Cornell University
Cornell Cooperative Extension
Eastern New York Commercial Horticulture

Vegetable News

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Fall Weed Control

Charles Bornt–ENYCHP

Even though the last week has not felt like fall weather at all, the calendar certainly says that it is. I know cover cropping is happening, but I have to ask one question – do your fields have a lot of perennial or biennial weeds left in them? What weeds in particular am I talking about? Well, the first one that comes to mind is bindweed (both Field and Hedge bindweed). These are the ones that seem to climb and wrap themselves around your cornstalks and tomato stakes. They are also often referred to as Morning glory, but they are not. These weeds produce underground reproductive structures called stolons and rhizomes that allow it to spread without having to create seed. When you till or cultivate, you chop up those parts and distribute them throughout your fields. Other perennials that come to mind are Dandelions, Yellow Nutsedge, Common Milkweed, Canada Thistle and Quackgrass. Then there are others that we call biennials which require 2 years to complete their life cycle (first year as a rosette, second year produce seed). Some common biennials are Common Burdock, Sow Thistle and Wild Carrot (Queen Anne's Lace).

Hard to get rid of perennials may require lots of stale seed bedding/tillage - Exhausts the food reserves but can also spread them!

In my experience, many biennial weeds are taken care of with cultivation, but while perennial weeds might be weakened by cultivation or mowing (prevent additional food reserves to reach the storage organs), they usually thrive because you move those underground rhizomes or other underground reproductive parts and spread them around the rest of the field or farm. For organic growers, cultivation is the main-stay of your perennial weed control program which may require fields to be taken out of production in order to continuous cultivate the piece to

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weaken the weed enough until you get rid of it. Fall tillage or mowing performed now would weaken perennial weeds so that they either die from lack or reserves or are so weak in the spring that they can be relatively easily controlled through normal spring cultivation. The other goal of fall tillage would be to bring as much of the storage organs to the surface of the soil to dry out and further be weakened by freezing.

Conventional growers can rely on herbicides and fall is a pretty good time to take care of them with herbicides. Why you might ask? At this time of year, the plant is usually moving most of the photosynthates or food it is producing to the storage organs below the soil and the herbicides, if applied now, will move into the organs too and work much better. In the springtime it is the opposite as most of the food reserves are moving from the storage organs in the ground to the above parts of the plant. When you apply herbicides in the spring, you might kill the top portion, but the plant usually has enough food reserves to continue to grow and just send up new vegetation. What to use? Conventional non-selective herbicides like glyphosate (Round-Up etc.) tank mixed with something like 2,4-D, Clarity, Banvel or Dicamba would be the preferred choice. These materials used by themselves will do fair, but tank mixed together with the right additives (usually a surfactant plus a nitrogen fertilizer) will do a much better job. The other key is to do it before frost sets in as you want as much foliage there as possible and don't till right afterwards either as you want the materials to translocate of move into the below ground parts. Daytime temperatures in the fifties and sixties, with bright sunshine is also ideal! If you use any of the above mentioned materials with your glyphosate, be mindful of the plant back restrictions for next season. Most of them require a 120 days for most vegetable crops.

This lone mature Redroot Pigweed plant between two rows of plastic can produce over 250,000 seeds by itself!

I've only talked about perennial weed control, but probably the ones that give us the overall most grief are those annual weeds like Lambsquarter, Ragweed and Galinsoga. I guess partly why I didn't talk about them is because they need to be taken care of throughout the season to limit the amount of seed they can produce. These annuals complete their lifecycle in one year and can produce some amazing amount of seeds. For example, a mature Lambsquater plant can produce over 100,000 viable seeds and a small one can still produce 25,000 – 30,000 seeds. However, now is the time to evaluate what your weed control successes and failures were and determine what can be done next year to minimize the weed problems and build off the successes. Below is an edited article by former UMASS Vegetable Extension Specialist Rich Bonanno, outlining what you can still do this fall to evaluate and prepare for next year's battle against the weeds (UMASS Vegetable Notes, Volume 20, No. 18, edited by Chuck Bornt, CCE Eastern NY Horticulture Program):

Fall Weed Management Advice

- Weed management is still important at the end of the season. There are three main activities that need to be completed. They are: fall field scouting, preventing weed seed production, and controlling perennial weeds.

