



Cornell University  
Cooperative Extension

# Eastern NY Commercial Horticulture Program

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## Vegetable News

### Weedy Nightshade Management in Tomatoes, Peppers, and Eggplant

Andy Senesac, Long Island Fruit/ Vegetable Update (5.19.16)



Cornell University

The USDA PLANTS database and other authorities have recently changed the common name of *Solanum ptycanthum* from Eastern Black Nightshade (EBN) to West Indian Nightshade. This change will take a while before the public is aware.

So, you probably heard it here first! I will continue to refer to it as EBN for the time being. EBN is the most commonly encountered of the annual weedy nightshades. Others are Hairy nightshade and Black nightshade. Unfortunately, the species ID is important. Several herbicides will claim control of some nightshade species, but it is rare to see EBN as a weed that is controlled by an herbicide that can be applied on Long Island. A review of the options available for tomatoes, peppers and eggplants reveals that there are three herbicides that are specifically labelled to control EBN. Aim (carfentrazone) is a contact herbicide that will burn the

weed down. Application must be done with a hooded sprayer in row middles to avoid crop injury. Gramoxone Inteon (paraquat) can be used as a pre plant or stale seed bed application or after planing but before seedling crops emerge. Reflex (SLN NO. NY-130006 fomesafen) will residually control all three nightshade species as a pre-emergent application. The Reflex SLN remains in place, unchanged from 2015. Labels are available on the PIMS website or at local distributors. Other crops, especially sweet corn have herbicides labeled that control this weed well, so a program of rotation to take advantage of this will help greatly-given the tools available in other vegetable crops are few.

#### Herbicide UPDATE!

#### Eggplant & Prowl H2O:

Eggplant has been added to the primary label of Prowl H2O.

The label allows for a pre-transplant (unincorporated) application to raised beds before plastic mulch is laid down. A second application to row middles can be made after transplanting. Read label carefully because the wording can be confusing. Prowl H2O will suppress Black and Hairy nightshade, but not EBN

Source: Andy Senesac, Long Island Fruit/ Vegetable Update (5.19.16)

### Cutworms

Amy Ivy, ENYCHP



Cutworms attack a wide variety of vegetable plants across the United States. Their typical damage is to sever young transplants right at

the soil line, so a tell-tale clue is finding the severed plant tops lying next to their bases in the morning. A rabbit or deer would have eaten off the tops and consumed them, only the cutworm leaves the tops behind. Dig around in the soil at the bases of affected plants to look for the caterpillars. They are large, 1-2" long, smooth, and dark in color but are quite easy to see. They are nocturnal and spend the days hidden just under the soil surface so you need to sift through the soil with your fingers or tines of a hand cultivating tool. They usually curl up when disturbed and vary quite a bit in color (see photo). Eventually transplants become large enough that they can withstand cutworm feeding and they are no longer a threat.

Cutworms tend to be worst when transitioning from sod, alfalfa or other cover crops that contain legumes. Turn under the residue at least 2 weeks before planting so it has time to break down and starve out any larvae. Usually

cutworm damage will occur in a few isolated spots within a field rather than the entire area so treatment of the whole field is seldom necessary.

In May the caterpillars feed on and topple seedlings but by early summer some can move up into the plant at night and feed on leaves and even the tomato fruit itself. They return to the soil for the day so the damage will be noticeable without any caterpillars visible. For more information visit :

<http://ipm.ncsu.edu/AG295/html/cutworm.htm>

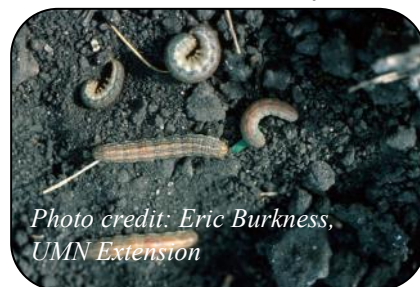


Photo credit: Eric Burkness, UMN Extension

## Early Pruning for Tomatoes: “The Strong Y”

Amy Ivy, *ENYCHP*



Tomatoes grown in the field or in tunnels do not need their lowest leaves. By removing them you increase air circulation and direct the plants' energies to the leaves and fruit that do matter. Detailed pruning is not practical in large field plantings but even a quick

stripping of the lowest leaves can help.

