Weekly Update

Annual Summer Valatie Field Meeting for Vegetable and Small Fruit Growers
Tuesday, August 2nd, 2011
State Farm Road, Valatie NY
9:30am to Noon. 2 DEC Credits

Join the CDVSF team and Long Island Vegetable Specialist Sandy Menasha as we focus on cover crops, soil health and pumpkin herbicides at our annual Summer Field Meeting. We will look at a great planting of a number of unusual cover crops at the Research Farm and then travel to a pumpkin herbicide trial installed at the Schwartz Family Farm (1532 Eleanor Dr., Castleton on Hudson, 12033).

Sandy Menasha will discuss her work with cover crops in vegetables and the team will talk about the value of doing a soil health test on your farm.

Tomato update: no new late blight incidents, but bacterial diseases are present

Now that fruit are starting to size up and stress the plants a little, I am seeing more Bacterial Canker in plantings across the region. Bacterial canker can really reduce yields and quality of your fruit when infected. The way BC works is that it clogs up the vascular system of the plant. First symptoms appear as marginal burning on the leaves. Eventually the plant becomes stunted and starts to show signs of wilting. Then the symptoms can appear on the fruit. Control starts in the greenhouse with sanitation of all inserts, flat bottoms and benches followed by making sure stakes used for staking tomatoes are properly sanitized. Then, use copper mixed with a mancozeb fungicide sprayed at weekly intervals once they are planted in the fields. Actigard, a plant defense activator is also labeled but trials we did in the Capital District did not prove to be as effective as copper alone or in combination with mancozeb. However, be careful as the days to harvest with any of the mancozeb products is 5 days. So if you are picking, copper is your best choice. And also remember, this is a bacteria so Bravo will not work. Be careful as this can look like Early Blight on foliage sometimes. See images below of foliar and fruit symptoms.

“Serving the research and educational needs of vegetable and small fruit growers in Albany, Columbia, Fulton, Greene, Montgomery, Rensselaer, Saratoga, Schenectady, Schoharie, Warren, & Washington Counties”
Not just for corn: European Corn Borer in snap beans, peppers and potatoes

By Julie Kikkert, Judson Reid, Carol MacNeil, Cornell Vegetable Program.

Although European Corn Borer (*Ostrinia nubilalis*) is a major pest of corn, it also feeds on over 200 plant species. Vegetable producers in New York are most concerned with this pest in sweet corn, snap beans, peppers and potatoes.

European corn borers (ECB) overwinter as fully grown larva in the stalks and stems of the host plant. The larvae pupate in early spring and the emerging adults mate. Females lay their eggs on susceptible crops. Masses of 5 to 50 eggs can be found on the undersides of leaves of their food crops. Eggs hatch in 4-9 days depending on the temperature. Young larvae feed on leaf tissue before boring into stalks, stems and pods.

**Peppers**

ECB larvae bore into pepper fruit. Attack that occurs when fruits are small results in fruit that are rotten by harvest. Attack on larger fruit may be unnoticed on the outside, but the peppers are deteriorated on the inside as larvae feed on the central seed mass, in the ribs and in the wall of the fruit. Usually, infested peppers have a small hole near the edge of the cap that is surrounded by sawdust-like frass.

It is best to locate pepper fields away from corn. A variety of natural enemies such as lady bugs, minute pirate bugs, lacewings, and parasitoids help suppress ECB infestations. If you've had problems with this in the past, there are several insecticides labeled for control (see page 293-295 of the Cornell Vegetable Guidelines). Insecticide treatments should coincide with peaks in ECB moth catches as determined by pheromone traps (see the weekly sweet corn report).

**Potatoes**

Small ECB larvae tunnel into potato stems within several days of hatching. Many varieties have a high tolerance for borer tunneling and by itself up to 35% infestation may be tolerated. However, in wet weather, or when seed was infected with blackleg, bacterial infection of the damaged stem tissue causes rotting of the vines. The mid-season destruction of the vines can severely affect tuber size.

There are a number of risk factors for ECB infestation in potatoes. Fields are at higher risk if: there's a history of serious ECB damage; if potatoes were planted very early and corn planting in the area was delayed; if potato fields are near or following non-Bt corn, especially if the stalks weren't chopped last fall. In addition, volunteer corn in the potato field attracts corn borer moths so control them with a selective grass killer like Poast or Select Max (follow the label regarding proper use of adjuvants or oil). Fields near or following Bt corn are at lower risk. In trials ECB larvae survived best on Sebago, followed by Monona, then Superior, and survived most poorly on Katahdin. Under field conditions Sebago, Monona and Norchip have been observed to be susceptible to attack by ECB’s and to infection by aerial blackleg.

