

Cornell University  
Cooperative Extension  
Cornell Vegetable Program

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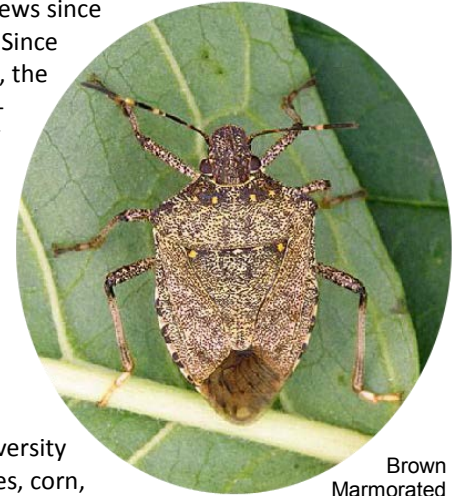
Volume 7, Issue 18

Veg Edge Weekly

## Brown Marmorated Stink Bug: What's the Concern for Western NY Vegetable Growers?

by Julie Kikkert

An invasive insect pest from Asia has been in the news since wreaking havoc in the Mid-Atlantic States in 2010. Since its official documentation in Allentown, PA in 2001, the Brown Marmorated Stink Bug (BMSB) has been detected in 33 other states, including NY. Eastern, NY seems to be the leading edge for invasion into the Empire State; however there have been positive identifications in several WNY counties. A map of confirmed sightings can be found on the ENY BMSB Project website <http://hudsonvf.cce.cornell.edu/bmsb1.html>). There has been no reported crop damage in NY to date.



Brown Marmorated Stink Bug adult  
Photo courtesy of G. Dively

### Damage

BMSB has a large host range. Dr. Galen Dively, University of Maryland, reported high infestations in fruit trees, corn, soybean and certain vegetable crops in Western and Central MD during 2010. ***There were significant losses to peaches and apples, and reports of unmarketable tomato, pepper and sweet corn crops (see photos on next page). In the vegetable arena, BMSB is also known to infest snap and lima bean, eggplant, cucumber and pepper.*** BMSB is also a nuisance to residential and commercial buildings as the bugs congregate and try to get inside structures to overwinter.

### What's Being Done?

Entomologists throughout the U.S. are working together to understand the biology and control of BMSB. The Northeastern IPM Center has formed a BMSB working group with funding from the National Institute of Food and Agriculture (NIFA) <http://www.northeastipm.org/working-groups/bmsb-working-group/bmsb-information/>

*Continued on next page*

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Work includes:

- Development of monitoring methods
- Evaluation of insecticide efficacy
- Assessment of feeding injury
- Evaluation of differences in cultivar susceptibility
- Determining the efficacy of four parasitic wasps as a biological control

Cornell Vegetable Program team members are keeping a close watch on the spread of this pest. We will keep you up to date should an immediate threat arise. The research being conducted throughout the U.S. will help us be better prepared to tackle any build-up of BMSB populations in our region.

**For More Information**

Pest Identification: <http://njaes.rutgers.edu/stinkbug/identify.asp>

Pest Alert: <http://www.northeastipm.org/neipm/assets/File/BMSB%20Resources/BMSB-Pest-Alert.pdf>

Pest Biology: <http://extension.psu.edu/ipm/biosecurity/brown-marmorated-stink-bug> ■

BMSB on sweet corn and the damage caused by them.  
Photos courtesy of G. Dively



BMSB damage on tomatoes.  
Photos courtesy of G. Dively



## Dates...

**August 2 - Annual Elba Muck Onion Twilight Meeting**, 5:30-8:00 pm, Mortellaro's Red Shop (Marky's), Elba Muck land. 1.5 DEC recertification credits available. *Featuring:* An Integrated Approach to Managing Bacterial Diseases of Onions, Latest Developments in Onion Thrips Management, and New Seed Treatments for Onion Smut and Onion Maggot Control. *Also:* Contradictory Soil test Results from Different Laboratories, and New Cover Crop Options to Improve Drainage. *Directions:* Relative to the intersection of Transit and Spoilbank, the red shop is at the end of the second lane on the east, south of Spoilbank. Look for the signs. For more info, contact Christy Hoepting 585-721-6953; [cah59@cornell.edu](mailto:cah59@cornell.edu)

