644
STLM 2nd 3rd flight begins	2253-2659	1508-1848

TRAP CATCHES (Number/trap/day)

Geneva

	7/9	7/12	7/16	7/23
Redbanded Leafroller	0.0	0.3	0.0	0.0
Spotted Tentiform Leafminer	6.5	5.2	4.6	6.1
Oriental Fruit Moth	0.0	0.3	0.0	0.1
American Plum Borer	0.5*	0.3	0.0	0.8
Lesser Appleworm	0.0	0.0	0.0	0.0
San Jose Scale	5.0	1.7	3.5	21.0
Codling Moth	0.1*	0.0	0.1	0.0
Lesser Peachtree Borer	0.0	0.0	0.0	0.0
Peachtree Borer	0.1	0.0	0.0	0.1
Obliquebanded Leafroller	0.3	0.2	0.1	0.0
Apple Maggot	0.0	0.0	0.6	0.8

Highland (Peter Jentsch)

	7/2	7/9	7/16	7/23
Redbanded Leafroller	1.6	0.8	0.3	0.2
Spotted Tentiform Leafminer	49.4	55.1	35.7	36.9
Oriental Fruit Moth	1.6	3.4	1.0	3.8
Codling Moth	0.1	0.4	1.4	0.8
Lesser Appleworm	2.5	2.4	5.9	3.2
Tufted Apple Budmoth	2.0	0.7	<0.1	0.0
Fruittree Leafroller	0.2	0.0	0.0	0.0
Variegated Leafroller	<0.1	0.0	0.4	0.6
Obliquebanded Leafroller	2.5	0.6	0.0	0.1
San Jose Scale	0.6	497	692	79.6
Sparganothis fruitworm	-	-	0.0	0.0
Apple Maggot	0.9	0.3	0.2	0.2

* = 1st catch

ORCHARD RADAR DIGEST

[Box Text: JULY KIT?]

Geneva:

Roundheaded Appletree Borer

Peak hatch roughly: June 30 to July 19.

Codling Moth

Codling moth development as of July 23: 2nd generation adult emergence at 63% and 2nd generation egg hatch at 24%.

2nd generation 30% CM egg hatch: July 25 = target

date where one spray needed to control 2nd generation CM.

White Apple Leafhopper

2nd generation WALH found on apple foliage: July 23.

[Section: INSECTS]

DON'T GET DOCKED

(Art Agnello, Entomology, Geneva; ama4@cornell.edu)

[Box Text: YOU CAN'T AFFORD IT]

The dock sawfly always creeps in during the waning days of summer. Following is a repeat of our annual write-up on this pest:

Before and during apple harvest in recent years, a number of growers and fieldmen have been unpleasantly surprised by the appearance of neat little (2 mm) holes bored into the side of their fruit, similar in appearance to those caused by a stem puncture.

Although graders sometimes attribute this damage to apple maggot or European corn borer, cutting open these apples reveals a bright green worm with a light brown head, 3 pairs of true legs and 7 pairs of prolegs, not feeding but lying inactive, in the burrow extending in from each hole. These are larvae of the dock sawfly,

Ametastegia glabrata, a highly sporadic but nonetheless well documented apple pest that has been known to show up in our area since 1908.

Dock sawfly probably confines its feeding almost entirely to plants belonging to the buckwheat family (Polygonaceae), including numerous docks and sorrels, the knotweeds and bindweeds, or else wild buckwheat or alfalfa. In feeding on any of these plants, the larvae devour the leaf tissue and the smaller veins, eating out irregular holes in the leaves. Ordinarily, the midribs and the larger veins are untouched. This insect should not be confused with the related European apple sawfly, *Hoplocampa testudinea*, which has a whitish larva that lives and feeds in young apples, particularly prevalent in the eastern apple regions of N.Y.

