



lower frame leaves of cole crops, especially broccoli.

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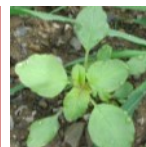
Now that early crops are harvested, try to get a cover crop established. Read about several options for the late summer.

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New research from Cornell on onion thrips in onions leads to revised insecticide recommendations for late-season thrips management.

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Redroot pigweed is the Weed of the Week. It is highly competitive with a number of vegetable crops.

Learn more about pigweed.

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Photo: Julie Kikkert

Cornell University
Cooperative Extension
Cornell Vegetable Program

Downy Mildew in Cole Crops

by Christy Hoepting, Cornell Vegetable Program

Downy mildew (DM) is commonly found in broccoli, collards and mustard greens but also occurs in cauliflower and cabbage. Temperatures of 50 to 60°F and abundant moisture from rain or dew are optimum for disease development and spread. It is most common in seedlings and in mature plants in the fall. With the cooler than normal temperatures, it has already started to show up on lower frame leaves, especially in broccoli plantings and at sites where the transplants had DM.

On older leaves, DM causes irregular, yellow to brown spots on the upper side of the leaves (Fig. 1) with a grayish, white mildew on the underside of the leaves (Fig. 2) during cool, moist conditions. As soon as lesions are evident on older leaves, spores can spread to marketable portions of the crop. Late season infections can cause losses in cauliflower and broccoli by internal discoloration of the heads (Fig. 3). It also leaves the heads more susceptible to soft rot bacteria and other storage rots, especially in cabbage and broccoli (Fig. 4).



A – early DM infection



B – older DM infection

Figure 1. Downy mildew causes irregular, yellow (A - early infection) to brown spots (B - older infection) on the upper leaf surface.
Photos: Christy Hoepting, CVP

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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.

We're interested in your comments. Contact us at:
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Help us serve you better by telling us what you think. Email us at cce-cvp@cornell.edu or write to us at Cornell Vegetable Program, 480 North Main Street, Canandaigua, NY 14424.



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The next issue of VegEdge will be produced August 20, 2014.



Christy Hoepting and Elizabeth Buck share the latest management strategies for controlling perennial sowthistle (weed is flowering in untreated check plot) in onions at the annual Elba Muck Onion Twilight Meeting on Thursday, August 7, 2014.

Photo: Cordelia Hall, Cornell Vegetable Program

The pathogen survives in crop debris and in soil. Seedlings and seed may become infected from soil. An infected seedling may grow out of DM symptoms, but the disease can remain in a latent (no symptoms) state within the plant, and flare up when favorable conditions resume later in the season. Crucifer weeds such as wild radish and wild mustard are susceptible to the disease and should be controlled.

Differences in susceptibility to DM commonly occur among varieties; choose DM-tolerant varieties especially for late season broccoli. And scout varieties known to be susceptible to DM more diligently; for example, Superstar cabbage variety and Bay Meadows broccoli variety. In addition to Bravo, Quadris and Cabrio, which are also labeled for Alternaria leaf spot, several other fungicides are labeled for DM including Ridomil Gold Bravo, Reason, Presidio, Ranman, Phostrol/Prophyt, mancozeb, Forum, Alliette, copper compounds (several OMRI approved) and Actigard. In Cornell and other university studies, Presidio (PHI = 2 days) consistently provided excellent control of DM. Bravo and mancozeb also provided good control of DM, while Actigard did not work. For resistance management, Presidio must be used in a tank mix with another fungicide for DM with a different mode of action, such as Bravo. To prevent inoculum buildup in the soil, destroy crop debris as soon as possible after harvest. Rotate ground away from crucifers for at least 3 years. Consider crucifer cover crops (forage radish, yellow/brown mustard) the same as crucifer cash crops in your rotation planning. ●



Figure 2.
On the underside of the leaf, the lesions of downy mildew have a grayish, white mildew.
Photo: Christy Hoepting, CVP



Figure 3.
Internal discoloration caused by downy mildew in broccoli.
Photo: Christy Hoepting, Cornell Vegetable Program



Figure 4.
Secondary bacterial rot following downy mildew infection in cabbage.
Photo: Chris Smart, Cornell

Late Summer Cover Crops

Carol MacNeil, CCE Cornell Vegetable Program (info from T. Bjorkman, Cornell, and C. White, Penn State)

Be sure to attend the Tuesday, August 19, Soil Health Workshop – Improving Crop Production, Soil Health & the Environment, at Donn Branton's Farm, Stafford! See the Upcoming Events page in this issue. 1.5 DEC credits available.

As early crops are harvested try to get a cover crop established when the weather and soil moisture permit. Cover crops crowd out weeds and reduce the seed they produce, loosen the soil and improve soil aggregation and stability, suppress weed germination and some crop diseases, and some can “grow” nitrogen for next year's cash crop.

