



Learn how to properly label and market your bagged greens for sale at farmers markets

and CSAs.

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During the process of removing scapes from your garlic plants is a great opportunity to

rogue out and cull away any weak plants.

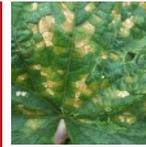
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Thrips feeding reduces the photosynthetic capacity of an onion plant, which can

reduce yield and bulb size by 30%+. Is it time to spray?

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Thinking about disease management in your cucurbits? Here's a quick reference of

fungicides for managing PM, DM, and Phytophthora blight.

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Photo: Darcy Telenko



Cornell University
Cooperative Extension
Cornell Vegetable Program

Selling Bagged Greens: What the Department of Ag & Markets Expects

Robert Hadad, CCE Cornell Vegetable Program

It seems like every spring I get questions on retail sales of bagged greens. The questions usually stem from rumors about the legality of selling bags of greens.

Can we sell mixed greens?

Can we sell washed greens?

Do the bags have to have a label?

Do the bags have to remain open or can they be closed?

I contacted the NYS Department of Ag & Markets concerning these and other questions and hopefully this will shed some light on the topic. I talked with John Luker, Assistant Director of Food Safety Inspection with Ag & Markets. He said the center of the bagged greens issue is whether or not the product is being sold as **“ready-to-eat”** (RTE). If the greens are RTE then under the NY State regulations, an Article 20-C Food Processing license is required and the



Photo from www.pollinatorparadise.com

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VegEdge newsletter is exclusively for enrollees in the Cornell Vegetable Program, a Cornell Cooperative Extension regional agriculture team, serving 12 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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CCE and its employees assume no liability for the effectiveness or results of any chemicals for pesticide usage. No endorsement of products or companies is made or implied. **READ THE LABEL BEFORE APPLYING ANY PESTICIDE.**

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 on June 15, 2016.

Early Season Potato Pest Concerns

Carol MacNeil, CCE Cornell Vegetable Program

Potato planting is finishing up. More fields have emerged. Growers are cleaning up potato volunteers to reduce the possible sources of late blight (LB) as more sites reach the 18 severity value threshold. While plants are small it's much easier to protect them against LB with effective fungicides. (*See the Late Blight Risk article in this issue.*) The first case of bacterial blackleg Dickeya was just seen and confirmed on Long Island. Affected plants had black stems above and below the soil line, and rotting the seed piece (*M. McGrath, Cornell*). There is no control on infected plants.

On fields not treated with a systemic insecticide seed treatment or in-furrow treatment at planting flea beetle feeding can be seen, and Colorado potato beetles (CPB) continue to emerge, feed, mate and lay eggs. CPB eggs will hatch a week after egg-laying and small CPB larvae will emerge and start to feed, often towards the top of the plant. The cool weather this week will slow down hatching.

From S. Menasha and D. Gilrein, CCE Suffolk Co, 6/2/16 Long Island Fruit & Veg Update: To control small to medium larvae Radiant, Rimon, Blackhawk and Kryocide are recommended. If using Kryocide, maximum effectiveness is achieved with a minimum 3-4 day rain-free interval after application. The effectiveness and residual activity of imidacloprid, thiamethoxam, acetamiprid and pyrethroid-containing products will depend on whether resistance is present.

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produce must be handled, according to all the guidelines (handling product with gloves, triple washed etc.) in a **certified facility**.

Then based on these standards, for most growers, greens can be sold through farmers markets or CSAs as not RTE if there is a label stating so (i.e. “Wash thoroughly before using”). The label also needs to have the farm name and address (which also is part of the new regulation under FSMA), name of product and quantity of contents.

Washing produce with the purpose of removing field dirt, grit, and other organic debris, is not considered the same as washing for consumer consumption. So when following food safety guidelines for post-harvest handling with wash

water, using sanitizer and triple washing in tanks/basin/ sinks etc. the end product is for the removal of soil etc. and keeping the water from contaminating the produce.

There is one other point of clarification. Bags of greens that are not RTE and being sold at farmers markets, through CSAs etc. do not have to be left open. The bags can be closed with a twisty or other method. Shelf life of the product may be affected by the type of bagged used (perforated or not) but as for sale requirement, bags can be closed.

So “intent” of the consumer package is everything. Farmers need not to wash for RTE cleanliness but to wash with the intent to remove field soil etc. The label information on the bag is the key ingredient for customer awareness. ●

Is Your Pest Control Program Proactive or Reactive?

Darcy Telenko, CCE Cornell Vegetable Program

Does your farm take a proactive or reactive approach to various issues on the farm? A number of pest issues occur on a regular basis in fresh market vegetables where a management plan can be ready to roll once certain circumstances are met such as reaching a population threshold, regional occurrence, or prediction models. See below for a short list of a few commonly occurring insect and disease pests in fresh market vegetables and the proactive decisions and reactive choices that are available for their management. Refer to the Vegetable Pest Management Guidelines for more information on specific treatments.