**August 4 - Innovations in Organic Research** 4-7 pm, Thompson Vegetable Research Farm, 133 Fall Creek Rd, Freeville.. See organic variety trials - late blight, downy mildew, cucumber beetle resistance; cover crops, including reduced tillage; organic potato management. Sponsored by NOFA-NY and Cornell. Contact Betsy at 607-423-8366 or [bai1@cornell.edu](mailto:bai1@cornell.edu).

**August 9 - Improving Your Crops From the Soil Up**, 4-7pm, Mud Creek Farm, McMahan Rd, Victor 14564, \$15. Mud Creek Farm Tour (Erin Bullock); organic management against garlic bloat nematode, soil-borne pests (Crystal Stewart, CCE); management for soil physical health, reduced compaction, healthy soil microbes and productive crops. Potluck dinner. To register, visit <http://www.nofany.org/events/field-days>, or call (585)271-1979 ext 512.

**August 9-11 - Empire Farm Days**, Rodman Lott & Sons Farm, Seneca Falls. For more info: 877-697-7837, [mwickham@empirefarmdays.com](mailto:mwickham@empirefarmdays.com)

**August 10 - Putting a Food Safety Plan into Action on a Diverse Organic Farm**, Time, TBA. Canticle Farms, 3835 South Nine Mile Rd, Allegany 14706. Join David Schummer for a look at Canticle Farm's transition to GAPs compliance. See Canticle Farm's new washing and packing facility and see how the farm's food safety plan has been implemented on the farm. To register, visit the NOFA-NY Shopping page or call (585)271-1979 ext 512.

**August 12-14 - NOFA Summer Conference** UMass Amherst. 225 workshops on organic farming, gardening, land care, draft animals, homesteading, sustainability, nutrition, food politics and more. Go to: <http://www.nofasummerconference.org/beginningfarmer.php>

**August 31 - Potato Varieties, Insect & Disease Pest Mgmt, and Water Management Meeting**, 5:30-8:30 pm, Marion. More details later.



## Cover Crop Options in a Dry Year

Thomas Björkman, Cornell

In many areas, conditions have been too dry for success with cover crop seeding. For cover crops to work well, they need to establish faster than the weeds and produce substantial biomass before they are incorporated. The go-to cover crops for mid-summer, buckwheat and sorghum-sudangrass, can normally be sown through the end of July. This year it is so dry in many places that they will establish too slowly or too unevenly to do their jobs.

This situation presents a dilemma: do you wait for rain, or change the plan? If it is too dry now to establish buck-

wheat or sorghum-sudangrass, don't make the mistake of waiting to plant the seed when it is too late. By early August, there is not enough warm weather left for these two to do a good job. Instead, consider using the cover crops of August.

By mid-August rainfall often catches up with evaporation and planting conditions can be excellent. Kill weeds in open fields or those where early crops have been harvested to keep them from going to seed. In August, prepare for planting by harrowing to kill weeds and to prepare a seedbed.

Some prime choices in August include annual ryegrass, for a fast sod, ahead of next year's mid-season crops; all the crucifers—radish, rapeseed, turnip, and mustard—for scavenging nitrogen and variable amounts of soilborne disease suppression, and hairy vetch with a small grain for nitrogen fixation and winter cover. Note that some of the crucifers can overwinter and will produce seed in the spring. Also, they should be used cautiously by cabbage, etc. crop growers, if they're used at all. Detailed information for these cover crops in New York vegetable systems are at [covercrop.net](http://covercrop.net). ■

## Potato Seed Performance & Physiological Age

*C. MacNeil, CVP:* Previously I mentioned some potato fields with poor stands and small, weak sprouts. I've seen a couple more cases in the past week, and heard of gardeners who planted certified seed who have the same problem. Some seed had decayed, but upon digging I discovered that instead of producing sprouts some of the seed was producing small tubers. This is a key indicator of stressed, physiologically old, seed. Seed ages when held too warm anytime, from harvest through the weeks before planting. You can check for it by holding a representative sample of seed at room temperature when you receive it to see if strong sprouts develop. ■



Physiologically old seed producing tubers instead of sprouts.