Forage radish, planted before the end of August, is effective at breaking up plow layer compaction and crowding out weeds. This crop forms thick, white tap roots that can reach lengths of 8-14”, most of which are underground. (If planted later there will only be small

roots.) A thinner, fibrous tap root can penetrate much deeper into the soil. The fleshy roots freeze and die in mid-winter. Open channels from these roots allow water to percolate through the soil more quickly. Crop roots will use the channels to grow deep, to better mine the soil for nutrients and water. Be sure you get forage radish seed instead of forage turnip. Varieties of forage radish include Cedar Meadow Forage Radish, Tillage Radish and Groundhog. If forage radish follows vegetables it often has sufficient nitrogen (N), but after wheat apply 50 lbs/A N for best growth. Loosen the soil surface. When radish is planted alone drill 10 - 13 lb/A. Roll lightly after seeding. An alternative to applying N is to cut the radish seeding rate back to a third and seed with the standard rate of red clover as an N source. Another tactic is to seed a third rate of radish with 40 lbs/A wheat or rye, and 50 lbs N/acre, to carry the N over until your cash crop needs it. After mild winters survivors

should be killed in early spring before seeds set. Do not use in close rotation with crucifer crops.

Medium red clover, planted from mid-August through mid-September, can grow a substantial amount of the N that your cash crop will need next season. The low cost, ease of establishment, and nitrogen fixation of red clover make it an attractive choice. A good stand of red clover that gets established by late August, with good growing conditions, can produce 80 – 100 lbs/A of N. Most of the N is fixed during May, however. Seed medium red clover at 15 lb/A with an inoculant for red clover. You can broadcast onto prepared ground or sow it with a grass seeder. A wheat nurse crop seeded at 40 lb/acre is recommended. The wheat keeps down weeds during clover's slow establishment. Volunteer wheat in a recently harvested field should work. Another benefit: The grass's N uptake stimulates the clover to produce more

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N and helps carry the N through until the next cash crop will need it. Warning! Red clover is difficult to kill chemically in the spring, though it can be buried with tillage. A high rate of glyphosate plus a low rate of 2,4-D applied early may be needed to completely kill it so crowns are dead and dry before zone tillage. A three week waiting period or more may be needed depending on the 2,4-D rate. Read the label.



Red clover in late fall. Photo: Carol MacNeil, Cornell Vegetable Program

Oats planted from mid-August to mid-September will grow some organic matter, crowd out weeds, and provide winter-killed ground cover that's easily incorporated for early spring vegetables. Oats are also useful as a nurse crop with legumes, for weed suppression, erosion control and improving overwintering of the legume. Seed is usually easily and cheaply available. Oats are more easily established than some other cover crops. Prepare a weed-free seedbed. For seeding after vegetables, or when using oats as a nurse crop with legumes, no nitrogen fertilizer is required. Drill 80-110 lb/A oats; broadcast 110-140 lb/A. Increase the rate 10% in late September. When seeding oats with a legume use a half rate of oats.

Hairy vetch planted by September 15 will over-winter, and the legume has the potential for fixing up to 150 lbs/A nitrogen (N). Most of the nitrogen is fixed during May, however, so seed it ahead of a mid-June cash crop planting. Vetch needs to be drilled into a soil with good moisture for a reliable stand. Seed it at 40 lbs/A and be sure to inoculate to ensure N fixation. (Vetch can be sown at rates as low as 25 lb/A, but the additional weed suppres-

sion and N fixation from the higher rate can make it cost effective.) Vetch should be seeded with a grass nurse crop to reliably overwinter. The grass will also reduce weed growth and will provide support to reduce matting of the vetch. Wheat overwinters and is likely the best nurse crop in most situations. Seed it at the low rate of 40 lbs/A. The vetch and grain seed can be mixed together in the drill. In the spring incorporate at early bloom of the vetch, typically late May, for maximum N fixation and minimum vetch seed production. Caution: If you raise small grains don't plant hairy vetch. It has hard seed that will germinate in future small grains producing vetch seed that will contaminate the grain.

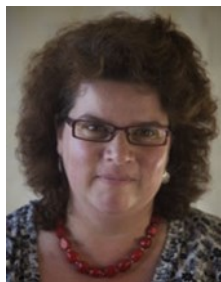
Annual ryegrass planted from late August to mid-September will overwinter, producing a dense sod which improves soil aggregation, reduces surface soil compaction, and picks up and carries over any leftover N. Ryegrass grows rapidly and is good for fall weed suppression. For rapid early growth good soil moisture and adequate nitrogen (N) are needed. There is often enough N left in the soil after vegetables. If there is not, 30 lb/A of N can double fall growth of the ryegrass. If the soil surface is moist, broadcasting without covering is effective. Seed ryegrass at 10 lb/A if drilled into reasonably moist soil, and 15 lb/A in dryer soil. Broadcasting requires 15-20 lb/A. Winter survival varies considerably among ryegrass varieties: Southern types will kill, whereas Midwestern ones will survive. If variety is not specified (VNS) by your dealer then winter survival may be inconsistent, and chemical kill in the spring will be difficult. In the spring leave plenty of time for the ryegrass sod to decompose after tillage or herbicide application. Don't plan on planting an early vegetable crop after it. Glyphosate is not effective until average daytime temperatures have reached the 50s and the ryegrass is actively growing.

