Cornell University Cooperative Extension

Eastern NY Commercial Horticulture Program

Vol. 4, Issue 4
May 18, 2016

Vegetable News

Allium Leafminer Update

The April 20 issue of this newsletter included a pest alert on allium leaf miner, and there are already reports of this pest coming out of New Jersey.

Rutgers Cooperative Extension has identified two probable infestations in New Jersey, which seem to have come from overwintering garlic and chives. For that reason, it is probably a good idea to pay extra close attention around any fields of overwintered alliums when spotting for damage. If you have onions planted this year next to a patch of fall-planted garlic or chives, be on the lookout for mines in the leaves such as in figure 1.

In addition to looking out for the mines, if you suspect an infestation you can check for pupae within the plant tissue. (figure 2).

Photo from Rutgers article linked below

Photo Credit: Royal Horticultural Society

See the whole Rutgers report of the New Jersey infestations here:
http://plant-pest-advisory.rutgers.edu/pest-alert-probable-allium-leafminer-infestations-found-in-nj/

Leek Moth Adults are Flying

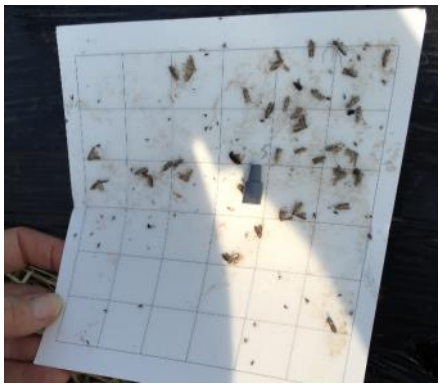
Amy Ivy, ENYCHP

Leek moths are a relatively new pest of all the allium crops: onions, garlic, leeks, shallots and chives. They are slowly moving south from Canada across northern New York and are pretty widespread across Vermont.

We are curious about where they are spreading to so this year we have traps set up in the southern Adirondacks, Oswego area, and western New York. If anyone would like to set up a trap on their farm, just let me know.

They overwinter as adults and emerge in mid to late April, even this far north. The photo shows the sticky card from one trap on May 12 with 35 adult leek moths. There are about 3 generations per year so there is plenty of time for growers to set out traps for the next generation of adults which will emerge around late June in Clinton and Essex Counties. It helps to have the traps out before the adults fly in order to see when they actually arrive.

For more information on leek moth visit: http://web.entomology.cornell.edu/shelton/leek-moth/



Above: *This sticky card from 5-12-16 in Essex County has 35 leek moth adults and a few non-leek moth insects. The gray cylinder near the center is the lure.*

The leek moth trap is simple, just a lightweight plastic shell suspended just above the crop foliage on a simple fence post.

In this issue of Vegetable News:

Herbicide Options for Pumpkins and Squash

Charles Bornt, ENYCHP

I know some early pumpkins and winter squash has already gone in the ground, but I suspect that the majority of them will be planted in the next couple weeks depending on how the weather cooperates. I really have nothing new to add this year as no new products have been labeled to my knowledge. The herbicides labeled and mentioned below all work best as post plant, pre-emergent applications. They are mostly seed germination inhibitors or root inhibitors and in some cases they do have some post-emergent activity. In my opinion, there are three important factors for these herbicides to work their best:

- ⇒ **Field preparation:** Fit and plant the field as closely together as possible. Do not fit the field and let it sit for more than 2 or 3 days before planting it as this will allow weed seeds to germinate (if the conditions are right) and in the case of many of these products, their activity and efficacy is reduced when seeds are already germinated. If you have to wait for some reason, I would consider re-fitting the field with a shallow cultivation before planting. Also, make sure the field is not full of clumps as this will also reduce the efficacy of the herbicides.
- ⇒ **Application timing:** As with field fitting, do not delay your herbicide application for more than a couple of days after planting! The same reason applies—this gives seeds time to germinate and reduces their activity. Planting and spraying your herbicide within a day or two will improve weed control.
- ⇒ **Moisture:** All of these materials require either a rain or irrigation after application in order to "activate" them. Not only does this activate the herbicide, but it also activates seed germination. If it looks like there is no rain coming for a while and you don't have irrigation, my suggestion is to go ahead and still get the herbicide on. It's better than waiting for a rain.