In tunnels or in smaller field plantings, a little time spent on pruning will make the plants easier to work around with better air flow. For determinate types and indeterminates that will be trained to a double leader, the Strong Y method is a simple way to approach this task. See the notations in the photo. The earlier the suckers are removed, while they are still young and small, the better.

**Determinate plants:** remove all leaves and suckers below the Y then begin with basket weave support.

**Indeterminate plants:** same as above, then maintain only 2 leaders by removing all suckers. This takes regular attention, especially late May – June when everyone is busy with everything else. But a little regular attention now will let you keep on top of this with much less effort and less stress on the plant. Try to prune and train indeterminates at least once, preferably twice, each week. Removing small suckers is quick and easy, waiting until they are larger takes more time and leaves a larger wound for the plant to recover from. Try to shoot for Early and Often. With indeterminate plants trained to a single leader do not follow this method. To train plants to a single leader, remove every sucker that forms and remove all leaves up to the first fruit cluster, continuing up the plant as it grows and harvest progresses.

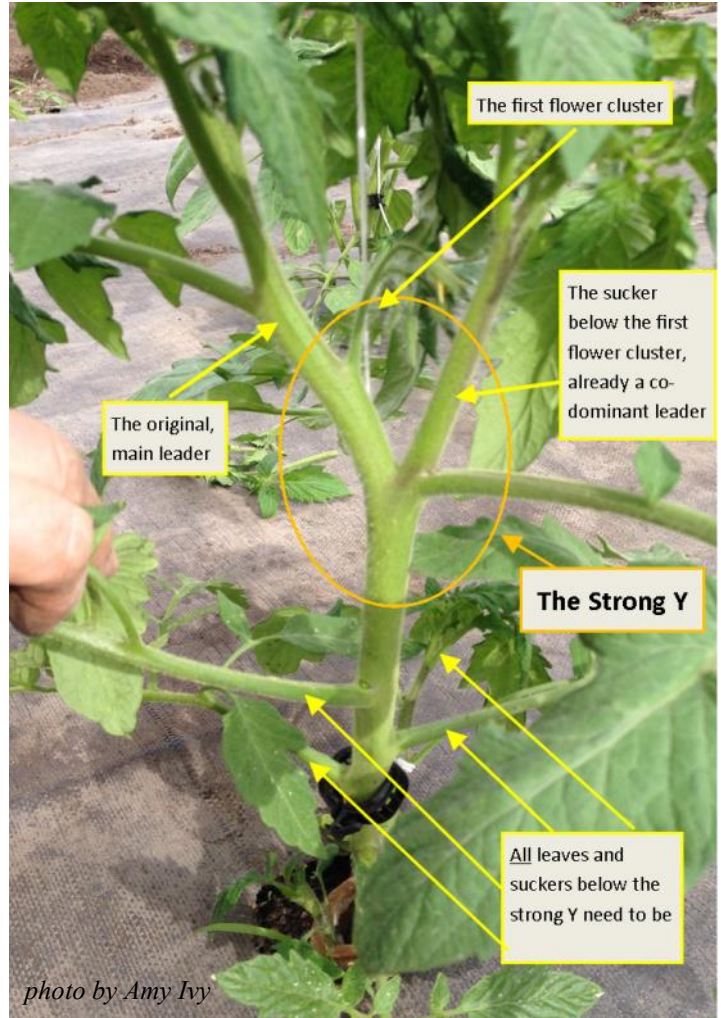


photo by Amy Ivy

## Chateau for POST-Emergent Control of Yellow Nutsedge in Onion

Christy Hoepting, *CCE Vegetable Program*



In 2015, we conducted an on-farm trial to identify effective post-emergent treatments for controlling yellow nutsedge (YNS) in direct seeded onions. In general, Chateau had very good POST activity against YNS with best control achieved when it was

applied early prior to plant producing rhizomes and side shoots and when multiple applications were applied. It worked better than Goal.

