



Onion thrips are tiny slender insects, often found in the axil of onion plants. Scout now to determine if you've met the threshold to begin spraying.

**PAGE 1**



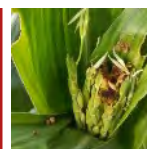
Common lambsquarters is the Weed of the Week. It is a summer annual that is highly competitive with many veg crops. How can you control it?

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Do you have open fields due to the late, cold, wet spring? Here are a couple of cover crop options you might consider.

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European corn borers have caused feeding damage in some early tasseling corn. See what locations have the highest pheromone trap catches in WNY.

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# VEGEdge

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Volume 10 | Issue 10 | June 18, 2014

Fresh market zucchini growing in Eden Valley.  
Photo: Darcy Telenko, CVP

**Cornell University**  
Cooperative Extension  
Cornell Vegetable Program

## Early-Season Onion Scouting for Onion Thrips and Botrytis Leaf Blight

*Christy Hoepting, CCE Cornell Vegetable Program*

The first foliar spray of the season in onions is triggered by exceeding the spray threshold for either Botrytis Leaf Blight or onion thrips, or sometimes both are triggered in the same week. Depending on the weather conditions, in some years there is opportunity to delay the first insecticide spray for onion thrips or the first fungicide spray for Botrytis leaf blight by 2-3 weeks until there is enough pest pressure to warrant a spray.

### SCOUTING FOR ONION THRIPS:

Onion thrips (OT) are tiny slender insects. Nymphs are yellow and 0.5 to 1.2 mm in length and adults are brown, up to 2 mm in length. Look deep into the leaf axils to find the first thrips of the season (Fig. 1). Count the total number of OT and divide by the average number of leaves per plant to get the number of OT per leaf. **The threshold to begin spraying is 1.0 OT per leaf.** Thrips feeding causes silvery streaking along the leaves (Fig. 2). If you can already see thrips feeding damage, that is also a good indication that it is time



**Figure 1.** Onion thrips nymphs in leaf axil of onion plant.  
Photo: Whitney Cranshaw, Colorado State University

*continued on page 3*



**VegEdge** newsletter is exclusively for enrollees in the Cornell Vegetable Program, a Cornell Cooperative Extension regional agriculture team, serving 11 counties in Western New York.

The newsletter is a service to our enrollees and is intended for educational purposes, strengthening the relationship between our enrollees, the Cornell Vegetable Program team, and Cornell University.

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*The next issue of VegEdge will be produced June 25, 2014.*



Peas ready for harvest in Genesee County this week. Photo: Julie Kikkert, Cornell Vegetable Program



to spray. If there is a lot of feeding damage, than you likely missed a timely first spray. **Cornell recommendation for first onion thrips spray:** Movento 5 fl oz + penetrating surfactant. Do not tank mix with Bravo. More later on onion thrips spray program.

#### SCOUTING FOR BOTRYTIS LEAF BLIGHT:

Optimum conditions for Botrytis Leaf Blight (BLB) are temperatures between 59 and 65 °F with at least 12 hours of leaf wetness. Infection of BLB is greatly reduced when temperatures are above 81 °F. When scouting for BLB, look for and count the tiny yellow lesions surrounded by silvery halos (Fig. 1) on the outer 3 leaves. The number of lesions per leaf is the number of lesions per plant divided by 3. **The threshold to begin spraying is 1.0 BLB lesions per leaf.** Identifying BLB lesions can be very tricky to the untrained eye, because they can be confused with other necrotic spots and silvering that afflict onion leaves. **Cornell recommendation for first BLB spray: Bravo 3 pts.** More later on onion fungicide spray programs. 🍷



**Figure 2.** Subtle streaking along leaves is an early indication of early onion thrips feeding. This plant has reached the spray threshold.  
Photo: Christy Hoepting, CVP



**Figure 3.** Botrytis leaf blight lesion on onion. Look for straw colored lesions surrounded by silvery halos.  
Photo: Agriculture and Agri-Food Canada

## WEED of the WEEK



### COMMON LAMBSQUARTERS

*Darcy Telenko, CCE Cornell Vegetable Program*

Common lambsquarters (*Chenopodium album* L.) is a summer annual that is highly competitive with a number of vegetable crops. It is a member of the goosefoot family, Chenopodiaceae, which also includes spinach and beets. It is found world-wide and throughout the United States. Lambsquarters has a distinctive gray-mealy coating on young leaf surfaces and stems. The first pair of leaves are opposite, but all others are arranged alternate on the stem. The leaves are egg-shaped to lanceolate. Young leaves are entire or have a few teeth while older leaves are irregularly toothed. It is propagated by seed and an individual plant can produce over 70,000 seed. Young seedlings emerge in spring or early summer.

Triazine resistant lambsquarters was documented in New York in 1978 and is found throughout the region in corn production areas. Lambsquarters has also documented resistance to acetolactate synthase (ALS) inhibitors, and variable tolerance to glyphosate has been documented. Rotations that include a winter grain or perennial forage can help break the life cycle of this summer annual weed. Rotating herbicide mode of action, using effective combinations from different groups, and implementing cultural management strategies will help control existing resistance issues and minimize the development of future ones.

