

Are your pea plants yellowing and dying? Discoloration and shriveling of stems and roots

are the symptoms of root rot. Learn how to check for root rot. PAGE 1

to rotate different Modes of

The key to

slowing the

development of

Colorado Potato

Beetle resistance

to insecticides is

Action. PAGE 5

When scouting for BLB in onions look for tiny yellow lesions surrounded by silvery halos on

the outer 3 leaves. Read more about scouting for BLB.

PAGE 6



The wet month of June has been very favorable for club root in cole crops, causing club-like spindle-

shaped roots. Learn management strategies for club root.

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Why Are My Pea Plants Dying?

Julie Kikkert, CCE Cornell Vegetable Program

Are your pea plants yellow and wilting or are they just plain dead? You can probably blame too much rain this month. Peas are one of the least tolerant crops to waterlogged soils, with changes in their cellular structure being observed within hours of sitting in water. These plants are "gasping" for oxygen which is important in cell division, growth, and the uptake and transport of nutrients.

If the peas didn't die outright from waterlogging, the damage can inhibit future root growth, subjecting the plants to injury during hot, dry periods because the root systems are not developed enough to support the top growth. Furthermore, saturated soils and damaged roots favor the development of diseases.

Several pathogens alone or in combination can cause root rot symptoms in peas. Fusarium cortical rot (Fusarium solani f. sp. pisi) has been the most prevalent disease of peas in Western NY in recent years, followed by Fusarium wilt and near wilt (F. oxysporum f. sp. pisi) (G. Abawi, Cornell). These pathogens only infect peas and you



Peas with severe root rot Photo: Julie Kikkert, Cornell Vegetable Program



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: CCE Cornell Vegetable Program 480 North Main Street, Canandaigua, NY 14224 Email: cce-cvp@cornell.edu

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The next issue of VegEdge will be produced



Attendees of Tuesday's Fresh Market Vegetable Weed Management Field Days, at the Cornell Vegetable Program's demonstration site in Batavia, learned how to identify different weeds and about the pros and cons of many ways to control them. Thank you to all that supported this event! Photo: Angela Parr, CCE Cornell Vegetable Program

will only see these diseases if peas have been grown in a field before. These fungi can survive for a very long time in soil. Root and stem rots can also be caused by *Rhizoctonia* and *Pythium* spp., which can affect a number of other vegetable crops as well. If that isn't enough, pea roots can also be infected with *Thielaviopsis* and *Aphanomyces* spp.

<u>To check for root rot</u>, look at plants whose oldest leaves are yellowing and dig them up. Discoloration and shriveling of stems and roots are the symptoms. Root symptoms are variable but often diagnostic of pathogen(s) involved. For instance if you scrape away at the lower stems and roots, and find a brick red color, it is an indication of Near Wilt. Healthy root systems should be plump, have a good color (not dark brown/black), and contain numerous small fibrous roots.

Best Practices to Keep Pea Roots Healthy

- Use high quality, pathogen-free, and fungicide treated seed.
- · Well-drained soils, free of compaction
- Plant peas only once every four years in a field
- Avoid fields with a history of severe root rot
- Rotations with grain crops will improve soil structure and reduce disease severity.
- Use tolerant varieties.

Considerations for Fungicides to Manage Late Blight in Potatoes

Amanda Gevens, UW-Madison, UWExtension Veg Crop Update, 6/13/15 (edited by C. MacNeil, CVP)

Under high <u>late blight (LB)</u> pressure, fungicide programs with Revus Top, Forum, Curzate 60DF, Ranman, Tanos, Gavel, Previcur Flex, Zing, or Omega should be used. Mefenoxam containing fungicides such as Ridomil Gold SL can also be highly effective in controlling LB caused by the pathogen strain US-23, identified in most WI cases in 2014. Note that Ridomil will not work to control the US-8 strain, and it is only moderately effective against US-24. *(In WNY in 2014 US-23 was predominant, but there were also a few sites with US-24, and several sites with the new, unknown "hybrid" strain. ed. C. MacNeil*)

Brief comments on each of the fungicides are listed below: <u>Revus Top</u> contains mandipropamid (Group 40) for LB and difenoconazole (Group 3) for <u>early blight (EB)</u>; excellent protectant on (LB) leaf blight; translaminar and contact activity.

