Wet weather pests and diseases continue to cause problems in the capital district

**Botrytis gray mold:** Late last week we were called to inspect some tomato transplants that were being moved outdoors to be hardened off. The grower noticed some lesions on some of his plants and was concerned that it was late blight. The good news is that it was not late blight but Botrytis Gray Mold (BGM). Sometimes the symptoms of the two diseases can look very similar.

**Cabbage maggot:** This week we also saw severe cabbage maggot damage on cole crop transplants. Affected plants appeared stunted and can easily be pulled from the soil. Upon close inspection, small white maggots can be found feeding on the roots and any underground stem portions. If populations are high enough, plants may be killed.

**Control** (from Christy Hoepting, CVP)  Diazinon and Lorsban can be used at transplanting as an in-furrow application or immediately after planting as a directed banded spray (rates based on 4-inch band). A minimum of 40 gpa should be used when Lorsban is applied as a band. Do not add any adjuvants, surfactants or spreader stickers. Check the pH of your tank-mix, it should not be alkaline or greater than 7, or else Lorsban does not work properly. Lorsban is also labeled to use as a pre-plant incorporated application. Make sure that the proper rate of Lorsban and depth of incorporation is used, or else the product will be diluted and off-target, leading to control failures. Diazinon can be used on seedbeds, broadcast and incorporated just before planting. Organic growers can rely on exclusion, placing row covers on the plants.

**Two Organic Cover Crop Meetings, One Date: June 1st!**
Dr. Thomas Bjorkman and Elizabeth Dyck talk cover crops as we tour two organic farms using them in vegetable rotations.
9 a.m.-11 a.m. – Windflower Farm, Washington County
3p.m.-5 p.m. Fox Creek Farm, Schoharie County
See back page for full details!!

“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”
The onset of BGM is not unexpected considering the stretch of weather we have had the last couple of weeks. The constant rain showers have allowed humidity levels to remain very high and the cool conditions have made it somewhat difficult to vent greenhouses. Transplants are getting leggy and crowded which is reducing the amount of air being moved across them and they tissues are soft allowing the spores to establish easily. Also, if you are growing hanging baskets or bedding plants in the same greenhouse, try to keep them as far apart as possible – even better if you can keep them in separate greenhouses. We often see when hanging baskets are being grown over

Herbicide options for cucurbits

I suspect that if the weather breaks and we can get back into the fields, a lot of pumpkins and winter squash will probably start to go in the ground this weekend. One thing I have noticed over the years of looking at vine crops is the variation in weed control. Several things that I would recommend is make sure that you prepare your field, plant it and put your herbicide on as soon as possible. Most of the materials that we have labeled are pre-emergent materials – this includes crop and weeds. Many of them are seed germination inhibitors so they work best when applied before the weeds can germinate. Soil preparation is another factor (as is soil type for determining rates) and if you have a soil that is clumpy or has lots of clods (and I don’t mean rocks), then your herbicide may be less effective.

Command 3 ME – annual grasses and many broadleaves. Command is labeled for all cucurbit crops but the company has made a point of labeling it on processing pumpkins only. This is due to some problems years ago with injury on pumpkins that made them unmarketable for retail sales. However, I have not seen a problem here and Command makes up half of the active ingredients in a pre-mix called Strategy which I will talk about later. The rates vary according to the crop and unlike the old Command formula this one does not and should not be incorporated. It can cause plants to turn white for a while, but yields are usually not affected.

Strategy – As mentioned, one of the active ingredients is Command and the other is a material we know as Curbit. This is a pre-mix material and does a pretty good job on the top of vegetable transplants BGM establish on the vegetable transplants where the flower petals have fallen from the flowers onto the transplants.

There is not much available for greenhouse/tunnel use, but Decree (1.0 – 1.5 lbs/acre), Scala (plus a protectant such as copper) at 7.0 fluid ounces or Serenade Max at 1.0 – 3.0 lbs are labeled. It is important to mix a protectant in with Scala and Serenade Max. Champ 2F and Champ Dry Prill, Champion WP, Kocide 2000 and 3000, Nu-Cop 50 DF and HB, Cuprofix Disperse DF are all labeled for greenhouse use but please check you label to make sure they are labeled on the crop you are treating. Nu-Cop 50 DF, Champion WP and Kocide 2000 and 3000 are also OMRI approved coppers.