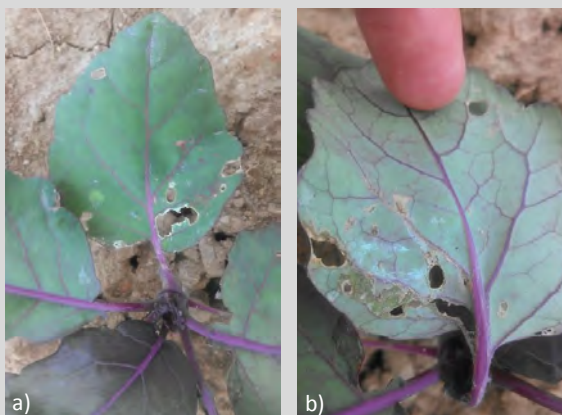
There are a number of herbicides with excellent postemergence activity on lambsquarters in vegetables including AAtrex+oil, Callisto, Clarity, Gramoxone, Impact, Laudis, Lorax, Roundup, and metribuzin. See product label for specific crop uses. 🍷

# CROP INSIGHTS

## CABBAGE & OTHER COLE CROPS

Another nice week for growing Cole crops. Unfortunately, what has been good for the crop has also been good for the weeds. See articles on weed control options for Cole crops.

The wet spring has been favorable for slugs. Slug pressure increases in the spring, especially in fields following corn, in weedy areas and along hedge rows. Slug feeding damage is characterized by large holes that skeletonize the leaves (e.g. leave the veins intact) (Fig. 1) and can definitely do some damage to small plants. Since slugs are generally nocturnal, they are often hiding during the day. Look for slim trails (Fig. 1) as a diagnostic indicator that the damage that you are seeing is in fact caused by slugs. In contrast, if this amount of damage is caused by caterpillars, the caterpillars can usually be found feeding on the leaves.



**Figure 1.** Slug feeding damage. a) Top side of broccoli leaf showing ragged skeletonized feeding damage. b) Tell-tale slime trails on underside of leaf indicating slugs were the culprit. Photos: Christy Hoepting, CVP

### Slug control options:

**Deadline MP** and other products with the active ingredient, metaldehyde, are molluscide baits are labeled for control of slugs and snails in Cole crops. Broadcast 20 lb per acre, and re-apply if necessary up to a total of 40 lb per acre. Care must be taken to avoid contamination of the edible portions of the plant with Deadline MP, which is not too much of a problem when applying to small plants. Following application with Deadline MP, the ground will be littered with dead slugs – this is VERY satisfying!

**Lannate LV** is available as a 2(ee) recommendation to control slugs in cabbage ONLY. The key to best control of slugs with Lannate is that it comes into contact with the slugs. Spraying at night (past 12 midnight) or in the early morning when temperatures are cool (50s or 60s) and foliage is wet with dew or rain is the best time to target slugs with Lannate. In Cornell studies, the addition of an adjuvant increased slug mortality when slugs were sprayed at night, as did multiple applications 7 days apart. Lannate is also labeled in Cole crops for control of caterpillars. The label is available at <http://128.253.223.36/ppds/531508.pdf>.

**An Organic Option:** The active ingredient, iron phosphate, is labeled under several trade names including some that are OMRI-approved. In the Cornell studies, Sluggo effectively controlled slugs, but was not quite as good as Deadline MP. The baits did not last as long in the field as Deadline MP and needed to be re-applied more frequently.

## GREENS

The intense high temperatures, sun, and winds have set back a number of plantings in the area. Mustards and brassicas have bolted early with the stress from the wild fluctuations of temperatures.

Flea beetles are still causing damage. Cabbage worms are being found in various stages from newly hatched to larger sized busy feeding on foliage. Slugs have also been active. All this adds up to a great deal of holes in leaves. Keep on top of management of these pests.

Aphids and leaf hoppers are hit or miss across the region in lettuce. In areas where there has been a lot of heavy rain, you might want to sacrifice a few lettuce heads across the field cutting them open. Look to see if there any small earthworms hiding up between the thick leaf midribs between lower leaves or look where the leaves come off the stem near the base of the plants. There has been one report of a lettuce planting where this was an issue. If so, please let us know. One management practice is a lite spreading of clean straw over the ground around the plants.

## ONIONS

Yet another great week for growing onions! The crop is growing beautifully in this warm weather with adequate rainfall. Earliest transplanted onions started to bulb this week. Transplanted fields range from 5 to 9 leaves with transplanting finally finishing up this week. Direct seeded onions are generally in the 3-leaf stage with some at the 5-leaf stage. In general, Botrytis leaf blight and onion thrips remain very low and below the spray thresholds in the muck lands across the region for another week. Thus, no fungicide or insecticide sprays are recommended. The exceptions to this are upland transplanted onions and transplanted onions that are located at influx sites along the edges of the muck lands. Only in these cases have onion thrips reached the spray threshold of 1.0 thrips per leaf. Another exception is that Botrytis Leaf Blight (BLB) has exceeded the spray threshold of 1.0 BLB lesions per leaf in susceptible varieties of both direct seeded (3-leaf) and transplanted onions. Examples of susceptible varieties include Bradley and Candy. **It is highly recommended to begin scouting for BLB and onion thrips this week – see cover article.**

**Oswego County Onion Growers Twilight Meeting**, next Wednesday, June 25, 2014, from 5:00 pm to 7:00 pm at John Dunsmoor Farm, 777½ County Route 53, Oswego, NY 13126. Dinner included and DEC credits will be available. 2013 weed research results will be presented. Contact JJ Schell for more info ([jjsc69@cornell.edu](mailto:jjsc69@cornell.edu); 315-783-4271).

## PEPPERS

Keep an eye out for aphids. We have found areas with high activity in peppers.

## POTATOES

Growers are trying to finish up potato planting. More potato fields have plants large enough to touch within the row and hilling continues. Cultivation and hilling should be done, if possible, while the potatoes are small enough to prevent significant root pruning. The large, replicated Cornell potato variety/breeding line trial of whites, reds and specialty potatoes was planted on Wayne Co. muck 6/16. Upland trials were planted earlier in the Southern Tier. See the [Late Blight Risk](#) article in this issue.