- End of Year Weed Scouting: It is worthwhile to take the time to check fields for weed problems at this time of year. A quick scouting can identify problems that will be expensive to solve if they get out of control and can provide clues that will help in designing a weed management program for next year. Mapping weedy spots, and keeping some kind of permanent record of weed surveys, can help you evaluate your weed management over the years. Make a map of each field and fill in the following information:

- How Many? How dense are the weeds? If weeds are very dense, they may be having an impact on yields. This is especially true if these weeds emerged early in the season, when competition is greatest. If weeds were actively growing during the period of greatest crop growth, consider changing the weed management program.

- Which Weeds? Identifying weeds can help identify potential problems before they get out of hand, and can help you decide if you need to modify your weed control program. Weeds like yellow nutsedge, field

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bindweed, and quackgrass are spreading perennials, which have underground parts that enable them to spread throughout whole fields. Because these weeds can be very damaging, and are very difficult to control, they are worth "nipping in the bud". In addition, keep an eye out for annual weeds that are new to a field or are increasing in numbers. Some weeds can be very difficult to control in some or all of the crops in your rotation. Galinsoga, for example, is hard to control in cole crops, peppers, and squash. Nightshades are difficult to control in tomatoes for growers who rely on herbicides for control, because they are in the same family as tomatoes. Velvetleaf is hard to control in sweet corn.

- What worked? It is also useful to look at the whole field and evaluate the effectiveness of your weed control efforts. If some weeds are generally escaping, identify them. They may point to weaknesses in your herbicide or cultivation program. If mostly grasses, or mostly broadleaves are escaping, it may require an adjustment of either the rates or the timing of grass or broadleaf herbicides.

- Where are the weeds? Weeds in the rows or planting holes are much more damaging to crop yields than between-row weeds. Weeds in rows may be an indication that cultivation equipment needs adjustment, or cultivation needs to be done earlier.

- Preventing Weed Seed Production: Annual weeds produce incredible amounts of seeds. Annual grasses normally produce 3,000 to 5,000 seeds per plant, small seeded annual weeds such as pigweed and lambsquarters can produce 100,000 to 250,000 seeds per plant, and larger seeded broadleaf weeds such as velvetleaf and smartweed can produce 5,000 or more seeds per plant. Perennial weeds can also produce seeds or other reproductive structures. For example, one yellow nutsedge plant can produce 2,000 tubers. Perennial weed management is covered below. Once fields are harvested, they should be tilled or disked as soon as possible to prevent seeds from maturing. Be especially concerned with weeds that are new to a field or are in abundant supply. If time is short, one alternative is to mow the weeds. This will remove the primary seed stalk but will also encourage lateral branching. Eventually, however, these branches will produce seeds and must be destroyed

- Perennial weed management: The best time to control perennial weeds is in the Fall. All perennial weeds have storage structures (tap roots or rhizomes) below ground that enable these plants to survive the winter and regenerate themselves the following year. Fall tillage of perennial weeds will kill top growth and fragment the storage organs but will not kill the weed. Frequent tillage will, over a long period of time, control perennial weeds but, in most cases, this is not practical.

- Perhaps the best control technique for perennial weeds is an application of glyphosate (Roundup) before the plant goes dormant. Perennial broadleaf weeds such as bindweed or dandelion should be sprayed while they are still actively growing which is usually before a hard frost. Perennial grasses, such as quackgrass, can be sprayed as late as mid-November. Use 10 to 20 gallons of water per acre when spraying Roundup. Two quarts of the herbicide will provide much better control at 10 gallons of water per acre than at 40 gallons of water per acre. Spraying on a mild afternoon following a cold or cool morning is best to encourage translocation of the herbicide to the below-ground storage structures. Disking or tilling two weeks after application will also improve control of the weeds.

- Many growers fight perennial weeds such as quackgrass in corn fields year after year because their primary goal in the Fall is to plant a cover crop. This is usually followed by a Spring application of Roundup which provides top kill but does not kill the whole weed. Applying Roundup at the proper time is the only way to achieve good control. Delaying the seeding of a cover crop may be a necessary evil in the fight against perennial weeds.

- ***In conclusion remember to scout and map your fields, prevent weed seed production, and apply Roundup at the right time to control perennial weeds.***

Field Bindweed foliage.