<u>Forum</u> contains dimethomorph (Group 40) for LB; good protectant on leaf blight; good antisporulant; translaminar activity.

<u>Curzate 60DF</u> contains cymoxanil (Group 27) for LB; locally systemic; excellent curative activity (except in hot weather – ed. CMac-Neil); good protectant on leaf blight.

<u>Ranman</u> contains cyazofamid (Group 21) for LB; excellent protectant for leaf and tuber blight; contact activity.

<u>Tanos</u> contains cymoxanil (Group 27) for LB and famoxadone (Group 11) for EB; excellent curative activity; good protectant on leaf blight; translaminar and contact activity.

<u>Gavel</u> (zoxamide, Group 22+mancozeb, Group M3) is best used as a protectant and has been reported to reduce tuber blight; excellent protectant on leaf blight; contact activity.

<u>Zing</u>! (zoxamide, Group 22+chlorothalonil, Group M5) is best used as a protectant and is excellent in protecting against leaf blight; contact activity.

<u>Previcur Flex</u> contains propamocarb hydrochloride (Group 28); good protectant on leaf, new growth, and stem blight; good curative and antisporulant activity; systemic and contact activity.

<u>Omega</u> is a broad spectrum fungicide (fluazinam, Group 29) and especially effective at controlling the tuber phase of LB (with added benefit of white mold control); excellent protectant on leaf blight; good protection against tuber blight; contact activity. <u>Ridomil Gold SL</u> (mefenoxam, Group 4+chlorothalonil, Group M5); excellent systemic movement in plant; curative activity; excellent control of stem, leaf, and tuber LB; mefenoxam only effective against a sensitive LB strain such as US-23, US-22.

In Wisconsin, the Qol inhibitors <u>Headline</u> (pyraclostrobin, Group 11), <u>Quadris</u> (azoxystrobin, 11), and <u>Reason</u> (fenamidone, 11) have offered good LB control at high label rates under moderate LB pressure. Use in a manner to reduce the development of resistance - in tank-mixes with protectant fungicides such as mancozeb or chlorothalonil-based products, and not applied consecutively.

<u>Phosphorous acid</u> formulations such as Crop-phite, Fosphite, Phostrol, Prophyt, and Rampart can increase tuber protection to LB and pink rot. However, rates must be high and multiple applications must be made for significant tuber protection starting at dime-size tubers and following up with 2 more applications 14days apart. This group does not provide great foliar control of LB.

Timing and frequency of fungicide applications are critical elements in an effective disease control program. Five (or less, rotating fungicides) to seven day applications are needed to protect the crop under conditions of rapid growth and high disease pressure. If LB is detected in a field, 'hot spots' should be destroyed to limit production of inoculum. A conservative approach to reducing spread from a hot spot includes destruction of 30 rows on either side of the newest lesions at the border of the LB hotspot and 100 feet down the row (both sides) with Reglone or Gramoxone (or generics). Although harsh, trials at Michigan State University have shown that the latent period between infection and symptom development is about seven days, and although not visible, plants within this area are already infected. Fields with very few lesions across a broad acreage must be intensively managed and consideration for early vine kill and harvest should be made to reduce overall risk.



WET WEATHER

Many areas have been hit with even more rain. Cool nights will also produce dew. All this leaf wetness provides the necessary environment for stressed plants to be more susceptible to fungal and bacterial diseases. With the ground being too wet for tractors to pull sprayers, expect to see an intensification of problems over the next week. Growers need to be on top of their game for getting out and dealing with issues as soon as the ground can be traveled on. For smaller plantings, it's time to break out the back pack sprayer. Be sure it is calibrated and cleaned from past use. Keep the pressure high and work to get the protectants all over the leaf canopy for the best results.