On a farm with some history of [insecticide resistance](#) newly emerged [Colorado potato beetle \(CPB\)](#) adults have just broken through the at-planting thiamethoxam (neonicotinoid) application. The field is early, with the crop closing rows, and with buds forming. This farm dropped the use of imidacloprid (closely related) a few years ago due to poor control. If these CPB adults cause more than 30% damage then a foliar application would be warranted, with spot, edge spraying preferred. No neonicotinoid should be applied, and many other CPB insecticides only work on larvae. What is suggested for adult CPB is Avaunt + [PBO \(piperonyl butoxide\)](#) at 0.25 lb active ingredient/acre) which significantly improves its activity, according to Russ Groves, U WI. Beetles quickly stop feeding but take a few days to die. PBO acts synergistically with the Avaunt, delaying the insect's metabolic breakdown of the insecticide. Refer to the article on pg. 4 in the 6/11 *VegEdge* on CPB insecticides recommended for controlling larvae if they reach the [action threshold](#). The threshold for small CPB larvae is 200 per 25 vines or small plants; or 68 large larvae per 25 vines.



Colorado potato beetle eggs, larvae, and adults.  
Photo compilation: Brian Nault, Cornell

## PROCESSING CROPS

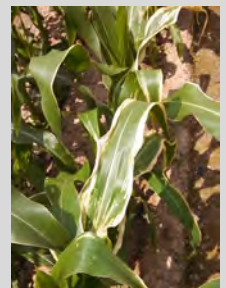
Despite a struggle to find dry ground to get peas planted this year, harvest is ready to begin. Looking at peas earlier this week, we did see issues of soil compaction and some root rot pathogens. The weather during this time of pod fill will determine much of the yield. Where roots are compromised and soil is compacted, hot and dry weather will add stress and reduce yields. While some areas were dry earlier this week, most received rain last night. Some seed corn maggot injury has been seen in peas and sweet corn this year (see cover article last week). There are still some beets to be planted, waiting for dry ground. A lot of sweet corn, carrots and beans have been planted the past few weeks and are generally emerging well. Snap bean planting is somewhat behind schedule. Weed control is the main concern for most crops at this time. Snap beans will soon be coming into flower and that will mean time for mold and European corn borer management. More on that next week.

## SWEET CORN

Areas where the rains came in, the sweet corn has really put on some growth. Many of the early plantings are well into tasseling and a few spots have started to silk. European corn borer feeding has been found in tassels and several corn earworm moths have been found in a couple IPM monitoring traps. Egg masses have been found on the underside of the leaves so control measures may need to be applied. So despite the cold wet spring, the insects are quite active. Keep an eye on your plantings scouting for eggs in the silks.

Many beneficial insects have been found in the corn as well. Lady bugs, lace wings, and hover flies. The lady beetles and lacewings have been found to feed on ECB eggs and newly hatched worms.

Stewart's wilt symptoms are appearing in susceptible sweet corn varieties following early season flea beetle feeding. The disease is caused by a bacterium, *Erwinia stewartii*, which overwintered in the gut of the beetle. It was transmitted to the young sweet corn plants early in the season when high numbers of flea beetle were noted. Symptoms include pale-green to yellow linear streaks with irregular or wavy margins develop parallel to leaf veins in infected tissue (see photo), the bacteria will continue to plug the vascular tissue and premature leaf death due to Stewart's wilt may predispose the weakened plant to stalk rot resulting in reduced yields. Control measures need to be implemented before planting in areas with known susceptibility. Use of resistant varieties, insecticide treated seed, or foliar insecticide spraying for flea beetle control are available to protect the young seedling from infection.



Stewart's wilt symptoms.  
Photo: Darcy Telenko, CVP

## TOMATOES

With the scattered heavy rain events, some splashing of soil up onto the lower leaves can lead to the spread of Septoria and Early blight. Putting on a preventive application of fungicide is prudent to keep these problems from becoming serious. Adding some copper will also help guard against bacterial infections as well. Keeping up with a thick canopy of leaves will lead to heavy yields and less sun scald. These diseases are relatively easy to manage. Losing foliage to them can be avoided with the benefits to the yield outweighing the time spent running a sprayer through the plantings.

## VINE CROPS

Harvest is well on the way for a number of early planted summer squash and zucchini fields. Pollination has been decent and the yields are looking good. Lady bug adult and larvae have been found in a few plantings going after aphids and chasing cucumber beetles.

There have been a number of calls concerning stunting or death of squash and melon seedlings/transplants in the field. The main culprit has been seedcorn maggot (see last week's cover article, Maggot Feeding is Evident Now). Their life cycle is relatively short so hopefully most have already done their damage and we can move on. What we have seen are young plants with poor or no growth while others are growing just fine. Leaves can curl a bit then yellow. Pulling up the plants will show a brown lower stem and most roots are gone. A soft rot may be found. Look for small holes in the lower stem where the maggots have burrowed into the plant (or have burrowed out).

Watch for leaf spots on summer/zucchini plants indicating possible angular leaf spot. Cucumber beetles are sweeping many areas.



# Dual Magnum for Pre-Emergent Weed Control in Cabbage, Broccoli & Other Selected Cole Crops

Christy Hoepting, CCE Cornell Vegetable Program

Dual Magnum (EPA No. 100-816, Syngenta), active ingredient, metolachlor 83.7%, is labeled for transplanted and direct seeded cabbage as a Special Local Needs Label for PRE-emergence control of annual grasses, yellow nutsedge, some broad-leaves like pigweed, hairy galingsoga, Shepherd's purse and nightshades. This label is available at <http://128.253.223.36/ppds/530208.pdf>. Dual Magnum does not control emerged weeds.