For seed sources, costs, and more details on these cover crops go to the Cover Crops for Vegetable Growers website at: www.covercrop.net ●

Plant Disease Expert Joins the NYS Ag Experiment Station Faculty

Cornell University

Dr. Sarah Pethybridge has joined the NYS Agricultural Experiment Station faculty as assistant professor of plant pathology and plant-microbe biology. Pethybridge comes to Cornell from Down Under, where she completed her Ph.D. at the University of Tasmania, Australia in 2000. Since then, she has held positions as Agricultural Research, Development and Extension Manager for Botanical Resources Australia Pty, and served as Science Group Leader (Field Crops) at The New Zealand Institute for Plant & Food Research.



Dr. Pethybridge has made substantial contributions in the epidemiology and management of virus diseases in the hop plant, an essential ingredient in beer production. She has received numerous awards, including the American Phytopathological Society's Syngenta Award, the Australian Institute of Agricultural Science and Technology's Agri-Industry Award, and the University of Tasmania's Foundation Award for Outstanding Graduates.

Her research and extension program at the Station will focus on understanding and managing diseases of vegetable crops. ●

Late Blight Risk

Carol MacNeil, CCE Cornell Vegetable Program

Late blight (LB) has been confirmed now in Erie, Wyoming, Allegany, Wayne, Yates, Livingston and Genesee Counties, and is suspected in a couple other Western NY/Finger Lakes counties. It was confirmed in Ontario, Canada, this past week, and is spreading across MI. The continued wet weather has been very favorable for development. The disease has spread rapidly where growers haven't been able to maintain a tight spray schedule due to excessive rain. A new LB strain, Mating Type B, has shown up on two small farms 25 miles apart in Allegany Co. All other LB strains for the past 40+ years have been Type A1 or Type A2. Nothing is known about where this new strain came from, or its sensitivity to specific fungicides, so it must be assumed that it is not sensitive to mefenoxam fungicides (Ridomil and other products). Fortunately, the majority of LB samples from the area that were tested have been US23, sensitive to mefenoxam fungicides.

The LB Decision Support System (DSS) called for 4-5 day fungicide spray interval during the past week (assuming a susceptible variety and the use of chlorothalonil), for most locations. For the few exceptions a 6-7 day interval was recommended. This was generally due to a break in the wetting period one or more nights. Reaching 30 blight units (see the chart) triggers the recommendation to apply a fungicide under these criteria. Use of a targeted LB fungicide like Previcur Flex + protectant, Revus Top, Ranman + protectant, or Gavel, only extends the spray interval by a day, 2 at most.

If you detect LB on your farm contact the Cornell Vegetable Program, your consultant, or your pesticide dealer's scout ASAP to arrange for a sample to be sent to Bill Fry, Cornell, Ithaca, to determine the LB strain and sensitivity to mefenoxam fungicides. Mefenoxam does NOT WORK AT ALL on insensitive strains. Immediately spray the field with a LB-specific fungicide such as Previcur Flex + protectant, Revus Top, Ranman + protectant, Gavel, and maintain a short spray interval. Rapidly kill hotspots of infection with Gramoxone, vine killer, or by cutting and bagging, burying or covering plants. Kill an area 30 ft. around the hotspot since it likely has infections that aren't yet large enough to see. Spray clean areas first and infected areas last. Work in the affected field when it's dry, and sunny, if possible, so any LB spores released will be killed by the UV light. Notify your neighbors so they can take extra steps to protect their crop. Note that in parts of the field with 5% or more of the foliage infected it will be near impossible to stop LB development, without a long period of warm, dry weather.

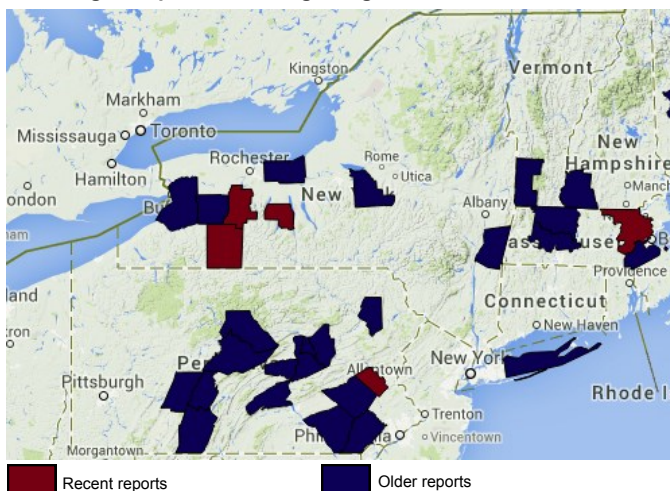
If you think you might have LB contact Carol MacNeil at 585-313-8796 or crm6@cornell.edu, John Gibbons at 585-394-3977 x405, or another Cornell Vegetable Program staff member. LB DSS users: If you need assistance contact Ian Small at ims56@cornell.edu or Carol MacNeil at crm6@cornell.edu or 585-313-8796. ●

Late Blight Risk Chart, 8/12/14

Location ¹	Blight Units ² 8/06-8/12	Blight Units ³ 8/13-8/15	Location ¹	Blight Units ² 8/06-8/12	Blight Units ³ 8/13-8/15
Albion	NA	NA	Lodi	48	19
Appleton	30	21	Medina	47	19
Baldwinsville	44	19	Penn Yan	50	16
Buffalo	39	19	Ransomville	48	20
Ceres	50	18	Rochester	49	21
Elba	51	19	Romulus	NA	NA
Farmington	26	19	Silver Creek	43	18
Gainesville	NA	NA	Sodus	47	20
Geneva	37	19	Versailles	37	18
Kendall	51	19	Williamson	50	19