Pest	Proactive decisions	Reactive choices
Insects		
Cucumber beetle	Seed treatment Transplant drench (Admire Pro) Release natural enemies (tachinid flies, parasitoid wasps, predacious nematodes) Perimeter trap crop (blue hubbard squash) Deep plowing and clean cultivation after harvest to reduce overwintering populations	Treat hot spots with insecticide. Foliar and soil insecticide application once threshold is met (Assail, Baythroid, Sevin, Asana, Warrior, etc.). Thresholds – cotyledon to 4-leaf >5 beetles per plant; plants larger than 4-leaf should be protected when beetle densities are > 1 per plant.
Aphids	Regularly scout plants – for peppers treatments should begin before population reaches 5 nymphs/ leaf Utilize naturally occurring predators and parasitoids Destroy weeds around the field as they provide shelter and food	See guidelines to determine best insecticide option for crop.
Diseases		
Powdery mildew	Plant resistant (tolerant) varieties when possible	Fungicide application once threshold is met (detection of powdery mildew in a field) – 7-day interval spray program that includes rotation of fungicide chemistry. (see fungicide table) Use mobile fungicides when thresholds are low (1 of 50 old leaves with symptoms), or preventative on fields not being scouted, do not start using mobile fungicides once disease is widespread.
Cucurbit downy mildew	Plant resistant (tolerant) varieties when possible. Monitor forecasts in extension publications or sign up for customized alerts at cdm.ipipe.org . Protectant fungicide applications made once detection in region or neighboring states.	Once downy mildew is present or risk of occurrence is high apply mobile fungicides to manage downy mildew on underside of leaves. Some of the most effective fungicides for downy mildew include Presidio, Gavel, Bravo Weatherstik, Manzate, ProStik, Omega, Curzate, and Ranman. Follow rotation guidelines to minimize resistance development. (see fungicide table)
Late blight – tomato/potato	Plant resistant (tolerant) varieties when possible and clean transplants. Do not plant near potato cull piles, and remove any volunteer potato plants. Disk down plants soon after harvest is complete or if field is abandoned due to late blight infection. Monitor late blight movement and utilize the Cornell Decision Support System (DSS) to determine when fungicide applications are needed.	Promptly report if late blight found to local extension educator or IPM specialist. If found in localized area in the field, destroy infected plants and use the DSS to schedule fungicide applications. ●

WNY Sweet Corn Trap Network Report, 6/7/16

Marion Zuefle, NYS IPM Program; <http://sweetcorn.nysipm.cornell.edu>

Eight sites reporting this week. European corn borer (ECB)-E was caught at Farmington and Seneca Castle. ECB-Z and corn earworm (CEW) were caught in Eden and Spencerport. And fall armyworm (FAW) was caught at Eden and Kennedy.

Fields at the most advanced stage of development will be most attractive to egg-laying ECB moths. Larvae hatching from eggs laid now will feed in the whorl and be found later in the emerging tassel. Degree day accumulations, based on the nearest NEWA weather station, are given for each trapping site. Most sites are close to the accumulated degree days for first ECB spring flight and several are near the accumulated degree days for first eggs. ECB eggs require 100 degree days (base 50) from oviposition to hatch. Degree day calculations for many locations may be found on the [NEWA](http://newa.cornell.edu) website: newa.cornell.edu.

WNY Pheromone Trap Catches: June 7, 2016

Location	ECB -E	ECB -Z	CEW	FAW	WBC	WBC to Date
Baldwinsville (Onondaga)	NA	NA	NA	NA	NA	437
Batavia (Genesee)	NA	NA	NA	NA	NA	288
Belfast	NA	NA	NA	NA	NA	401
Bellona (Yates)	NA	NA	NA	NA	NA	474
Eden (Erie)	0	1	1	9	NA	424
Farmington (Ontario)	5	0	0	0	0	397
Hamlin (Monroe)	NA	NA	NA	NA	NA	368
LeRoy (Genesee)	NA	NA	NA	NA	NA	374
Pavilion	NA	NA	NA	NA	NA	374
Penn Yan (Yates)	NA	NA	NA	NA	NA	439
Ransomville (Niagara)	0	0	0	4	NA	390
Seneca Castle (Ontario)	4	0	0	0	NA	419
Spencerport (Monroe)	0	3	2	0	NA	448
Waterport (Orleans)	NA	NA	NA	NA	NA	368
Williamson (Wayne)	0	0	0	0	NA	355

ECB - European Corn Borer

CEW - Corn Earworm

FAW - Fall Armyworm

WBC - Western Bean Cutworm

NA - not available

DD - Degree Day (modified base 50F) accumulation

Development Stage	Accumulated Degree Days
First Generation	
First spring moths	374
First eggs	450
Peak spring moths	631
First generation treatment period	800-1000
Second Generation	
First summer moths	1400
First eggs	1450
First egg hatch	1550
Peak summer moths	1733
Second generation treatment period	1550-2100

European corn borer (bivoltine) development estimated using a modified base 50F degree day calculation.