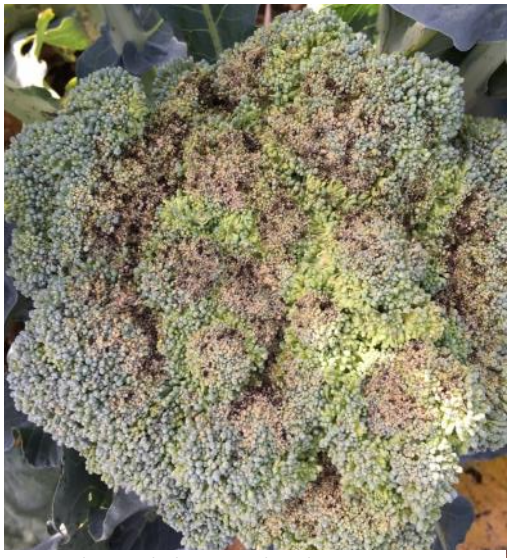
Managing Alternaria Leaf Spot and Head Rot in Broccoli

Ethan Grundberg, ENYCHP

The unseasonably cool temperatures and regular rainfall that we experienced for much of July and August provided ideal conditions to establish fall brassicas. Of course, the environmental conditions presented two significant disadvantages. First, the readily available soil moisture in the top few inches of the soil profile meant that some crops did not root as deeply as normal, leaving them more susceptible to drying out and wilting in the dry warm weather we're currently experiencing. This has forced many farms to overhead irrigate broccoli crops that, given the heat wave, are quickly developing heads. Second, the prolonged periods of leaf wetness and high relative humidity of much of the summer created ideal conditions for many pathogens, such as those that cause alternaria leaf spot and head rot (sometimes called pin rot) of broccoli, to develop and spread. So given the circumstances, some broccoli fields that had low to moderate leaf spot pressure are now being overhead irrigated and spreading the pathogens to developing crowns causing head rot.

Alternaria leaf spot and head rot of broccoli is caused by two very closely related fungi, *Alternaria brassicae* and *Alternaria brassicicola*. These two pathogens can survive a wide temperature range (40°F to 90°F), but as mentioned above, require high relative humidity and the maintenance of a water film on the leaf surface for at least nine hours to produce spores and colonize new plant tissue. The spores spread on clothing and equipment, but primarily by wind and splashing water from either rainfall or overhead irrigation. Both pathogens can also be seedborne, but more often survives on cruciferous weeds and plant residues from other cole crops.

It may be too late to save broccoli crowns already showing symptoms of head rot, but there is plenty that you can still do to reduce your risk of infection in the future. First, incorporate infected residue as quickly as possible after harvest to limit the ability of the pathogens to continue to produce spores. Plants should be thoroughly destroyed (such as by a flail mower) and incorporated well in the soil. If you have later broccoli successions that have not developed crowns yet, but are showing alternaria leaf spot symptoms, try to avoid overhead irrigation or, at very least, try to irrigate early in the morning to avoid the excessive periods of leaf wetness that are necessary to spread the disease. Since wild mustards and other brassica weeds are also hosts, be sure to clean up field edges and spent fields that may be harboring those weeds species. Finally, a minimum of a two-year rotation out of cole crops is recommended.



Advanced alternaria head rot, or pin rot, on broccoli

Of course, conventional growers can use a number of labeled fungicides for alternaria management . Christy Hoepting of the Cornell Vegetable Program produced the table above summarizing results from Cornell field trials over the last six years.

Performance of Fungicide	ALS	
	Fungicide	FRAC[1] code
Best	Endura	7
	Quadris Top	3, 11
	Quadris	11
	Switch	9, 12
	Cabrio	11
	Inspire Super	3, 9
Good	Bravo	M5
	Presidio	43

Prepared by C. Hoepting based on research from Dillard and Smart.

While research by Scheufele, Dillard, and Strauss showed no statistically significant impact of labeled organic fungicides like Serenade and Double Nickel 55, it did show that using straw mulch DID significantly decrease the incidence of alternaria leaf spot in kale.

Alternaria leaf spot lesions on broccoli. Note both the larger concentric circle spots as well as the smaller black dots across the leaf.

No– till Vegetables at the Hudson Valley Farm Hub

Crystal Stewart, ENYCHP & Jean-Paul Courtens, HV Farm Hub

During the intense rainstorms of 2016, Jean-Paul Courtens and the Pro-Farmer trainees at the Hudson Valley Farm Hub watched deep ruts wash out of their production fields, sending the silty river bottom soils into the Esopus Creek. That winter they made plans to keep as much ground as possible covered during the next growing season. Swatches of land which were high risk for erosion had already been converted to perennial cover, and now the vegetable fields included a significant area devoted to experimenting with various combinations of cover crops and cash crops destined for no-till systems.