- 1 Weather stations. For more sites, and varietal susceptibility to LB: <http://newa.cornell.edu>
2 Passed Week Simcast Blight Units (BUs)
3 Three days predicted Simcast Blight Units (BUs)

Late Blight Map from USAblight.org, 8/13/2014



FRESH MARKET POTATO VARIETIES, DISEASE & INSECT MANAGEMENT MEETING

Join the Cornell Vegetable Program on **August 28, 2014 at 5:30 - 8:30 PM in Marion, Wayne County**, for a field meeting with information and updates. We'll meet at John Williams Farm on Decker Rd, just north of Newark, to view the Cornell replicated variety/breeding line trial on the muck. Don Halseth, Cornell, will review the highlights. **Hear from the late blight expert, Bill Fry, Cornell, on the late blight strains showing up and the latest control recommendations.** Colorado potato beetle continues to be a major pest on many potato farms, especially with the development of resistance to the previously very effective Neonicotinoid insecticides. Anders Huset, Entomologist, Cornell, will present results of trials he and Brian Nault, Cornell, have conducted, and propose an insecticide rotation plan to preserve effective insecticides. 1.25 DEC recertification credits will be available. Dinner will be provided. *Sponsored by Williams Farms, Gowan Company and Syngenta.*

This event is FREE! Preregister by contacting Angela Parr at aep63@cornell.edu or 585-394-3977 x426 so we'll know how much food to order. For more info, [visit http://cwp.cce.cornell.edu/event.php?id=253](http://cwp.cce.cornell.edu/event.php?id=253).

Late-Season Onion Thrips Management in Onions – Revised Recommendations

Christy Hoepting, CCE Cornell Vegetable Program

It is not uncommon for onion thrips pressure to become very high in onion fields during the month of August in New York. This phenomenon is caused in part simply by the population building up within a field, but also from influxes entering into greener fields from nearby fields that are being harvested. Sometimes, thrips counts can go from less than the spray threshold of 1.0 thrips per leaf to 3 to 6 thrips per leaf within a week. Another challenge to managing onion thrips later in the season is the lack of highly effective insecticides. Movento is strategically used first in sequence because this when it works best, and is then followed by Agri-Mek because it has a 30-day PHI. Both Movento and Agri-Mek allow only a maximum of 2 sequential applications per season. Radiant is a highly effective insecticide, which is strategically saved for when thrips populations are the highest; no more than 2 sequential applications (6-8 fl oz) can be made before switching to a different chemical class, and up to 30 fl oz may be made per season. Lannate and Warrior (and other labeled pyrethroids) are two other insecticides that are available, but they only provide suppression of onion thrips.

New Information! Cornell Onion Entomologist, Brian Nault, just completed his onion thrips field trial in the Elba muck and reported the following key results at the onion twilight meeting last Thursday (Fig. 1):

- Warrior alone failed to provide adequate control of onion thrips.
- Lannate alone suppressed onion thrips (44% control).
- Warrior + Lannate tank mixed together controlled thrips better than either alone, but still only provided suppression of onion thrips (73% control)
- Radiant provided the best control of onion thrips (90% control)

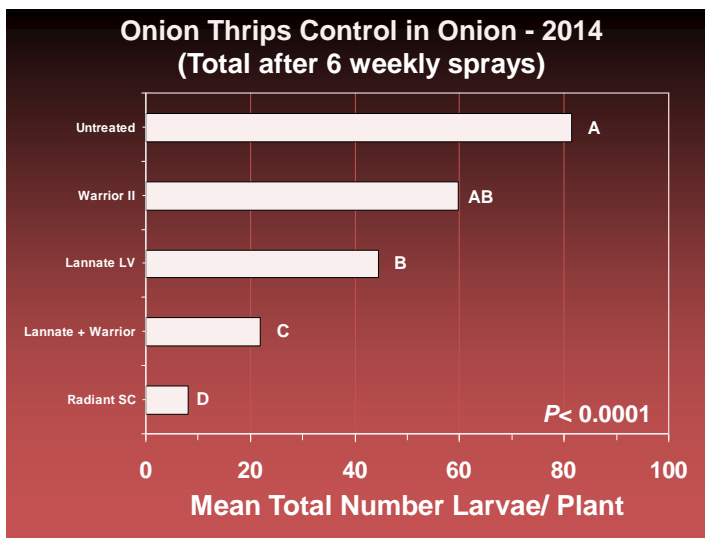


Figure 1. 2014 Field research results (Nault et al., Elba, NY). Warrior was not effective in managing onion thrips. Neither Warrior nor Lannate LV were effective in reducing onion thrips densities when each was applied alone; however, when co-applied, they were able to suppress the onion thrips population.

Thus, we are now recommending Lannate + Warrior instead of Lannate alone.