From J. W. Apple, Department of Entomology, University of Wisconsin-Madison

Field Cull While Removing Garlic Scapes for a Healthier Future and Share Your Culls with Us!

Christy Hoepting, CCE Cornell Vegetable Program

During the bulbing phase of garlic development is when weak plants become evident. Most growers remove the scapes (seed stalk) from their hard neck varieties to ensure that the plants put all their resources into bulb production instead of dividing them with production of seed stalk and seed (Fig. 1). During the process of removing scapes is a great opportunity to rogue out and cull any weak plants. Pull anything that looks stunted, yellow, or sickly (Fig. 2). **Doing so now when you can see the whole plant is much more accurate than bringing it into the drying area**, where damaged bulbs can start to look ok, despite harboring problems which could spread to your other garlic.



Figure 1. Garlic scapes are removed from garlic plants to encourage the plant resources to go into bulb production instead of into producing seed. Photo: Conover Organic Farm



Figure 2. Sickly garlic plant should be pulled and culled prior to harvest while they are easily distinguished. Once bulbs are harvested and dried down, those that may be harboring nematodes or diseases may not be so easily recognizable. Photo: Christy Hoepting, Cornell Vegetable Program

continued on next page

There are several causes of weak garlic, but **Fusarium disease** (Fig. 3) and **garlic bloat nematode** can be propagated to next year’s crop through infested seed. Also, the nematodes and disease can move out of the plant and into the soil and spread from there. Do not discard culls in an area that may distribute the nematode across your farm from surface water run-off.

Garlic bloat nematode (GBN) can easily be confused with Fusarium disease and is often associated with Fusarium disease. GBN is characterized by bloating of the scales and their separation from the basal plate. **If you suspect garlic bloat nematode**, you may have your bulbs or soil tested through the NYSEAS. Only samples from within NY State are accepted. Keep samples at room temperature and send as soon as possible after collection. For garlic, select up to 10 bulbs (per sample) with potential damage caused by bloat nematode. Cost: \$40/sample (bulbs or soil). For more information and submission form: http://rvpadmin.cce.cornell.edu/uploads/doc_325.pdf.



Figure 2. Fusarium bulb rot (a) and Fusarium basal rot in a clove (b) and bulb (c). When cloves infested with Fusarium species are planted, the resulting plant may also be infected and the disease can continue to perpetuate. Photos: a&b: Crystal Stewart, CCE ENY Commercial Horticulture Program; c: OMAFRA

Save your sickly garlic for us!

While you are pulling up sickly garlic, if you could keep a bunch (10-15 heads) which look like they will not break down in storage and dry them somewhere isolated from the rest, we would be very, very grateful! We (Cornell team) just got a Fusarium study funded that will investigate what kinds of Fusarium we are battling every year and what the best controls are. We’ll be asking for samples later in the season, but this is the best time to collect them. If you pull a sample, just let us know and we can come get it when it’s dry. Contact Robert Hadad (rgh26@cornell.edu; 585-739-4065) or Christy Hoeping (cah59@cornell.edu; 585-721-6953) to submit samples. ●

Late Blight Risk – Severity Values are Accumulating

Carol MacNeil, CCE Cornell Vegetable Program

Since May 12, 32 Blitecast late blight (LB) severity values (SVs) jumped from 19 to 32 in the past week in Gainesville, and a spray is needed promptly. In the Cornell Vegetable Program area, Wellsville has reached 20 SVs and should be sprayed in a week or so. All other stations range from 0 to 10 total SVs. Within a week of reaching 18 SVs a LB-effective fungicide should be applied to all potatoes in the area 4+ inches tall, and on all field tomatoes, to protect them against LB. The forecast SVs for the next three days is zero for all locations, due to the very cool weather. Note: There is a new weather station northwest of Fairville which may be useful to some of you.

A copper fungicide applied to tomatoes for bacterial diseases is effective against LB, though its residual activity is shorter than for chlorothalonil or mancozeb. Copper is recommended to organic growers for LB control. For much more information on LB control see the 2016 Cornell Integrated Crop and Pest Management Guidelines for Commercial Vegetable Production. To order a print or e-copy go to: <http://store.cornell.edu/c-875-pmep-guidelines.aspx>

Information on residual activity of fungicides against LB is on the LB Decision Support System (DSS)/BlightPro website at http://blight.eas.cornell.edu/lbdocs/simcast_details_2015.pdf Scroll down to the second page. Destroy all potato culls and volunteers so they don’t serve as a source of LB for your potato/tomato crop.

LB has now been confirmed on tomatoes in northern Maryland, and on potatoes on Virginia’s Eastern Shore. LB has been confirmed on potato and tomato in Florida, of concern to those who get tomato transplants from there. All are US 23, “generally sensitive” to Ridomil (and other mefenoxam formulations), according

to Bill Fry, Cornell plant pathologist. Check out the <https://usablight.org/> website for:

- recent LB confirmations in the Northeast, including the determination of the LB strain
- description of Phytophthora infestans, the late blight organism, and symptoms on potatoes and tomatoes;
- description of how to sample and handle suspected late blight infected foliage for submission
- how to sign up for Alerts to new LB confirmations
- management recommendations for potato/tomato growers, including organic growers, and home gardeners.