## Cabbage, Direct-Seeded and Transplanted:

Apply a single broadcast treatment at 0.5-1.33 pt/A prior to transplanting or within 48 hours after transplanting, the latter often being less injurious.

Apply to direct seeded cabbage only at the 4-leaf stage. Use lower rates on soils relatively coarse-textured and higher rates on fine-textured soils.

PHI = 60 days.

In December of 2011, several additional uses were added to this label, which is available at <http://128.253.223.36/ppds/529541.pdf>. New Cole Crop uses follow:

## Transplanted Broccoli:

Apply a single broadcast treatment at 0.5-1.33 pt/A prior to transplanting or within 72 hours after transplanting, the latter often being less injurious.

## Direct Seeded Broccoli:

Apply a single broadcast treatment at 0.5-1.33 pt/A only at the 4-leaf stage. Adjust rates according to soil type as stated for cabbage.

PHI for broccoli: 60 days

**Mustard Greens, Broccoli (raab), Chinese cabbage (bok choy), collards, kale, mizuna, mustard greens, mustard spinach, and rape greens:**

**Soil Applied:** Apply a single broadcast treatment of 0.67 to 1.33 pt/A to the soil surface after planting, but before weeds or crop emerges. If a pre-plant application is used, minimize the mixing/incorporation of treated soil into the seed furrow through the planting operations, so as to reduce the risk of crop injury. Adjust rates according to soil type.

**Post Applied:** Apply a single broadcast treatment of Dual Magnum at 0.67 to 1.33 pt/A after mustard greens have at least 1 true leaf.

PHI for leaf Brassica greens: 30 days

**Restrictions for all Cole crops:** 1) Make only one application per crop. 2) Do not apply more than 1.33 pt/A per crop. 3) Do not incorporate. 4) Do not use in combination with Goal.

**Caution on injury:** 1) Weed control may be reduced on muck soils. 2) Crop maturity may be delayed. 3) May cause reduced yields in broccoli. 4) The risk of crop injury increases when nitrogen sources (e.g. AMS, UAN), fertilizers or other pesticides are applied with Dual Magnum.

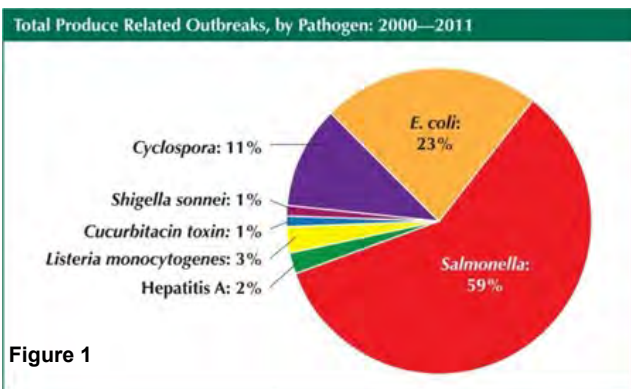
The use of Dual Magnum under Special Local Needs labeling requires users to sign a waiver which releases Syngenta Crop Protection, Inc. from all liability and indemnification by the user and/or grower for failure to perform and crop injury, crop yield reduction, and/or crop loss from use of the product in accordance with the SLN labeling. Go to <http://armassist.com>, "products" and "indemnified labels".

**Dual Magnum is NOT labeled on cauliflower, Brussels sprouts, turnips or radishes.** Other vegetables and small fruits that Dual Magnum is labeled on include canberries (red & black raspberry), highbush blueberry, asparagus, carrots, garden beets, cantaloupe, muskmelon, watermelon, cucumber, pumpkin, winter squash, dry bulb and green onions, garlic, transplanted peppers, swiss chard and spinach. Tomatoes, potatoes, rhubarb and potatoes are on the Section 3 label (<http://128.253.223.36/ppds/527936.pdf>). ●

# Focus on Food Safety - Pathogens Causing Foodborne Illness in the US

Craig Kahlke, Lake Ontario Fruit Team, and Betsy Bihn, Cornell

In this installment, we will examine a few of the pathogens that most frequently cause foodborne illnesses associated with fresh produce. Understanding a little bit about the microorganisms and what they need to survive and multiply is important to understanding how to assess and minimize risks on the farm.



Center for Disease Control, CDC Estimates of Foodborne Illness in the U.S. 2011

Figure 1 shows the seven major pathogens that cause nearly all of the foodborne illnesses & outbreaks associated with fresh produce in the US. While bacterial causes such as *Salmonella* spp., and pathogenic *E. coli* do cause the majority of the illnesses, the parasite *Cyclospora cayetanensis* causes over 10% of outbreaks and the virus Hepatitis A can be a threat as well. (Due to space restraints in this newsletter, *Cyclosporiasis*, *Listeriosis*, and *Hepatitis A* will be covered in a future issue of *VegEdge*. ed. A. Parr, CVP) Though the data outlined in Figure 1 does not include the *Listeria monocytogenes* outbreak associated with cantaloupe, most fresh produce growers are keenly aware of that outbreak as it continues to be featured in the

media as the legal ramifications continue to unfold.

**Salmonella** causes well over 50% of foodborne outbreaks in the US per year. Salmonellosis is the disease caused by ingestion of the *Salmonella* bacteria. On average across all foods every year, *Salmonella* is estimated to cause about 1.2 million illnesses in the US, with over 20,000 hospitalizations and 450 deaths<sup>1</sup>. Most persons infected with *Salmonella* develop diarrhea, fever, and abdominal cramps 12 to 72 hours after ingestion of the contaminated food.