Lastly, I would not use any of these products pre-emergent/post-plant by themselves with the exception of Strategy (already has 2 different active ingredients pre-mixed). We have seen that tank mixes are the best value and result in much better weed control. Many of these products have a narrow range of weeds they target so tank mixing a couple of them improves overall weed control. Tank mixes that we think have potential are: Sandea plus Dual Magnum plus Reflex; Sandea plus Command ME or Sandea plus Dual Magnum plus Reflex. As always, please read the label carefully and if you have questions about what you read below, please do not hesitate to call me at 518-859-6213 and I will do my best to answer them.

Dual Magnum Notes: There is a lot of confusion out there about this label and how it can be used and I will try to explain it the best I can as I think it is an important tool to have. First, this is a 24 c Special Local Needs (SLN) label which means you need to obtain a copy of the correct 24 (c) label and have it in your possession at the time of application. Second, this is an indemnified label which means that you accept the risk of using this material and any injury or crop loss is not the responsibility of the company. In order to obtain the correct label, you will need to register with Syngenta and indicate that you are using this product on those specific crops. The good news is, this process is simple and can be done via the internet. (More to follow below). **If you have Dual Magnum or Dual II Magnum, you will note that "Pumpkins" are on those labels. However, if you read the Dual II Magnum label, you will see it stated clearly that it is labeled only as a banded application and the applicator must leave a 12 inch area over the seed row untreated. The SLN label for Dual Magnum does not have this restriction and it can be used as a broadcast application. And as far as I know, the use of generic "Dual" products is <u>not legal</u> to use on pumpkins or winter squash.**

Registering with Syngenta and obtaining the 24 c SLN: First, go to www.farmassist.com where you will need to create a user name and password. Once logged in, select "Products" where a dropdown menu will appear. Under that, select "Indemnified Labels". Next, select "New York" under the state and "Dual Magnum" under the "product". It is very important to note here that ***only the Dual Magnum formulation is labeled on pumpkins and winter squash and not Dual II Magnum***. Then the list of Dual Magnum indemnified labels comes up and you need to find the appropriate one (should be the one that included pumpkins and winter squash). Click the crop you are applying it to and the "submit" button. You will then be navigated to a "WAIVER OF LIABILITY AND INDEMNIFICATION AGREEMENT" page where you will either accept or decline the special instructions for using this product on the selected crops. If you accept it, the label you need to print will appear as a pdf file and you can then print it and you are ready to go. If you decline it, the labels will not appear and you legally cannot apply Dual Magnum to the selected crop. The good news is that Farmassist will save all of the indemnified labels you have agreed to in case you lose your label and need another one. If you need assistance you can call the Syngenta Customer Resource Center at 866-796-4368. Remember, you need to have a copy of the 24 (c) label in your possession when using this material.