In order to strive for mastery, the Pro-Farmers at the Hub are given a handful of crops to focus on each year. This year the crops they grew were sweet corn, potatoes, sweet potatoes, green beans, edamame, broccoli/ cauliflower, and garlic. Of these, green beans, edamame, sweet corn and broccoli/cauliflower lent themselves best to no-till production. Working under Jean-Paul's guidance, the Pro-Farmers developed a cover-crop plan for the successions of these crops through the growing season, starting with overwintered cover crops and moving into spring and summer planted annuals. There were many combinations, timings, and successions included in the plan, but for the sake of brevity this article will focus on some of the most successful combinations, and some lessons learned from this first season of no-till.

Success One: Sweet Corn into Vetch

Planting sweet-corn in rolled Vetch 06/22/17

On June 20th, a cover crop of vetch in full flower was rolled and crimped in preparation for transplanted sweet corn. The corn was planted two days later using a no-till vegetable transplanter.

The vetch was completely controlled by the combination of the initial crimping (multiple passes) and the additional action of the planter, which sliced a furrow for the transplants but also pressed the cover crop around the furrow once more. The vetch in flower provided enough biomass to suppress the vast majority of summer annual weeds and also provided sufficient nitrogen to the corn for excellent vigor and yield (297 bags/A).

Success Two: Green Beans into Rye

Green beans drilled into a rolled rye cover crop also performed very nicely, yielding healthy beans that could still be mechanically harvested as long as you drove in the same direction that the cover crop was crimped.

Partial Success: Broccoli into Field Peas and Bell Beans

Planting into this spring legume combination provided encouraging results through multiple successions of broccoli and cauliflower. Weed control was not 100% in the no-till planting, but yields were acceptable, and the plants experienced less drought stress in the no-till system than in the conventional-till system. Below, notice the wilted conventional till vs. no till photos from the same day.

Lessons Learned from No-Tilling Vegetables:

1. Perform all your deep tillage work and establish good weed control in the cover crop before seeding down your cover crop (in the previous year). You do not want to disrupt the soil aside from getting good seed or plant placement. A clean cover crop is the best from of weed control during the cash crop year.

2. Population and seeding time greatly helps weed control efficacy.

- While you can be tempted to seed fall cover crops early to increase biomass the following year, weeds will germinate with the cover crop in August. The best date to get an overwintering cover crop established is in the second or third week in September. Late seeding date is equally ineffective as it affects biomass production the following year.
- A spring seeded cover crop like field peas and bell beans did not work out well as weeds tend to germinate in much greater numbers in the spring than in the fall. The weeds survived rolling and crimping and affecting the cash crop.
- Increase the seeding rate you would normally use for

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a cover crop that is followed by plowdown by about 50%. Having said this, keep your numbers of the accompanying non leguminous cover crop low (e.g. 60lbs of rye or triticale and 150 lbs of Austrian winter pea or 40 lbs of vetch).

3. Do not expect that the cover crop will feed your cash crop, although a straight leguminous crop with a C/N ratio of about 10 -12 can provide significant amount of N to the crop. It is better to aim for a bit higher C/N ratio and gain the biomass and weed control and try to fertilize your crop in other ways. If you have the ability to transfer freshly cut hay (cut before the boot stage), it could replace your needs for additional fertilizer.

4. Aim for balancing the need for weed control with the need for nitrogen in your cash crop. While it is difficult to control what the C:N ratio of a rolled and crimped cover crop, the rule of thumb is that anything over 25:1 is too carbonaceous and anything under 15:1 breaks down too fast. A 100 % leguminous cover crop as in hairy vetch or Austrian winter peas but will have a C:N ratio of about 12. A straight rye mix has a C/N ratio of about 100. When you follow the cover crop with a legume like green beans or edamame, the trick is to maximize biomass for weed control and to make sure you inoculate the bean seed before planting.

4010 Field Peas and Bell Beans 07/10/17

4010 Field Peas and Bell Beans 08/10/17

Conventional Till 08/10/17

5. Roll and crimp when the crop is in anthesis. This is when the crop is in between vegetative and reproductive stages. You do not want to have fertile seed in your rolled crop, but you want it mature enough that crimping will kill it. Cereals are determinate while legumes are predominately indeterminate. Roll vetch when the first flowers appear and expect to roll it up to three times to secure dieback. Even rye needs to be rolled twice to prevent it from producing viable seed.