CABBAGE & COLE CROPS

Planting continues although still behind schedule due to wet planting conditions. Bright sunny weather brings out flea beetles, while worm and thrips pressure is increasing slightly. Wet planting conditions are favorable for club root – see article, pg 7.

DRY BEANS

Planting continues to be held up by rain and wet fields. The black bean variety strip trial did get planted 6/18 in a gravelly field. It has two rows each, 1,200 ft. long, of Eclipse, Zenith, Black Velvet, Midnight, Zorro, and T-39. *Thanks to New York Bean, and Treasure Valley Seed, for providing the seed, thanks to Paul Stein Farms for planting it, and thanks to the NYS Dry Bean Industry Committee for their support!*

ONIONS

The big news of the week is that <u>Botrytis leaf blight (BLB)</u> jumped this week. At this point, all fields should be sprayed for this disease, if they have not been already. Typically, we see that once BLB jumps, it continues to increase or remain high despite diligent fungicide use for 3 to 4 weeks until the onion plant begins to bulb and the originally infected outer leaves die off; then BLB counts begin to drop. Bravo 3 pts, Bravo 1.5 pt + mancozeb product 3 lb and Bravo 1.5 pt + Scala 9 fl oz have consistently provided the most economical control of BLB in Cornell trials. *See article, pg 6,* on BLB lesion identification.

<u>Onion thrips</u> pressure remains steady from last week. All transplanted fields and some early direct seeded fields that have reached the spray threshold have had their first application of Movento already. We have some fields where a single application of Movento successfully knocked back the population below threshold and will not need to be sprayed this week. This is what we call the "momentum of Movento" – see last week's article. There are still direct seeded fields that remain below the spray threshold of 1.0 thrips per leaf and do not need to be sprayed yet. Brian Nault strongly encourages growers to make their first application of Movento when fields reach the spray threshold and not at the first find of thrips in the field, as in the long term this will reduce insecticide use and expense, and minimize the risk of running out of effective control options before the spray season is over.

Hope to see you next **Wednesday, July 1st at the Elba Muck Onion Twilight Meeting: Weed Control Extravaganza**, 5:30 - 8:30 PM at Mortellaro's red shop. We are so excited to share with you all that we've learned this spring! *See pg 8 for details*.

POTATOES

The largest potatoes are filling the rows, and some are flowering and setting tubers. Many growers are hilling. Some fields have large plants, and also small plants with rotting seed pieces. There are drowned out spots, and stunted plants in parts of many fields. Potato planting continues. In the past week <u>Colorado potato beetle (CPB)</u> adults, egg masses, recently hatched and small larvae, and some medium larvae were seen. One CPB egg mass which had been partly eaten by a predatory lady bug was seen on a potato volunteer in an onion field. *See article, pg 5* – Managing CPB to Avoid/Combat Insecticide Resistance.

PROCESSING CROPS

Somewhat improved weather this past week has allowed for herbicide applications and planting, or replanting of processing crops. Many pea fields are yellow after the excessive rainy period - *see the article, pg 1, on root rot in peas.* While much focus has been on planting and weed control, diseases are also starting to come in. **Bacterial spot was seen on snap beans** this week and samples have been collected for identification. Copper sprays are the only thing available for bacterial infections, and may help to limit spread of the disease. **Cercospora leaf spot** has also been observed at low levels in beet fields. **Tan spot of lima beans** (photo) is already present in fields planted the last week of May. The Pethybridge lab at Geneva is working to identify the pathogens responsible for this disease, and along with the Cornell Vegetable Program will be scouting fields this summer, conducting on-farm fungicide trials, and determining if there is associated yield loss.