## Improving Stands of Genesee Potatoes

*C. MacNeil, CVP:* The Cornell variety Genesee has the performance and market characteristics that make it very useful for growers to produce, however there has been poor or erratic stand establishment. Seed may decay in the ground. This was true again this year. There have been other varieties with this problem and if they're sufficiently important to the market growers have taken extra care with the seed to ensure a good stand. Don Halseth,

Cornell, will be experimenting with Genesee seed handling procedures next spring.

One grower, Kevin Datthyn, Sodus, has had much better luck getting a good stand of Genesee. Kevin pre-warms and then pre-cuts the seed a week before the intended planting date to suberize/heal the cut surfaces. He fills boxes no more than two-thirds full and stacks the boxes no more than 4 high inside his storage. He staggers the stacks of boxes

so there's space between each stack on all sides and has a fan blowing on every 6 – 8 stacks of boxes. Finally, Kevin plants into warm soil if at all possible. He's generally had good stands. This year Kevin got some Genesee seed late, cut it cold, and planted it the same day, and the stand was poor, so he's convinced of the need for the special seed handling. ■

# CROPS Tidbits & Insights

## DRY BEANS

Some beans planted the last week of June are pushing their second trifoliolate. In earlier bean fields there are flower buds, open flowers, pin pods, and even 4" pods. It remains to be seen whether the pin pods will stick with the soil as dry as it is. In last Thursday's heat, sun and wind beans had their leaves folded to limit the surface area from which moisture could be lost. Marginal leaf burn was showing in some fields this week, or yellowing cotyledons. The crop desperately needs rain, in general, though some areas have had significant rains in the last week.

Scout for potato leafhopper (PLH) adults and nymphs as beans enter flowering. The Cruiser seed treatment loses effectiveness at this time. If no Cruiser was used scout your beans at least every week. The optimum temperature for PLH development is 80-90°F. Some organic fields are showing significant hopperburn from the toxin the insect injects into the leaf when feeding. Leaf tips and margins first turn yellow or bronze, curl upward and then begin to die. PLHs are capable of reducing yield very significantly by stunting the crop.

## ONIONS

Some areas soaked up some much needed rain, while other areas, like Elba, didn't get much rain at all and conditions remain dry. In general, leaf disease pressure from Botrytis leaf blight and Purple Blotch is low, downy mildew is non-existent, early signs of bacterial diseases and Iris yellow spot virus are very hard to find (compared to other years), and onion thrips are well under control. So far, it promises to be a high quality crop! Hopefully, August and September weather won't disappoint! **See you at the Annual Elba Muck Onion Twilight Meeting next Tuesday, August 2<sup>nd</sup> – see Dates (page 2).**

Growers have experienced great success in controlling onion thrips (OT) by using two applications of Movento 7-10 days apart. The Cornell spray sequence for onion thrips is: 1) 2 sprays of Movento 7-10 days apart, 2) 2 sprays of Agri-Mek 7 days apart, 3) 2 sprays of Lannate 7 days apart; and 4) 2 sprays of Radiant at 3 OT per leaf. If you have completed Movento in your sequence, and you have less than 4 weeks until harvest, you need to skip Agri-Mek, because it has a 30 day pre-harvest interval. In this case, we recommend finishing the season with Radiant, because it is better than Lannate and can handle high thrips pressure late in the season. Radiant has a maximum of 30 fl oz per season, so, theoretically, if after two sprays of Radiant more thrips control is needed, you could rotate to a single spray of Lannate and then finish with one more Radiant spray, if need be. For detailed OT recommendations, see June 22 issue.

**Note that there are two formulations of Agri-Mek;** the recommended rates for Agri-Mek 0.15EC is 14 fl oz per acre, and the for Agri-Mek SC it is 3.2 fl oz per acre. **Only the EC formulation has a Section 18 for OT control in onions.** It is available at <http://132.236.168.120/ppds/525486.pdf>.