Since onion thrips pressure has generally been very low this year, at this time, many growers have had only 1 or 2 applications of Movento or are just starting Agri-Mek in sequence. As influxes may increase thrips pressure dramatically, following are some strategic management decisions to consider ensuring that thrips populations remain controlled (“controlled” = leaves remain green and do not turn white from excessive thrips feeding) for the rest of the season – Fig. 2):

- If, it has been 3 weeks since the first and only application of Movento: skip the second app of Movento and skip to the next insecticide in sequence, to avoid exposing multiple generations of onion thrips to the same insecticide class.
- If, after the last Movento spray, there are only 2-3 weeks until it is time to harvest the onions, skip Agri-Mek in sequence, in order to not violate the 30-day PHI restriction of Agri-Mek.
- Only use Lannate + Warrior when onion thrips are 1.0 thrips per leaf or less.
- The spray threshold for Radiant is 3.0 thrips per leaf.
- If, before an Agri-Mek spray (1st or 2nd), the thrips population is above 3.0 thrips per leaf, use Radiant next. Ideally, a single app of Radiant should reduce pressure to 1.0 thrips per leaf where Agri-Mek or Lannate + Warrior could be used effectively.
- If Agri-Mek was skipped and after a single app of Radiant pressure is less than 3.0 thrips per leaf and there are less than 30 days to harvest, return Agri-Mek in sequence.
- If Lannate + Warrior was skipped and after a single app of Radiant, thrips pressure is 1.0 thrips per leaf or less, return to Lannate + Warrior in sequence.
- If after the first application of Radiant, thrips pressure is greater than 3.0 thrips per leaf, make a second application with Radiant. Often, we see that it takes a double application 7 days apart to see a knockdown in thrips pressure.
- Use 8 fl oz of Radiant when thrips pressure exceeds 5.0 thrips per leaf

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Figure 2. Excessive feeding of onion thrips causes the onion plants to turn white, which in turn results in reduced bulb size (left side). Onion leaves remain green and healthy (right side) when onion thrips are kept under control. *Photo: Brian Nault, Cornell*

Although it is common for growers to effectively manage onion thrips season-long using these strategies, having only one product that can manage thrips pressure greater than 3.0 thrips per leaf sometimes falls short. Fortunately, there is a new product in the pipeline that belongs to another chemical class, Exirel that has performed very well in Cornell trials, and once it is registered in New York, it should adequately fill in this gap.

The newly updated “strategic management of onion thrips” decision chart is available at http://rvpadmin.cce.cornell.edu/pdf/submission/pdf240_pdf.pdf 📄

WNY Sweet Corn Trap Network Report

Marion Zuefle, NYS IPM Program

Seventeen sites reporting this week. Eight sites had European corn borer-E (ECB-E) and five sites had ECB-Z. Corn earworm (CEW) was reported at 3 sites, with two of the sites over threshold indicating a need for a spray, please see the chart at the bottom of this page. Fall armyworm (FAW) was reported at 8 sites and 16 sites reported Western bean cutworm (WBC).

Western bean cutworm peaked last week and total number caught in traps is dropping but the total number of sites with WBC remains high. No reports of WBC egg masses seen in the field this week but it is still important to scout fields that are in the whorl or early tassel stage for egg masses. The threshold for processing sweet corn is 4% and a 1% threshold for fresh market sweet corn. Eggs are usually laid on the top side of the first 3 leaves nearest the tassel. 📄

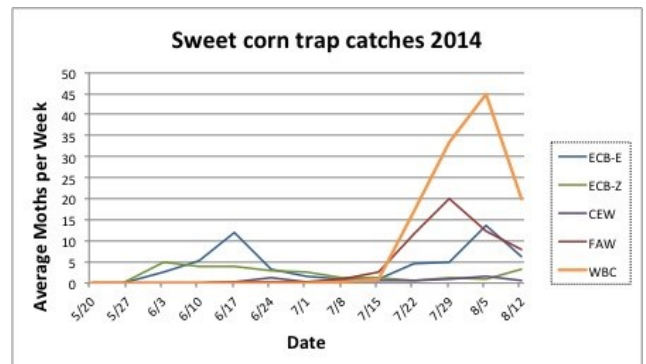
WNY Pheromone Trap Catches: August 12, 2014

Location	ECB-E	ECB-Z	CEW	FAW	WBC
Baldwinsville (Onondaga)	1	0	1	0	6
Batavia (Genesee)	2	0	2	0	10
Bellona (Yates)	41	22	0	9	2
Eden (Erie)	0	0	0	31	46
Farmington (Ontario)	8	0	0	0	2
Hamlin (Monroe)	NA	NA	NA	NA	NA
LeRoy (Genesee)	NA	NA	NA	NA	NA
Lockport (Niagara)	0	1	0	0	4
Pavilion	0	0	0	25	39
Penn Yan (Yates)	1	0	0	2	4
Seneca Castle (Ontario)	2	1	0	0	2
Spencerport (Monroe)	NA	NA	NA	NA	NA
Waterport (Orleans)	0	0	0	0	7
Williamson (Wayne)	1	0	0	0	5

ECB - European Corn Borer
CEW - Corn Earworm
FAW - Fall Armyworm

WBC - Western Bean Cutworm
NA - not available

Average sweet corn trap catches for all reporting sites, 5/20/14 - 8/12/14



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.