Injury to apples by the dock sawfly is known to occur generally in the late summer and early fall, when the fruit is approaching maturity and the sawfly is searching for an overwintering site. The greater hardness of immature apples probably deters the larvae from burrowing into these, so although 4 generations per year have been identified, only the last one or two are of concern to apple growers. The injury to apples consists externally of the small round holes bored by

the larvae, which after a few days show a slightly sunken, brownish ring around them and occasionally may be surrounded by a larger discolored halo. These holes may occur anywhere on the surface, but are most numerous around the calyx and stem ends, or at a point where the apple touches a leaf or another apple, since it is easier for the larva to obtain a foothold here.

Inside, the injury is usually more serious, since the larva often burrows to the core and usually hollows out a pupal cell somewhat larger than itself. Apples may have three or four, or sometimes even eight, holes in them of varying depths, but contain only one or two worms.

Since the dock sawfly does not feed upon any part of the apple tree, but must live on the above-mentioned succulent weeds, it becomes an apple pest only where these plants are growing in or around the orchard.

There is little danger from this insect in orchards where the food plants don't exist. Likewise, the possibility of the larvae coming into the orchard from neighboring meadows, ditch banks, or roadsides is slight, for the larvae are incapable of finding their way over any extent of bare soil. The adults, though active, are not strong fliers, and it is not possible for the insect to travel far in this stage. Now would be a good time to

assess the weed situation in your orchard and make plans for such selective herbicide applications as may be appropriate regarding this insect. Even though common wisdom says this sawfly is a pest only every 10-12 years, this is only an average estimation, and it's not a bad idea to anticipate the unexpected when hardly any season is considered to be "average".

(Information adapted from Newcomer, E. J. 1916. The dock false-worm: An apple pest. USDA Bull. 265, 40 pp.)

SPOTTED WING DROSOPHILA UPDATE

(Deb Breth, CCE-LOFT, Albion; dib1@cornell.edu)

[Box text: FLIES SPOTTED]

Spotted winged Drosophila have been detected in traps in a peach orchard in Orleans County, in Tompkins County (wild host- twinberry) and in a Yates County cherry orchard. Greg Loeb and Juliet Carroll are leading the trap network for SWD, but as they detect the first ones, consultants might want to expand their reach and look in other locations. Delegate (7 oz/A) and Entrust (2.5 oz/A) have labels for suppression but require the high rates on the labels. Imidan is also labeled for control of SWD, but watch the PHI on various

crops. These insecticides are registered for use on apples (which are not likely targets), peaches, apricots, and plums and prunes. Delegate (3–6 oz/A) and Entrust are labeled for SWD in bushberries and caneberries. You will need to have a copy of the 2 ee label- online at:

<http://128.253.223.36/ppds/525149.pdf>. However, other insecticides including many pyrethroids such as Brigade, Danitol, and Asana will provide excellent control when applied against other pests. If Assail is applied for blueberry maggot, Oregon State has it rated as "fair" for control of SWD. Carbaryl is also effective for control. You will need to look at the PHI for these insecticides. Stay tuned – below is more info posted on the Cornell Fruit Website,

<http://www.fruit.cornell.edu/berry/pestaalerts/drosophilapestalart.html>

Genus & species: *Drosophila suzukii*

Distribution

Becoming established throughout Northeast; first detected in NY in 2011.

Background

Originally from Asia, spotted wing Drosophila (SWD) first showed up in California in about 2005 and has

spread north into Oregon, Washington, and western Canada, south into Florida and recently was reported in significant numbers in North Carolina and Michigan. In 2011, SWD was reported throughout the Northeast. SWD looks superficially like your everyday vinegar fly, *Drosophila melanogaster* of genetics fame, but vinegar flies are generally not a serious economic threat to fruit growers. Female vinegar flies typically lay eggs in damaged and/or overripe fruit and are therefore mostly just a nuisance. On the other hand, female SWD have very robust ovipositors (the rear end portion of the fly used for egg laying) and lay their eggs in ripe, marketable fruit, leading to damage and contamination with maggots. SWD appears to have the capability to survive winter conditions in the Northeast. They are found in similarly cold areas of Japan. However, populations at the start of the growing season tend to be quite low, indicating high mortality over the winter. The optimum development temperature of SWD is 65–70°F and they have a generation time of 12 days.

