



# VEGEEdge

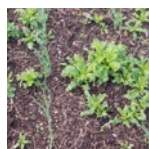
YOUR TRUSTED SOURCE FOR RESEARCH-BASED KNOWLEDGE

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Gas vs Cold  
Damage in High  
Tunnel Tomatoes

PAGE 1



The Weed Race  
– Trial Notes from  
Spraying Small  
Onions

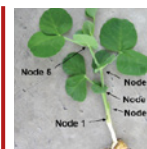
PAGE 3



from the Pandemic

All Farms  
Must Have  
a COVID-19  
Safety Plan to do  
Business During  
the Reopening

PAGE 5



Processing  
Green Peas:  
Post-Emergence  
Weed Control  
with Herbicides

PAGE 10

## Gas vs Cold Damage in High Tunnel Tomatoes

Judson Reid, Cornell Cooperative Extension, Cornell Vegetable Program

We can't help but notice the irony of a forecast high in the upper 80's at the time of this writing, however damage inflicted on high tunnel tomatoes is a common problem right now. Over the previous two weeks prolonged cold, with nights in the upper 20's and cloudy days struggling into the 40's has created two problematic scenarios; cold damage and gas damage.

We'll begin with cold, or specifically, frost damage. Unheated high tunnels are very poor insulators on clear, still nights. Daytime heat is lost rapidly as infra-red (IR) wave lengths escape through the polyethylene covering. These tunnels can have temperatures lower inside than out! Frost damage to high tunnel tomatoes is a burned, wilted appearance on the top of the plant. If the stalk is still alive often these plants can produce heavy yields, but unfortunately with smaller tomatoes, and much later in the season. IR trapping poly, and more effectively a double, inflated covering are options to prevent cold damage. Many farmers also use temporary solutions, such as propane heaters. Unfortunately, these bring the risk of gas poisoning.

Unvented, portable heaters can save a tomato crop when used occasionally, for example one or two cold nights. Often these cold nights are followed by clear, sunny days and the tunnels are vented when side curtains are raised. This vent-



Frost damage in high tunnels burns the top of the plant. It will likely survive if well rooted, but yields will be delayed.

Photo by Judson Reid, CCE Cornell Vegetable Program

continued on page 3

## About VegEdge

VegEdge newsletter is exclusively for enrollees in the Cornell Vegetable Program, a Cornell Cooperative Extension partnership between Cornell University and CCE Associations in 14 counties.



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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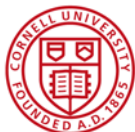
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# Contents

## Contact Us

Cornell Vegetable Program ..... 12

## Articles

Gas vs Cold Damage in High Tunnel Tomatoes ..... 01  
The Weed Race – Trial Notes from Spraying Small Onions ..... 03  
New USDA Coronavirus Food Assistance Program Accepting Applications ..... 04  
All Farms Must Have a COVID-19 Safety Plan to do Business ..... 05  
NY Forward Safety Plan Template ..... 06  
Crop Insights: Observations from the Field and Recommendations ..... 08  
Late May Berry Observations ..... 09  
Processing Green Peas: Post-Emergence Weed Control with Herbicides ..... 10  
Weather Charts ..... 11

## Upcoming Events

Food Safety & Wash/Pack Facilities ..... 02

*This next issue of VegEdge newsletter will be produced on June 3, 2020.*

## Upcoming Events

*View more events at [CVP.CCE.CORNELL.EDU](http://CVP.CCE.CORNELL.EDU)*

### Food Safety & Wash/Pack Facilities

June 15, 2020 (Monday) | 6:15 pm - 9:15 pm via Zoom

This virtual training, presented by Robert Hadad and Caitlin Tucker from the CCE Cornell Vegetable Program, will help farmers and workers understand the concepts of food safety from harvest to packing. This training will also cover facility design, operation for washing produce and cleaning/sanitizing to minimize the risk of possible microbial contamination. Topics will include:

- The Basics: Understand **what is contamination**, why do we care, and where does it come from
- Identify **sources and routes of contamination** from field to Wash/Pack line – what to do about it
- Demonstrate the process of **proper handwashing, and recognizing signs and symptoms of illness and injuries**
- Understand the importance of **prioritizing Wash/Pack design and function**
- Review **cleaning and sanitizing procedures for facilities** and basic wash lines
- Review **cleaning and sanitizing procedures for Wash/Pack equipment**

This meeting is a FREE online webinar. For more information and registration, contact Robert Hadad at [rgh26@cornell.edu](mailto:rgh26@cornell.edu) or 585-739-4065.