Since it is foods of animal origin that are most often contaminated with *Salmonella*, it is most prevalent in raw or undercooked poultry, meat, and eggs<sup>1</sup>. *Salmonella* can also be found in raw or unpasteurized milk and other dairy products. *Salmonella* contamination of fresh fruits and vegetables can occur through cross-contamination on the farm as well as throughout the food distribution system including transportation, retail stores and even in the home.

**Pathogenic *Escherichia coli*.** Nearly one-fourth of foodborne outbreaks across all food types in the US are caused by pathogenic (disease-causing) strains of *Escherichia coli*. *E. coli* are a big and diverse group of bacteria, with most strains being harmless. In fact, *E. coli* are a component of healthy intestinal tracts in humans and many other animals<sup>2</sup>. Unfortunately, there are also pathogenic strains of *E. coli* that have caused many produce associated foodborne illness outbreaks. A well-known and studied strain is *E. coli* O157:H7. This strain of *E. coli* produces a shiga-toxin once ingested and so it is categorized as a Shiga Toxin-producing *E. coli* (STEC)<sup>2</sup>. According to the Centers for Disease Control and Prevention (CDC), around 5–10% of those who are diagnosed with STEC infection develop a potentially life-threatening complication known as hemolytic uremic syndrome (HUS)<sup>2</sup>. Most of these people will recover within a few weeks, but some, including young children and others who may be immune-

compromised, can suffer permanent damage to their kidneys or other critical organs.

Pathogenic *E. coli* can be shed by animals including both domestic and wild animals in their feces. Ruminants, such as cows, can naturally shed pathogenic *E. coli* which can then introduce it into the growing environment through contaminated water sources, soil, and even wind. If this manure is used on production fields, fresh fruit and vegetable crops can become contaminated.

More detailed information about each of these pathogens, as well as others, can be found on the Center for Disease Control's (CDC) website at <http://www.cdc.gov/>. Simply enter the pathogen in the search field in the top right corner of the home page to find extensive information about each one.

#### References

1. Centers for Disease Control and Prevention, <http://www.cdc.gov/salmonella/>, accessed 4-24-14.
2. Centers for Disease Control and Prevention, <http://www.cdc.gov/ecoli/>, accessed 4-24-14. ●

## Post-Emergent Broadleaf Weed Control Options for Cole Crops

Christy Hoepting, CCE Cornell Vegetable Program

**GOALTENDER 4F** (a.i. oxyflufen):

Available as a 24(c) Special Local Needs Label available at <http://128.253.223.36/ppds/518814.pdf>

**Crops:** broccoli, cabbage and cauliflower

**Weeds controlled:** Provides excellent control of pigweed, good control of lambsquarters, smartweed, purslane, galingsoga, nightshade, Shepherd's purse, Canada thistle and annual sowthistle, and fair control of ragweed.

**Crop Stage:** Apply to a transplanted crop after a minimum of 2 weeks after planting, and to direct seeded crops with at least 4 true leaves.

**Rates:** 4 to 6 fl oz per acre per application. Do not apply more than 8 fl oz per acre per season. If a pre-transplant treatment has previously been made, the combination of pre-plant and post-transplant treatments must not exceed 16 fl oz per acre per season.

**Pre-harvest interval (PHI):** 35 days

**Notes:** Do not add any adjuvant, liquid fertilizer or pesticides to the spray mixture. Avoid application if heavy rainfall is predicted to occur within 24 hours after planned application.

**STINGER 3EC** (a.i. clopyralid):

**Crops:** Broccoli, Brussels sprouts, cabbage, cauliflower, cavalo broccoli, Chinese broccoli (gai lon), Chinese cabbage (napa), Chinese mustard cabbage (gai choy) and kohlrabi.

**Weeds controlled:** Provides excellent control of ragweed and galinsoga and good control of nightshade.

**Crop Stage:** not specified

**Rates:** 4 to 8 fl oz per acre per application. Do not apply more than 8 fl oz per acre per season.

**Pre-harvest interval (PHI):** 30 days

**Notes:** Be aware of crop rotation restrictions – see label.

**AIM EW** (a.i. carfentrazone):

Apply as a directed spray to row middles including between beds covered with plastic mulch with a hooded sprayer ONLY –see label for details.

**Crops:** Broccoli, Brussels sprouts, cabbage, cauliflower, collards, kale, kohlrabi, greens, mustard greens, mustard spinach.

**Weeds controlled:** Provides excellent control of pigweed and velvetleaf, and good control of lambsquarters, purslane, smartweed, nightshade and Shepherd's purse.

**Crop Stage:** non specified

**Rates:** 0.5 to 2.0 fl oz per acre per application. Do not apply more than 2.0 fl oz during pre-plant timing and no more than 4.1 fl oz in-season. Do not apply more than 6.1 fl oz per crop season.

**Pre-harvest interval (PHI):** 0 days

**Notes:** Must use with an adjuvant – see label.

**POST-EMERGENT GRASS CONTROL:**

Poast (a.i. sethoxydim) and Select Max (a.i. clethodim) and generic versions of these active ingredients are available to control emerged grasses in Cole crops. ●

## Cover Crops for Open Fields

Thomas Bjorkman, Cornell (edited by C. MacNeil, CVP)

*(Unfortunately again this year there are fields which won't get planted due to the late, cold, wet spring. Growers have begun to call to discuss cover crop options. Here are a couple of possibilities for open fields, or for filling open niches after early crop harvest. C. MacNeil, CVP)*

If the crop rotation, or spring weather, leaves an open field in the summer, filling it with a cover crop is much better than leaving the field subject to erosion by rain, and weeds going to seed. For planting in June, there are two choices. One is sudangrass, or sorghum-sudangrass, and the other is buckwheat. Both grow rapidly in the summer warmth. Buckwheat and sudangrass have different properties, so the management goal and field conditions will determine the right one to use.