If you have questions or suspect that you have Late blight, please do not hesitate to give us a call.
I know there are still some questions regarding the FarMore DI seed treatment being offered by many of the seed companies. This is a mix of an insecticide and two fungicides. We did several years worth of research in the Capital District with this material and have found that Striped Cucumber Beetle control was as good as in-furrow applications of imicloprid (Admire, Admire Pro, Advise etc.) without the extra expense or frustrations of putting an in-furrow application down. However, if you are using FarMore treated seed for transplants, I would not expect to get the same beetle control as with direct field seed treatments. This is because the material should give you 2-3 weeks of beetle control in the field but, when we talk about a transplant that is already 3-4 weeks old in the greenhouse, much of the activity is gone.

So, if you’re transplanting you will have to go back to an in-furrow application or drench the plants a day or so prior to transplanting. Use a very low rate (0.02 ml/plant of Admire 2F formulation) to treat transplants about 1 day prior to planting in the field. To treat a flat of 200 transplants with Admire at this rate, a grower would need to dilute 4 ml (0.135 oz) of Admire in a volume of water sufficient to soak to soil mix evenly. This treatment will protect the plants for about 2 weeks, and after that may be followed by field application. To help make other conversions: multiply 0.02 ml per plant times the number of plants in your flat. This can be applied with a backpack sprayer or watering can. Be sure to rinse the plants off after the application so that the imidacloprid gets washed into the soil. It needs to be taken up by the roots to be most effective. Please note what formulation of imidacloprid you have as it makes a difference in the rates used. The rates mentioned above are for the 2F formulations (2 lbs of active ingredient per gallon). If you are using Admire Pro or generic product with 4.6 lbs of active ingredient per gallon, that is over twice the amount of active ingredient compared to the 2F formulation. This means that you would use is ½ (0.01 ml per plant) the 2F formulations.

If using an in-furrow application of imidacloprid 2F formula for direct seeded or transplants, research has shown that 1.1 ounces per 1000 feet of row is adequate. To determine the per acre rate at different spacings, take 43,560 square feet (the number of square feet in one acre) and divide it by your between row spacing. Take that value and divide it by 1,000. Finally, take that number and multiply it by 1.1 fluid ounces and that is the number of ounces you need to treat one acre. For example, if you plant your Jack-O-Lanterns on 10 foot centers, then you would take 43,560/10 = 4,356 row feet. Divide that by 1,000 row feet: 4,356/1000 = 4.4 (this is the number of 1,000 row feet per acre per your spacing). Then take 4.4 and multiply that by 1.1 ml imidacloprid per 1000 feet = 4.8 ounces of imidacloprid 2F per acre. Most growers are aiming to apply their imidacloprid anywhere between 5 and 10 gallons of water per acre. Again I cannot stress the importance of knowing what formulation of imidacloprid you have! -CDB

(Continued from page 2)

Sandea – This material is labeled on all cucurbits as a post plant/preemergent application. It controls many different broadleaves including galinsoga, lambsquater, mustard species, ragweed, pigweed and velvetleaf. As a preemergent it also suppresses yellow nutsedge, but is very effective when used post emergent to control yellow nutsedge. I would recommend the 0.5 ounce rate. When you purchase this material make sure the distributor provides you with a measuring container that is supposed to come with the package. Again, I would recommend tank mixing this with one of the materials that controls annual grasses such as Dual Magnum. One thing to keep in mind about Sandea is that we’ve had a lot of growers complain that usually around the 4th of July they notice a lot of weeds coming in their pumpkins. As I started to ask some questions, it was brought to my attention that it has a fairly short residual – 3-4 weeks. Knowing this and that you can use a total of 1.0 ounces of Sandea for the whole season, it might be worth applying a post emergent application of Sandea 3-4 weeks after the first application in pumpkins and winter squash. However, for post emergent applications plants need to have at least 2-5 true leaves and no visible female flowers. Sandea can also be applied to transplants planted on bare soil up to 14 days after transplanting.