NORTHEAST  
EXTENSION  
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continued from page 1

ing allows the combustion gases such as carbon monoxide and ethylene to escape. When cold nights are followed by cold, cloudy days repeatedly the tunnels are not vented and the plants are exposed to toxic levels of the combustion gases. Symptoms include twisting of foliage, off-colors such as purple, bronze and yellow as well as abnormal swelling and dropping of flowers. Severe damage can kill plants; however low levels of exposure often lead to only temporary symptoms.

The keys to using temporary propane heat in high tunnels is for emergency temperature drops only and to vent as soon as conditions allow in the morning. Long term upgrades such as inflated double-poly covering and permanent, vented heaters will prevent both the risks of frost and gas damage in a Spring such as 2020. If these aren't within reach, a double layer of floating row cover, applied over top of the crop before sunset is another non-toxic option.



Unvented propane heaters are for emergency temperature drops only. Vent as soon as possible in the morning. Photo by Judson Reid, CCE Cornell Vegetable Program



The ovary of these flowers swells abnormally prior to flower opening when exposed to combustion gases such as carbon monoxide and ethylene. These flowers will drop. Photo by J. Reid, CCE CVP



The turning and twisting of leaves is common where combustion gases have reached toxic levels. Photo by Judson Reid, CCE Cornell Vegetable Program

## The Weed Race – Trial Notes from Spraying Small Onions

Christy Hoepting, Cornell Cooperative Extension, Cornell Vegetable Program

When onions are in the flag-leaf stage with the first-leaf just starting to grow and there is a flush of weed seedlings coming, it is so tempting to want to go out and spray, because we all know how fast and furious those weeds can grow and how much easier it is to control them when they are small! I have not done much work recently on spraying post-emergent herbicides on flag-leaf onions, but below are some notes on my recent trials from 2018 and 2019 on spraying onions at 1-leaf stage. Specifically, the onions were at 1.25-leaf stage, which means that the second leaf was starting to come in and was about a quarter of the size of the first-leaf. I call this a “strong 1-leaf” stage. Also, important to note that spray conditions in 2018 trial were similar to current hot and dry conditions.

The following notes refer to single apps. Follow-up with a second application 7 days after the first generally results in much higher levels of weed mortality. The first app usually just burns them back. I have also demonstrated several times, especially with Goal 2XL that waiting until 2-leaf stage to apply 4 fl oz was as effective as applying 2 fl oz rate at 1-leaf stage. I’ve had similar results with Chateau, Goaltender and Buctril. Buctril 2EC 8 fl oz + Goal 2XL/tender at 2-leaf can be very effective.

(1) Goaltender 1 fl oz = Goaltender 2 fl oz	(2) Chateau 2 oz	(3) Goal 2XL 2 fl oz	(4) Buctril 2E 8 fl oz	(5) Goal 2XL 4 fl oz = Buctril 2E 8 fl oz + Goaltender 2 fl oz = Chateau 2 oz + Goaltender 1 fl oz
<b>CROP SAFETY ON 1-LEAF ONION (TECHNICALLY 1.25-LEAF = 2ND LEAF STARTING)</b> in order from safest to onion to causing most injury to onion				
Categories 1-3) less than 5% crop injury 7 days after treatment (DAT)		Categories 4) 5-10% crop injury 7 DAT		Category 5) 10% or more 7 DAT

continued on page 4

## WEED CONTROL

**Weed Abbreviations** – PW: pigweed; LQ: Lamb's quarters; RW: ragweed; SW/LT: smartweed/Lady's thumb; MYC: marsh yellowcress; MSM: wormseed mustard; YNS: yellow nutsedge; BW: wild buckwheat; NS: nightshade

### Chateau 2 oz

- Excellent on PW (may kill up to 4")
- Excellent on small mustards such as MYC, WSM (kill up to 2"; 4" too big), SM/LT (kill up to 1") and RW (kill up to 0.5-1", > 1" to big).
- Have burned up 1" YNS
- Weak on LQ (kill cot to 0.5", > 0.5" too big)
- Follow-up application 7 DAT improves control
- Can be "touchy": crop injury and weed control can increase considerably when conditions are wet/moist/weeds & onions are "soft" vs. when conditions are dry & weeds/onions are "tough". During current hot and dry weather, 2 oz would be necessary to control weeds.

### Goal 2XL 2 fl oz

- This is the maximum rate on 1-leaf onion for crop safety in my trials
- Compared to Chateau, this rate offers a wider spectrum of weed control, but often only burns them back instead of killing them. Alternatively, Chateau will have a higher mortality rate on the weeds and sizes of weeds that it has best activity on (e.g. RW 1" or less), while those out of its spectrum (e.g. RW > 1") will not be hurt. Goal 2XL may not kill the weeds, but they will be more hurt overall.
- Broad-spectrum ability to burn back weeds can be effective at holding them back until higher rates of herbicides can be applied at 2-leaf stage, such as Buctril + Goal.