What does your soil need? Sudangrass is often chosen for improving soil organic matter. It produces a strong root system and lots of biomass. The deep root system helps reduce compaction. Sudangrass can be a good choice for reducing root-knot nematodes. If weed suppression is the main goal, buckwheat is preferable. Buckwheat is best known for weed suppression and mellowing the soil. It covers the ground earlier than sudangrass. Sudangrass requires a higher seeding rate for effective weed suppression.

When will the cover crop be planted? The amount of time available for the cover crop is a significant factor. As a cover crop, buckwheat is in the ground just 35-40 days, when it should be promptly mowed to avoid seed production. Sudangrass needs at least 60-70 days to be effective. Mow it once or twice when it reaches 3-4 ft. tall to keep stalks from getting woody, leaving 8 in. stubble for re-growth. Sudangrass needs a final flail mowing in September and immediate incorporation to suppress nematodes.

What is the current condition of your soil? If the soil is hard or the field is prone to standing water, sudangrass is a good choice, but buckwheat will do poorly. However, if the field is low in nitrogen and phosphorous, buckwheat will do well, while sudangrass needs about 40 lb/acre of nitrogen (the nitrogen will be released on decomposition).

What are the needs of the following crop? If the crop to follow the cover crop needs a fine seedbed, it will be easier to produce after buckwheat. Buckwheat mellows the soil for easy working and decomposes quickly after incorporation. Sudangrass crowns take some time to break down, so the following crop needs to be one that can be sown where some partly decomposed stalks and crowns remain.

Seeding buckwheat and sudangrass - Buckwheat seed is available from local farm seed retailers. The variety does not matter. Buckwheat generally costs between \$15 - \$20/50 lb. bag, which will seed an acre. Sorghum and sorghum-sudangrass are widely available. Varieties suitable for cover crops must be selected carefully. Grain types are inappropriate and some new forage varieties ("sweet" or brown midrib) are low in dhurrin, which is the biofumigant in sudangrass. Piper sudangrass is readily available and has a similar composition to Trudan 8, the classic sudangrass for biofumigation. Sorghum-sudangrass hybrids are more vigorous and will produce more biomass than sudangrass, but the seed is more expensive. Locally available varieties include Sordan 79, Green Grazer, and Special Effort. Seeding 30 lb/acre costs \$10-\$20/acre to establish. Weed suppression requires 50 lb/acre.

For more info on cover crops go to the Cornell Cover Crop Guide at: <http://covercrops.cals.cornell.edu/> ●

## Prowl H<sub>2</sub>O for Pre-Emergent Weed Control in Selected Cole Crops

Christy Hoepting, CCE Cornell Vegetable Program

Prowl H<sub>2</sub>O, a.i. pendimethalin, is now labeled in broccoli, Brussels sprouts, cabbage and cauliflower as a post-emergence (to the crop) directed spray on the soil at the base of these crops, beneath plants and between vegetable rows for pre-emergence control of broadleaf and grass weeds. It is labeled on both transplanted and established direct seeded crops. Prowl H<sub>2</sub>O provides excellent control of annual grasses and good control of pigweed, lambsquarters, purslane, velvetleaf and some species of mustards. Apply 1.0 to 2.1 pints per acre to transplants and direct seeded crops at the 2 to 4 leaf

stage and to transplants 1 to 3 days after transplanting. Crop injury may occur with direct contact of Prowl H<sub>2</sub>O to foliage.

Prowl H<sub>2</sub>O, Treflan and Dual Magnum all provide excellent pre-emergent control of annual grasses. Dual Magnum is the only one that controls yellow nutsedge. Prowl H<sub>2</sub>O and Dual Magnum both provide better pre-emergent broadleaf weed control than Treflan with Prowl H<sub>2</sub>O providing control of lambsquarters, purslane, velvetleaf and some mustards, while Dual Magnum controls galinsoga, and nightshade. Both control pigweed. Goal and Goal-

tender can be used to provide pre-emergence weed control of all of these broadleaf weeds except velvetleaf. Go to the CVP website for "Relative Effectiveness of Herbicides Available for Use in Cabbage in New York for 2014" chart at [http://rvpadmin.cce.cornell.edu/pdf/submit/pdf49\\_pdf.pdf](http://rvpadmin.cce.cornell.edu/pdf/submit/pdf49_pdf.pdf) ●



# WNY Sweet Corn Trap Network Report

Marion Zeufle, NYS IPM Program

Thirteen sites reporting this week. European corn borer (ECB-E) was found at three sites with Seneca Castle once again having the highest trap catch with 73 moths. ECB-Z was caught at five sites. We also have our first report of corn earworm (CEW) at the Eden site in Erie County and one fall armyworm (FAW) in Avoca. Only a few western bean cutworm (WBC) traps have been set but no moths caught.

ECB-E flight peaks at 631 degree days (modified base 50). All but two of the sites, Batavia and Kennedy, have reached the peak moth flight according to degree day models. For sites catching CEW the recommended spray intervals can be found at the bottom of this post. Usually CEW will be controlled with sprays for ECB, but since ECB numbers are low in most places, sites that are catching CEW may need to spray.