continued on next page

continued - CROP insights

VINE CROPS

When it rains it pours.... Downy mildew has been confirmed in Kent Cty, Ontario Canada and in southeastern MI this week. All vine crop growers in the region should be monitoring their fields closely and applying protectants. When DM shows up in SE MI, the Erie and Niagara Counties are usually only days away from having the disease show up. An excellent article on DM management can be found at the Cornell Veg MD website. Effectively Managing Cucurbit Downy Mildew in the Northeast and Mid-Atlantic Regions of the US in 2013 is still a very relevant article. It can be found at: <u>http://</u> uwgethblamdenline meth cornell adu/Nuws Articles/

vegetablemdonline.ppath.cornell.edu/NewsArticles/ Cucurbit%20Downy%20Mildew%20MGT2013.pdf



Symptoms of downy mildew on cucumber begin with yellow spotting of the leaf with a water-soaked appearance on the leaf underside (close-up) and wide view (white spot is physical injury). Lesions under the leaf early in the infection are confined to the leaf tissue within the vein borders, creating the characteristic angular shape associated with the disease. *Photos: Meg McGrath, Cornell*

Early morning under high humidity gray sporulation can be seen on the undersides as well.

DM usually starts on cucumbers and cantaloupes. It can later be found on summer squash, and zucchini. During some seasons, DM can spread to winter squash and watermelons.

Another important fact sheet found on VEG MD is a listing of fungicides available for use on cucurbits including OMRI approved products for organic farmers. CUCUR-BIT FUNGICIDES (Labeled & Rates/A) as of JULY 2014. http://vegetablemdonline.ppath.cornell.edu/

<u>NewsArticles/Cuc_LabRts.pdf</u> The OMRI lists should be checked regularly to see if the products are still currently listed. If you have questions, contact your certifier for clarification.

Managing Colorado Potato Beetle to Avoid/Combat Insecticide Resistance

From an article by A. Huseth and B. Nault, Cornell – Geneva (edited by C. MacNeil, CVP)

The key to slowing the development of Colorado potato beetle (CPB) resistance to insecticides is to rotate different Modes of Action (MoA). (This is not rotating insecticides. Many insecticides have the same MoA.) Only one MoA should be used against a particular CPB generation, and a different MoA should always be used against the following generation. Repeat applications of a MoA may be needed against a single larval generation. The plan below is focused on controlling CPB larvae only, because adults can be so hard to kill. A three year MoA rotation, with each MoA only used once every three years, will provide the most protection. Foliar neonicotinoid insecticides are reserved for use on mixed size larvae later in the season. (Be sure not to use a foliar neonicotinoid insecticide like Endigo ZC or Actara, below, later in the season if a seed or in-furrow treatment for CPB was used at planting!!) Prepack insecticides with pyrethroids should only be used in situations when both CPB larvae and PLH reach threshold.

Here are two CPB insecticide MoA rotations suggested by Huseth and Nault:

Suggested CPB Insecticide Mode of Action Rotation (to reduce the development of resistance)

If Neonicotinoid was used in prior year with limited success:

2015		20	016	2017	
Early	Later	Early	Later	Early	Later
Coragen	Radiant	Agri-Mek	Endigo ZC	Verimark (IF)	Blackhawk

If Neonicotinoids maintain effectiveness:

20)15	2016 2017			7
Early	Later	Early	Later	Early	Later
Agri-Mek	Endigo ZC	Rimon*	Coragen	Radiant	Actara

*Rimon for CPB - There is a Special Local Needs label for use of Rimon to control CPB in NYS. You must have a copy of the SLN label when using Rimon,

http://132.236.168.99/ppds/535376.pdf Effective if timed for 1st and 2nd stage larvae (small to medium). Use 12 oz/A rate (but no less than 9 oz/A), followed by a second application after 7 days. Maximum 3 applications and 24 oz/A per year, the pollinator advisory, a 300' buffer strip to water, for ground application only, and avoid drift to grapes.