- Better than Chateau on LQ (kill up to 1")
- Goal 2XL 4 fl oz is too risky on 1-leaf onion

### Goaltender 2 fl oz

- Is equivalent to Goal 2XL 4 fl oz
- In rate-to-rate comparisons of Goal 2XL to Goaltender, Goal 2XL results in better weed control (e.g. Goal 2XL 2 fl oz killed LQ 1" vs. Goaltender 1 fl oz killed LQ 0.5")
- Similarly, Goaltender is always safer on the onions. I can deliver a higher rate of active ingredient more safely than I can with Goal 2XL. I have applied Goaltender 4 fl oz (= Goal 2XL 8 fl oz) to 1-leaf onion, but this falls into category 4-5 for risk of injury

### Goaltender 2 fl oz + Chateau 2 oz

- Improves control of LQ, RW and NS. Chateau alone already good on PW and mustards and does not benefit from help from Goal
- Combo improves spectrum of weed control and can control larger weeds than either alone (e.g. MYC 3-4"), but can be pretty risky on 1-leaf onions for injury (category 5)

**Buctril 2E 8 fl oz** (a.i. bromoxynil), tradename e.g. Brox 2EC, Broclean, etc.

- Best control of RW (kill 1-2", injure 2-4" pretty good)
- Similar control of MYC 4-6" as Goal 2XL 4 fl oz with less risk of crop injury
- Limited weed spectrum: failed to control LQ > 1", poor control of PW, fair control of NS.
- Best to use this active ingredient at 2-leaf when it can safely be tank mixed with Goal 2XL/tender for improved weed control spectrum and efficacy (kill larger-sized weeds) ●

## New USDA Coronavirus Food Assistance Program Accepting Applications

*Julie Kikkert, CCE Cornell Vegetable Program with info from the Cornell Small Farms Program and Farm Credit East*

The USDA Farm Service Agency is accepting applications now through August 28, 2020 for the Coronavirus Food Assistance Program (CFAP), which provides direct payments to offset impacts from the coronavirus pandemic. The application and a payment calculator are now available online, and USDA's Farm Service Agency (FSA) staff members are available via phone, fax and online tools to help producers complete applications. Producers can download the CFAP application and other eligibility forms from [farmers.gov/cfap](https://farmers.gov/cfap). Also, on that webpage, producers can find a payment calculator to help identify sales and inventory records needed to apply and calculate potential payments.

While you will need to read the eligibility information at the website carefully and work with your local Farm Service Agency, here are some brief eligibility requirements to help you get started.

### ABOUT THE CORONAVIRUS FOOD ASSISTANCE PROGRAM

(from <https://www.farmers.gov/cfap>)

The Coronavirus Food Assistance Program, or CFAP, provides vital financial assistance to producers of agricultural commodities who have suffered a five-percent-or-greater price decline or who had losses due to market supply chain disruptions due to COVID-19 and face additional significant market costs.

Eligible commodities include:

- Non-specialty Crops: malting barley, canola, corn, upland cotton, millet, oats, soybeans, sorghum, sunflowers, durum wheat, and hard red spring wheat
- Wool
- Livestock
- Dairy
- Specialty Crops: many fruits, vegetables, nuts, beans and mushrooms.

USDA has also issued a Notice of Funding Availability (NOFA) to solicit feedback on making additional crops available for the Coronavirus Food Assistance Program (CFAP) if producers of those commodities believe they have faced a five percent or greater price decline between January and

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April 2020 – this would include ornamental horticultural products.

### SPECIALTY CROPS EXAMPLE:

Chris Laughton from Farm Credit East provided examples of how the CFAP might work in an article at <https://www.farmcrediteast.com/knowledge-exchange/Blog/todays-harvest/usda-new-direct-payments-program-for-farmers>. Below is the section on specialty crops. See the full article for other commodities.

Because the growing season is just getting started, most Northeast producers will not have had eligible losses of specialty crops between January 1 and April 15, 2020. However, there may be some producers who had finished crops in storage who may have eligible losses.

Producers of specialty crops are eligible for CFAP payments in the following three categories:

1. Had crops that suffered a five percent-or-greater price decline between mid-January and mid-April as a result of the COVID-19 pandemic
2. Had produce shipped but which subsequently spoiled due to loss of marketing channel, for which they did not receive payment
3. Had shipments harvested and packed that did not leave the farm or mature crops that remained unharvested (i.e. were plowed under), and that which have not been and will not be sold due to loss of market.

For example, producers of apples and potatoes are not eligible for category 1 losses but are eligible for categories 2 and 3.

### Examples

- Apple grower had 10,000 pounds of apples shipped but not paid for:  $(10,000 \times \$0.21) = \$2,100$
- Potato grower had 100,000 pounds of potatoes packed for an order, which was canceled and which cannot be resold:  $(100,000 \times \$0.05) = \$5,000$

As with other USDA programs, the Farm Service Agency administers the program and determines the final dispensation of funds. The examples provided above are intended to be illustrative and are no way binding on USDA.