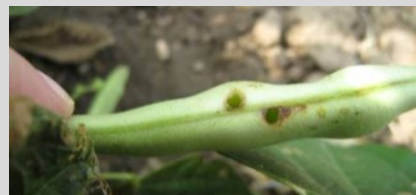
ECB damage in pepper.
Photo: Elizabeth Buck, CVP

CABBAGE and COLE CROPS

Cole crops are growing nicely in this cooler weather. Insect pressure tends to be low. With cooler than normal conditions, foliage is soaked with dew almost every night, which provides perfect conditions for Downy mildew (DM). DM can be found on lower frame leaves at this time, and growers are cautioned to protect plants nearing maturity from this disease – see cover article.

DRY BEANS

Unfortunately Sclerotinia white mold (WM) has shown up in quite a few fields, and is severe in some. Fungicide applications when plants first bloom can significantly reduce disease, but the weather has been very favorable for the development of spore-forming apothecia in the soil, for the germination of spores on the plants, and for spread from one part of the plant to an adjacent part. WM is especially noticeable on injured stems and leaves. In fields with WM, defoliating just as soon as most seed in the pods is physiologically mature will open the canopy and promote foliage drying, which will significantly slow the spread of the disease, without reducing yield. Seed is physiologically mature when it is no longer green under the seed coat, which scrapes off easily with a fingernail. This is earlier than many growers defoliate. Western bean cutworm (WBC) trap catches have been very high in Attica, Wyoming County, in dry beans. Trap catches have been very high in sweet or field corn fields in Eden, Erie County, and Hamlin, Monroe County. The Pavilion trap in Genesee County is just over the threshold. Where trap catches were high the upper few leaves of corn should be scouted for larvae. If they are found then the pods of dry beans nearby should be scouted for feeding damage. Check 5 plants in several spots in the field. If damage is found an insecticide spray should be applied.



White mold on dry beans (left).
Photo: Sarah Pethybridge, Cornell

Western bean cutworm dry bean pod damage (above).
Photo: C. DiFonzo, MSU

ONIONS

Fields have finally dried out from the heavy rains that fell two weeks ago. At this time, many fields have begun to lodge. Yield and quality of early harvested transplants has been excellent. Apply maleic hydrazide (MH) to storage bound onions when 50% tops are down and plants have 5-8 green leaves to ensure translocation into the bulb. If MH is applied too late when the onion has less than 3 green leaves, it will not be absorbed properly and the onions will start sprouting in storage. If MH is applied to an onion that is still producing new leaves, cell division will be stopped but individual cells will continue to grow in size. This will produce spongy bulbs where the scales pull away from each other. Humid weather and temperatures less than 75°F are ideal for applying MH. Low humidity and high temperatures (i.e. > 80 – 85°F) may cause MH to crystallize on the leaves, thereby inhibiting uptake. Rain within 24 h after application also reduces uptake. The rule of thumb is that onions should dry down naturally, not from diseases or insects. If diseases and/or onion thrips pressure is high, it would be sensible to include fungicides and/or insecticides with the MH spray. If thrips and diseases are in check, MH alone is all you need. At this time, fungicides should include protection for downy mildew (see July 23 issue of VEW) and Stemphylium leaf blight/Purple Blotch. The “Cornell Onion Fungicide Cheat Sheet” is available on the CVP website (http://cvp.cce.cornell.edu/submission.php?id=231&crumb=crops|crops|onions|crop*20).

Onion thrips pressure increased this past week. Although there are several fields that continue to have less than 1.0 thrips per leaf despite having only 1 or 2 insecticide sprays, in other fields, thrips counts jumped this week, especially in areas where onions are being harvested and on upland farms. In fields where thrips numbers are high, the thrips are located all along the leaves (Fig. 1), not just in the leaf axils, where they occur first in the season. During onion harvest, we often see a lot of movement of onion thrips from harvested/windrowed fields to nearby green fields and counts can jump from less than 1.0 thrips per leaf to 5.0 or more in a week. Unfortunately, neither Agri-Mek nor Lannate are strong enough to manage such high pressure. Radiant is the only insecticide that is effective in this situation – see article for some new strategic management options. **Last Muck Donut Hour of the Season – Tuesday, August 19, 2014.**



Figure 1. Adult onion thrips feeding all along onion leaves, not just in the leaf axil. Note, the yellow nymphs can be found all along the leaves too.
Photo: Christy Hoepting, CVP

Thank you to the onion growers and allied industry representatives who participated in the Annual Elba Muck Onion Twilight Meeting last Thursday – as always, it is our pleasure to educate!

PEPPERS

Bacterial spots continue to be noted around the region. Aphid populations may also be on the rise, so keep a look out.

POTATOES

While many fields are late, some were being vine killed or will be soon, and a few were being harvested this week. Early market potatoes continue to be offered at local markets. The yellowed out spots where water sat are more obvious this week. Late blight is spreading across our area. See the Late Blight Risk section for new counties with confirmations.

continued on page 9

PROCESSING CROPS

A short stretch of dry weather over the weekend allowed growers to get into some fields to put on needed fungicides and herbicides. However, some areas remain very wet and more rain has fallen. Lima beans and later planted snap beans in particular are suffering from wet soils in many fields.