All insecticides included have their greatest activity on small larvae. With Agri-Mek target small to medium larvae. Many foliar insecticides require specific spray adjuvants. Several insecticides lack activity on key potato pests (e.g., PLH and aphids). Scouting and use of thresholds for all pests remains critical when deciding whether to spray. For more info see the 2015 Cornell Pest Management Guidelines and the product label.

Late Blight Risk

Carol MacNeil and John Gibbons, CCE Cornell Vegetable Program

Last week most all stations exceeded the 18 severity value (SV) threshold for the first fungicide spray, or had done so earlier. The report this week now indicates for all weather stations the favorability for late blight (LB) development, and the need to spray, in Simcast blight units (BU) accumulated in the past week. (If the weather station closest to you has not yet reached 30 blight units (BU) the forecast indicates that it will in the next 2-3 days, or that fungicide (loss) units (FU) have reached the threshold of -15, which can independently trigger a spray.) Note that this 30 BU threshold is for fully susceptible varieties, and assumes the use of fungicides such as chlorothalonil, mancozeb, Curzate, Reason, Catamaran, Forum, Evito, Ariston, Tanos, Quadris Opti. The better LB fungicides, Ranman, Revus Top, Previcur Flex, and Presidio will provide a couple days longer residual under this year's more favorable weather. More tolerant/resistant varieties can provide additional days of protection. See the June 17 VegEdge for info and links to varietal susceptibility. Contact Carol MacNeil at crm6@cornell.edu or 585-313-8796) if you have questions, or for assistance setting up your personal farm account and using the full LB Decision Support System (DSS).

Re-check your <u>potato cull piles</u> NOW to be sure they're covered with at least 2 ft. of soil, or otherwise destroyed! In eastern Allegany/western Steuben Counties be sure to carefully scout emerging potato sprouts and potato/tomato stems at the soil line for possible symptoms of LB from overwintered oospores from the new strain which showed up last year.

New Late B	light Ris	k Chart, 6	6/23/15
Location ¹	Blight	Blight	Location ¹

Location ¹	Blight Units ² 6/17- 6/23	Blight Units ² 6/24- 6/26	Location ¹	Blight Units ² 6/17- 6/23	Blight Units ² 6/24- 6/26
Appleton	28	6	Kendall	37	5
Arkport	56	13	Lodi	19	12
Baldwinsville	2	16	Lock/Niag F.	39	16
Bergen	25	10	Lyndonville	43	16
Buffalo	39	10	Medina	30	10
Butler	30	10	Penn Yan	43	11
Ceres	47	18	Rochester	33	10
Elba	53	11	Sodus	19	5
Farmington	25	10	Versailles	43	11
Gainesville	61	13	Wellsville	53	13
Geneva	27	5	Williamson	28	15

1 Past week Simcast Blight Units (BU)

2 Three day predicted Simcast Blight Units (BUs)

Scouting Tips for Botrytis Leaf Blight in Onions

Christy Hoepting, CCE Cornell Vegetable 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 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. Count the number of lesions on 25 to 35 plants per field. Identifying BLB lesions can be very tricky to the untrained eye.



Figure 1. Classic or "Model" BLB lesions with tiny yellow necrotic spots surrounded by silvery halos. *Photo: Christy Hoepting, CVP*

BLB Lesions:

These are the tiny pin-prick to pin-head sized yellow necrotic spots surrounded by silvery halos (Fig. 1). The silvery halo is often blotchy in shape. Sometimes the necrotic spot is barely visible, which can make identification of such versions of these lesions tricky to identify (Fig. 2). When BLB lesions get old, the center becomes sunken and often splits, it is still yellowish in color and remnants of the silvery halo can usually still be seen (Fig. 2). BLB lesions are most abundant on the outer leaves, usually on the underside of the leaf, and are distributed anywhere along the leaf. All of these lesions are counted when scouting to use for spray thresholds for BLB.