One treatment that stood out was **Chateau 1.0 oz applied when the yellow nutsedge was poking out of the ground** and was no greater than 2 inches tall (Fig. 1) and the onions were in the flag leaf stage. One week later, this single application resulted in **70% mortality** of YNS. Another 2.0 oz was applied one week later when the onions were in the 1-leaf stage, which increased YNS mortality to 78%. Of the remaining YNS, 21% was actively growing while the rest (7.5%) were injured. With no fur-

ther herbicide applications, this treatment resulted in 80% reduction in weed biomass and 47% reduction in ground cover (Fig. 2). **Timing this burndown application to before YNS begins to produce rhizomes and side shoots appeared to be key**, because once YNS produces side-shoots and rhizomes, it more readily grows back (Fig. 3).

In this study, this treatment resulted in 44% stand reduction. In other trials, Chateau 1.0 oz at flag leaf stage resulted in 10% or less injury. We suspect that the higher level of injury in 2015 was a result of the flag leaf application having been made following a frost and closely preceded by an application of Prowl EC. Chateau is not labeled until direct seeded onions are in the 2-leaf stage, However, **Chateau 2.0 oz could be used now in transplanted onions**. If you have YNS starting to emerge in transplanted onions, Chateau 2.0 oz followed by 1.0 oz one week later would be a good start.

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In the 2015 trial, Chateau generally performed better than Goal 2XL for post-emergent control of YNS. However, four repeated applications of Goal 2XL 4 fl oz at 2-, 3-, 4- and 6-leaf stages resulted in 85% control of weed biomass and 39% control of ground cover. **For post-emergent control of YNS in direct seeded onions, I would suggest to start with Chateau 2.0 oz at 2-leaf stage, followed by 1.0 oz 1 week later, and then to continue to burn it back with Goal 2XL 4 fl oz.** This will not result in 100% control, but will drastically cut down on hand weeding it later.



Fig. 1. New emergence of yellow nutsedge on onions at the early flag leaf stage. Photo: C. Hoepting.



Fig. 3. Yellow nutsedge can more readily be controlled with post-emergent herbicides when it is applied before the plants produce rhizomes and side-shoots (a) Photo; C. Hoepting. b) YNS producing rhizomes and side shoots. Photo: Mark Schonbeck.