6. Mulching with hay or straw to provide greater weed control is costly and unnecessary if you have a good stand.

Conclusions: This was a first year of experimenting with organic vegetable production using no-till, and there will undoubtedly be many adjustments to the systems as understanding increases. It's not clear how often tillage will have to be incorporated to manage certain diseases and perennial weeds, but it's expected that some tillage will be necessary. Additional work on the seeding mixtures to provide proper C:N ratios, to maximize weed suppression for different crops and successions, and to address non-nutrient and weed related concerns will be ongoing. For this year, holding the soil in the vegetable fields and not having to disc in *too* many experiments was a great success.

Soil Testing in High Tunnels

Teresa Rusinek, ENYCHP

Growing the first year or two in high tunnels (HT) can be thought of as the 'honey moon' period. Pests and soil issues are generally not a problem, and crops are responding just the way you imagined they would. After a couple of years however, things happen. It's common to see salts and pH levels increase and plant health suffer.

Those of you growing vegetables in high tunnels have likely heard about this already. Testing soil and irrigation water on a regular basis in tunnels will help you make adjustments before things get out of hand.

High pH issues - When root zone solutions have a high pH (basic) of 7.0 and above, micronutrients like iron,

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manganese, zinc and boron are insoluble and unavailable for roots to absorb, resulting in nutrient deficiencies. Although your inclination may be to supplement the plants with the missing nutrient, your real long term solution is to lower the pH, thus allowing these nutrients to become available.

Water and pH – Often, a high pH problem is not a result of over liming, but rather because of water alkalinity. The alkalinity level of your water may need to be adjusted to properly manage your soil pH. Alkalinity is the ability of water to neutralize acids due to the dissolved alkalis (bicarbonates) in the water. Think of alkalinity as "liquid limestone". If your alkalinity is high (the ideal range is 80-120ppm), it's like you are applying lime every time you irrigate. Over time, the pH goes higher and higher. Compounding this problem is that most HTs exclude rain and snow. Leaving plastic off tunnels for some period of time which could help bring pH down as well as salts.

If your water alkalinity is high (over 200 ppm), it can be lowered by injecting acid into your irrigation system using a proportioner. Citric acid can be used in organic production, sulfuric acid is commonly used in conventional production. If the alkalinity is slightly high, between 100-200 ppm, using an acidifying fertilizer alone can often alleviate the problem. Test water sources at least once a season before considering adding acid. Alkalinity may change during droughts or rainy periods. Your alkalinity reading will determine the amount of acid to be injected into the system.

We have found that acid injection works well to maintain soils at the optimal pH, but if you already have high soil pH, acid injection will not significantly lower it. In such a case, it is best to put down and incorporate elemental Sulfur into the soil between crops. This has been much more effective in bringing down pH.

So for example, to lower the soil pH from 7.5 to 6.5 in a 3,000 sq.ft HT with LOAM soil, you will need to apply 60 lbs S.

On a final note regarding the pH issue, watch out for high pH compost. I've seen several growers totally throw off pH with a heavy compost application. Make sure you know what you are putting down.

High Salts or Electro-conductivity (EC)-is another common HT soils problem. "Salts" means any charged molecule including nitrate (NO_3), ammonium (NH4), K, Ca, Mg, Na and Cl. Most of these, except for NaCl (sodium chloride or table salt) are important plant nutrients. The problem is caused when we over apply fertilizers (doesn't matter if they are organic or conventional) and manures. And again, the exclusion of rain or snow melt in high tunnels prevents these excess nutrients or contaminants (i.e. NaCl) from leaching through the soil profile. High salts in the root zone burns root tips, causing poor germination and slows plant growth. Dry soils will exacerbate the situation as the salts become more concentrated around roots. Some crops; radish , lettuce and peppers, for example are more sensitive than others such as cucumber, tomato, and squash.

So what to do? First of all conduct regular soil tests each season to ensure you are not over applying nutrients. There are a number of labs and soil extraction methods to analyze soil samples. Researchers at the University of Maine are studying the use of Saturated Media Extraction (SME) method in high tunnels. They are suggesting that for newer houses, routine field soil analysis with additional checks on salts and available nitrogen work well, but that SME testing may be better suited for continuously covered high-salts houses. Field soil test and SME tests differ in the pools of nutrients each method accesses, and values are reported on a different basis. Each requires discreet interpretation and recommendation systems.