If you've had problems with this in the past, there are several insecticides labeled for control (see page 293-295 of the Cornell Vegetable Guidelines). Choose a material based on whether Colorado potato beetle and/or potato leafhopper also need control as many materials are not effective against all three pests. Insecticide treatments should coincide with peaks in ECB moth catches as determined by pheromone traps (see the weekly sweet corn report).

**Snap Beans**

Larvae that bore into pods are the main concern, because the resultant holes render the beans unmarketable and no one wants to find a "worm" while cooking their snap beans. Properly timed insecticide sprays are an effective tool for ECB management in snap beans. If moth activity in pheromone traps (see the sweet corn report) is increasing or high in a field during early bloom OR if the field has a history of high ECB dam-

(Continued on page 3)
age, the field is at high risk and should be sprayed 2 times. The first application should be made during full bloom (21 days before harvest) and then followed by another application 6 to 8 days later. If moth activity is low and numbers of moths caught in pheromone traps are not increasing OR if the field has a history of very low corn bor-der damage, the field is at low risk and only 1 application is needed. In this situation, the application should be timed during late bloom to early pin stage, say around 17 days before harvest. In many cases these insecticide sprays will coincide with fungicide applications, but not always. All of the products listed in the Cornell Vegetable Guidelines for ECB control on snap bean are effective.

Additional photos and information can be found at: http://www.nysipm.cornell.edu/factsheets/vegetables/swcorn/ecb.pdf or http://web.entomology.cornell.edu/shelton/veg-insectsne/pests/ecb.html. Edited by CLS

Tomatoes, continued

This week we found our first Horned Tomato Worms (HTW) in tomatoes. These pests can be very destructive to a tomato crop if left unchecked. Although there is a very effective naturally occurring parasitic wasp that attacks this giant worm, the damage can already be done! THW can defoliate a tomato plant quickly, reducing foliage cover which can reduce overall yields due to sun scalding or smaller fruit. THW can and will also chew on fruit. They are easy to control with many conventional insecticides such as Warrior or a generic version such as Grizzly, Lannate, Baythroid, Asana etc. Several Bt’s work well also including Dipel and Javelin. Organic growers can also use Entrust in addition the Bt’s just mentioned. In some small plantings it might be just as economical to pick them by hand, but you need a good pair of eyes to it as these worms blend right in with the tomato foliage! I usually look for their frass (the politically correct phase for an insect’s “poop”). When the frass is fresh it appears as pellets that have a nice leafy green color to it and as it dries it turns brown to black. Then look to where the foliage has been stripped and usually you can find them. I’ve included a couple of pictures that might help.-CDB

Defoliation from horned tomato worms

Horned tomato worm with frass

Dual Magnum herbicide label expanded

Dual Magnum herbicide just received a Special Local Need registration to control weeds in blackberries, red and black raspberries, direct seeded and transplanted broccoli, cantaloupe, muskmelon, watermelon, cucumbers, garlic, high bush blueberries and leafy brassica greens (subgroup 5b). However, this label does not allow Dual Magnum to be used in Nassau and Suffolk Counties, New York. Users must have a copy of the Special Local Need (SLN) label with them in order to use Dual Magnum on the above mentioned crops. According to the letter from NYS DEC, “The SLN labeling requires that the users of the SLN specified applications to the above listed crops, sign a waiver which releases Syngenta Crop Protection, Inc. from all liability and indemnification by the user and/or grower for failure to perform and for crop injury, crop yield reduction, and/or crops loss from use of the product in accordance with the SLN labeling.” For those of you that are using or have used Dual Magnum on pumpkins, these are the same conditions as that. For a copy of the SLN label, please contact Chuck Bornt at 859-6213.
Basil Downy Mildew Update

Downy mildew was found this week on sweet basil plants for sale to the public at chain-store garden centers in MA and NJ by university pathologists. Stores in other states (including NY) have either not been checked yet or reports not yet issued. All stores checked in several locations throughout MA had affected plants. This pathogen produces spores that can be easily dispersed by wind similar to the late blight pathogen, thus there is the potential for gardens with affected plants to be the source of the pathogen for commercial plantings. Basil downy mildew has occurred on LI every year since 2008, one year after the pathogen is thought to have been introduced to the USA. However, it hasn’t been found until August in previous seasons. Photographs of symptoms and more information about this disease, including a link to a log page of occurrences, are in the June Ag News.