## POTATOES

Marginal leaf burn has been observed on potatoes. There's very clear necrosis on the leaf edges and very healthy green leaf tissue beyond it. This is likely due to the lack of rain/soil moisture, the hot, sunny, windy weather, and/or cultivation/hilling a little too close/deep, causing root pruning. In most years you wouldn't see much of this but with the dry soils and heat it's become more common. (Contrast this symptom with hopperburn.)

In a number of fields adult potato leafhoppers (PLH), but no nymphs, have been seen, indicating that the at-planting insecticide is still working. The adult PLH populations are pretty high but generally no hopperburn has been seen in conventional fields. PLHs inject a toxin into the foliage while feeding causing this symptom. Leaf tips and margins first turn yellow or bronze, curl upward and then begin to die. As feeding continues the symptoms cover more of the leaf. Symptoms are worse in dry weather. PLHs are capable of reducing yield very significantly by stunting the crop, and are a major problem for organic growers.

## SWEET CORN

In some fields, we are seeing an increase in ECB moth activity, egg masses, and young feeding larvae in the whorls. Having all stages present at one time may be due to weather where eggs laid by the earlier flight might have taken longer to develop or egg laying was staggered. In any case, scout your fields to look for potential problems and manage in a timely fashion.

## TOMATO, PEPPERS, EGGPLANT

Water, water, water. Blossom End Rot is very common right now and growers are reaching for the jug of calcium. Forget it. Water is the cure in most cases. Bugs? There are lots on these crops right now. Take your pick: Leaf Hoppers, Flea Beetles, Aphids, Colorado Potato Beetles, Corn Borers. Scout and take action if necessary. Blemished fruit coming down the packing line should not be your first notice of an insect problem. Get out there and turn over some leaves. Need help with ID? Give us a call.

## VINE CROPS

Downy mildew has widened in other states (and in Canada) surrounding NY. The dry conditions has helped keep the disease from getting started but now with the scattered showers, cool nights, and dew in the morning, there might be enough leaf wetness for any spores being blown in to infect plants. Preventative sprays are highly recommended at this point. We are late in getting the disease but let's not tempt fate. Be vigilant and be prepared. **For organic disease management, copper and potassium bicarbonate products are available – see OMRI listings for approved products [www.omri.org](http://www.omri.org).**

Due to the heat, incomplete pollination has reduced marketable yields. Even fields with bee hives are seeing a problem with fruit not fully pollinated. Curved cucumbers, disfigured summer squash, or rotting fruit tips in zucchini are some of the signs of this problem.

# WNY Sweet Corn Trap Network Report, 7/26/11

Abby Seaman, NYS IPM Program

## WNY Pheromone Trap Catches: July 26, 2011

Location	ECB		CEW	FAW	WBC
	-E	-Z			
Baldwinsville (Onondaga)	30	10	9	2	5
Batavia (Genesee)	0	0	1	0	0
Bellona (Ontario)	5	0	1	0	10
Eden (Erie)	3	6	0	0	4
Farmington (Ontario)	2	1	1	0	1
Great Valley (Cattaraugus)	1	0	3	0	0
Hamlin (Monroe)	2	0	0	0	4
LeRoy (Genesee)	4	0	0	0	NA
Lockport (Niagara)	2	4	0	0	0
Penn Yan (Yates)	4	3	0	0	0
Spencerport (Monroe)	2	7	0	0	0
Waterport (Orleans)	NA	NA	NA	NA	NA
Williamson (Wayne)	4	1	9	0	12

European corn borer catches are up from last week at most locations. Corn earworm are being caught in high enough numbers at a few locations to indicate the need for a four day spray interval. See the table below for recommended spray intervals based on CEW trap catches. Fall armyworm was caught in low numbers at just a couple of locations this week. Western bean cutworm catches are up substantially at a few locations, and catches from the larger WBC trap network indicate that the peak flight will be this week and next week. Western bean cutworm females are most attracted to late whorl/early tassel stage corn. They lay masses of 50-200 eggs on the top surface of a leaf near the tassel. The next few weeks will be important for controlling western bean cutworm in any fields in the attractive stage.