USDA will be providing a CFAP payment calculator with which producers and growers can estimate payments and pre-populate the application for payment—form AD-3314—once signup begins. Additional information, including a video preview of the payment calculator, is available at <https://www.farmers.gov/cfap>. ●

## All Farms Must Have a COVID-19 Safety Plan to do Business During the Reopening from the Pandemic

Robert Hadad, CCE Cornell Vegetable Program; adapted from the Cornell Small Farms Program, 5/20/2020

Cornell Agricultural Workforce specialist Richard Stup prepared the following overview of how all NYS businesses need to have a written safety plan that details how they will prevent and manage COVID-19. This post appeared first in The Ag Workforce Journal.

New York State's plan to begin re-opening will be in phases, as regions of the state achieve certain COVID-19 management metrics. An important part of this New York Forward plan is for all businesses to have a customized, written safety plan that details specifically how each business will prevent and manage COVID-19.

For more information, check out the NY Dept of Agriculture and Markets. <https://agriculture.ny.gov/coronavirus>



Department  
of Health

### NY FORWARD SAFETY PLAN

All farms are required to have a written plan, this includes essential, food-producing farms (e.g., dairy, fruit, vegetable) that have been open all along, and non-food-producing farms (e.g., ornamental horticulture, equine). The state provides a Business Safety Plan Template that farmers can use to meet the requirement. **Completed safety plans do “not need to be submitted to a state agency for approval but must be retained on the premises of the business and must (be) made available to the New York State Department of Health (DOH) or local health or safety authorities in the event of an inspection.”** If a business already has a prior written plan that addresses some or all of the issues in the safety plan, then that plan can be updated to current guidelines and used as the safety plan. A Cornell Extension team is working to develop further educational resources to help farms with safety plan compliance.

The NY Forward Safety Plan Template can be found at [https://www.governor.ny.gov/sites/governor.ny.gov/files/atoms/files/NYS\\_BusinessReopeningSafetyPlanTemplate.pdf](https://www.governor.ny.gov/sites/governor.ny.gov/files/atoms/files/NYS_BusinessReopeningSafetyPlanTemplate.pdf) It is a fillable PDF form that can be downloaded and/or printed.

NOTE: We've included a copy of the NY Forward Safety Plan Template on the following pages for our readers without internet access. ●



## NY FORWARD SAFETY PLAN TEMPLATE

### COVID-19 Reopening Safety Plan Template

Name of Business: \_\_\_\_\_

Industry: \_\_\_\_\_

Address: \_\_\_\_\_

Contact Info: \_\_\_\_\_

Owner: \_\_\_\_\_

Human Resources Representative and Contact Information, if applicable: \_\_\_\_\_

#### I. PEOPLE

**A. Physical Distancing. To ensure employees comply with physical distancing requirements you agree that you will do the following:**

- Ensure 6ft distance between personnel unless safety or core function of the work activity requires shorter distance. Any time personnel are less than 6ft apart from one another, personnel must wear acceptable face coverings
- Tightly confined spaces will be occupied by only individual at a time unless occupants are wearing face coverings. If occupied by more than one person, will keep occupancy under 50% of maximum capacity.
- Post social distancing markers using tape or signs that denote 6 ft. of spacing in commonly used and other applicable areas on the site (e.g. clock in/out stations, health screening stations).
- Limit in-person gatherings as much as possible and use tele- or video-conferencing whenever possible.
- Essential in-person gatherings (e.g. meetings) should be held in open, well-ventilated spaces with appropriate social distancing among participants.
- Establish designated areas for pick-ups and deliveries, limiting contact to the extent possible.

*List common situations that may not allow for 6 ft. of distance between individuals. What measures will you implement to ensure the safety of your employees in such situations?*

*How you will manage engagement with customers and visitors on these requirements (as applicable)?*

*How you will manage industry-specific physical social distancing (e.g., shift changes, lunch breaks) (as applicable)?*

#### II. PLACES

**A. Protective Equipment. To ensure employees comply with protective equipment requirements, you agree that you will do the following:**

- Employers must provide employees with an acceptable face covering at no-cost to the employee and have an adequate supply of coverings in case of replacement.

*What quantity of face coverings – and any other PPE – will you need to procure to ensure that you always have a sufficient supply on hand for employees and visitors? How will you procure these supplies?*

- Face coverings must be cleaned or replaced after use or when damaged or soiled, may not be shared, and should be properly stored or discarded.

*What policy will you implement to ensure that PPE is appropriately cleaned, stored, and/or discarded?*

- Limit the sharing of objects and discourage touching of shared surfaces; or, when in contact with shared objects or frequently touched areas, wear gloves (trade-appropriate or medical); or, sanitize or wash hands before and after contact.