Lima Beans – The earliest fields have some fairly large pods, as well as many smaller pods and are still flowering. Some fields were in full bloom this past week and there was a lot of bee activity in them. White mold was confirmed in one field as hard sclerotia were present on pods and stems. The infected plants could be spotted by leaves flagging on a portion of the plant. The white mold was down in the crown area. Velvet leaf is also a host for white mold and an infected plant was found in one field. Leaf spots are present in nearly all fields to varying degrees. There are at least 3 types of spots being found. First, with a concentric pattern and tan center, the second appearing as small brown spots often surrounded by a yellow halo, and a third seems associated with a leaf miner insect. We have collected samples from more than a dozen fields and 4 varieties, and work is progressing to isolate and identify the pathogens and insects involved. Virus symptoms have been seen in several fields and samples are being tested to identify the virus.

TOMATO

Bacterial diseases (spot/speck) and Septoria are both becoming more active. Both can burn out canopy coverage and make it harder to finish fruit, but the bacterial diseases will scar and mar fruit and cause direct losses to marketability. We have seen localized epidemics of early blight. Plants with wet feet are showing signs of nutrient stress, with root rot setting in where they have not been able to dry out. Soilborne pathogens are continuing to impact crops as high humidity conditions continue to favor white mold, Verticillium wilt, and *Phytophthora capsici*. Stay on top of your management programs to protect against late blight as more counties in NY have been added to the list.

High tunnel tomatoes have started showing powdery mildew and, with the cooler and wet weather, botrytis gray mold is gaining a foothold.

VINE CROPS

By far, the worst problem in vine crops is Verticillium wilt. Cantaloupes and watermelons are worst hit, followed by winter squashes, summer squashes, and pumpkins. See last week's cover article. Foliar bacterial and fungal spots are also quite common. Some fields are suffering from white mold. Powdery mildew is still pretty active in many cucurbits, but the good news is that there are still no reports of downy mildew in NY. There is a new report out of Ontario, Canada and in Michigan, so it may be heading our way. See last week's note about cucumber beetle and bacterial wilt. Fields where two spotted spider mites were present earlier in the year are suffering a population resurgence, despite the heavy rains. Phytophthora blight continues to impact both old and new plantings and rapid blighting and plant death has been seen in second plantings in areas where this pathogen is present.



Bacterial speck on tomato fruit.
Photo: Darcy Telenko, Cornell Vegetable Program

WEED

of the
WEEK



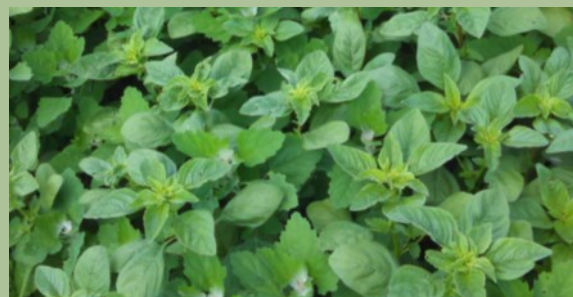
REDROOT PIGWEED

Darcy Telenko, CCE Cornell Vegetable Program

Redroot pigweed (*Amaranthus retroflexus* L.) is a summer annual that is highly competitive with a number of vegetable crops. It is a member of the Amaranthaceae family and is a common weed in the northeast United States. It is generally found in mixed populations with Powell amaranth and green pigweed. Young seedlings emerge in mid-spring and flowering begins with decreasing day length in late June. Redroot pigweed is erect and freely branching. The cotyledons are narrow and lanceolate (pointed), 10-12 mm long, dull green to reddish on the upper surface and bright red underneath. Young leaves are alternate, egg-shaped and sparsely hairy on the margin and vein. Stems are light green and hairy with a reddish base. It is propagated by seed and with seed production occurring from late summer to fall until a hard frost.

Triazine resistant pigweed is found in the northeast. 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 preemergence activity on pigweed including AAtrex, Callisto, Chateau, Goal, Karmex, Matrix, Princep, Sandea, and metribuzin. Herbicides with excellent postemergence activity on pigweed in vegetables include AAtrex+oil, Aim, Callisto, Clarity, Goal, Gramoxone, Impact, Laudis, Lorax, Matrix, Raptor, Reflex, Roundup, and Sandea/Permit. See product label for specific crop uses. ●



UPCOMING EVENTS

Organic Seed School

August 17, 2014 | 8:00 AM - 4:00 PM

Cornell University Homer C. Thompson Vegetable Research Farm, 133 Fall Creek Rd, Freeville 13068

Come learn from growers, breeders, and seed companies to better understand organic seed quality topics and how it affects your farm. Up to eight regional seed companies will present their new developments related to the needs of organic producers. A series of moderated group discussion sessions will focus on the issues surrounding organic seed quality and availability - bring your questions on organic seed and talk directly to the experts! Lunch and refreshments will be provided. Pre-registration is appreciated at the website <http://goo.gl/zpR5UG>. The \$10 registration fee can be paid at the door. Contact Michael Glos at mag22@cornell.edu or 607-227-7793 with questions.

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. 1.5 DEC and CCA credits will be available. Cost: \$5 (pre-registered) or \$10 at the door. For more information, to see the [complete agenda](#), and [mail-in pre-registration form](#), visit the CVP website at <http://cvp.cce.cornell.edu/event.php?id=237>. Questions? Contact Dennis Kirby, Orleans SWCD, at dennis.kirby@ny.nacdnet.net or 585-589-5959. Organized by USDA-NRCS, County SWCD, Cornell Cooperative Extension, and WNY Crop Management.

