Swede midge is a serious pest of crucifers that has only recently arrived in the United States. It is originally from Europe and Southeast Asia and was first identified in Ontario, Canada in 2000 and in Niagara County, NY in 2004. Its hosts include all the crucifer crops (broccoli, cauliflower, cabbage, Brussels sprouts, kale as well as many of the crucifer/mustard weeds that are everywhere. Once this pest arrives, it is there to stay.

Swede midge is now well established in western New York, the western side of the Adirondacks (Jefferson, St. Lawrence and Franklin Counties) and most recently in the Vermont side of the Champlain Valley. We have been on the alert for this pest in Clinton and Essex Counties but so far have not found any. (See distribution map).

The adult is a tiny midge (fly) smaller than a sesame seed and there are several generations each year, making this a difficult pest to control, especially for organic growers. The larvae are tiny maggots, barely visible with the naked eye, and hard to find since they burrow into the plant tissue to feed.

The damage it does to the growing points of the host plants can be difficult to distinguish from other types of injury. To be sure of the identification, the larvae need to be found in the affected plant tissue. This website created by Cornell researchers and vegetable specialists, contains lots of good information, photos, and control options: http://web.entomology.cornell.edu/shelton/swede-midge/

If anyone suspects they might have Swede midge, please contact one of us to confirm.

-ADI (image below courtesy of OMAFRA)
We have received several calls this week from growers suspecting Downy Mildew in their vine crops. The movement of storm systems has put us at risk, but so far we have not found any Downy Mildew. We have seed very severe powdery mildew. However, that does not mean Downy mildew is not here—my instinct says it’s around and we haven’t been in the right place at the right time.

More reports of Downy Mildew continue to roll in from New Jersey and Pennsylvania this week with an expanding host range; giant pumpkins were infected in New Jersey this week. The disease forecast for this week is not a good one. According to the website “HIGH Risk for cucurbits from the lower Lakes region into central sections of NY and PA; and in eastern KY / western WV / southwest OH. Moderate Risk along the Gulf Coast and into the Southeast, through the southern Appalachians and mid-Atlantic states through eastern NY. Low Risk for coastal SC / NC / VA, southern New England, and a few scattered areas in the Ohio Valley and South. Minimal Risk to cucurbits most other areas.” This means this week might be the week we add a Downy Mildew specific product to our spray program, especially for cucumbers. Presidio, Ranman, Previcur Flex or Revus should be added along with a protectant such as chlorothalonil or copper. Be sure to cover all plantings—downy mildew will attach new plantings as easily as older ones. If you do have DM, adding Curzate to any of the previous materials plus the protectant, will improve control, especially if it remains cool like the forecast is indicating.

We will continue to monitor the forecasting system and respond to any calls that might come in and if we suspect Downy Mildew, we will let you know ASAP.

As I mentioned a couple of weeks ago, I cannot stress enough to destroy old plantings of vine crops such as abandoned summer squash and cucumbers. They serve as great inoculum sources for powdery and downy mildew as well as populations of squash bugs and striped cucumber beetles. If you can’t mow them or disk them under, you should continue to maintain a fungicide and insecticide program on them or you could consider using a non-selective herbicide such as paraquat or glyphosate to burn them off. Paraquat does a nice quick job of burning down plants. However, if you have a hard to control weed like bindweed, glyphosate might be the better choice. -CDB, edited by CLS

Downy on cucumber leaf surface (left) and pumpkin leaf underside (right). Downy is often confined to spaces between the leaf veins initially. As the disease progresses, the lesions can coalesce and kill of leaves. Look for grey downy growth on the leaf underside. White powdery growth is powdery mildew.
In general, trap catches of Europeran corn borer, Western Bean Cutworm and Fall Armyworm remain low. However, we did catch the most Corn Earworms moths (134) then I have seen in a long, long time at one of our locations. However, CEW numbers remain fairly low at other locations. In the case above, a 3-4 day spray schedule was recommended. See the last page for this week’s trap counts –CDB