*List common objects that are likely to be shared between employees. What measures will you implement to ensure the safety of your employees when using these objects?*

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**B. Hygiene and Cleaning. To ensure employees comply with hygiene and cleaning requirements, you agree that you will do the following:**

- Adhere to hygiene and sanitation requirements from the Centers for Disease Control and Prevention (CDC) and Department of Health (DOH) and maintain cleaning logs on site that document date, time, and scope of cleaning.  
*Who will be responsible for maintaining a cleaning log? Where will the log be kept?*

- Provide and maintain hand hygiene stations for personnel, including handwashing with soap, water, and paper towels, or an alcohol-based hand sanitizer containing 60% or more alcohol for areas where handwashing is not feasible.  
*Where on the work location will you provide employees with access to the appropriate hand hygiene and/or sanitizing products and how will you promote good hand hygiene?*

- Conduct regular cleaning and disinfection at least after every shift, daily, or more frequently as needed, and frequent cleaning and disinfection of shared objects (e.g. tools, machinery) and surfaces, as well as high transit areas, such as restrooms and common areas, must be completed.  
*What policies will you implement to ensure regular cleaning and disinfection of your worksite and any shared objects or materials, using products identified as effective against COVID-19?*

**C. Communication. To ensure the business and its employees comply with communication requirements, you agree that you will:**

- Post signage throughout the site to remind personnel to adhere to proper hygiene, social distancing rules, appropriate use of PPE, and cleaning and disinfecting protocols.
- Establish a communication plan for employees, visitors, and customers with a consistent means to provide updated information.
- Maintain a continuous log of every person, including workers and visitors, who may have close contact with other individuals at the work site or area; excluding deliveries that are performed with appropriate PPE or through contactless means; excluding customers, who may be encouraged to provide contact information to be logged but are not mandated to do so.

*Which employee(s) will be in charge of maintaining a log of each person that enters the site (excluding customers and deliveries that are performed with appropriate PPE or through contactless means), and where will the log be kept?*

- If a worker tests positive for COVID-19, employer must immediately notify state and local health departments and cooperate with contact tracing efforts, including notification of potential contacts, such as workers or visitors who had close contact with the individual, while maintaining confidentiality required by state and federal law and regulations.

*If a worker tests positive for COVID-19, which employee(s) will be responsible for notifying state and local health departments?*

### III. PROCESS

**A. Screening. To ensure the business and its employees comply with protective equipment requirements, you agree that you will:**

- Implement mandatory health screening assessment (e.g. questionnaire, temperature check) before employees begin work each day and for essential visitors, asking about (1) COVID-19 symptoms in past 14 days, (2) positive COVID-19 test in past 14 days, and/or (3) close contact with confirmed or suspected COVID-19 case in past 14 days. Assessment responses must be reviewed every day and such review must be documented.

*What type(s) of daily health and screening practices will you implement? Will the screening be done before employee gets to work or on site? Who will be responsible for performing them, and how will those individuals be trained?*

*If screening onsite, how much PPE will be required for the responsible parties carrying out the screening practices? How will you supply this PPE?*

**B. Contact tracing and disinfection of contaminated areas. To ensure the business and its employees comply with contact tracing and disinfection requirements, you agree that you will do the following:**

- Have a plan for cleaning, disinfection, and contact tracing in the event of a positive case.

*In the case of an employee testing positive for COVID-19, how will you clean the applicable contaminated areas? What products identified as effective against COVID-19 will you need and how will you acquire them?*

*In the case of an employee testing positive for COVID-19, how will you trace close contacts in the workplace? How will you inform close contacts that they may have been exposed to COVID-19?*

### IV. OTHER

Please use additional paper to provide additional details about your business's Safety Plan, including anything to address specific industry guidance.

# CROP INSIGHTS

## GENERAL

The weather continues to be challenging. Some early planted crops show frost or chilling injury, while other plantings are suffering from a lack of timely rainfall in this unseasonable heat. A line of violent storms swept through the southern Finger Lakes Monday, which may have caused some damage to young plantings. On the whole though, planting is progressing well and crops will benefit from the large number of degree days if given adequate moisture. Keep an eye on low temperatures headed into next

week and be ready to protect tender crops with row cover, since they will not be hardened off for a sudden return to the low 40s.