Figure 2. Ten BLB lesions on an onion leaf. Lesion No. 1,4,5,6 & 7 have tiny yellow necrotic centers. In lesion No. 2 & 10, the necrotic center is not visible. Lesion No. 8 does not have a distinct yellow center and blends into No. 7. Lesion No. 9 is an old lesion with a sunken center and silvery halo still visible. *Photo: Christy Hoepting, CVP*

Wet Spring Favorable for Club Root in Cole Crops – New Fungicide Available

Christy Hoepting, CCE Cornell Vegetable Program

The wet month of June has been very favorable for club root, which is caused by a water-loving fungus, the spores of which can persist in the soil for up to 18 years. It is favored by wet, acidic soils (pH < 7.0). The optimum soil temperature is $67-73^{\circ}F$ with a minimum of $61^{\circ}F$. It is introduced by drainage water, soil that clings to farm equipment, shoes, infected transplants, and contaminated manure and irrigation water. Repeated crucifer production leads to a rapid build-up of the club root fungus in the soil. Only crucifer crops are susceptible to club root. On ground that is at risk for club root (i.e. pH less than 6.5 with a history of crucifer production and club root infections), applying fungicides prior to or at planting may provide some relief.

FUNGICIDE OPTIONS FOR MANAGING CLUB ROOT:

Generally, fungicides do not kill the overwintering spores that last for more than 10 years, but they do reduce the number of clubs so that the crop is nearly normal size.

NEW in **2015** – **Omega 500F** (a.i. fluazinam) may be applied as a transplant drench immediately after transplanting with a single application of 6.45 fl oz/100 gal using 3.4 fluid ounces of this transplant solution per plant. Alternatively, for soil with low infiltration rates, apply 2.6 pints per acre in a minimum bandwidth of 9 inches along the planting row and incorporate to a soil depth of 6 to 8 inches with a precision incorporator in the same operation. Apply in a water volume of at least 50 gallons per acre. Transplant the seedlings into the treated band. If planting into a bed, a broadcast application can be made prior to forming the bed. Note: *This product may delay the start of harvest by up to 8 days, cause some plant stunting, and shorten the harvest period, without adverse effects on the final yield.*

Blocker 4F, (a.i. pentachloronitrobenzene = PCNB) may be applied in transplant water at planting at 3 pt/100 gal or 5.62 gal per acre with 0.5 to 0.75 pt of solution per plant. It may also be applied as a pre-plant band application in 25 gal water per acre as a 12-inch band centered on the row or as a broadcast application in 30 gal water per acre, both thoroughly incorporated to a depth of 4-6 inches.

Ranman 400SC (a.i. cyazofamid) may be applied as a transplant soil drench at 12.9 to 25.75 fl oz/100 gal with 1.7 fl oz of solution per plant, or as a banded soil application at 20 fl oz per acre. Good incorporation and maintaining moist soil are keys to maximizing control of club root with Ranman, because Ranman becomes inactive when soil dries. Irrigating 1 inch of water within 2-4 hours of applying Ranman can improve control even more.

In University research studies conducted in Ohio and Ontario, Canada, fungicides, Ranman 400SC (a.i. cyazofamid) and Omega 500F (a.i. fluazinam) provided significant reduction in severity of clubroot compared to the untreated. Unfortunately, PCNB was not included in any of these trials as an industry standard for comparison. Ranman performed slightly better than Omega and was especially effective when used at higher rates (at least 6.8 fl oz/1000 plants) with a lot of water (100 gpa). Irrigating 1 inch of water within 2-4 hours of applying Ranman improved control even more.