### Average CEW pheromone trap catches during silk stage

<table>
<thead>
<tr>
<th>Per day</th>
<th>Per 5 days</th>
<th>Per week</th>
<th>Days between sprays</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;0.2</td>
<td>&lt; 1.0</td>
<td>&lt;1.4</td>
<td>No spray (for CEW)</td>
</tr>
<tr>
<td>0.2—0.5</td>
<td>1.0—2.5</td>
<td>1.4—3.5</td>
<td>6 days</td>
</tr>
<tr>
<td>0.5—1.0</td>
<td>2.5—5.0</td>
<td>3.5—7.0</td>
<td>5 days</td>
</tr>
<tr>
<td>1.0—13.0</td>
<td>5.0—65.0</td>
<td>7.0—91.0</td>
<td>4 days</td>
</tr>
<tr>
<td>Over 13</td>
<td>Over 65</td>
<td>Over 91</td>
<td>3 days</td>
</tr>
</tbody>
</table>

Spray intervals should be lengthened by a day if daily maximum temperatures were less than 80°F for the previous 2 to 3 days.

---

### Prepare for Allergic Reactions on the Farm!

A farmer died from an allergic reaction to bee stings in Fulton County last week. This tragedy is a reminder to everyone to be prepared by knowing who on the farm has life-threatening allergies and what to do if a reaction occurs.

If you have workers with severe allergies, contact your health care provider to seek recommendations on how to best prepare. The most common initial treatment for severe allergic reactions is a shot of epinephrine (man-made adrenaline), which helps the body overcome the reaction for a period of time. EpiPens, a common delivery device, are small enough to put in the pocket of your work pants, in the glove compartment, and in the tractor. Having one in each location where workers spend a great deal of time, and alerting workers that the pens are there, is one step towards increasing safety. Identifying workers who have potentially life threatening allergies and equipping them with EpiPens to carry with them is another safeguard. If someone has a reaction, make sure to call 911 in addition to using the EpiPen. The epinephrine will only last for a while, and the victim may require additional treatment.

When workers are in the field, make sure they have a way to contact help if they are disabled by an allergy or some other incident, and ideally make sure that other people on the farm are aware of the location of their fellow workers. This is not always possible, but getting in the habit of communicating location is a good practice. We can hope that a serious accident or incident never happens on the farm, but being prepared in case it does can save precious time, making all the difference. –CLS
Spotted Winged Drosophila (SWD) is now firmly rooted in all of the berry patches that I have been scouting. If you doubt their presence, go out and pick 10-12 slightly past raspberries and/or blackberries and, with a hand lens, gently peel apart the drupelets. The photo above is what you will see if you have them.

According to UC Davis report, in California’s inland valleys the adult flies are most active during spring and fall when temperature highs are between 60 and 80º F, especially humidity is high and food is available. In laboratory studies at constant temperatures, SWD are most active at 68ºF; activity becomes reduced at temperatures above 86ºF, and adult males become sterile. So the hot, dry summer may have helped keep the insects at bay until now.

Given this development, I encourage ALL berry growers to begin spraying IMMEDIATELY. Below is a summary by Dr. Greg Loeb and Cathy Heidenreich of the currently legal materials for control or suppression of SWD on the three major categories of berries. Efficacy information is still being determined. Please feel free to call me if you have thoughts about how your spray program is working and if you need help understanding and identifying this pest.

Some helpful tips for your customers: It will be very important for you and your customers to understand and follow recommendations for cooling the berries. Field heat from berries should be removed ASAP. SWD larval development can be stalled when temperatures are below 40ºF, but if temperatures in your cooler are at 32ºF there is good evidence that larvae and eggs can be killed. Please read the related article for more information on temperature and its’ effect on mortality. –LGM

