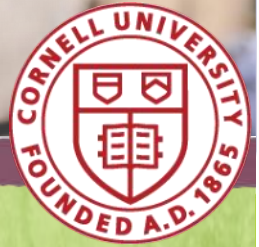


Vegetable News



When will Tomatoes Ripen?

Teresa Rusinek, CCE ENYCHP

In the Hudson Valley, it's usually excessive heat that delays ripening in July and August. Dr. Steve Reiners of Cornell University says the ideal temperature for fruit ripening is between 70-75°F. Above 85-90°F the ripening process slows significantly or even stops. At these temperatures, lycopene and carotene, pigments responsible for giving fruit their orange to red appearance cannot be produced. As a result, the fruit can stay in a mature green phase for quite some time. But ripening also slows down when nighttime temperatures approach 60°F, which is what happened for a few weeks in July of last year. In some areas of Eastern NY, growers saw a lag in tomato fruit ripening for over 2 weeks.



After several days of excessive heat growers may notice blossom drop as well. So far I haven't seen much of this, it may be because evening temps have been relatively cool. Night temperatures over 72 F. can interfere with pollen formation and fruit set.

So is there anything you can do to hasten ripening? Here are some suggestions from Steve Reiners. "Light conditions have very little to do with ripening. Tomatoes do not require light to ripen and in fact, fruit exposed to direct sunlight will heat to levels that inhibit pigment synthesis. Direct sun can also lead to sunscald of fruit. (For more on Sunburn in Fruiting Vegetables see: <https://extension.udel.edu/weeklycropupdate/?tag=tomato>) Do not remove leaves in an effort to ripen fruit. Also, soil fertility doesn't play much of a role. We do know that high levels of magnesium and low levels of potassium can lead to conditions like blotchy or uneven ripening or yellow shoulder disorder. But the slowness to ripen is not likely due to soil conditions and adding additional fertilizer will do nothing to quicken ripening. If you absolutely cannot wait, some growers will remove fruit that are showing the first

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color changes. These fruit, in the mature green or later phase, could be stored at room temperature (70-75F) in the dark. A more enclosed environment would be best as ethylene gas, released from fruit as they ripen, will stimulate other fruit to ripen. If temperatures remain high outdoors, these picked fruit will ripen more quickly, perhaps by as much as five days. As far as flavor, the greener fruit should develop flavor and color similar to what you would get if field ripened. The key is picking them when they are showing the first signs of ripening (no

earlier) and keeping them at room temperature. Do not refrigerate, as this will absolutely destroy their flavor.”

Also maintain even soil moisture through regular irrigation to avoid a sudden influx of water into the fruit which will lead to cracking. Frequency of irrigation will depend on your soil type, the stage of the crop, and evapotranspiration rates. For more on Irrigation Scheduling for Tomato, see: <http://www.omafra.gov.on.ca/english/crops/facts/08-011.htm>

Post-Emergent Herbicides for Pumpkin and Winter Squash

Charles Bornt, CCE ENYCHP

I know I sound like a broken record, but I have nothing new to report in the world of cucurbit herbicides! With the dry weather from May till now that did not activate herbicides, there are a lot of weedy pumpkins and winter squash. I wish I could give all of you the magic potion that would clean them up, but alas I have not found it yet!

So what are we going to do? First, you really need to know what weeds are in the field. Start first by figuring out which broadleaves you have – if it's pigweed, nutsedge, galinsoga, mustards or ragweed and they are still small, broadcast apply Sandea/Profine at ½ ounce per acre plus a non-ionic surfactant (1 to 2 quarts per 100 gallons of spray solution). However, plants must have at least 2 leaves and no visible female flowers. You can tell the female flowers because they usually are out on the end of the vines and have a small fruit on the end of the flower. Male flowers can usually be found in closer to the crown area and they do not have what resembles a fruit attached to them. I will also forewarn you now; do not be surprised if after the application you notice the growing points on your pumpkins and squash turning slightly yellow and not really growing fast—this is somewhat typical of post emergent halosulfuron applications and plants normally grow out of it within 3-5 days. **DO NOT MIX SANDEA/PROFINE WITH ANY POST EMERGENT GRASS HERBICIDES!** Wait at least 2-3 days between applications! Do not apply to plants grown on plastic unless you are using a shielded sprayer in order to minimize the amount of material that gets onto the plastic.