Also, there are simple extraction methods, such as the 1:2 dilution extraction (1 part soil to two parts distilled water), that you can do yourself to monitor pH and EC. All you need is to purchase a pH/EC meter (many models are available, I have a Hanna combo meter that I use a lot when I go on field visits).

Lbs of Sulfur/100 ft^2 to lower pH to 6.5

Soil pH	Soil Texture: Sand	Loam	Clay
7.0	.5	1.0	1.4
7.5	1.0	2.0	2.7
8.0	1.7	3.4	4.7
8.5	3.0	5.0	6.0

Here are some more ideas for preventing or dealing with high soluble salt levels from Penn State Extension:

1. Only place high tunnels in areas with good drainage to promote leaching.
2. Select fertilizers with low salt indexes; limit the use of organic nutrient sources containing animal manures.
3. Use irrigation water with low salt levels.
4. Use a sprinkler irrigation system to establish seedlings. Seedlings are more sensitive to high soluble salt levels than mature plants. Using sprinkle irrigation can facilitate leaching of salts around the plants.

5. Rotate crops based on salinity tolerances.
6. Leach out salts. As a general guideline for leaching out soluble salts from the top foot of soil, apply 6 inches of water to leach about 50% of the salts, apply 12 inches to leach about 80% of the salts and 24% to leach about 90% of the salts (California Fertilizer Association, Western Fertilizer Handbook, 8th Ed.).

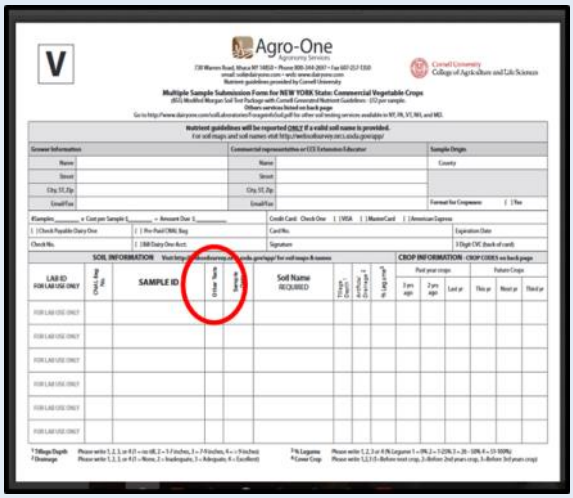
Check Tunnel Soils for Salt

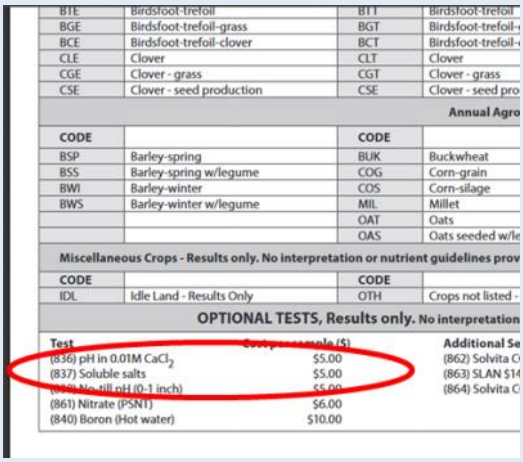
Amy Ivy, ENYCHP

As you clear out the last of the summer crops from your tunnels, now is a great time to do a soil test. If the cover has been on the tunnel for more than a full year, we urge you to add the soluble salts test so you can see if they are beginning to build up. This is not part of the standard $12 test. Since there is no rain or flooding (you hope) in your tunnels there is little opportunity for excess salts to be leached away. And it's not only conventional fertilizers that contain salts. Organic sources of fertilizer, especially manure based sources and compost, can also contain salt. The only way to know if they are building up in your soil is to test for them. This extra test is well worth doing once a year to monitor any changes, along with all your other nutrients covered in the standard test.

The soluble salts test, called **837**, is an extra $5 charge to the standard soil test cost of $12, and you indicate you want that on the submission form. In addition, if you're submitting other samples from fields where you plan to grow any of the boron sensitive crops including brassicas, celery and beets, you can add in the boron test **840** for an extra $10. These crops need boron but too much is toxic so it is important to test the boron soil levels for any of these sensitive crops.