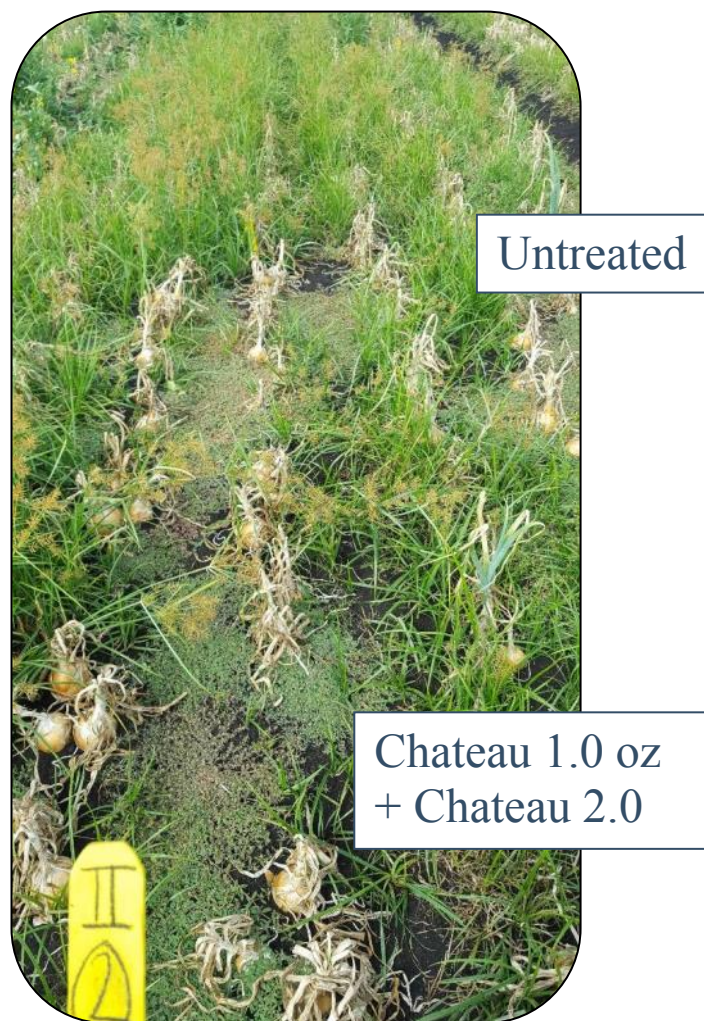


Fig. 2. Chateau 1.0 oz was applied to newly emerging yellow nutsedge (less than 2 inch tall) when onions were in the flag leaf stage, followed by Chateau 2.0 oz 1 week later when onions were in the 1-leaf stage. With no additional applications, this treatment resulted in 85% reduction in biomass and 47% reduction in ground cover at harvest (shown). This treatment resulted in 44% stand reduction, but certainly could be used in transplanted onions and with even better results when followed with Goal 2XL. Photo: C. Hoepting.



## Growing Edamame in Eastern NY

Teresa Rusinek, Jesse Strzok, Bob Weybright; ENYCHP



Edamame was planted using Kinze Planter

Growers in the ENYCHP region have expressed an interest in producing edamame (AKA edible soybean) but have been cautious in doing so due to the fact that the seed is expensive and not much is known about the yield potential in more northern climates. This crop offers potential for ethnic markets in New York City and

other larger city farmers' markets. It is also fits in with crop rotation plans for many of our vegetable growers who are looking to rotate into other crops that align with their vegetable plantings. These beans are harvested green and sold as a fresh market crop direct to consumers in the pod, or frozen either in the pod or removed from the pod. It is a crop small scale and large scale farmers could become quickly skilled at growing.

Last year we put in an edamame trial in northern Dutchess County. We aimed to pinpoint the obstacles to growing and marketing vegetable soybeans, commonly referred to as edamame. Below is a synopsis of the results. Please feel free to contact one of us if you are looking for more detailed information.

### Production Summary

**Weed Control** - There are limited chemical options for weed control during edamame production. Therefore, it is important that growers choose fields with low weed pressure before planting and have appropriate cultivation equipment to keep weeds under control particularly until rows fill in and edamame plants can better compete with weeds.

**Planting Date** - Edamame need warm soils to germinate between 55-65 F. Our June 6<sup>th</sup> planting date in Northern Dutchess County was adequate for good germination. Growers need to monitor soil temperatures to determine if they can plant earlier. Planting dates can be staggered a week or so apart to extend the harvest. Growers will need to keep in mind that many varieties of edamame, particularly the later maturing type, are photoperiod sensitive. If planted too late, the shorter day lengths will trigger flower-

ing before adequate vegetative growth is put on to give good yields of pods.

**Soil Moisture/Fertility** – Adequate moisture is key to good germination. In our trial, the grower irrigated after planting and there was some rain as well, however, we learned from other growers that soil crusting before emergence can actually prevent the seedling from emerging. At our site, the soil was light and didn't crust much after irrigation so this was not a problem. 20-10-10 fertilizer was applied @ 350lb/Acre, Rhizobium inoculant was not used.

**Planting depth and spacing** - We planted at about 3/4" deep. In our trial this was a good depth and we had fair to excellent germination depending on variety (see Table 1.) Growers have reported that planting deeper particularly with smaller seed varieties results in poor germination and stands. 2 rows per bed – 565' long beds, 2" in-row spacing and 36" between rows and 24" spacing between beds