Search tassel-emergence and silk stage fields for western bean cutworm and European corn borer eggs and larvae. A threshold has not been developed that takes western bean cutworm into account, so count a plant with egg masses or newly hatched larvae as an infested plant the same way you would with European corn borer or fall armyworm, and use a 15% infested plants threshold for tassel emergence stage fields and a 5% threshold for silk stage fields. As with ECB, it's important to control western bean cutworm before it enters the ear and is protected from an insecticide application. To see more pictures and information go to: <http://blogs.cornell.edu/scptnetwork/files/2011/06/Western-Bean-Cutworm-ID-Card.pdf> ■

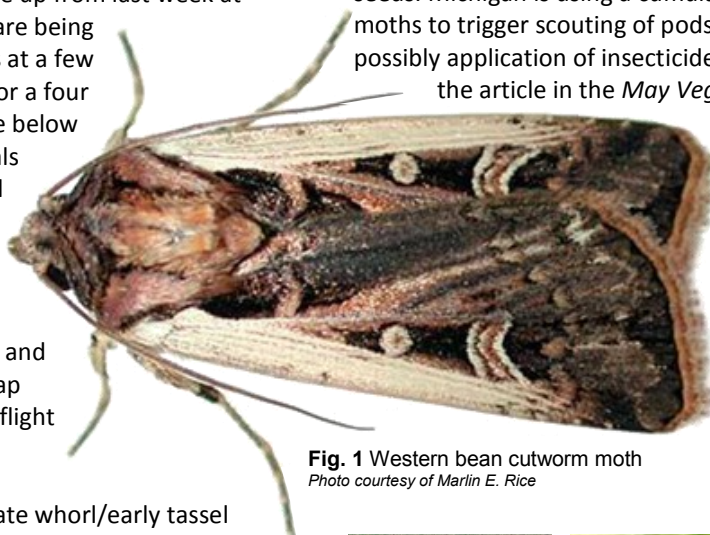


Fig. 1 Western bean cutworm moth  
Photo courtesy of Marlin E. Rice



Fig. 2 Bucket trap with pheromone lure for catching WBC moths.



Fig. 3 WBC larvae, just hatched on corn.

# Western Bean Cutworm Moth Catches Rise

C. MacNeil, CVP: The Western bean cutworm (WBC) is a pest of primarily field/sweet corn and dry beans that's been moving east from the High Plains. It has caused economic damage in Michigan dry beans in recent years. This past week 74 of the ¾" long WBC moths (Fig. 1) were caught in 12 traps (Fig. 2) in the dry bean fields in the trap network, with one trap catching 39 moths! Previously the maximum catch in a trap was 3. See the Sweet Corn Trap Catch chart for WBC moths caught in sweet corn fields. Just outside the CVP area the maximum trap catch this past week was 26 moths, way up from previous weeks.

WBC moths are first attracted to corn in the whorl to tassel stage. Scouting the tops of corn plants may reveal feeding damage and small larvae (Fig. 3) beginning next week, based on degree days and moth catches. Once nearby corn passes the susceptible stage moths are more attracted to beans to lay their eggs. WBC can do significant damage to pods and bean seeds. Michigan is using a cumulative trap catch of 125 – 150 moths to trigger scouting of pods in dry bean fields and possibly application of insecticide sprays. For more info see the article in the *May Veg Edge* on page 2.