Bushberries:
1. Delegate WG: PHI = 3 d; Do not make more than 6 applications per calendar year; Minimum treatment interval is 6 d. IRAC group: 5
2. Entrust, Entrust SC: OMRI listed. PHI = 3 d; Do not make more than 6 applications per calendar year or more than 3 applications per crop; Minimum treatment interval (MTI) = 6 d. IRAC group: 5
3. AzaSol, Molt-X: PHI= 0 d. IRAC group: UN (unknown)
4. Triple Crown: This product is a mixture of three active ingredients including bifenthrin, zetacypermethrin and imidaclopid. Triple Crown is a Restricted Use Pesticide; PHI = 3 d; MTI = 7 d; Maximum amount of Triple Crown allowed per crop season is 31.0 fl oz/A. IRAC groups: 3A, (bifenthrin and zeta-cypermethrin) and 4A (imidacloprid)
5. Brigade WSB: PHI= 1 d; Do not make applications less than 7 d apart. Do not apply more than 0.5 lb active ingredient per acre per season. IRAC group: 3A
6. Danitol 2.4EC: Restricted use pesticide; PHI = 3 d; No not exceed 32 fl oz/A per season. IRAC group: 3A
7. Imidan 70-W: PHI = 3 d. Do not make more than 5 applications per year. IRAC group: 1B

Caneberries:
1. Delegate WG: PHI = 1 d; Do not apply more than a total of 19.5 oz/A per year; Do not make more than 2 consecutive applications of Group 5 insecticides. Do not make more than 6 applications per calendar year; Minimum treatment interval (MTI) = 4 d. IRAC group: 5
2. Entrust, Entrust SC: OMRI listed. PHI = 1 d; Do not apply more than a total of 9 oz/A of Entrust or 29 fl oz/A Entrust SC per year; Do not make more than 2 consecutive applications of Group 5 insecticides. Do not make more than 6 applications per calendar year; MTI = 5 d. IRAC group: 5
Recent 2(ee) recommendation Approvals – Spotted Wing Drosophila

The NYS Department of Environmental Conservation recently approved 2(ee) recommendations for the unlabeled pest spotted wing drosophila for the following insecticides and crops:

- **Malathion 8 Aquamul** (EPA Reg. No. 34704-474) – for use on blackberries, boysenberries, dewberries, loganberries, raspberries, and strawberries;
- **Brigade WSB Insecticide** (EPA Reg. No. 279-3108) – for use on caneberries;
- **Brigade 2EC Insecticide/Miticide** (EPA Reg. No. 279-3313) – for use on caneberries;
- **Entrust** (EPA Reg. No. 62719-282) – for use on strawberries;
- **Entrust SC** (EPA Reg. No. 62719-621) – for use on strawberries.

Users must have a copy of the appropriate 2(ee) recommendation in their possession at the time of use. Copies of the above 2(ee) recommendations have been posted to the “NYS 2(ee) Recommendations and Categories” section of our web site. (Direct link to find the recommendations: http://pmep.cce.cornell.edu/regulation/2ee/index.html.) They should also be available on PIMS (http://pims.psur.cornell.edu) shortly. When using a 2(ee) recommendation, remember to follow any applicable directions, restrictions, and precautions on the primary product label.
In some of the first literature written in Japan in 1939 (Kanzawa, T.) about spotted wing drosophila, Drosophila suzukii, (SWD), experiments were made regarding the sensitivity of the egg and larval stages of spotted wing drosophila to periods of temperatures above and below freezing (32o F).

As is noted in the two graphs below, at constant temperatures of up to 35o F, 96 hours or more of cooling resulted in total mortality of spotted wing drosophila eggs and larvae. This was also anecdotally confirmed in tests conducted in 2009 in California.

While temperatures below freezing are not useful to fruit shippers, temperatures in the area of 35o F are useful. However, it is important to note that for success the constancy of the temperature is critical. So, while in an ideal situation constant temperatures of 35o F or a little below are effective in SWD egg and larvae suppression when extended for periods longer than 96 hours, the reality can vary significantly from the ideal. Shipped fruit ordinarily do not experience lengthy regimes of constant temperature as they are moved from place to place.

Temperatures of a refrigerator truck can vary by location inside and placement of the produce (ie on the side, towards the bottom etc.), and certainly the temperatures at the point of sale can vary from the ideal to room temperature to even warmer.

Additionally, while initial damage from SWD on raspberries, blackberries and strawberries can be difficult to detect, this is not the case for other fruits such as cherries or blueberries, where the activity of SWD will leave an unsightly blemish.