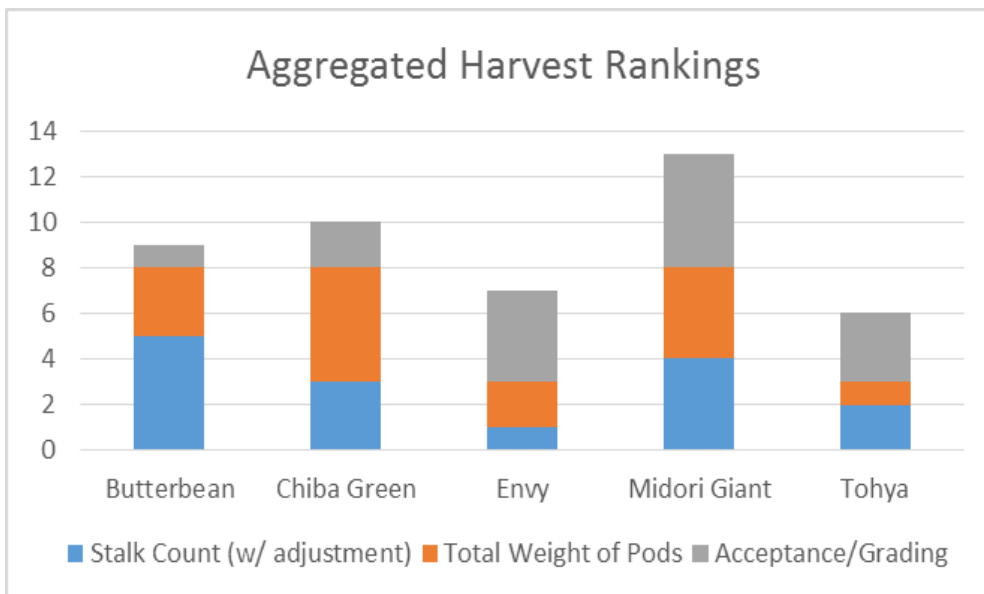
**Pests** - We had moderate deer damage in the Butterbean variety. Japanese beetles were seen at low to moderate levels but damage to pods was not evident. Brown Marmorated Stink Bug (BMSB) was a potential concern as it is documented to cause significant yield losses in soybean in the Mid-Atlantic States. Though we did see some BMSB at harvest time, we did not see damage to pods. There was no issue with disease.



Progression of edamame growth

**Harvest** - The window for harvesting marketable, good quality, edamame is short, about 3 days, depending on environmental conditions. The first indication of maturity is when the leaves begin to take on a yellowish hue. Beans in pods should be 80-90% expanded. In our trial the first variety to show maturity was Tohya, however, the beans had not filled in the pods until after the grower irrigated the planting. The grower harvested and sold the edamame on the stalk.

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“fullness,” aroma, texture, starchiness, sweetness, nuttiness, finish, etc.

It was found that the edamame compared quite favorably to that of readily available market edamame. In the cases where it was being evaluated against high end restaurant product the appearance was slightly below that of some product being sourced from Malaysia and Taiwan, but the flavor quality was close if not similar. It became evident that the hand sort methodology used by the team on our project resulted in a noticeably high yield loss that surpassed most commercially available (via mainstream

**Post Harvest Considerations** - Harvest during the coolest part of the day and get product out of sun and heat immediately. Cool immediately by hydro -cooling and /or placing in cooler to avoid visual and flavor degradation. Consider cooler space, especially if selling on stems as this is a bulky item. Trimming off tops and some leaves will improve presentation at market. Store in cooler up to 5 days.

### Harvest and Marketing Summary

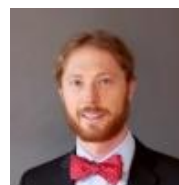
The gathered edamame harvest data was broken down into three main categories: stalk count; weight per stalk, adjusted for planting/seeding rates; and acceptance or grading. This information is given in the Harvest Summary table. From the three categories the varieties were ranked and the ranks aggregated as shown in the Aggregated Harvest Ranking graph. To understand the table a rank of 1 was given 5 points, 2 was given 4 points, and so on. Post-harvest handling and preservation of the edamame was intended to closely replicate that which could be reasonably expected on a small to mid-size farm in the region. The next step was to combine this with consumer preference data gathered post-harvest using the edamame for selection of varieties best suited for ENY’s climate, geography, and markets.

Efficacy evaluations were performed throughout ENY and in NYC. The work targeted both visual and culinary aspects of the edamame, e.g., color, size, shape, pubescence,

commodity sources) edamame, but was on par or slightly below that which was being sourced by the very high end Asian themed restaurants. It is very unlikely to compete on price using this hand sorted method.