Please read the label for determining rates depending on your soil type for any of these materials. The information above is only a brief introduction as to what is labeled and how they might be used. These are also not the only materials labeled, but appear to be the most effective. -CDB

Diagnose pest and disease problems using color pictures: http://vegetablemdonline.ppath.cornell.edu/
Cornell Guidelines for fruit and vegetables: http://www.nysaes.cornell.edu/recommends/
Cucurbit Downy Mildew forecast: http://www.ces.ncsu.edu/depts/pp/cucurbit/
USDA Fruit and Vegetable Market News: www.marketnews.usda.gov/portal/fv
Over the last couple of days I have been in several tomato high tunnels and am seeing quite a bit of flowering and fruit sizing. I just thought it might be worth mentioning that if you have never tried using bumble bees for pollinating your tomato crop (or cucumbers etc.), it might be worth trying a small hive. One local grower who has been using bees for a number of years now believes that his fruit are larger and there are more fruit per plant and a big part of that he thinks is the bumble bee hives he uses in his high tunnel. The one thing that I am impressed with is these bees will fly during cool, cloudy, rainy conditions when most honey bees will remain in or near the hive. If you’re interested in learning more about bumble bees and how to use them, I recommend that you visit Koppert Biological Systems at http://www.koppert.com/pollination/vegetable-crops/crops/detail/natupol-beehive/ or 1-810-632-8750. They are a wealth of information on bumble bees and are also a major supplier. I would recommend that you talk to one of their representatives to assist you in choosing the right size hive for your tunnel or greenhouse. Most hives will last 10 – 12 weeks. If you are already using bumble bees, make sure the hive is off the ground and that it is partially shaded, especially from late afternoon sun. This will help your bees and keep them happy.-CDB

Crops such as tomatoes, eggplant and peppers will soon be transplanted into the field, usually into black plastic mulch. Weed control between the rows of plastic often becomes the issue. Uncontrolled weeds in these areas allow for unwanted competition and offer alternate hosts to insect and disease pests. When deciding on a strategy for between-row weed management, the options break down to either residual pre-emergence or non-residual postemergence.

Remembering that any herbicide that is labeled for use on bare ground on a crop can also be used between rows will make the choices clear. In tomatoes, these options would include metribuzin (Sencor), Devrinol, Prowl H2O or Treflan (ppi). Combining metribuzin with either of the others would provide broad-spectrum annual weed control. However, often the choice is to treat weeds after they have emerged between the rows. There are several options for field grown tomatoes. These include non-selective materials such as glyphosate (Roundup & others) and Gramoxone Inteon. Other postemergence options are Aim, Poast, Select, Sandea and Matrix. If glyphosate or Gramoxone Inteon are used, while they are generally the best options for weed control, they can present real problems with off-target movement. Glyphosate drift is often impossible to detect until telltale signs of plant yellowing and stunting indicate a problem. This may continue to inhibit crop growth for much of the season. Gramoxone injury is usually evident within 24 hours of application and often appears as a fine network of tan spots. This injury is often cosmetic and crops will usually soon outgrow it. Keeping nozzle pressure low and droplet size large (greater gallonage) and shielding the spray will help prevent drift. On Long Island the real trick is to find a time to spray when the wind will not interfere. Sandea and Matrix can be very useful if particular weed problems like nutsedge, bindweed or nightshade become problems. Select or Poast will be helpful only for emerged grasses, (not nutsedge). Aim is very active at low rates. It will not control grasses, but can be useful for controlling small annual broadleaf weeds. (AS)
Expect and Prepare for Basil Downy Mildew

-By Meg McGrath: Unfortunately this destructive new disease of basil is expected to occur again in the northeastern US during 2011. Field-grown crops as well as basil in greenhouses and home gardens have been affected every year by downy mildew since first occurrence in 2008. The pathogen (*Peronospora belbahrii*) produces an abundance of spores easily dispersed by wind, which are considered the main source of inoculum. The pathogen can survive over winter in southern Florida. From there the pathogen is thought to move up the eastern coast during the production season. Infested seed is another possible source. Seed could be the source for some outbreaks that have occurred in greenhouses, especially during the winter to spring period before field production is underway.