## BEETS

Leaf spots in field-grown beets at this time are likely caused by Bacterial Leaf Spot as this disease is favored by cool, rainy weather. Lesions are irregular shaped and have black borders. Leaves become twisted and puckered. Beets grown in green-houses or tunnels could have Bacterial Leaf Spot or Cercospora leaf spot which is typically a mid to late season disease in field grown beets and chard. Cercospora is favored by warm weather and long periods of humidity or rain. Lesions of Cercospora have characteristic black dots in the center (pseudostromata) as seen with a hand-lens and a purple border. For more information and photos, see the [June 12, 2019 issue of VegEdge](#). If you are growing beets conventionally, I reviewed herbicide options in the [February 3, 2020 issue of VegEdge](#). Post-emergence herbicides are selected based on the weed species that have emerged. Micro-rates of a combination of some or all of the following herbicides can be used: UpBeet, Nortron, Spin-Aid, and Stinger. Alone, each of these herbicides has limited effectiveness, but together can improve the spectrum and efficacy of weeds controlled. Spin-Aid can burn young beets, so be very careful with the rates. We typically use 0.5 pt/acre Spin-Aid when beets are very young (2 to 4 leaf stage), and increase rates with larger beets. Stinger has a long crop rotation interval for some crops and should be used with that in mind. - JK

## COLE CROPS

Flea beetle activity is picking up. Scout for flea beetles during the middle part of the day and have a plan in place for protecting young transplants from heavy feeding.

## CUCURBITS

Cucumber beetles are here and hungry! Scout your cucurbit crops now, be sure to check under leaves and at the base of stems to make an early detection.

## GARLIC

It may be a little late for adding N to garlic at this point. However, with the dry weather, it wouldn't hurt to give the plants some irrigation. Garlic doesn't have a big root system and it isn't very deep. If your soil is well drained or it just hasn't rained much in the last couple of weeks, providing some water every two to three days while the dry conditions last will ease the stress on them. - RH

## LETTUCE AND GREENS

Irrigation is needed to help keep these crops from becoming stressed enough to bolt. Bottom water rather than overhead, especially for lettuce to avoid rot. Short but frequent waterings are better than infrequent heavy watering. Bottom rot/wirestem (Rhizoctonia), and drop (sclerotinia) are several of the common diseases of lettuce during hot damp weather. Endura 70 WDG and Luna Sensation are two of the products that can be used on both bottom rot/wirestem and drop. As always, read the labels and the NY label recommendation is the law. - RH

## ONIONS

Here come the weeds! As the weather has changed from winter to summer in a week, its grow time! For both onions and unfortunately the weeds and barley. Earliest direct seeded onions are at 1-2 leaf and transplants are at 5-6 leaf. Most of the direct seeded crop is at flag to 1-leaf stage. Barley-kill is well underway. Hopefully, this heat will not result in seedling burn-off. See article on the Weed Race – Trial Notes from Spraying Small Onions (page 3), which outlines some key differences between Chateau and Goal 2XL/



Lettuce bottom rot. Lower leaves turn soft and rot, especially near the stem.



Lettuce drop. Stem rots through causing outer leaves to wilt and inner leaves to rot.



Figure 1. Chateau 2 oz is very good at controlling pigweed (small dying seedlings in pink), while ragweed that was greater than its size limit (1") look untouched (blue). Ragweed within its size limit is hurting (yellow). Photo: C. Hoepting, CVP

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tender. In general, Goaltender is the safest with most broad-spectrum weed control, while Chateau is more selective, but is really effective on the weeds that it is good at (Fig. 1). Onions struggling with pre-emergent injury such as improper unfurling of the leaves (= looping injury) and thickened, brittle stems from Outlook and Prowl are less equipped than healthy onions to tolerate post-emergent herbicides.

### PEPPERS

Many peppers and tomatoes have been set out in the field in the past week. Best practice is to examine both crops for any sign of bacterial disease on the foliage prior to transplanting out into the field. Bacterial diseases can spread easily in the greenhouse. Follow that up by using fresh stakes to avoid carrying over bacterial (and other tomato) diseases from year to year.

### PROCESSING VEGETABLES

Will be covered under individual crop headers this year. - JK

### SWEET CORN

Early sweet corn has been cut out of its plastic tents. Crop still under plastic cover should be cut out now or closely monitored to ensure the crop doesn't suffer from excessive heat. Crop stages vary, but most of the fields examined were 4-5 leaf and about 6-8" tall. Some plantings showed injury from the recent cold. Young corn will outgrow that damage and should yield properly. Corn traps were set up in the last few days across several Western NY sites. Expect to see catch counts starting next week.



## Late May Berry Observations

*Esther Kibbe, Cornell Cooperative Extension, Harvest NY*

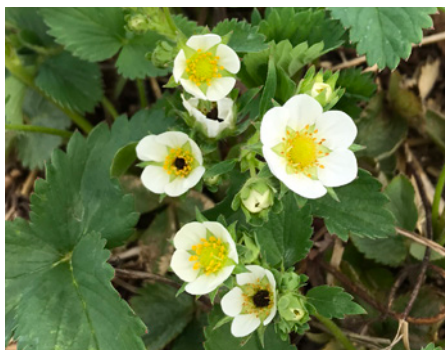
After weeks of cold slowing plant development, hot weather is now accelerating it. Strawberries and blueberries are in full bloom across WNY. Early strawberry flowers showed quite a lot of black centers, but secondary flowers have been pushing through with this heat and it looks like most fields will still have a reasonable crop. Bear in mind that with the early bloom delayed, and the later flowers now advancing rapidly in the heat, there may be little difference between early and late varieties, making for a very condensed harvest season. If we get some cooler weather, that may spread things out again, but it will be interesting to manage.