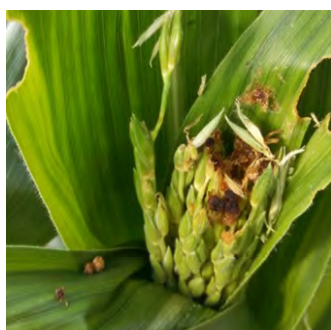
Feeding damage as well as egg masses of ECB were observed in some early tasseling corn (see photos). As well as symptoms of Stewart's wilt disease. Stewart's wilt is vectored by flea beetles, if you have varieties planted that are susceptible to Stewart's wilt you will want to scout for flea beetles from plant emergence to mid whorl. The threshold is 6 flea beetles per 100 plants. ●

## WNY Pheromone Trap Catches: June 17, 2014

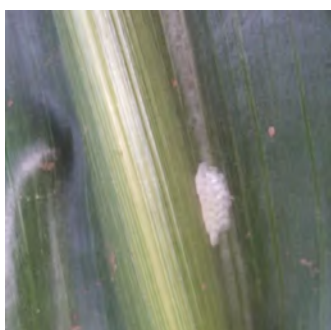
Location	ECB-E	ECB-Z	CEW	FAW	WBC
Baldwinsville (Onondaga)	NA	NA	NA	NA	NA
Batavia (Genesee)	0	1	0	0	NA
Bellona (Yates)	NA	NA	NA	NA	NA
Eden (Erie)	0	10	2	0	NA
Farmington (Ontario)	0	1	0	0	0
Hamlin (Monroe)	NA	NA	NA	NA	NA
LeRoy (Genesee)	NA	NA	NA	NA	NA
Lockport (Niagara)	0	1	0	0	NA
Penn Yan (Yates)	4	0	0	0	NA
Seneca Castle (Ontario)	73	11	0	0	0
Spencerport (Monroe)	NA	NA	NA	NA	NA
Waterport (Orleans)	0	0	0	0	NA
Williamson (Wayne)	0	0	0	0	NA

Average corn earworm catch			
Per Day	Per Five Days	Per Week	Days Between Sprays
<0.2	<1.0	<1.4	No Spray (for CEW)
0.2-0.5	1.0-2.5	1.4-3.5	6 days
0.5-1.0	2.5-5.0	3.5-7.0	5 days
1-13	5-65	7-91	4 days
over 13	over 65	over 91	3 days

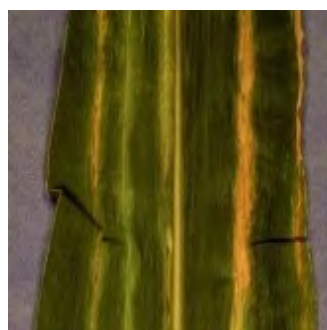
Add one day to the recommended spray interval if daily maximum temperatures are less than 80° F for the previous 2-3 days.



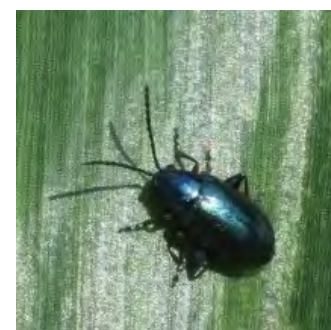
Corn borer feeding damage in tassel.  
Photo: Darcy Telenko, CVP



Egg mass on corn leaf.  
Photo: Darcy Telenko, CVP



Stewart's Wilt disease.  
Photo: Meg McGrath, Cornell



Flea beetle.  
Photo: Russ Ottens, University of Georgia

## Late Blight Risk

Carol MacNeil, CCE Cornell Vegetable Program

Several more weather stations exceeded, or will soon exceed, the 18 severity value (SV) threshold for applying the first fungicide spray on all potatoes 4+ inches tall and unprotected field tomatoes. Some other stations have accumulated few SVs. The weather has varied widely across WNY and the FL Region. For those stations which exceeded 18 SVs previously, the Late Blight (LB) Decision Support System (DSS) Simcast forecast reached the threshold for applying the second fungicide spray in 7 days in Buffalo and Gainesville, and just 5 days in Penn Yan. See the table of LB SVs for weather stations in the area. Be sure potato cull piles have no live foliage! ●

### Late Blight Severity Values\* 6/17/14

Location**	Week	Total	Location	Week	Total
Albion	8	18	Lodi	16	36
Appleton	9	12	Medina	3	12
Baldwinsville	4	11	Penn Yan***	18	41
Buffalo***	5	24	Ransomville	0	3
Bergen	1	2	Romulus	1	21
Ceres	7	16	Rochester***	3	18
Elba	9	19	Silver Creek	8	29
Farmington	4	10	Sodus	1	5
Gainesville	3	26	Versailles	3	8
Geneva	12	19	Williamson	4	7
Kendall	NA	NA	Wolcott	NA	NA

\* Severity value accumulations start 5/15/2014

\*\*For more sites: [http://newa.cornell.edu/CropPages/Potato\\_Blitcast](http://newa.cornell.edu/CropPages/Potato_Blitcast)

\*\*\*Airport stations, with RH increased to estimate field conditions

## UPCOMING EVENTS

### Muck Donut Hour

8:30 - 9:30 AM

June 24, 2014 | July 1 | July 8 | July 15

Elba muck, corner of Transit and Spoilbank, Elba 14058



Meet with Cornell Vegetable Program Specialist Christy Hoepfing every Tuesday morning to ask questions and share your observations.