Now, if you don't know what weeds you're looking at, take a picture and send it to me and I will try to identify it for you (518-859-6213)! If most of what you have is Lambsquarter, I'm sorry to say that you are out of luck. The best advice I could give you is to either a.) clean cultivate between the rows the best you can and apply ½ ounce of Sandea/Profine with the non-ionic surfactant.

That just leaves you to either live with the weeds in-row between the plants or hand-weed them. This should hold back another flush of broadleaves; b.) Build a shielded sprayer and use something like Aim or gramoxone (Paraquat) between the rows – again you will have the same problem with weeds between the plants in the row. **I would not recommend** using Round-Up (glyphosate) because if that contacts any of the crop, it could move and kill the crop plant you are trying to save! With this shielded application you could also mix in your Sandea/Profine and Dual Magnum for residual control. Do not apply when plants are under stress as this might increase crop injury (slight yellowing and some stunting). Do not apply to plants grown on plastic unless you are using a shielded sprayer in order to minimize the amount of material that gets onto the plastic. **DO NOT MIX SANDEA/PROFINE WITH ANY POST EMERGENT GRASS HERBICIDES!** Wait at least 2-3 days between applications!

Post-emergent grass control is pretty easy. We have several materials labeled including Select 2 EC/Section or Select Max (active ingredient: clethodim) and Poast 1.5 E or Poast Plus (AI: sethoxydim). There are several generic versions of these materials available as well which is why I gave you the active ingredient names in parentheses. You need to know what you have and make sure you read the labels carefully as the rates and the surfactants (crop oil versus a non-ionic surfactant) are different for each material (See Table 1). For example, Select 2 EC is labeled for 6—8 fluid ounces per acre and requires a crop oil concentrate (COC) while Select Max is labeled at a rate of 12—16 fluid ounces per acre and requires a non-ionic surfactant. Two more notes: if perennial grasses like quackgrass are a problem, I recommend using Select/Section or a clethodim material as they are particularly active on perennial grasses. **Another key to using either of these grass herbicides is to make sure the grasses are actively growing.** So don't put them on right after a heavy rain or after a cultivation

or during a long dry spell as the control may be less than you expect. And, don't expect to see results overnight: the Select materials work a little faster than the Poast

products, but both may take a week to 10 days to really work. Again, please do not mix these grass herbicides with SANDEA/PROFINE!

Table 1: Grass herbicides labeled for use in cucurbits.

Product	Labeled crops	Weeds controlled	Rate	Comments
Select Max	All cucurbits	Annual grass Perennial grasses	9-16 ounces per acre 12-16 ounces per acre	Adjuvants: Non-ionic Surfactant (NIS) at 0.25% v/v in the finished spray volume (2 pints per 100 gallons of water). Do not apply more than 16 fluid ounces per application. Do not apply more than 64 fluid ounces per year. Use a minimum of 10 gallons of water per acre with a maximum of 40 gallons per acre. Minimum spray pressure of 30 PSI with a maximum of 60 PSI. Do not use flood nozzles. Do not tank mix with broadleaf herbicides or apply a post-emergence broadleaf herbicide within one day following application of or reduced grass control may result.
Section 2EC Select 2 EC	All cucurbits	Annual grass Perennial grass	6 ounces per acre 8 ounces per acre	Adjuvants: Crop oil concentrate (COC) at 1% v/v in the finished spray volume (1 gallon per 100 gallons of water). Use a minimum of 10 gallons of water per acre with a maximum of 40 gallons per acre. Minimum spray pressure of 30 PSI with a maximum of 60 PSI. Do not use flood nozzles. Do not use more than 8 fluid ounces per application to cucurbits. Do not apply more than 32 fluid ounces per acre per year. Do not tank mix with broadleaf herbicides or apply a post-emergence broadleaf herbicide within one day following application of or reduced grass control may result.
Poast 1.5EC	All cucurbits	Annual grasses with some perennial grass suppression	1.5 pints per acre	Adjuvants: Crop oil Concentrate (COC) at 2 pints per acre. Use a minimum of 10 gallons of water per acre with a maximum of 20 gallons per acre. Minimum spray pressure of 40 PSI with a maximum of 60 PSI. Do not use flood nozzles. Do not use more than 3.0 pints per acre per season. Although the label does not specify, I would not tank mix with broadleaf herbicides due to increase injury potential or apply a post-emergence broadleaf herbicide within one day following application of or reduced grass control may result.