If you have questions regarding LB contact Carol MacNeil at crm6@cornell.edu or 585-313-8796. ●

Late Blight Severity Values* 6/7/16

Location*	Total	Forecast 6/8-6/10	Location	Total	Forecast 6/8-6/10
Appleton N	0	0	Lodi	6	0
Baldwinsville	4	0	Lyndonville	0	0
Bergen	0	0	Medina	0	0
Buffalo	9	0	Niagara Falls	3	0
Ceres	9	0	Penn Yan	10	0
Elba	0	1	Rochester	10	0
Fairville	3	0	Sodus	5	0
Farmington	3	0	Versailles	1	0
Gainesville	30	2	Welsville	20	0
Geneva	2	0	Williamson	5	0
Kendall	0	0	Wolcott	4	0

* Severity value accumulations start 5/12/2016

Early Season Thrips Control: Start with Movento

Christy Hoepting, CCE Cornell Vegetable Program

The warm weather during the past couple of weeks has pushed onion thrips (OT) along and transplanted fields in areas of influx in Elba muck land as well as some upland transplants have reached the spray threshold and have already been sprayed or will need to be sprayed this week. **The threshold to spray onions for onion thrips is 1.0 onion thrips per leaf.** Thrips feeding reduces the photosynthetic capacity of the onion plant, which can reduce yield and bulb size by 30% or more. If thrips build to greater than 1.0 OT per leaf, they can quickly become challenging to control with insecticides. If they are sprayed too much before the spray threshold is reached, it is an inefficient use of insecticides and prolongs the spray season; with only a handful of effective products with limited usage, you could burn through the spray program before the thrips spray season is over. Or, if you are relying mostly on pyrethroids, as many small-scale growers do, starting to spray too early increases the risk that OT will develop resistance. Both scenarios can lead to poor control of thrips by the end of the season.

Start with Movento. The Cornell recommendation for the first onion thrips spray is Movento 5 fl oz with a penetrating surfactant. Movento has a proven track record to provide excellent control of onion thrips when applied first in sequence at the 1.0 ± 0.3 OT per leaf threshold. Do not tank mix Movento with Bravo as this can reduce the efficacy of Movento by 12 to 35%.

“Momentum” of Movento

Through our onion scouting program, we continue to experience that when Movento (plus penetrating surfactant without Bravo) is applied first in sequence to young onions pre-bulbing at 1.0 ± 0.5 OT per leaf that at the beginning of the season this treatment can keep OT populations below 1.0 OT per leaf for 2 to 3 weeks or more! (Table 1). This is what we call “The Momentum of Movento”, which we believe is a function of the systemic activity of

Movento being stronger in young plants. In Table 1, fields 1 to 3, you can see an increase in the number of weeks of protection from double applications of Movento as the applications are made to younger onions and earlier in the season. Note that in field No. 3, the first application of Movento was made before the spray threshold was reached, and that the second application was not made until the spray threshold was reached 2 weeks later.

Table 1. 2015 onion scouting data from Elba muck demonstrating the efficacy of Movento when applied first in sequence for managing onion thrips in onion (Hoepting *et al.*).

Field No.	Onion Type	Prior to 1 st app of Movento		Prior to 2 nd app of Movento		“Momentum of Movento” (No. weeks before next spray warranted)
		No. OT per leaf:		No. OT per leaf:		
1	Yellow transplants	No. OT per leaf:	1.5	No. OT per leaf:	1.6	5 weeks
		Onion Stage:	6-7 leaf	Onion Stage:	7.5-8.5 leaf	
		Date:	Jun-8	Date:	Jun-15	
2	Yellow direct seeded	No. OT per leaf:	0.7	No. OT per leaf:	2.4	3 weeks
		Onion Stage:	6-7 leaf	Onion Stage:	6-7 leaf	
		Date:	Jun-29	Date:	Jul-6	
3	Yellow direct seeded	No. OT per leaf:	0.1	No. OT per leaf:	1.6	2 weeks
		Onion Stage:	7-leaf, start bulb	Onion Stage:	7-leaf, start bulb	
		Date:	Jun-29	Date:	Jul-13	
4	Yellow direct seeded	No. OT per leaf:	0.8			4 weeks
		Onion Stage:	5-6 leaf			
		Date:	Jun-15			
5	Red direct seeded	No. OT per leaf:	3.2	No. OT per leaf:	4.4	1 week later: 1.3 per leaf
		Onion Stage:	6-7 leaf, start bulb	Onion Stage:	7 leaf, 1” bulb	
		Date:	Jul-6	Date:	Jul-13	

Movento applied at 5 fl oz + penetrating surfactant; no Bravo in tank mix.