continued on next page

Product	Labeled crops	Weeds controlled	Rate	Comments
Sandea, Profine 75 (halosulfuron)	All cucurbits	Broadleaves (pigweed, velvetleaf, etc.)	0.5 1.0 ounces per acre	Can stunt and delay emergence especially at higher rates (I recommend 0.5 oz rate) but temporary, short residual of about 4 weeks, will start to see some weed species breaking through (common lambsquarter, Eastern black nightshade) around the 4th of July. Using a 0.5 oz. once pre-emergent allows you to use a another 0.5oz. once post emergent, needs to be mixed with a grass herbicide when used pre-emergent.
Dual Magnum	Pumpkins, winter squash,	Mostly grasses and some broadleaf suppression	2/3—1.33 pints per acre depending on soil type	PLEASE SEE OTHER NOTES ON DUAL MAGNUM! I have seen very good results and limited injury using the 1.0 pints per acre rate. Do not incorporate as this increases the risk of severe injury! Best if used as a post plant pre-emergent and can be used post transplant within 72 hours of planting (weed seed germination issues).
Command 3ME	All cucurbits	Annual grasses and some broadleaves	2/3 – 1.33 pints per acre depending on soil type	Labeled on all cucurbits (Label actually says "Do not use on Jack-O-Lantern pumpkins" because the companies distributing this product will not accept libility for potential off-color responses that have been observed in numerous varieties). I find that the 1.0 pint per acre rate is used and provides good control. **Do not incorporate!** The ME (micro-encapsulated) formulation does not need to be incorporated! May be used prior to seeding or transplanting (make sure transplant is planted below the chemical barrier) or post seeding but before crop emerges.
Curbit EC	All cucurbits	Mostly annual grasses and some broadleaf suppression	3.0—4.5 pints per acre depending on soil type and organic matter level	Use as a as a post plant pre-emergent application only within 2 days of planting or banded application between rows after crop emergence or transplanting (be very careful of drifting onto the crop). Do not use under plastic mulches or rowcovers. Cold, wet soils can increase injury or even result in crop failure! Label recommends using a minimum of 20 gals/acre fixed spray volume.
Strategy (Pre-mix of Command and Curbit)	All cucurbits	Most annual grasses and some broadleaves	2.0 - 6.0 pints depending on soil texture	**Do not incorporate,** recommended as a post plant pre-emergent or banded application between rows after emergence or transplanting. Do not broadcast apply and then transplant into treated soil as severe injury will occur. It can also be banded to row middles after a cultivation. Again, do not let this material freeze in storage as it could potentially settle out and clog your sprayer screens, tips etc. If it has frozen, be sure to contact the manufacturer for recommendations of how to proceed. Label also recommends to use 10 to 30 gallons per acre finished spray volume. Be sure to check the label as there are crop rotational restrictions that are rate dependent.
Reflex	Pumpkins and winter squash except butternut	Broadleaves and some annual grass suppression	0.5—1.0 pints per acre	24 c Special Local Needs label on pumpkins, summer squash and most varieties of winter squash, except butternut. "Indemnified" label like Dual Magnum which means you accept any crop loses associated with using this material and you will need to register with Syngenta in order to print a copy of the label. See the "Registering with Syngenta and obtaining the 24 c SLN" section under Dual Magnum. For direct seeded crops you need to apply to the row middles only or leave the area over the seed furrow untreated. Do not use as a broadcast application on direct seeded pumpkins or squash! However, for transplants you can use it as a pre-transplant non-incorporated pre-emergence (weed seeds) broadcast application up to 7 days prior to transplanting. Apply Reflex at a rate of 0.5—1.0 pints per acre. Do not exceed 1 pint per acre of Reflex on pumpkins, winter or summer squash per season and do not harvest any of these crops within 32 days of the Reflex application. Please note the 18 month crop rotation restrictions for sweet corn Do not use Reflex alone.

P&Z in Spring Tomatoes

Judson Reid, CCE Cornell Vegetable Program

Spring fertility management for tomatoes often emphasizes phosphorus. This makes sense given the importance of phosphorus in root growth. Cold soils inhibit phosphorus uptake, so many growers increase the ratio and rate of application to get the nutrient in direct contact with the roots. However, phosphorus is banked in the soil when over applied. In our sampling of high tunnel soils across NYS we have found that phosphorus levels are excessively high on many sites, sometimes several orders of magnitude above recommended levels (figure 1).

Is this a problem? Absolutely. In high pH and phosphorus soils an induced zinc deficiency can occur. Zinc is critical in a number of plant functions including flower production. Thus, there will often be a recommendation to apply zinc sulfate. Tomatoes only need ½ to 1 lb per acre of zinc, but it simply may not be available in these situations so application rates range from 10-20 lbs per acre. If making a banded application the rate is reduced to 1-2 lbs/ac. Zinc Sulfate is OMRI listed but the products generally carry the stipulation that it "may only be used as a plant or soil amendment with a documented zinc deficiency. "

Aside from the addition of zinc there are other management steps to prevent this issue.

- Soil test annually in the fall to get the most accurate measure of soil P levels.
- Fertilize in the spring and avoid fertilizers with a high P ratio (the 2nd number in the analysis).
- Apply sulfur if pH is beginning to climb
- Lay plastic well prior to transplanting to help warm the soil. This will make P more available and reduce the need to make excess application.
- Inject sulfuric or citric acid with irrigation water to reduce alkalinity and pH problems.
- Foliar test in season to make adjustments if necessary.