August Walk & Talk Discussion Group

August 20, 2014 | 6:00 PM

Simon Girod's farm, 11101 Fitch Farm Rd, Freedom 14065

This August crop walk will highlight pest and disease controls, with an emphasis on pro-active management. Cultural practices, as well as topics of interest to the group, will be discussed. This discussion group is free to join, and new growers are particularly encouraged to attend. Meetings are held on various farms in Allegany and Cattaraugus counties. Contact Elizabeth Buck at 607-425-3494 for more info.

Processing Snap Bean and Sweet Corn Variety Field Day

August 21, 2014 | 1:00 PM Snap Beans; 3:00 PM Sweet Corn; 5:30 PM Dinner

Vegetable Research Farm, County Road 4, Geneva (1 mile west of the NYS Ag Experiment Station)



For more information or to RSVP for dinner, contact Jim Ballerstein 315-787-2223 or jwb2@cornell.edu.

Fresh Market Potato Varieties, Disease & Insect Management Meeting

August 28, 2014 | 5:30 PM - 8:30 PM

Williams Farm, Decker Rd, just west of Minstead Rd, Marion 14505



This meeting will include updates on late blight and other potato diseases, management of Colorado potato beetle and other insects, and the opportunity to see the 2014 Cornell fresh market muck variety and breeding line trial. Dinner provided. 1.25 DEC recertification credits, CCA credits available. *This meeting is FREE for growers due to the support of our meeting sponsors: Williams Farms, Gowan Company and Syngenta.* Pre-register to Angela Parr at aep63@cornell.edu, 585-394-3977 x426 by 8/22/14 so that we know how much food to order.

Cornell Vegetable Program Research Updates: Grafting, Living Mulch & More

August 29, 2014 | 6:00 PM - 8:00 PM

Maple Lane Produce (Nelson Hoover farm), 3039 Bath Rd, Penn Yan 14527



Vegetable Specialist Judson Reid will give updates on his fresh market research program, with a major focus on grafting in tomatoes, the use of living mulch in a variety of crops, and varietal resistance to brown leaf mold of tomatoes. The meeting will include a tour of research plots. Cost: \$20/person. Space is limited to 30 participants. Pre-registration is required by August 25. Send your name, farm name, # attending and payment of \$20 per person (check payable to *Cornell Vegetable Program*) to Karen Gavette, CCE Yates Co., 417 Liberty St, Penn Yan, NY 14527. Indicate that your payment is for Judson Reid's Research Updates Meeting.

2014 NYS Dry Bean Field Meeting

September 18, 2014 | 5:15 PM - 7:45 PM

Tom Corcoran's farm, 1302 McEwen Rd, Caledonia 14423



Tour the Cornell dry bean variety trial and nearby strip trials. Cornell professors will share research-based ideas on pest issues and management including bacterial diseases and Western bean cutworm updates. Changing bean plant architecture to improve yields will also be discussed. DEC pesticide recertification and CCA credits will be available. A light supper will be provided. Cost: \$5 for Cornell Vegetable Program enrollees; \$10 for all others. The [full agenda and directions](#) to this event can be found on our website. Pre-register by contacting Angela Parr at aep6@cornell.edu or 585-394-3977 x426 by September 12. *Meeting sponsored by Genesee Valley Bean.*

Weather Charts

John Gibbons, CCE Cornell Vegetable Program

Weekly Weather Summary: 7/29 – 8/11/14

Location	Rainfall (inch)		Temp (°F)	
	Week	Month August	Max	Min
Albion	NA	NA	NA	NA
Appleton, North	0.02	0.34	84	51
Baldwinsville	0.00	0.70	83	56
Buffalo*	0.09	1.55	83	55
Ceres	0.51	1.63	86	51
Elba	0.07	0.58	80	48
Farmington	0.01	0.58	82	51
Gainesville	0.38	1.71	81	47
Geneva	0.07	1.08	82	54
Kendall	0.03	1.15	82	53
Lodi	1.35	1.95	85	52
Penn Yan*	0.41	2.45	82	57
Ransomville	NA	NA	83	50
Rochester*	0.00	0.86	83	54
Romulus	NA	NA	82	54
Silver Creek	0.47	1.30	82	54
Sodus	0.00	0.74	82	50
Versailles	NA	NA	84	51
Williamson	0.00	2.18	82	51

Accumulated Growing Degree Days (AGDD) Base 50°F: April 1 – August 11, 2014

Location	2014	2013	2012
Albion	NA	NA	NA
Appleton, North	1407	1530	1829
Baldwinsville	1749	1774	2012
Buffalo	1662	1773	2089
Ceres	1449	1471	1649
Elba	1306	1539	1767
Farmington	1604	1631	1836
Gainesville	1276	NA	1733
Geneva	1647	1719	1991
Kendall	1611	1814	NA
Lodi	1788	1914	NA
Penn Yan	1747	1751	2007
Ransomville	1494	1463	1928
Rochester	1749	1833	2048
Romulus	1683	1792	NA
Silver Creek	1576	1725	1921
Sodus	1547	1555	1800
Versailles	1551	1705	1870
Williamson	1518	1739	1976

* 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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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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