What if one week after the first spray of Movento, thrips are below the spray threshold? Then, you do not need to spray. **Sometimes, only a single application of Movento is enough** to achieve the Momentum of Movento, and we see this about 25% of the time in Elba (Table 1, Field No. 4). If the spray threshold is reached and it has been 3 or more weeks since the first application of Movento, switch to another insecticide, so as not to expose more than a single generation of onion thrips to the same chemical class.

What if one week after the first spray of Movento, onion thrips have not changed, or have increased slightly? As long as pressure is 2.5 OT per leaf or less, give Movento another chance by applying the second application, as we often do not see the knockdown until after the second application. We see that this occurred in field No. 5 with even higher onion thrips populations; here, the double

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application of Movento did not result in the momentum of Movento, but it did reduce the population to a level that would be easily manageable with Agri-Mek (next in sequence).

Mostly adult thrips are on my onion plants and Movento does not control adults. What should I do? True, Movento is very weak on controlling adult onion thrips, which is another reason why it is strategically positioned first in sequence. In fact, Cornell trials and grower experience have shown that when Movento is used later in sequence and later in the season that it is not nearly as effective. The first adult onion thrips of the season do not really cause much damage. Instead of waiting until you see more nymphs or applying a pyrethroid instead, go ahead and apply Movento now. Because it has systemic activity, it will move into the plant and when the nymphs hatch it will already be right there to kill them. Last year, we had some growers who started their spray season with a pyrethroid spray and although this worked to keep the pressure below threshold initially, when the population naturally exploded a couple of weeks later, pyrethroid-treated fields had no residual activity compared to those treated with Movento and they had a much tougher battle on their hands (in Table 1, compare Field 5 (start with Warrior) to Fields 2-4 (start with Movento).

For small-scale upland growers who generally do not use Movento, we recommend to apply a pyrethroid such as Warrior or Perm-up to control the adults (and nymphs) when your thrips population reaches 0.7 OT per leaf or more. Continue to manage OT with pyrethroids until the population exceeds 1.0 OT per leaf, when you will have to switch to Radiant, which is more effective. ●

SCOUTING FOR ONION THRIPS

To find the first thrips of the season, look deep into the leaf axils. The adults are brown and up to 2 mm in length (Fig. 1), while the nymphs are yellow and 0.5 to 1.2 mm in length (Fig. 2). Inspect 15 to 20 plants and count the total number of OT per plant and divide by the average number of leaves per plant to get the number of OT per leaf. Thrips feeding causes silvery streaking along the leaves. If you can already see thrips feeding damage (Fig. 3) that is also a good indication that it is time to spray. If there is a lot of feeding damage, than you likely missed a timely first spray.



Figure 1. Adult onion thrips have already begun to infest transplanted onions that are in the 4-5-leaf stage and older. Photo: Christy Hoepting, Cornell Vegetable Program



Figure 2. Onion thrips nymphs in leaf axil of onion plant. Photo: Whitney Cranshaw, Colorado State University



Figure 3. Subtle streaking along leaves is an early indication of early onion thrips feeding. This plant has reached the spray threshold. Photo: Christy Hoepting, CVP

CROP INSIGHTS



We have finally received some well needed rain in most areas of the region. Even with the dry conditions we have encountered issues with damping off and root rot issues in peppers and cabbage. These issues are primarily caused by either *Pythium* or *Rhizoctonia* soilborne fungi. Plant infection by these pathogens can appear as seed decay, seedling damping-off (sudden wilting/melting of transplant) or root rot if older plants

are infected. A number of fungicides are available for use in cabbage for root rot, including Quadris (chinese cabbage only), Endura, Presidio, Ridomil Gold (for *Pythium* only), PCNB, and Cabrio. As for peppers Vapam (soil fumigation pre-plant), Previcur Flex (soil drench in greenhouse before planting and/or transplanting, or directed spray to lower portions of the plants and surrounding soil, or via drip irrigation) and RootShield are the only options for management. RootShield has a new wettable powder (WP) formulation that may be applied as an in-furrow spray, transplant starter solution or under drip chemigation.

COLE CROPS

In addition to flea beetles and cabbage maggot, worm pests including imported cabbage worm and diamondback moths were observed.

CUCURBITS

Keep and eye out for cucumber beetle, we had a hard time finding any this week but have reports of pockets where high populations have been discovered. Cucumber downy mildew has been reported in North Carolina and the southern states have a high risk forecast, minimal risk to cucurbits remains elsewhere.

GARLIC

Insect feeding damage on roots early on in the season are now resulting in rots occurring in the bulbs. High organic matter, heavy layers of mulch, or planting into sod field plots tend to have higher numbers of root feeding insects such as wireworms. Onion maggots can also feed on roots in the spring.

Fertility issues can be responsible for several issues. Over-fertilizing can also make plants more attractive to insect feeding. Poor fertility can result in stress on the plants with yellowing or discolored leaves which can lead to earlier senescence. Instead of the plant pushing to grow bigger bulbs the closer to the summer solstice we get, the leaves start to dry down and the bulbs don't get any bigger. A good fertility program begins in the fall followed by split applications for nutrients in early then late spring.