Here is the link to the Agro-One soil test for vegetable crops, which we use for high tunnel vegetable crops as well: http://dairyone.com/wp-content/uploads/2014/01/Form-V.pdf . If you have any questions about how to fill this out, contact any of us on the team.





BTE	Birdsfoot-trefoil	BTT	Birdsfoot-trefoil
BGE	Birdsfoot-trefoil-grass	BGT	Birdsfoot-trefoil-
BCE	Birdsfoot-trefoil-clover	BCT	Birdsfoot-trefoil-
CLE	Clover	CLT	Clover
CGE	Clover - grass	CGT	Clover - grass
CSE	Clover - seed production	CSE	Clover - seed pro
			Annual Agro
CODE		CODE	
BSP	Barley-spring	BUK	Buckwheat
BSS	Barley-spring w/legume	COG	Corn-grain
BWI	Barley-winter	COS	Corn-silage
BWS	Barley-winter w/legume	MIL	Millet
		OAT	Oats
		OAS	Oats seeded w/le
Miscellaneous Crops - Results only. No interpretation or nutrient guidelines prov			
CODE		CODE	
IDL	Idle Land - Results Only	OTH	Crops not listed -
OPTIONAL TESTS, Results only. No interpretation			
Test			Additional Se
(836) pH in 0.01M $CaCl_2$	$5.00		(862) Solvita C
(837) Soluble salts	$5.00		(863) SLAN $14
(838) No-till pH (0-1 inch)	$5.00		(864) Solvita C
(861) Nitrate (PSNT)	$6.00		
(840) Boron (Hot water)	$10.00		

Left: *Here is the front of the form with the column for extra tests circled in red. Add **837** to any samples you want tested for soluble salts. You can submit up to 6 samples with this one form.* ***Right:*** *Here is a close-up of the bottom left corner of the back side of the form where you can find the extra optional tests, **837** for soluble salts and **840** for boron.*

COVER CROPS AND SOIL HEALTH FIELD DAY

Join us for a day of cover crop and soil health presentations, field tours, and a farmer panel! This field day is presented by USDA-NRCS, Cornell Cooperative Extension ENYCHP, SARE & SUNY Cobleskill.

Topics to include:

- Understanding Soil Health, Soil Health Demos
  Aaron Ristow, Cornell
- Soil Health Field Evaluation and test pit
  Olga Vargas, NRCS
- "Life Underground?": A discussion of beneficial soil-dwelling invertebrates
  Carmen Greenwood, SUNY Cobleskill
- Cover Crop Selection and Management
  Thomas Bjorkman, Cornell
- Twenty Different Cover Crop Species and Mixes Demonstration Plots
  Paul Salon, NRCS
- Seven Inter-seeding demonstration plots
  John Wallace, Cornell
- ***Farmer Panel - TBA***

For More Information Please Contact:

Chuck Bornt, *CCE ENY CHP*: 518-859-6213

Date: Thursday, October 12

Registration:	9:30
Presentations:	10:00 – 11:30
Lunch:	11:30 – 12:00
Field Tour & Stations:	12:00 - 2:00
Farmer Panel:	2:00 – 2:30

Location: Schoharie Valley Farms
495 N. Main Street
Schoharie, NY 12157
*The pavilion at the little league fields

Cost: $10/ person (Includes Lunch)
Pre-registration is encouraged.

Registration online at:

https://enych.cce.cornell.edu/event.php?id=821

Or call Abby at (518) 746-2553 to register by phone

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Willsie Equipment Hydraweeder

Directions: From Pulaski Hwy, turn onto Big Island Rd, pass Cavallaro Farms, continue around the bend and over the bridge crossing Quaker Creek, then look for the signs on the right just past the red barn before reaching Round Hill Rd.

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New York State Integrated Pest Management Program

Register at https://enych.cce.cornell.edu/event.php?id=826 or call Abby 518-746-2553

Contact Ethan Grundberg at eg572@cornell.edu or 617-455-1893 for more information

Sweet Corn Pheromone Trapping Network 9/19—9/25

County	Corn Earworm	European Corn Borer-Z	European Corn Borer-E	Fall Armyworm	Western Bean Cutworm
Orange	5	Na	Na	77	3
Greene	0	Na	Na	4	Na
Albany	4	Na	Na	0	Na
S. Clinton	0	Na	Na	0	0
C. Clinton	0	NA	Na	0	0