Fungicides currently labeled for this new disease include Quadris and phosphorous acid fungicides (ProPhyt, Fospite and K-Phite have downy mildew under herbs on the label). OMRI-listed fungicides include Actinovate AG, Trilogy, and OxiDate. Please report if you think you have this disease to Meg McGrath. For more information and pictures, visit the following websites:

http://www.longislandhort.cornell.edu/vegpath/photos/downymildew_basil.htm

http://vegetablemdonline.ppath.cornell.edu/NewsArticles/BasilDowny.html

By Meg McGrath, Long Island Fruit and Vegetable Update, No. 19, July 21, 2011

Cucurbit update

This week we found our first Powdery Mildew in pumpkins and butternut squash, both of which were sizing up fruit. Powdery mildew is one of those diseases that we deal with on an annual basis. The disease starts usually on the older leaves in towards the crown of the plant as pale yellow areas. As the disease progresses, white fluffy growth (mycelium) can be found on the undersides of the leaves, growing from these lesions. Eventually, the mycelium will make it to the top of the leaf and spread to other surrounding leaves.

For pumpkins and winter squash, both our Cornell Pathologists are recommending you start with Quintec at 4 – 6 oz/acre. Remember that Quintec is not labeled on edible peel vegetables so summer squash and cucumbers are not on the label. They would also recommend adding a protectant like chlorothalonil (Bravo, Initiate, etc.). Meg McGrath, our pathologist on Long Island, has had very good luck using sulfur as part of the tank mix for a protectant. Although there are several sources of sulfur out there, many of them are meant as “dusts” and are not very water soluble. The one that she feels has the best mixing properties and success is Microthiol Dispers at 2 – 10 lbs per acre, but I would lean towards the 3 – 5 lb rate. However, do not use sulfurs when temperatures are above 90° F, especially when humidity levels are going to be high (like last week!). The label also recommends that you do not apply it under intense sunshine, so evening applications may be required. If you start with Quintec, the following week you should rotate to Procure (8 oz/acre) or Rally (5.0 oz/acre) mixed again with a protectant. Then in week 3 go back to Quintec plus a protectant and continue to rotate these materials. –CDB

Cucurbit Downy Mildew: There are more reports of Cucurbit Downy Mildew from Ohio, Maryland, Michigan and Wisconsin. Forecasts from the North Carolina Forecasting site for our region are as follows: “Transport events move east to northeast from the sources in the South, northeast to north from the sources in the mid-Atlantic states, and generally southeast from the sources in the Great Lakes. Moderate to HIGH Risk for cucurbits from portions of AL north and east along the East”

Sweet Corn

One thing we can be sure of is the importance of trapping on your own farm to get an accurate picture of what is happening there. Trap counts do reflect the moth pressure in a particular field. In the absence of other moths, ECB should be controlled with 6-7 day spray intervals on silk where trap counts are twelve are more moths caught in a week. When flight begins on your farm you can expect egg laying to start and hatch to begin about a week later. Inspect tassels for feeding damage and live caterpillars. Spray tassels if 15% or more of your field is infested. The action threshold for ECB during silking is 12 moths per week. If your flight is at 12 moths per week or greater, a weekly spray on silk is warranted, unless corn is within a week of harvest. Sprays should target the ear zone with the use of drop nozzles if possible. High pressure and low speeds are also effective at targeting the ears where small borers can hide and tunnel into the sides of developing ears. Keep checking your traps weekly to decide whether or not you need to be concerned about your silking corn and when you should start scouting your pre-tassel and tasseling corn. From UMASS Vegetable Notes, July 21, 2011
I’ve been working with blueberries for several years, and
had not seen mummy berry in an eastern NY plantings un-
til this year. And our area is not unusual according to berry
specialists from New England, who reported seeing LOTS
of mummy berry, caused by the *Monilinia vaccinii-
corymbosi* pathogen, throughout the region. I never saw
the early season shoot strikes which will cause new twigs
and leaves to die back, have since seen many berries with
infection. The photo below is what mummy berry will
look like when first infected – before the fruit shows out-
ward signs. As the fruit begins to ripen, you will see some
pinkish gray berries that do not appear to be turning blue,
also they may have a slightly ridgy look to them. This is
due to the seed area of the berry filling up with the fungus,
which, when you cut the berry open, looks like a star in-
side.

The mummies that now are hanging on the plant will soon
fall to the ground. If left undisturbed, the mummies will
fruit and send more spores out next year which will
compromise shoot growth as well as berry yield.

The most important aspect of control is to get rid of the
mummies from this year. Removing mummies will help,
but if you try to rake them, be careful not to just rake them
into the grass, because they will fruit there as well. Hand-
picking the infected berries while pickers are going through
the patch is a good first step. Then make sure to mulch. If
you apply fall mulch, wait as long as possible so that the
mummies dry out. You can also apply urea lightly to the
mulched are under the bushes, and then put a good layer of
mulch on – preferably in the spring, but just make sure to
get it on. Another approach is to aim a lime-sulfur spray to
the base of the plant in the spring, which kills the fruiting
mummy. Lime sulfur has been in short supply recently – if
you have this disease you might want to try now and locate
some for next year. According to NJ sources, Miller
Chemical in Hanover PA will ship a 55 gallon drum of
lime sulfur to you. You can reach them at: (717) 632-8921.
The most resistant cultivars include Burlington, Collins,
Jersey, Darrow, Rubel, Bluetta, and Dixi. Tolerant culti-
vars are Duke, Elliott, Lateblue, and Northsky. Less re-
sistant ate Rancocas, Weymouth, Berkeley, Bluecrop,
Herbert, and Coville. The most susceptible cultivars are
‗Earliblue‘ and ‗Blueray‘.