ONIONS

The crop looks good with oldest direct seeded onions in the 4-5 leaf stage and transplants in the 8-leaf stage. Growers continue to battle weed escapes with yellow nutsedge and ragweed being notably more aggressive than usual. Weed escapes that are 3-4" in size can continue to be burned back with Chateau up until the 6-leaf stage (mostly for pigweed, some annual mustards and yellow nutsedge), with Buctril (for annual mustards, smartweed and ragweed) between the 3- and 5-leaf stage and with Goal (for mixed broadleaves and yellow nutsedge) until 45 days prior to harvest (mid-July for onions harvested in early September). Repeat applications should kill weeds smaller than 2" in size. Even though we are entering into cooler temps the onions are still pretty tough with thick waxy cuticles and will be able to tolerate high labeled rates of these burner herbicides. Once onions are bigger, the escapes will have to be hand weeded.

The hot weather has pushed onion thrips (OT) along and transplanted fields in areas of influx in Elba muck land as well as some upland transplants have reached the spray threshold and have already been sprayed or will need to be sprayed this week. The threshold to spray onions for OT is 1.0 onion thrips per leaf. See article on early season OT control and scouting tips, pg 6. Alternatively, the hot and windy weather has not been favorable for *Botrytis* leaf blight, and although the odd lesion can be found, pressure is too low to warrant spraying fungicides. The Oswego Onion Weed Twilight Meeting will be held at John Dunsmoor's next Thursday, June 16, 2016. All are welcome.

PEPPERS

Keep and eye out for aphids – I encountered my first population hiding out on the underside of the pepper leaves. June 15 is generally the time we start to monitor but the warm, dry conditions look to have brought them a week early.

PROCESSING CROPS

Scattered showers over the past week continue to relate to varied soil moisture across the region. The relatively dry spring has allowed for planting to progress well, however, crops in some fields have come up unevenly – this is especially true for small seeded crops such as beets and carrots. Overall, processing crops are progressing well. Weed management is a high priority at this time. Under dry conditions, pre-emergence herbicides may not have been sufficiently activated. Additionally, rain showers have stimulated weed emergence. Once the crop is up, scouting for weeds should commence to identify escapes. Plan your post-emergence applications based on weed species present and the history of weed species in the field. Most herbicides are selective for the weeds they control (see the herbicides charts available for peas, beets, lima beans, snap beans and sweet corn on our website <http://cvp.cce.cornell.edu>). Remember too, that herbicides are more effective on smaller weeds.



Ragweed seedling emerging amongst carrots.
Photo: Julie Kikkert, CVP

TOMATOES

Field tomatoes look pretty clean and are growing great as long as they have received water. The first set of fruit is developing on the earliest plantings. Late blight has been reported in both Maryland and Virginia (see the Late Blight Risk article).

Rimon is best used on small, first generation larvae. There is a Special Local Needs label for use of Rimon to control small to medium CPB. You must have a copy of the SLN label when using Rimon. Go to <http://132.236.168.99/ppds/535376.pdf> Use 12 oz/A (no less than 9 oz/A), and repeat in a week. SLN label restrictions include: maximum 3 applications and 24 oz/A per year; pollinator advisory; a 300' buffer to water; ground application only; and, avoid drift to grapes.

For organic growers timing is critical. Scout frequently and begin sprays with egg hatch. Entrust (OMRI) will provide good control where resistance has not been reported.

Azera (OMRI) is a newer product which combines the active ingredients azadirachtin and pyrethrin, and has provided good control of small larvae in our trials. Products containing azadirachtin/neem can also be used. For best results, apply materials at the highest labeled rate targeting small, newly hatched larvae. A second application, 5-7 days later may be necessary. Other management practices include hand picking, row cover, bug vacuums, flaming and trench trapping.

To assist you in determining what might best manage a combination of insect pests in your potato fields, a list of over three dozen products labeled on potato in New

York has been summarized by Brian Nault, Cornell entomologist. It is available on the CVP website Potato page at http://rvpadmin.cce.cornell.edu/uploads/doc_422.pdf. If you would like a print copy see the April 1 issue of VegEdge.

For information on insect and disease management, including LB fungicide information, see the 2016 Cornell Integrated Crop and Pest Management Guidelines for Commercial Vegetable Production. To order a print or e-copy, go to <http://store.cornell.edu/c-875-pmep-guidelines.aspx>

A Quick Reference of Fungicides for Disease Management in Cucurbits

Adapted from - *Mobile Fungicides for Managing Powdery Mildew, Downy Mildew, and Phytophthora Blight in Cucurbits*, Margaret Tuttle McGrath, Plant Pathology and Plant-Microbe Biology Section, Cornell University Long Island Horticultural Research and Extension Center, <http://vegetablemdonline.ppath.cornell.edu>

Apply fungicides for a particular disease in alternation to manage resistance (in the use directions on many labels; typically, 1 or 2 consecutive spray maximum) and to ensure effective control if resistance develops. In addition, sulfur is a very effective, inexpensive product for powdery mildew, no efficacy for other diseases. Oils (several botanical and mineral oils available) are also a good choice for powdery mildew only. Chlorothalonil and copper have broad-spectrum activity. Copper also effective for bacterial diseases. Mancozeb is recommended when only downy mildew is occurring. QoI* and Ridomil fungicides are not recommended due to resistance. (*Amistar, Cabrio, Quadris, Flint).