The above steps are part of a 2-year project CVP and NOFANY are conducting with support from the New York Farm Viability Institute. Thanks to Professor Steve Reiners for his input.

https://www.flickr.com/photos/judsonreid/27050496866/in/datetaken/

Element	lbs/acre*	Very Low	Low	Optimum	High	Very High
Phosphorus (P)	669					
Potassium (K)	2,616					
Calcium (Ca)	16,142					
Magnesium (Mg)	1,971					

nent	Value	Element	Value	Element	Value
Soil pH	7.8	Manganese (Mn), lbs/acre	56	Aluminum (Al), lbs/acre	4
Iron (Fe), lbs/acre	6	Zinc (Zn), lbs/acre	6	% OM	11.9

Figure 1. Phosphorus in this high tunnel soil is literally off the charts. Levels in excess of 40 lbs per acre are ranked as very high; this sample has 669 lbs/ac. Although zinc is high (6 lbs/ac), it may be deficient in the plant, restricting yield potential.

TECHNICAL RESOURCES a "Click" AWAY

Chris Callahan, UVM Extension Ag Engineer

Guidance on wash water discharge from vegetable pack sheds:
http://go.uvm.edu/vegwater

Guidelines for selecting a good thermostat for agricultural use:
http://go.uvm.edu/thermostats

Summary of materials available that provide a "smooth and cleanable" finish surface for coolers, wash areas, and pack sheds:
http://go.uvm.edu/smoothnclean

A new Excel-based calculator to help size piping systems and to select pumps for heating systems and other water moving applications:
http://go.uvm.edu/pumpnpipe

SARE Fellowship Trip to Idaho

Crystal Stewart, ENYCHP

Last year I was selected to be one of four extension agents from across the country to take four trips over two years to different regions of the US learning about the diversity of sustainable agriculture in our country and working with a talented group of agents from all different specializations. My first trip was last week, and involved touring farms around Boise, Idaho.

Of course when I think about Idaho I think about potatoes (rightly so, but all the potato production is to the east of Boise). The diversity of agriculture in Southwestern Idaho was in fact quite impressive, and not unlike New York. They grew everything from wine grapes to organic milk. The diversity of products is largely where the similarities end, though.

I'm originally from the west, but I've been gone for 15 years—long enough to forget just how serious the water situation is. The average rainfall at some of the farms we visited was just 7 inches a year, and most of that comes in the winter and spring. Every farm requires irrigation, and most of that irrigation is traveling through a series of aquifers from the distant mountain snowpacks into the valleys. Concrete lined canals and ditches snaked across the landscape wherever crops were grown, and fields were fitted to facilitate water flow first and foremost.

Sharing water between farms like this leads to some interesting challenges. Many fields may be serviced by the same ditch, so farmers have to schedule their watering with or around their neighbors. They cannot turn the water on themselves, but leave a request for a ditch master to divert flow to them. On the day that water flows, a series of metal pipes are used to siphon water from the ditch into the spaces between ridges (they called them corrugations, like on cardboard) in a style of flood irrigation. It can take 12 hours to move water from one end of the field to the other. Excess water then drains to another concrete ditch, and returns to the water source. Those of us who work with organic growers raised an eyebrow at this practice—how can you know what is in that water that flows off one field and into another?

This system of irrigation is not particularly water efficient, and many forms of drip irrigation are being trialed in the state. Some growers are looking to bury tapes 12 inches deep and keep them in for a few years, others are looking at more conventional systems like ours on the East Coast. Drip systems might also reduce the amount of contamination through runoff, another benefit.

That dry environment is of course beneficial in many ways. Fungal diseases are not nearly as serious, and there is little concern about timing harvests around rain. Seed production is big business in the Treasure Valley, with companies like High Mowing and Fedco contracting with small (40 acres is small in Idaho) growers for crops such as leeks, onions, cover crops, and red peppers.

Being in Idaho made me appreciate the relative enlightenment of our consumers here in New York. The local foods movement is very modest there, centered on farmers' markets in the city. Roadside stands were incredibly scarce, in part because of the lack of consumer awareness but also because the population is small and spread out. I felt grateful on my drive home to pass the many greenhouses selling flowers and vegetable transplants, farmstands getting ready for business in a month or so (assuming it ever warms up!) and small fields filled with product which will fetch retail prices.