Buds are swelling fast on the Rubus (brambles) and Ribes (currants & gooseberries). Expect bloom in the next week or so. There are some laterals that appear to have been damaged by the cold, and are not elongating. In some cases, secondary buds are pushing to replace these. It isn't clear how this might affect the crop. Some growers are putting out feeders to attract hummingbirds, which eat thousands of insects every day. This approach may help reduce pressure from SWD.

Fields I have visited have been very clean, but from across the Northeast there are reports of tarnished plant bugs, spider mites and strawberry clipper damage. Insecticides should be avoided now that we are in bloom, but keep looking for issues so that you are ready at petal fall. Some growers are seeing young gypsy moth caterpillars, which have blown out of the trees. They aren't particularly interested in strawberries, but will eat them if they are in the neighborhood. Gypsy moth caterpillars can be a bigger problem in blueberries, defoliating entire plants. Dipel can be used to control these if they get bad.

As mentioned last week, some fields are seeing more angular leaf spot due to sprinkling for frost protection. Copper products are not recommended now that we are in bloom. Oxidate/Rendition is the safest option for now.

Many areas across the northeast are experiencing drought conditions. We have been lucky in WNY to get some timely rains, but be sure to get irrigation equipment into the field if it isn't set up already. Adequate moisture is key for fruit size, yield and overall plant health.



Cold damaged blossoms have a black center, while yellow centers show that a berry will develop.



Hummingbird feeders can attract birds to eat insect pests like SWD.



Strawberry plants under heat and drought stress will curl and wilt.

*Photos by Esther Kibbe, CCE Harvest NY* ●

# Processing Green Peas: Post-Emergence Weed Control with Herbicides

Julie Kikkert, Cornell Cooperative Extension, Cornell Vegetable Program

The earliest planted peas already have several nodes of growth while others have recently been planted. Scouting and managing weeds in all pea fields is critical until the crop begins flowering. The best chance for control is when the weeds are young. Growers of conventional processing peas rely largely on herbicide use for weed management. The application of post-emergence herbicides should be based on the dominant weed species present and the growth stage of the peas. A copy of the [chart on relative effectiveness of herbicides available for peas in NY](#) is available on the Cornell Vegetable Program website in the pea crop section. There are no changes in products for 2020. Note that this chart is only for succulent green (English) peas. If you are growing edible pod or other types of peas, please make sure to look at the product labels carefully.

The application of post-emergence herbicides to succulent peas must be made at certain growth stages. Herbicide labels often refer to peas at a certain number of nodes (point where a leaf meets the stem). In peas, the first two nodes have only scale leaves and are often below the ground (Fig. 1). These should be counted in green peas. (Note this is different for dry field peas.) Furthermore, afilea (leafless) peas do not have true leaves, rather they have stipules and tendrils.

Basagran and Thistrol don't have any soil residual, so the best time to spray is when the majority of weeds have emerged. Ideally, the first flush of weeds would have one or two leaves and the next flush would be in the cotyledon stage. Keep in mind that rain will stimulate new flushes of weeds. If you have nightshades, pigweed or mustard in your field, a better choice may be Raptor or Pursuit. Basagran will only control hairy nightshade, whereas Raptor and Pursuit will control both hairy and eastern black nightshade. Poast, Assure II/Targa and Select Max all provide good to excellent control of the most prevalent annual grasses in NY.

Figure 1. Node Count in Succulent Green Peas

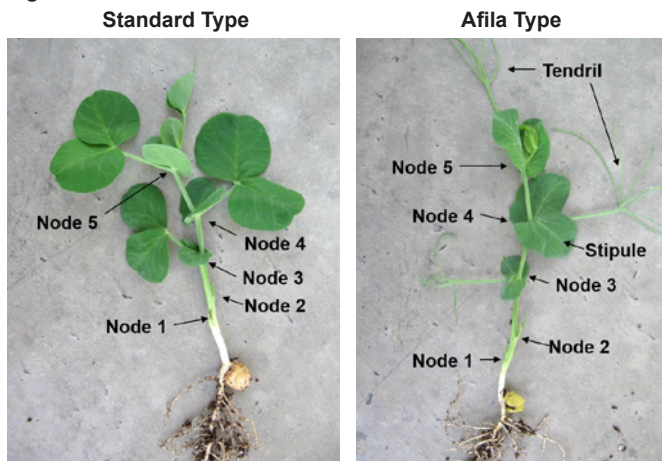


Image by Julie Kikkert, CCE Cornell Vegetable Program

Although Basagran is labeled for yellow nutsedge, the rate we use in peas (1.0 – 2.0 pt/A) is too low to kill nutsedge, however, you may see suppression of weed growth. That is why on the pea herbicide chart Basagran is given a “poor” rating on yellow nutsedge. In the future, make note that Dual Magnum applied pre-emergence is very effective against nutsedge. Better yet, control nutsedge in fallow fields or rotational crops as a long-range plan for a particular field