Fungicide	FRAC Code	Diseases	Recommended Rate/A (labeled)	REI	PHI	Seasonal Limits	Approx.\$/ A/spray
Vivando ^a	U6	Powdery mildew	15 fl oz	12 h	0 d	3 sprays	\$33.15
Torino ^a	U8	Powdery mildew	3.4 oz	4 h	0 d	2 sprays	\$24.00
Quintec ^b	13	Powdery mildew (melon, pumpkin, w. squash, gourd)	6 fl oz (4-6)	12 h	3 d	24 fl oz	\$23.60
Proline ^c	3	Powdery mildew	5.7 fl oz	12 h	7 d	2 sprays	
Procure ^c	3	Powdery mildew ^c	8 fl oz (4-8)	12 h	0 d	40 fl oz	\$36.84
Merivon ^c	7	Powdery mildew	5.5 fl oz (4-5.5)	12 h	0 d	3 sprays	
Pristine ^c	7 + 11	Powdery mildew ^c	18.5 oz (12.5-18.5)	12 h	0 d	4 sprays (74 oz)	\$70.85
Ranman ^{a, d}	21	Blight, Downy mildew	2.75 fl oz (2.1-2.75)	12 h	0 d	6 sprays	\$25.24
Zampro	40 + 45	Blight, Downy mildew	14 fl oz	12 h	0 d	3 sprays	
Forum	40	Blight, Downy mildew	6 fl oz	12 h	0 d	5 sprays	\$17.86
Revus ^{a, c}	40	Blight, Downy mildew (low efficacy DM cucumber)	8 fl oz	12 h	0 d	4 sprays (32 fl oz)	\$30.31
Phostrol, etc. ^f	33	Blight, Downy mildew	2.5 – 5 pt	4 h	0 d	7 sprays	\$11.44 –\$22.88
Presidio ^{c, g}	43	Blight, Downy mildew ^c	4 fl oz (3 – 4)	12 h	2 d	4 sprays (12 fl oz)	\$44.94
Tanos ^e	27 + 11	Blight, Downy mildew	8 oz	12 h	3 d	4 sprays	\$25.02
Zing!	22 + M	Downy mildew	36 fl oz	12 h	0 d	8 sprays	\$17.72
Curzate ^e	27	Downy mildew	3.2 oz	12 h	3 d	9 sprays	\$13.26
Previcur Flex ^c	28	Downy mildew ^c	1.2 pt	12 h	2 d	6 pints	\$18.32

a Organosilicone and/or non-ionic surfactant required (Revus) or recommended.
 b Quintec is not labeled for use on edible-peel cucurbits. 10-14 day spray interval.
 c Limited use recommended because resistance suspected of affecting efficacy especially when applied often.
 d Rate range applies for downy mildew; high rate for blight.
 e Short residual; apply another fungicide within 5 days.
 f Other phosphorous acid fungicides include ProPhyt and Fosphite. Rate and seasonal limits vary a little among products. Recommended tank mixed with other fungicides. Note that there are also phosphate fertilizers, which are not fungicides.
 g Plant-back restriction for non-labeled crops is 365 days for Vivando and 18-month for Presidio. Tank-mix each of these fungicides with a protectant, with the exception of Zing! (or Gavel), which are formulated with chlorothalonil or mancozeb. Need to tank-mix is specified in use directions on many labels.

UPCOMING EVENTS *view all Cornell Vegetable Program upcoming events at cvp.cce.cornell.edu*

Muck Donut Hour

Every Tuesday through August 9 | 8:30 AM - 9:30 AM
Elba Muck, corner of Transit and Spoilbank, Elba, NY



Meet with Cornell Vegetable Program Specialist Christy Hoepfing every Tuesday morning to ask questions and share your observations. Grower experience is combined with research and scouting information for a whole lot of talk about growing ONIONS!