Farming is challenging everywhere, but it's good to come home feeling lucky for what we have here.

More than Mites!

Amy Ivy, ENYCHP

After my submission in last week's newsletter about damage to high tunnel spinach in April, one of our colleagues, Dan Gilrein, Entomology Specialist with CCE in Suffolk County suggested I look for maggots as well. I had seen them initially but just assumed they were feeding on the dead tissue caused by the crown mites. It turns out seedcorn maggots have a wide host range and Dan has seen and confirmed them in spinach. They like the cool, moist conditions of tunnels in late winter. So the spinach plants in this picture were being attacked by both seed corn maggots and crown mites. Luckily, this grower was ready to prepare the space for tomatoes anyway so he just removed the affected spinach plants. The sturdy tomato transplants should have no problem with either pest and the sunny, warm conditions in the tunnel are not favorable for them either.

Dan also explained that there are at least a couple of species of mites that feed in and around the crowns of plants so this one is not specifically a spinach crown mite, but a crown mite feeding in spinach. Many thanks to Dan for this additional information!

For more information on seedcorn maggots visit this site: https://pubs.ext.vt.edu/444/444-231/444-231.html

FYI

Don't Miss This Bus! Deadline is May 23.

We have an exciting day trip to southern Canada planned for Tuesday, June 28th. Just 20 miles north of the border, only 40 miles north of Plattsburgh, is a huge vegetable growing region featuring hundreds of acres of muck soil, flat land and cutting edge farms. The deadline to sign up is this Monday, May 23rd. Our first stop is at Veg Pro International (http://vegpro.com/en/) the largest vegetable producer in Canada with 1200 acres of muck soil plus mineral soils as well. They specialize in salad greens, onions, carrots and root crops.

We will have lunch at the Univerco warehouse, an importer and custom-manufacturer of harvesting and tillage equipment (http://www.univerco.com/en/home/) They will have some equipment on display for you to look over and ask about.

Our next stop is Jardins Vinet, a large mixed vegetable grower and then our last stop is Les Serres Lefort, a greenhouse operation expanding to over 500 houses this year. They grow vegetable transplants and hydroponic peppers, cucumbers and greens.

The cost is $75/person which includes the motor coach, lunch and a light dinner. To register email Abby Henderson (aef225@cornell.edu) or sign up on our website: http://enych.cce.cornell.edu/event.php?id=568 where there is more detailed information about the trip.

Register Today!

Find us on Facebook

The Eastern New York Commercial Horticulture Program is now on Facebook! Find us at:

https://www.facebook.com/Eastern-NY-Commercial-Horticulture-Program-

ENYCH Program Educators:

Fruit

Dan Donahue
Phone: 845-691-7117
Email: djd13@cornell.edu
Tree Fruit

Anna Wallis
Phone: 443-421-7970
Email: aew232@cornell.edu
Tree Fruit & Grapes

Laura McDermott
Cell: 518-791-5038
Email: lgm4@cornell.edu
Berries

James O'Connell
Phone: 845-691-7117
Email: jmo98@cornell.edu
Berries & Grapes

Vegetables

Chuck Bornt
Cell: 518-859-6213
Email: cdb13@cornell.edu

Amy Ivy
Phone: 518-561-7450
Email: adi2@cornell.edu

Teresa Rusinek
Phone: 845-340-3990 x315
Email: tr28@cornell.edu

Erik Schellenberg
Phone:845-344-1234
Email:js3234@cornell.edu

Crystal Stewart
Cell: 518-775-0018
Email: cls263@cornell.edu

Maire Ullrich
Phone: 845-344-1234
Email: mru2@cornell.edu

Business and Economics

Jesse Strzok
Phone: 518.429.1464
Email: js3234@cornell.edu

Content Editor: Erik Kocho-Schellenberg
Layout: Abby Henderson

Every effort has been made to provide correct, complete and up-to-date pesticide recommendations. Nevertheless, changes in pesticide regulations occur constantly, and human errors are possible. These recommendations are not a substitute for pesticide labelling. Please read the label before applying any pesticide. .