Applying fungicides frequently and starting before first symptoms are considered necessary to control downy mildew effectively. Few fungicides are currently labeled for this new disease. Actinovate AG, Trilogy, and OxiDate are OMRI-listed fungicides labeled for use on herbs and for suppressing foliar diseases including downy mildew. OxiDate is labeled for use outdoors and in greenhouses. The Actinovate and Trilogy labels do not have a statement prohibiting use in greenhouses. OxiDate has limited residual activity and thus if used should be combined with or followed by another product. There are three phosphorous acid fungicides that have downy mildew under herbs on the current label: ProPhyt, Fosphtite and K-Phite. This chemistry was documented to be effective in fungicide evaluation experiments. Greenhouse use is not prohibited. Quadris is labeled for use on basil but not specifically for downy mildew; it also has been shown to be effective for this downy mildew. In states like NY where the target disease is required to be specified on the label, Quadris cannot be used without an approved FIFRA 2(ee) recommendation, which the applicator must possess when using (the one for NY can be downloaded at [http://magritte.psur.cornell.edu/pims/current/](http://magritte.psur.cornell.edu/pims/current/)). Greenhouse use is not permitted with Quadris.

Basil crops should be disked under or otherwise destroyed as soon as possible after last harvest, or when abandoned because of disease, to eliminate this source of inoculum for other plantings. A sunny day is the best time to physically destroy an affected crop because the disturbed spores will be killed by UV radiation.

A monitoring program started in 2009 can provide information on occurrence useful for assessing risk of downy mildew in a crop. Each year a spreadsheet accessible by anyone has been set-up in Google Docs. A link to the page for 2011 is at:

[http://vegetablemdonline.ppath.cornell.edu/NewsArticles/BasilDowny.html](http://vegetablemdonline.ppath.cornell.edu/NewsArticles/BasilDowny.html)

Photographs of symptoms and additional information about this disease and its management are posted on the web at

- [http://www.longislandhort.cornell.edu/vegpath/photos/downymildew_basil.htm](http://www.longislandhort.cornell.edu/vegpath/photos/downymildew_basil.htm)
- [http://vegetablemdonline.ppath.cornell.edu/NewsArticles/BasilDowny.html](http://vegetablemdonline.ppath.cornell.edu/NewsArticles/BasilDowny.html)

Please Note: The specific directions on fungicide labels must be adhered to -- they supersede these recommendations, if there is a conflict. Any reference to commercial products, trade or brand names is for information only; no endorsement is intended.
Weather Data

Weekly and Seasonal Weather Information

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

Upcoming Meetings and Notices

Organic Field Days: June 1st. Join Dr. Thomas Bjorkman and Elizabeth Dyck as we tour two farms using cover cropping extensively in their rotations. We will discuss ways to increase cover crop use in your rotation, ways to control cover crops, and the effects cover crops have had on the health of soils on these farms.

Washington County: 9am-11: Windflower farm, 585 Meeting House Road, Valley Falls, NY 12185.

Schoharie County: 3 p.m. to 5 p.m: Fox Creek Farm, 182 Fox Creek Farm Road, Schoharie, NY 12157—in addition to cover crop information, Raymond Luhrman will also discuss using alternative energy sources including solar and wind to power his farm.

Save the date: 2011 Empire Farm Days, August 9 - 11.

The CDVSFP will be setting up European Cornborer, Fall Armyworm and Corn Earworm traps to monitor on local sweet corn farms this year. Many of you have participated in this program with retired IPM Vegetable Specialist John Mishanec. In an effort to cover the territory, we would appreciate it if any of you have old traps of Johns that he left at our farm. If so, please call Chuck Bornt at 859-6213 and I will arrange to pick them up, clean and re-use them. Thanks, CDVSFP