If you have Canada thistle in your fields, you may either hand-pull if there are small patches or apply a spray of Thistrol when the thistle is 4 to 10 inches tall. Use a rate of 3 to 4 pints/acre. This will prevent the thistle from forming flower buds that can contaminate the pea product, but will not kill the thistle. Remember that Thistrol cannot be applied to peas that are later than 3 nodes before flowering. In early peas, those at nodes 9 to 11, the timing of this postemergence application is critical. Late applications in early peas cause non-uniform flowering, resulting in uneven maturity. Canada thistle management is best done in rotational crops or in the fall. Stinger is the most effective herbicide, because it moves to the roots. Note that there is an 18 month restriction before you can plant peas in a field where Stinger has been applied. Stinger is labeled for field corn, sweet corn, cabbage, beets and spinach, and pasture/forage crops. The optimal time for application is in April and May before the thistle buds open. Later in the season, you can use 2,4-D in labeled crops (not peas). In the fall, Roundup + Banvel can be used.

Table 1. The average node to first flower for commonly grown processing pea varieties.

Variety	Vine Type	1st Node to Flower
<b>Early Season</b>		
FP 2269	Afilea	9 to 10
Spring	Normal	9 to 10
PLS M-14	Normal	9
<b>Mid-Season</b>		
BSC5051	Normal	10
DA1470	Determinant Afilea	12 to 13
Portage	Afilea	10
SV7401QH	Normal	13 to 14
SV 8112QH	Determinant Afilea	10 to 13
<b>Late-Season</b>		
Bolero	Normal	14 to 15
Concept	Afilea	16 to 18
GV513	Normal	15
PLS196	Afilea	11 to 16
Ricco	Afilea	16
Spartan	Afilea	12 to 14
SV6844	Afilea	13 to 16
SV7688QF	Determinant Afilea	15 ●

## Weather Charts

John Gibbons, CCE Cornell Vegetable Program

### WEEKLY WEATHER SUMMARY: 5/19/20 - 5/25/2020

Location**	Rainfall (inch)		Temperature (°F)	
	Week	Month May	Max	Min
Albion	0.16	1.32	86	45
Arkport	0.31	2.45	86	43
Bergen	0.18	1.44	89	41
Brocton	0.83	3.57	86	51
Buffalo*	1.37	2.65	84	50
Burt	0.01	1.11	86	53
Ceres	0.33	1.87	86	32
Elba	0.08	1.12	87	46
Fairville	0.22	1.28	86	43
Farmington	0.11	2.08	87	44
Fulton*	0.87	2.57	82	44
Geneva	0.15	1.23	83	44
Hammondsport	0.14	1.57	85	44
Hanover	0.98	2.86	86	50
Lodi	0.82	1.86	84	46
Niagara Falls*	0.17	1.14	85	45
Penn Yan*	0.17	1.34	85	40
Rochester*	0.09	1.06	86	45
Sodus	0.37	1.39	84	42
South Bristol	0.09	1.43	86	48
Varick	0.13	NA	85	47
Versailles	1.13	3.46	85	46
Williamson	0.19	1.03	83	48

### ACCUMULATED GROWING DEGREE DAYS (AGDD)

BASE 50°F: APRIL 1 — MAY 25, 2020

Location**	2020	2019	2018
Albion	152	171	296
Arkport	140	183	347
Bergen	161	186	279
Brocton	193	211	NA
Buffalo*	192	169	337
Burt	125	136	225
Ceres	149	234	285
Elba	156	164	NA
Fairville	162	170	283
Farmington	173	173	290
Fulton*	178	173	280
Geneva	172	190	300
Hammondsport	170	191	294
Hanover	187	208	294
Lodi	188	213	323
Niagara Falls*	159	141	324
Penn Yan*	176	214	321
Rochester*	169	222	327
Sodus	156	168	272
South Bristol	172	190	310
Varick	195	220	319
Versailles	186	219	296
Williamson	147	147	259

\*Airport stations

\*\* For other locations: <http://newa.cornell.edu>

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# Cornell Cooperative Extension Cornell Vegetable Program

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