Crops of Concern

Brambles are of particular concern, especially fall-bearing cultivars. Blueberries with later-maturing varieties appear more vulnerable. June-bearing

strawberries may escape injury, although day-neutral varieties, during late summer, are vulnerable. Elderberries are also susceptible.

Potential for Economic Impact

There is potential for significant impact from this pest, especially for midsummer and later-maturing fruit, when populations tend to increase. Risk of marketing fruit contaminated with SWD larvae is high, resulting in rejected shipments and consumer complaints. In areas where SWD has been established longer (e.g., Michigan) some growers have resorted to frequent pesticide applications, thereby increasing economic and environmental costs, as well as potentially disrupting established IPM programs.

Identification

SWD appear similar to other vinegar flies. Adults are 2–3 mm in length, with red eyes, and a tan-colored body with darker bands on the abdomen. Males have characteristic single spots at the leading edge of the tip of the wing and two dark spots on their front legs. Females lack wing spots and leg spots, but are distinguished by a robust, serrated ovipositor (visible under magnification). Larvae are white, nondescript and legless maggots.

Identifying *Drosophila suzukii*:

http://www.oregon.gov/ODA/PLANT/docs/pdf/ippm_d_suzukii_id_guide10.pdf?ga=t

- Oregon Department of Agriculture

How to Identify the Spotted Wing Drosophila Fly:

<http://www.youtube.com/watch?v=fxHhMRh9gnI> -

Oregon State University (video)

Recognizing Fruit Damaged by Spotted Wing Drosophila (SWD), *Drosophila suzukii*:

[http://www.ars.usda.gov/SP2UserFiles/person/41853/PDF/articlesandinfo/Damage by SWD_2.pdf](http://www.ars.usda.gov/SP2UserFiles/person/41853/PDF/articlesandinfo/Damage%20by%20SWD_2.pdf)

Recognize Fruit Damage from Spotted Wing Drosophila (SWD):

<http://horticulture.oregonstate.edu/system/files/em9021.pdf>

- Oregon State University

SWD Monitoring and Management

Monitoring is very important for this pest. Traps baited with vinegar have proven successful in capturing sometimes large numbers of adult SWD. Traps should be checked frequently (e.g., twice/per week), adding fresh vinegar each time. Research is ongoing to improve trap efficiency and develop a better early warning system. Fruit should also be inspected for

evidence of larval feeding.

Monitoring

Making and Checking a Spotted Wing Drosophila Trap:

<http://ncsmallfruitsipm.blogspot.com/2011/12/swd-monitoring-videos-from-nc.html> - North Carolina State University (2 videos)

Cultural Management

Good sanitation is very important. Try to prevent the buildup of ripe and over-ripe fruit. Fruit crops that mature earlier in the season may likely escape major damage.

Chemical Management

A few insecticides have recently been granted 2ee label exemptions for control of SWD. SWD adults appear to be sensitive to several different chemistries, although their high reproductive rate, short generation time, and mobility may necessitate multiple applications for control. See listings under specific crops in the Cornell Pest Management Guidelines for Commercial Tree Fruit Production, <http://ipmguidelines.org/TreeFruits/> (look in the "Insects and Mites" section in each crop); and in the Cornell Pest Management Guidelines for Berry Crops, <http://ipmguidelines.org/BerryCrops/>.

Additional SWD Resources

There are several web sites now dedicated to SWD biology and management in the west and eastern USA.

- Getting Ready for Spotted Wing Drosophila:

Understanding Risks for Small Fruit Crops and Current Management Options:

<http://breeze.cce.cornell.edu/p65wch1dipm> (*Webcast with Dr. Greg Loeb, Cornell University*)

- Spotted Wing Drosophila:

<http://www.ipm.msu.edu/swd.htm> - *Michigan State University*

- Spotted Wing Drosophila: A New Threat To Tender Fruit And Berry Crops:

<http://www.omafra.gov.on.ca/english/crops/facts/pest-alert-swd.htm#id> - *OMAFRA*

- Spotted Wing Drosophila:

<http://horticulture.oregonstate.edu/group/spotted-wing-drosophila> - *Oregon State University*

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