If you do have this disease, plan also to spray Indar starting
at green tip on an 8-14 day interval. You can rotate with
several other chemicals listed in the Berry Guidelines in-
cluding Captan, Switch or Orbit. Organic growers can use
Actinovate or Serenade Max, but realize that these materi-
als may only suppress the disease – spring cultural manage-
ment will be imperative.

If you think you have this disease, please call me, 518-791-
5038. A North Carolina graduate student is studying the
genetic variation of this disease, so I might be able to
collect mummies and send them to her. I would also just
like to know how bad our infection rates are this year.-LM
Weekly and Seasonal Weather Data

<table>
<thead>
<tr>
<th>Location</th>
<th>Weekly Total</th>
<th>Season Total</th>
<th>2010 Total</th>
<th>2011 Weekly Rainfall</th>
<th>2011 Season Rainfall</th>
<th>2010 Total Rainfall</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>7/19/11 - 7/25/11</td>
<td>4/1/11 - 7/25/11</td>
<td>4/1/10 - 7/25/10</td>
<td>7/19/11 - 7/25/11</td>
<td>4/1/11 - 7/25/11</td>
<td>4/1/10 - 7/25/10</td>
</tr>
<tr>
<td>Albany</td>
<td>200.6</td>
<td>1637.8</td>
<td>1674</td>
<td>0.64</td>
<td>15.15</td>
<td>10.22</td>
</tr>
<tr>
<td>Bennington, VT</td>
<td>172</td>
<td>1350.3</td>
<td>1378.5</td>
<td>0.8</td>
<td>13.35</td>
<td>12.51</td>
</tr>
<tr>
<td>Clifton Park</td>
<td>197</td>
<td>1447.3</td>
<td>1603</td>
<td>N/A</td>
<td>N/A</td>
<td>12.72</td>
</tr>
<tr>
<td>Glens Falls</td>
<td>187.1</td>
<td>1418</td>
<td>1427.5</td>
<td>0.38</td>
<td>15.47</td>
<td>12.14</td>
</tr>
<tr>
<td>Guilderland</td>
<td>187.5</td>
<td>1540.5</td>
<td>1653.5</td>
<td>0.09</td>
<td>11.02</td>
<td>11.52</td>
</tr>
<tr>
<td>Granville</td>
<td>180.1</td>
<td>1405.1</td>
<td>N/A</td>
<td>0.24</td>
<td>18.24</td>
<td>N/A</td>
</tr>
<tr>
<td>Valatie</td>
<td>209.5</td>
<td>1584.6</td>
<td>1629.7</td>
<td>N/A</td>
<td>N/A</td>
<td>11.48</td>
</tr>
</tbody>
</table>

NA¹—The Granville weather station was established this year (2011) so there will be no 2010 data reported because we have

Sweet Corn Trap Catches

<table>
<thead>
<tr>
<th>Location</th>
<th>ECB Z-Race</th>
<th>ECB E-Race</th>
<th>Corn Earworm</th>
<th>Fall Armyworm</th>
<th>W. Bean Cutworm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northern Washington</td>
<td>0</td>
<td>15</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Central Washington</td>
<td>6</td>
<td>16</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Northern Rensselaer</td>
<td>4</td>
<td>8</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Central Rensselaer</td>
<td>0</td>
<td>87</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Central Saratoga</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Central Fulton</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Central Schoharie</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Central Albany</td>
<td>0</td>
<td>17</td>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Northern Columbia</td>
<td>1</td>
<td>10</td>
<td>3</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

* (Cucurbits, continued from page 4)

Coast through central NY ... with Low Risk into upstate NY. Moderate Risk also for eastern OH, western PA, and northern WV. Minimal Risk to cucurbits most other areas.”

Even though there is a “low risk into upstate NY”, we continue to recommend maintaining a protectant fungicide program, especially on those crops most susceptible like cucumbers and melons.

The other disease that has been found fairly widespread, especially in winter squash is Septoria Leaf spot. Septoria could be confused with Downy Mildew, but you won’t see any of the purple/brown spores associated with DM. The Septoria lesions are also quite small, white to beige in color where DM lesions can become quite large. Septoria can also infect the fruit as well and the lesions appear as small raised bumps. Chlorothalonil (Bravo, Initiate, etc.) is about all we have for control and early control in the foliar phase will help reduce fruit infections later in the season.

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.