It was found that there is interest on the part of restaurants to explore purchasing a few of the varieties presented over a period of 6-8 weeks as a special draw to differentiate their menu. As well as some interest on the part of consumers to purchase edamame fresh and on the stalk at farmer’s markets.

In summary, sales potential for edamame as an add-on item for farmers able to successfully grow some of the varieties presented exists. There does, however, need to be additional work to better understand the growing of, and equipment/infrastructure needed to have consistent and successful crops to develop and maintain a fresh market alternative to commodity frozen edamame. Customer education on the varietal differences and their unique attributes as an alternative to commodity edamame will be required as well.



### Harvest Summary

	Butterbean	Chiba Green	Envy	Midori Giant	Tohya
Avg stalk count / 10' row sample	19.1	19.5	20	18.9	13.2
Avg weight of pods / 10' row sample (kg)	1.73	2.10	1.36	1.87	0.82
Rejection percentage	73%	60%	34%	28%	57%



## A Glug is not a Unit of Measurement

Crystal Stewart, ENYCHP

When I was a kid I watched so much of Julia Child's cooking show that I still hear her voice in my head when I cook now. Add a pinch of salt, a splash of wine, and voila! A culinary masterpiece. The use of experience or intuition feels good, and we rely on it in many parts of our life. One place that it doesn't serve us so well, however, can be in the application of inputs when farming. Chemicals, from pesticides to fertilizers, are always becoming more complicated, more powerful, and more in need of great care and respect.

### First: know what you are working with

Formulations are always changing, so make sure that you note updates and re-acquaint yourself with the label. It's not uncommon for us to see rates increase or decrease by half or more, or for adjuvant requirements to change. Take a few minutes and make sure you know key details like rate, PHI (this one in particular has caused some serious issues in the past, with changes of up to 30 days!), REI, and maximum applications per season.

### Second: know how much product you need to apply, and how to do so accurately

Figure out the area in which you will be applying product (in acres or square feet), and accurately determine how much active ingredient and water you will need to get the job done. Mix only what you need. Before you do this, though, calibrate your sprayer if you have not done so for the season. The accuracy of your mixing is only as accurate as your application. If you are using a backpack sprayer, figure out how much material you apply and either calibrate your speed or change the water volume as needed. If you are using a boom sprayer, calibrate each nozzle to determine flow and to make sure that nozzle wear is not leaving you with uneven application rates. If you need help calibrating, do not hesitate to contact anyone on the team.

### Third: Double check all of your math

Look at the numbers, think about them, and make sure they make sense. It's easy to make a math error, and doing so can be costly and harmful. Overapplication can cause phytotoxicity, put applicators at risk, and waste product. Underapplication can lead to issues with disease and insect resistance, and crop damage due to continued pest pressure. It takes less time to check the numbers than it does to correct most of the mistakes that not checking cause.

### Fourth: Systematize where you can

Once you know your numbers are right, take steps that allow you to be accurate without having to think about it too much. Designate measuring cups for specific products and mixes (and labels appropriate lines on them), maintain sprayers in good working order, and make sure everyone who will apply pesticides is on the same page about the systems.

### ENYCHP Twilight Meeting:

## Sprayer Efficiency Update

Join ENYCHP for a twilight meeting with Andrew Landers of Cornell to discuss Sprayer Efficiency. Two meetings will be held, one in the Capital District and one in Orange County. **Please Pre-Register by June 13th to receive the pre-registered rate.**

Online: <http://enych.cce.cornell.edu/events.php>

Phone: Call Abby Henderson at 518-746-2553

**Meeting Fee:** \$10 PER FARM if pre-registered by 6/13 for ENYCHP members, \$20 for non-enrolled \$15 at the door PER FARM for ENYCHP members, \$25 for non-enrolled

### Capital Region Meeting

Date: Wednesday, June 15th

Time: 6pm-8pm

Location: Wertman Farms  
311 Pinewood Road  
Melrose, NY 12121

### Orange County Meeting

Date: Thursday, June 16th

Time: 6pm-8pm

Location: Cavallaro Farms  
442 Big Island Rd  
Goshen, NY 10924

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