Soil Health & Cover Crop Workshop

June 30, 2016 | 9:00 AM - Noon
Elba Firemen's Recreation Hall, 7143 Oak Orchard Rd, Elba, NY 14058



Topics include **Soil health basics and why to start cover cropping**, *Jeff Rasaweher, crop farmer and owner of Centerseeds, Celina, Ohio*, **A Local Farmer Panel** with cover crop advice for the beginner, **The Cornell Climate Smart Farming Program**, *Darcy Telenko, Cornell Vegetable Program*, and an introduction to the **Western New York Soil Health Alliance**. *Sponsored by: Western New York Soil Health Alliance, a Farmer-to-Farmer Network.*

To pre-register for this FREE event, contact Orleans County SWCD at Dennis.Kirby@ny.nacdnet.net or 585-589-5959, or Genesee County SWCD at Molly.Stetz@ny.nacdnet.net or 585-343-2362

Fresh Market Vegetable Field Day: Early Disease Detection & Weed Management Options

July 6, 2016 | 9:00 AM - 3:30 PM

CVP Fresh Market Demo Site at Partridge's on the Farm Market, 4924 Ellicott St Rd (Rt 63), Batavia, NY 14020



View demonstration plots to exemplify early disease detection and weed management options for fresh market vegetable production. In addition to the demonstration plots, sessions will be offered throughout the day on weed and disease identification and biology, soil health and resistance management by CVP team members and county agriculture Educators. Regional equipment dealers and industry representatives will be invited to display equipment and new technology. CCA and DEC credits will be available.



- Tomato varieties and organic spray programs for disease management
- Cucumber varieties and organic spray programs for downy mildew
- Specialty crop vegetable varieties for viewing
- Pesticide tank mixing 101
- Weed identification and biology
- Stale seedbed techniques for weed management in pumpkin, winter squash, and root crops
- Improving soil health through the use of cover crops
- Herbicide options in sweet corn

\$20 per person before June 30th includes lunch and information packet / \$30 per person at the door (lunch cannot be guaranteed unless you have pre-registered). Please contact us for special food accommodations. Pay online at https://cvp.cce.cornell.edu/event_preregistration.php?event=564 or contact Eva McKendry at 716-652-5400.

High Tunnel Pest and Disease Management: Organic Control Strategies

August 2, 2016 | 4:30 PM - 7:30 PM

Fellenz Family Farm, 1919 Lester Rd, Phelps, NY 14532

How can you manage your tunnel to limit losses due to pests and disease? This field day will start with identification of common high tunnel pests and diseases and effective organic control strategies, including spraying. Andy Fellenz, with support from NE-SARE, has developed and will demonstrate a boom-style high tunnel sprayer, as well as discuss the proper use of backpack and other relatively low pressure, low flow single-tip sprayers. Variety selection, rotation, cultural practices and spraying all have a place in the overall farm strategy. Fellenz Family Farm received its certification for growing organic vegetables and fruits in Phelps, NY in 2005, and has been growing in high tunnels for more than 10 years.

Cost: FREE! Email Angela Parr at aep63@cornell.edu to register or call 585-394-3977 x426. *This event is sponsored by NE-SARE through a Farmer Grant. The Cornell Vegetable Program is cooperating with Fellenz Family Farm to bring you this event.*

Vegetable Walk and Cut Flowers

August 15, 2016 | 5:30 PM

Werner's Farm, 8427 West Henrietta Rd, Rush, NY 14543

A discussion and field walk for cut flower growers. Topics will be production considerations, and disease and insect management. The vegetable field walk will be conducted by Cornell Vegetable Program Specialists Judson Reid and Robert Hadad and will cover identification and management of insects, diseases, and weeds. FREE! Contact Robert Hadad for more information at 585-739-4065.

Weather Charts

John Gibbons, CCE Cornell Vegetable Program

Weekly Weather Summary: 5/31 – 6/06/16

Location	Rainfall (inch)		Temp (°F)	
	Week	Month	Max	Min
Albion	0.24	0.24	82	47
Appleton, North	0.75	0.75	79	50
Baldwinsville	1.26	1.26	83	49
Buffalo*	0.24	0.24	83	53
Butler	0.76	0.76	84	49
Ceres	1.45	1.45	86	45
Elba	0.53	0.53	76	46
Farmington	0.31	0.31	82	45
Gainesville	0.54	0.54	83	46
Geneva	0.25	0.25	81	49
Lodi	0.35	0.35	87	49
Niagara Falls*	0.52	0.52	82	53
Penn Yan*	0.27	0.27	81	50
Rochester*	0.62	0.62	81	53
Romulus	0.28	0.28	80	52
Silver Creek	1.96	1.96	78	54
Sodus	0.70	0.70	79	46
Versailles	0.37	0.37	83	48
Williamson	0.98	0.98	78	46

Accumulated Growing Degree Days (AGDD)

Base 50°F: April 1 – June 06, 2016

Location	2016	2015	2014
Albion	413	495	384
Appleton, North	322	375	288
Baldwinsville	434	519	472
Buffalo	453	511	385
Butler	427	540	455
Ceres	323	428	362
Elba	291	370	300
Farmington	389	489	423
Gainesville	296	389	313
Geneva	413	496	441
Lodi	458	577	500
Niagara Falls	469	457	353
Penn Yan	426	541	464
Rochester	438	554	462
Romulus	395	505	445
Silver Creek	375	441	361
Sodus	351	423	405
Versailles	392	467	386
Williamson	353	437	386

* Airport stations

** Data from other station/airport sites is at: <http://nwa.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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