Scouting Report- Sweet Corn

Chuck Bornt, CCE ENYCHP

Scouting Report – Sweet Corn: Other things that I've seen this week include the beginning of the emergence of Western Bean Cutworms (WBC) which has become an increasing pest of sweet corn. Usually once we got through the European Corn borer (ECB) flight we had a little bit of a lull until Corn Earworms (CEW) arrived but that's not the case anymore. WBC seem to emerge and start laying eggs about this time every year, coming in right behind ECB's. WBC moths typically oviposit on corn while the tassel is just developing in the whorl, again very



*Newly hatched western bean cutworm and whorl leaf damage
(Picture courtesy of Purdue University)*

similarly to ECB. When the WBC eggs hatch, the larvae quickly move into the whorl to feed on the developing tassel, where they are protected. When the tassel emerges, they are more exposed and start to move down to leaf axils and ultimately the silks to feed. Once on the silks, they soon move into the ear and are again protected.

Just like ECB, the WBC are exposed and susceptible to insecticide sprays when tassels emerge. If adults are detected in traps in your area, scout late whorl or early tassel stage corn for egg masses on the upper leaf surface of the top 3 leaves. **The action threshold for fresh market sweet corn is 1%.** WBC damage to corn leaves also very much resembles ECB damage. Since there can be a fair amount of carryover time between ECB and WBC, insecticide sprays targeting ECB at tassel emergence should take care of some of the WBC's. However, they have a long egg laying period so if we aren't treating for ECB, there is a good chance they will go undetected and cause damage. Also be aware that only the Bt varieties with the Vip3A protein control WBC.

Corn Pest Chart 7/9/2018

County	CEW	ECB-Z	ECB-E	FAW	WBC
Albany	0	1	0	0	1
Columbia	2	0	5	1	0
Dutchess	3	0	0	x	x
Greene	3	0	3	0	0
Montgomery	2	0	0	0	0
Orange	1	2	7	0	1
Rensselaer 1	0	0	1	0	0
Rensselaer 2	0	0	0	0	1
Schoharie	0	0	0	0	0
Ulster 1	0	0	0	0	1
Ulster 2	6	3	0	x	1
Ulster 3	0	0	0	x	x
Ulster 4	15	22	14	x	4
Washington	2	0	2	0	0

Diagnosing and Managing Verticillium Wilt in Eggplant

Ethan Grundberg, CCE ENYCHP

Many eggplant growers around the region began to notice Verticillium wilt symptoms in their fields over the past couple of weeks. Since Verticillium wilt infects the plant's vascular system and restricts the movement of water and nutrients, the associated leaf scorching and plant wilt symptoms are usually more pronounced during warm weather and in dry soils. Even though there is nothing that can be done to cure currently infested crops, it is important to scout and record where Verticillium is present on the farm to inform a long-term management strategy.

There are two common soil-borne fungal pathogens, *Verticillium albo-atrum* and *Verticillium dahlia*, that cause Verticillium wilt in over 200 different plant species. Once the pathogens are established in a field, they can survive for up to 15 years as microsclerotia in the soil and can continue to reproduce on a wide range of host weed species that includes velvet leaf, horse nettle, pigweed, and lambs-quarters. The Verticillium species can be spread from field



Typical marginal leaf scorching and discoloration from Verticillium wilt

to field on equipment carrying soil, so care must be taken to work fields with known infestations last and sanitizing equipment afterward.

On eggplant, the first noticeable symptom of Verticillium wilt is a discoloration on the edges of lower leaves accompanied by slight wilting. As the infection progresses and the vascular system clogging becomes more severe, the discoloration can progress into more severe leaf scorching. These leaf symptoms are often only observed on one half of the leaf or plant, with one side visibly wilted and necrotic and the other side seemingly healthy. Cutting the main stem of the plant just above the soil line will reveal a darkened center (the clogged vascular tissue). Though affected plants may be able to survive,

the loss in foliage often leads to secondary issues like sun scald on the fruit.