From Keith Waldron, NYS IPM, 7/22: WBC moth catch numbers have been rising. In 2010, NY WBC numbers peaked the week of Aug 2. The NY WBC trapping program will continue through August. ■



# Tomato Pruning & Leaf Roll

J. Reid, CVP: Tomatoes often exhibit an upward curling of the leaves that causes alarm with its sudden appearance (see Fig. 1). There is a virus of tomatoes called Tomato Leaf Curl Virus, which is totally unrelated to the disorder common to New York tomatoes at this time of year. To avoid confusion we will call the disorder simply 'Leaf Roll'. This is not a disease caused by virus, fungi or bacteria, but rather a response to stress by the plant. A number of stresses are blamed for Leaf Roll, but pruning seems to be responsible most of the time here. The problem occurs in both field and greenhouse (or tunnel) production. Heirloom tomatoes that are pruned to a single leader (greenhouse style) display severe Leaf Curl (Fig. 2). One local grower this year decided to prune a row of tomatoes as he always does (2-4 suckers off the bottom), and leave an adjacent row unpruned. The photo (Fig. 3) tells the rest of story; the unpruned tomatoes did not exhibit Leaf Roll, whereas the pruned tomatoes did.



Fig. 2 Severe Leaf Roll due to pruning

So, to prevent Leaf Roll we could simply stop pruning. But, this may not be the best choice either. Pruning can ripen fruit earlier and is an important pest management tool. When we prune we remove disease spores, mites, thrips and otherwise senescent tissue. Furthermore in light to moderate cases of Leaf Curl there is no documented yield loss. Then what is the right approach? This depends on the tomato variety and growing environment.

- **Field grown determinate tomatoes** (such as Mtn. Fresh) should be pruned lightly (~2 suckers) and as early as possible. Suckers only, no leaves. These varieties are quite susceptible to Leaf Roll.

- **Field grown indeterminate tomatoes** (such as Big Beef) can be pruned more aggressively (~4 suckers plus several leaves), as this will help keep shoots within the trellis and the lush growth can compensate for any reduction in growing points.

- **High tunnel or greenhouse determinate tomatoes** (such as BHN 589) can be pruned (both leaves and shoots) up to the first strong fork. Start early and work gradually, taking no more than 1 leave per week.
- **High tunnel or greenhouse hybrid indeterminate tomatoes** (such as Geronimo) can be pruned to a single leader removing all suckers weekly and up to 2 leaves per week. These varieties are the least susceptible to Leaf Roll.
- **High tunnel or greenhouse heirloom tomatoes** (such as Cherokee Purple) should be pruned to multiple leaders (~2-4) removing all other suckers weekly and perhaps 1 leaf per week, based on plant nutritional status. These varieties, in this environment, are the most susceptible to Leaf Roll. ■

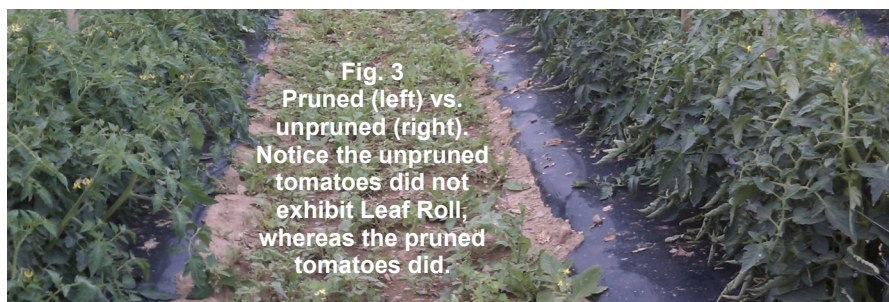


Fig. 3 Pruned (left) vs. unpruned (right). Notice the unpruned tomatoes did not exhibit Leaf Roll, whereas the pruned tomatoes did.

## Late Blight Severity Value Accumulations

### Late Blight Severity Value Accumulation 7/26/11

Location*	Week	Total	Location*	Week	Total
Albion	1	44	Geneva	3	61
Appleton	0	49	Lafayette	9	92
Baldwinsville	1	**	Lodi	1	37
Buffalo**	1	36	Portland	4	54
Ceres	3	53	Ransomville	0	43
Elba	4	46	Sodus	3	41
Farmington	2	41	Williamson	1	42
Fayette	3	41	Wellsville**	1	49

\* For more sites: <http://newa.cornell.edu/> Crop Pages, Potatoes, Late Blight.  
 \*\*Airport stations, with RH increased to estimate field conditions

C. MacNeil, CVP: Some areas had rain this past week and late blight (LB) severity values (SV) are up in those locations. If you live where valley fog forms or dew remains on plants into mid-

morning the LB SVs on your farm may be higher than at the IPM/NEWA weather stations. If your farm had rain and the weather station didn't your SVs may also be higher. For info on where the weather stations are located go to: <http://newa.cornell.edu/>, click on Station Pages, then the weather station closest to your farm.