### New York Vegetable & Field Crops Weed Science Field Day

July 16, 2014

8:00 - 11:30 AM - Vegetables

Thompson Research Farm, east of Freeville (Fall Creek Rd, Rt 366 exit; 10 miles northeast of Ithaca)

\$8 info packet available – Preregistration by 7/10 is requested, at:

<http://blogs.cornell.edu/ccfieldcropnews/files/2014/05/WEED-DAY-2014-Registration-Form-1i9wptn.pdf>



12:00 - 1:30 PM - NYSABA BBQ Lunch

Musgrave Research Farm

Preregister by 7/10 to save, at: <http://blogs.cornell.edu/ccfieldcropnews/files/2014/05/WEED-DAY-2014-BBQ-Ticket-Request-Form-1fhtjmt.pdf>

1:30 - 5:00 PM - Field Crops

Robert Musgrave Research Farm, 1256 Poplar Ridge Rd, connects Rts 90 and 34B, Aurora

CCA and DEC Credits have been requested for both sessions.

For more info contact Maxine Welcome: [mw45@cornell.edu](mailto:mw45@cornell.edu) or 607-255-5439 (Veg), or Russ Hahn: [rrh4@cornell.edu](mailto:rrh4@cornell.edu) or 607-255-1759 (Field Crops).

### Vegetable Pest and Cultural Management Field Meetings

6:00 PM - 8:00 PM

July 23 - Seneca County

July 25 - Yates County

July 31 - Orleans County

August 6 - Allegany County



This course (offered on several dates and at several different locations) will demonstrate pest management in fresh market vegetables in both field and greenhouse (high tunnel) vegetables; primarily for those growing for wholesale auction. A hands-on demonstration of weed, insect and disease identification in vegetables including management options such as inter-row cover crops, grafting and where appropriate, spray options will be used to educate growers. Judson Reid, Senior Extension Associate with the Cornell Vegetable Program will instruct participants and facilitate peer-based learning. Cooperating farms will be selected as the season progresses. Details on each topic will focus on field observations at these farms.

DEC recertification credits have been requested. FREE! For a full agenda, [visit the CVP website](#) or call Judson at 585-313-8912.

### Improving Crop Production, Soil Health & the Environment

August 19, 2014 | 3:00 PM - 8:30 PM

Donn Branton's Farm, 6536 E Main Rd/Rte 5, Stafford 14143



Five innovative grower speakers, a nationally recognized soil health expert, and local staff will show and describe the benefits of improving the soil health on your farm. There will be equipment and displays to see. DEC and CCA credits will be available. Cost: \$5 (pre-registered) or \$10 at the door. For more information and to see the complete agenda, visit the CVP website at <http://cvp.cce.cornell.edu/event.php?id=237>. Pre-registration form coming soon. Questions? Contact Dennis Kirby, Orleans SWCD, at [dennis.kirby@ny.nacdn.net](mailto:dennis.kirby@ny.nacdn.net) or 585-589-5959. Organized by USDA-NRCS, County SWCD, Cornell Cooperative Extension, and WNY Crop Management.

*Sponsored by Cummings & Bricker, Empire Tractor, Lakeland Equipment, Monroe Tractor, Carolina Eastern – Crocker, Seedway, BCA Ag Technologies and WNY Crop Management.*

# Weather Charts

John Gibbons, CCE Cornell Vegetable Program

## Weekly Weather Summary: 6/10 - 6/16/14

Location	Rainfall (inch)		Temp (°F)	
	Week	Month June	Max	Min
Albion	1.50	2.54	85	51
Appleton, North	0.33	1.66	83	44
Baldwinsville	0.66	1.16	87	47
Buffalo*	1.03	2.68	81	50
Ceres	0.66	2.44	85	47
Elba	2.03	2.98	81	47
Farmington	0.16	1.13	85	50
Gainesville	0.31	1.25	81	43
Geneva	0.32	1.14	83	50
Kendall	NA	NA	NA	NA
Lodi	0.18	2.12	81	51
Penn Yan*	0.39	1.43	86	53
Ransomville	0.25	1.28	83	45
Rochester*	0.17	0.67	86	50
Romulus	NA	NA	82	51
Silver Creek	0.09	0.59	83	50
Sodus	0.47	1.12	84	49
Versailles	0.20	NA	83	45
Williamson	0.81	1.19	86	45
Wolcott	NA	NA	NA	NA

## Accumulated Growing Degree Days (AGDD) Base 50°F: April 1 — June 16, 2014

Location	2014	2013	2012
Albion	544	587	627
Appleton, North	415	465	553
Baldwinsville	634	592	699
Buffalo	553	656	708
Ceres	507	494	555
Elba	436	537	685
Farmington	582	551	625
Gainesville	445	NA	591
Geneva	597	627	681
Kendall	NA	NA	NA
Lodi	622	660	652
Penn Yan	634	627	695
Ransomville	495	533	627
Rochester	638	673	706
Romulus	603	619	NA
Silver Creek	514	609	643
Sodus	556	530	597
Versailles	544	638	649
Williamson	484	572	646
Wolcott	NA	NA	NA

\* Airport stations

\*\* Data from other station/airport sites is at: <http://newa.cornell.edu/> Weather Data, Daily Summary and Degree Days.

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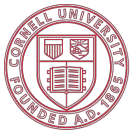


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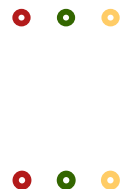


**Cornell University**  
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**Cornell Vegetable Program**

480 North Main Street  
Canandaigua, NY 14424



VegEdge is the award-winning newsletter produced by the Cornell Vegetable Program in Western New York. It provides readers with information on upcoming meetings, pesticide updates, pest management strategies, cultural practices, marketing ideas and research results from Cornell and Cornell Cooperative Extension. VegEdge is produced every few weeks, with frequency increasing leading up to and during the growing season.



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