Management options for Verticillium wilt are limited, but there are some strategies that can be combined to maintain production in infested fields.

- Rotate infested fields into broccoli, corn, wheat, and/or barley for at least two years. These plants are not hosts and can reduce the level of inoculum while yielding a cash crop.
- Plant high isothiocyanate (ITC) concentration biofumigant mustards, such as the variety Caliente, incorporate the residue, and pack the soil. High ITC biofumigants can suppress *Verticillium* species, even as microsclerotia
- If you don't have the equipment or time for growing a biofumigant crop, Isagro USA sells a product called Dominus that is 96% ITC and can be used in a similar manner to a biofumigant crop (see label for



Severe Verticillium wilt causing almost complete collapse of eggplant

details). Research at Cal Poly in 2014 in strawberries showed that Dominus improved plant survival and yield as well as conventional soil fumigants Pic-Clor 60 and Tri-Con 50/50 in *Verticillium* infested fields (see <http://cesantabarbara.ucanr.edu/files/225196.pdf> for more information).

- When rotating back into a cash crop that is susceptible to *Verticillium* wilt, promoting robust root growth early in the season by increasing fertilization levels and, depending upon the crop and soil type, using root stimulant products containing kinetin and/or Indole-3-butyric acid (IBA) rooting hormone can help plants produce a crop, even if infested.

Squish This, Not That!

Amy Ivy, CCE ENYCHP

The next generation of Colorado potato beetles (CPB) are out now. Last week, while looking for larvae and eggs on heavily damaged eggplant, I found clusters of what looked like miniature CPB eggs. But those were ladybug eggs! Both insects lay orange barrel-shaped eggs in clusters on the undersides of leaves. The main difference is their size.

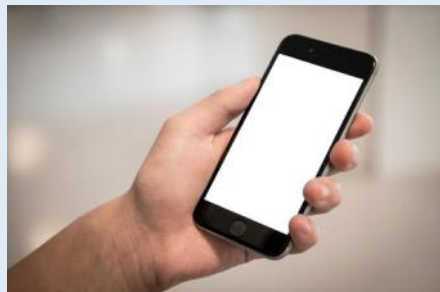
Both ladybug larvae and adults were feasting on aphids on the eggplant as well as the adjacent peppers which are a favorite crop for aphids. Be on the lookout for all 4 stages of ladybugs, pictured below, all found the same day on eggplant.



Ladybug adult



Top Left: ladybug eggs; **Bottom Left:** CPB eggs; **Top Right:** Ladybug pupa sticks to the leaf, has cross-wise ridges and usually some orange markings. **Bottom Right:** Ladybug larva. Youngest are all black, orange spots develop in later stages.



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Upcoming Events

July 2018

20 Minute Ag Manager Webinars:

All webinars run from
12:00 until 12:30.

To register, go to <https://tinyurl.com/y9gfqbmx>. *Registering once gives you access to the series.*

July: Managerial Accounting

- July 3—Budgeting 101
- July 10—Assessing a Capitol Investment
- July 17—Relevant Information and Sensitivity Analysis
- July 24—Pricing for Profit
- July 31—Know When to Hold'em, Know When to Fold'em



[Previous 20 Minute Ag. Manager sessions are now available on our ENYCHP YouTube—Learn the highlights in just 5 minutes!](#)

July 12, 2018 – FSMA Training

Cornell Cooperative Extension, Albany County – Voorheesville, NY.

More information at <https://enych.cce.cornell.edu/event.php?id=951>

July 18, 2018 - New York Soil Health Summit

Empire State Plaza, Downtown Albany, NY. For more information at this time, contact David Wolfe (dww5@cornell.edu) or Aaron Ristow (ajr229@cornell.edu).

July 31st, 2018– Reduced Tillage in Organic Systems Field Day 9am—3pm

Cornell Willsboro Research Farm, free and open to the public, for questions call Amy Ivy at 518-570-5991 or adi2@cornell.edu, DEC Credits have been applied for.

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