The take home message from this information is that while extended cooling can be suppressive of SWD, growers should not rely on cooling alone. It will still be important to manage SWD in field.

Thanks to Shinji Kawai for making the information from the 1939 Kanzawa paper available.

This article was posted on the UC Santa Cruz county blog by Mark Bold on March 23, 2010. You can view more blog posts by going to: http://cesantacruz.ucdavis.edu/Strawberry_Nursery_Plant_Production/
Meeting Notices

Tuesday, August 21st — Spotted Winged Drosophila Workshop — Hands on workshop led by Peter Jentsch of the Hudson Valley lab will help train growers, field scouts and extension personnel in what to look for, how to accurately identify and how to best formulate control strategies. Training is from 1:00 -2:30 pm at the CCE Rensselaer county office, 61 State Street, Troy, NY 12180. Cost is $10/person. You can pay at the door, but please call Laura at 518-746-2562 to register.

Tuesday and Wednesday, August 28th and 29th: Bejo field days, Geneva, NY
Bejo is an international organic seed breeding company. This field walk will take place at the Bejo Geneva farm in Geneva, NY. Call 315-789-4155 to get on the mailing list for details and field day invitation. Also visit with High Mowing Organic Seeds staff at the event to discuss highlighted varieties. This event is free.

Friday, August 31st, Cornell Small Fruits Open House, Ithaca, NY. Free and open to the public, hosted by Dr. Marvin Pritts, with Dr. Courtney Weber, Small fruits breeder, Extension Specialist Cathy Heidenreich and Extension Educator Jim Ochterski on hand to present information and answer questions on new small crop fruits and production practices. See flier for details and contact information.

Corn Trap Catches for the week of Aug 15

<table>
<thead>
<tr>
<th>Location</th>
<th>ECB-E</th>
<th>ECB-Z</th>
<th>Corn Earworm</th>
<th>Fall Armyworm</th>
<th>W. Bean Cutworm</th>
</tr>
</thead>
<tbody>
<tr>
<td>N. Washington</td>
<td>0</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>C. Washington</td>
<td>0</td>
<td>2</td>
<td>3</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>N. Rensselaer</td>
<td>0</td>
<td>0</td>
<td>5</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Albany</td>
<td>0</td>
<td>1</td>
<td>5</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>C. Fulton</td>
<td>0</td>
<td>0</td>
<td>4</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>N. Columbia</td>
<td>0</td>
<td>1</td>
<td>134</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>W. Montgomery</td>
<td>0</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Schoharie</td>
<td>0</td>
<td>0</td>
<td>12</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Saratoga</td>
<td>0</td>
<td>0</td>
<td>27</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Weekly and Seasonal Weather Information

<table>
<thead>
<tr>
<th>Site</th>
<th>Growing Degree Information Base 50°F</th>
<th>Rainfall Accumulations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Albany</td>
<td>164.0</td>
<td>2273.6</td>
</tr>
<tr>
<td>Bennington, VT</td>
<td>164.6</td>
<td>1973.2</td>
</tr>
<tr>
<td>Clifton Park</td>
<td>156.5</td>
<td>2098.0</td>
</tr>
<tr>
<td>Glens Falls</td>
<td>168.0</td>
<td>1964.5</td>
</tr>
<tr>
<td>Guilderland¹</td>
<td>Not Available</td>
<td>Not Available</td>
</tr>
<tr>
<td>Granville</td>
<td>169.5</td>
<td>1985.5</td>
</tr>
<tr>
<td>Hudson</td>
<td>171.2</td>
<td>2389.9</td>
</tr>
</tbody>
</table>

Cornell Cooperative Extension and the staff assume no liability for the effectiveness of results of any chemicals for pesticide use. No endorsement of any products is made or implied. Every effort has been made to provide correct, complete, and current pesticide recommendations. Nevertheless, changes in pesticide regulations occur constantly and human errors are still possible. These recommendations are not substitutes for pesticide labeling. Please read the label before applying any pesticide. Where trade names are used, no discrimination is intended and no endorsement is implied by Cornell Cooperative Extension.