Club root shows up when the soil dries out once the plants are bigger: Club root causes club-like spindle-shaped swellings on individual roots or on the whole root system (Fig. 1). These distorted roots are unable to absorb nutrients and water, and are often invaded by secondary organisms (like maggots) causing death of the plant. Above-ground symptoms include stunted and wilted plants (which may recover at night), which can easily be confused with heat and draught stress, water-logged soil conditions or maggot feeding. If you see wilting plants, pull a couple of them up to determine whether they are infected with club root, maggot, or are simply water-logged.



Figure 1. Club-like spindle-shaped roots of a broccoli plant infected with club root. *Photo: Christy Hoepting, Cornell Vegetable Program*

OTHER MANAGEMENT STRATEGIES FOR CLUB ROOT:

1) Rotate out of crucifers for 5-7 years. Cruciferous weeds such as mustards and Shepherd's purse also serve as hosts to club root, so it is important to control these weeds within the rotational crops.

2) Avoid the movement of soil and plant material from infected fields to non-infected areas – Do not plant club root-infested transplants into a clean field.

3) Maintain a soil pH of 7.2 to 7.5 by *liming.* This high pH does not kill the fungus, it just reduces its ability to cause infections. Club root will still occur in heavily infested soils despite an elevated pH. For fields that have Cole crops in their rotation, pH should be maintained at 6.8. In the year that you are planting Cole crops, apply 1500 lbs/acre of hydrated lime to get the pH between 7.2 and 7.5. Hydrated lime is more expensive than ground limestone, but it can change the pH easily with an early spring application. It should be applied at least 6 weeks prior to planting. Balance nutrients in high pH soil: When pH is

greater than 7.2, boron, manganese, zinc, copper and phosphorous can become tied up and deficient to the Cole crops. The most important nutrient to Cole crops, especially cauliflower, is boron. Boron can be applied pre -plant incorporated with NPK at 1-2 lbs actual boron per acre (= 10 lbs Borax). A good amount of phosphorous should also be applied in the transplant solution.



Figure 2. Above-ground symptoms of club root, wilted plants. Photo: OMAFRA

WNY Sweet Corn Trap Network Report, 6/23/15

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

Eighteen sites reporting this week with European corn borer (ECB)-E caught at 5 sites and ECB-Z caught at 9 sites. The first generation flight of ECB-E has peaked at all sites except Batavia, according to degree day calculations. The second generation of ECB- E will begin around 1400 degree days. Five sites are reporting 1 corn earworm (CEW) per trap, this number is below threshold and does not require a spray. Fall armyworm was caught at 1 site in Cortland County and the first western bean cutworm (WBC) of the season was caught this week in Kennedy (Chautauqua County).

Feeding damage caused by ECB has been observed in early tasseling corn, damage caused by fall army worm will look different to that of ECB. Please see the photos below to distinguish the two types of feeding damage. Scout whorl and emerging tassel stage corn for signs of armyworm and ECB feeding. The treatment threshold at the tassel emergence stage is 15% plants with damage or live larvae. O

WNY	Pheromone	Trap	Catches	s: June 2	23, 2015	;

Location	ECB-E	ECB-7	CEW		WRC	DD to
Location	ECD-E	EUD-Z	CEW	FAW	WBC	Date
Baldwinsville (Onondaga)	1	0	0	0	0	796
Batavia (Genesee)	0	1	0	0	0	601
Belfast	NA	NA	NA	NA	NA	745
Bellona (Yates)	NA	NA	NA	NA	NA	874
Eden (Erie)	3	14	1	0	0	749
Farmington (Ontario)	0	0	0	0	0	758
Hamlin (Monroe)	1	3	1	0	0	732
LeRoy (Genesee)	2	4	0	0	0	713
Lockport (Niagara)	0	1	0	0	0	710
Pavilion	NA	NA	NA	NA	NA	713
Penn Yan (Yates)	0	0	0	0	0	837
Seneca Castle (Ontario)	0	2	0	0	0	772
Spencerport (Monroe)	0	6	1	0	0	851
Waterport (Orleans)	0	2	1	0	0	732
Williamson (Wayne)	0	0	0	0	0	694
ECB - European Corn Borer	WBC	- Wester	n Bean Cu	utworm		
CEW - Corn Earworm	NA -	not ava	ilable			
FAW - Fall Armyworm	DD -	Degree	Day (mod	lified base	e 50F) acci	umulation