This year, once you're set up the LB Decision Support System (DSS) can text or email blight risk and fungicide coverage Alerts to you for your farm. You can go online to get the details. One grower in the area is using the information to help him decide what rate of fungicide to use, and the system can tell you how safe it is to stretch your spray interval. The 3 day pinpoint NWS weather forecast (and blight risk/ fungicide coverage forecast) for your farm is a big improvement over the old Blitecast system, which only indicated blight risk based on past weather. For more info on the LB DSS contact Carol MacNeil at 585-313-8796 or [crm6@cornell.edu](mailto:crm6@cornell.edu). New Brunswick, Canada, is the newest area to confirm LB this year. ■

# Weather Charts

J. Gibbons, CVP:

## Weekly Weather Summary: 7/19 - 7/25

Location	Rainfall (inch)		Temp (°F)	
	Week	Month	Max	Min
Albion	0.55	0.55	93	65
Appleton, North	0.38	0.55	93	66
Baldwinsville	0.02	0.77	96	63
Buffalo*	0.92	2.06	93	70
Ceres	0.45	0.94	97	62
Elba	0.41	0.66	94	64
Farmington	0.16	0.28	96	61
Geneva	0.12	0.19	98	63
Himrod	****	****	104	67
Knowlesville	1.08	1.30	96	69
Lafayette	0.00	0.00	96	62
Lodi	0.04	1.32	98	65
Lyndonville	0.76	0.92	94	63
Ransomville	0.30	0.31	95	66
Rochester*	0.38	0.56	97	66
Syracuse*	0.26	2.28	100	64
Williamson	0.08	0.24	100	63

## Accumulated Growing Degree Days (AGDD) Base 50°F: Jan. 1 — July 25, 2011

Location	2011	2010	2009
Albion	1418	1554	1099
Appleton, North	1141	1342	915
Buffalo	1493	1572	1141
Elba	1352	1545	897
Farmington	1415	1515	1048
Geneva	1558	1761	1166
Himrod	1518	1562	1118
Lafayette	1457	1467	1077
Lodi	1508	1591	****
Lyndonville	1384	1557	1085
Ransomville	1409	1534	1062
Rochester	1517	1624	1078
Syracuse	1735	1663	1218
Wellsville	1304	1390	915
Williamson	1426	1588	1066

\*Airport stations

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

### IRRIGATION & PLASTIC MULCH CONSIDERATIONS

R. Hadad, CVP: Even with trickle irrigation, plants with a large leaf canopy and/or fruit load are suffering from lack of water. The question asked is "Why is there a problem? We irrigate every second or third day." What we are seeing is that the soil has been depleted of moisture for a long time in many areas. High heat and hot breezes are drying out soils and making for real high transpiration rates. Sandy and gravelly soils are especially prone to low water holding capacity but this season, even more clay and loamy soils are having problems. It might be more advantageous to irrigate every day for shorter duration than every couple of days with longer duration.

Also, if we are really in a new weather pattern where we will be having more frequent episodes of extreme conditions, we might want to reexamine the use of other colors than black plastic. White would have been a better choice this year than black for keeping the soils cooler. Several years ago, a number of growers were using both colors dividing up the field. If the season was hot, than the white plastic section did better. If it was cooler then the black plastic did better. This spreads out the risk somewhat. ■

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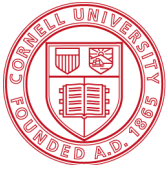
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Seneca, Wayne and Yates Counties*

**Veg Edge Weekly** is a seasonal weekly publication of the **Cornell Vegetable Program** providing information about crop development, pest activity and management, pesticide updates, local weather conditions, meetings and resources.

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