DD -Degree Day (modified base 50F) accumulation

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

2015 Elba Onion Weed Twilight Meeting

July 1, 2015 | 5:30 PM - 8:25 PM

Mortellaro & Sons, Mortellaro's Red Shop in the Elba Muck Land, 6550 Transit Rd, Elba, NY 14058

1.75 DEC credits available in categories 1A, 10 & 23. Featuring exciting new weed control options and novel approaches to weed control:

- POST-emergent control of broadleaf weed escapes including ragweed and yellow nutsedge
- PRE-emergent weed management in direct seeded onions
- Tank mixes, programs, crop tolerance, pipeline products
- Comprehensive management of perennial sowthistle
- · 2015 on-farm trial results and demonstrations

Contact Christy Hoepting at cah59@cornell.edu or 585-721-6953 for details.

Crop Quality Control on Small-Scale Organic Farms & High Tunnels

July 8, 2015 | 3:00 - 6:00 PM Falkimmer Farms Organic Growers, 8595 E Eden Rd, Eden, NY 14057



Tour several acres of cultivated fields to learn how the Falkowskis produce quality organic produce, and market it through direct-toconsumer opportunities. Cornell Vegetable Program Specialist Judson Reid will lead a demonstration and discussion of tomato pruning and other high tunnel production practices that improve quality, especially in organic systems. There will be time to network and ask questions, and bring a dish to pass for the potluck at the end of the event! To pre-register and pay, shop online or call Stephanie at 585-271-1979 ext. 509. The fees are \$15/person or \$25 for two or more people/farm. Pre-registration is encouraged and closes at 4pm on 7/6/15. This event is produced by NOFA-NY, in partnership with Cornell Cooperative Extension, and with support from USDA-Risk Management Agency.

Weather Charts

John Gibbons, CCE Cornell Vegetable Program

Weekly Weather Summary: 6/02 – 6/22/15

	Rainfa	ll (inch)	Tem	p (°F)
Location	Week Month		Мах	Min
		June		
Albion	0.12	2.65	84	47
Appleton, North	0.15	2.84	79	43
Baldwinsville	1.73	5.68	81	49
Buffalo*	0.41	2.80	80	54
Butler	NA	NA	83	48
Ceres	0.93	4.15	82	54
Elba	0.18	3.81	79	45
Farmington	0.71	5.52	82	46
Gainesville	0.41	2.62	77	48
Geneva	0.28	4.76	84	47
Lockport	NA	NA	80	47
Lodi	1.00	3.71	84	48
Penn Yan*	0.60	4.56	81	49
Rochester*	0.34	5.02	83	51
Romulus	NA	NA	81	50
Silver Creek	0.57	2.49	79	55
Sodus	0.38	5.44	82	48
Versailles	NA	NA	84	54
Williamson	0.28	3.35	81	45

Accumulated Growing Degree Days (AGDD) Base 50°F: April 1 – June 22, 2015

Location	2015	2014	2013
Albion	775	648	672
Appleton, North	598	497	542
Baldwinsville	796	732	681
Buffalo	795	663	759
Butler	817	712	687
Ceres	701	600	572
Elba	601	515	614
Farmington	758	674	626
Gainesville	629	520	NA
Geneva	772	691	702
Lockport	710	599	NA
Lodi	877	770	781
Penn Yan	837	732	727
Rochester	851	740	773
Romulus	787	695	NA
Silver Creek	712	610	701
Sodus	683	634	NA
Versailles	749	639	719
Williamson	694	616	636

* Airport stations
** Data from other station/airport sites is at: <u>http://newa.cornell.edu/</u> 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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