



**Field Crops, Forages and Soils Updates for NNY**

**6 July 2017**

- Potato leafhopper in some North Country alfalfa fields are severe. PLH have been a headache for south and western NY for several weeks and have now made their way north. This week and last, PLH have been causing severely stressed alfalfa fields here in NNY. Leafhopper damage can be most severe when a crop is under moisture or fertility stress – we have both in NNY this year. We’ve been recommending a weekly scouting program, using a standard 15” sweep net. Adult PLH are 1/8” long, bright green and very active. Developing nymphs are smaller and green. We already have both. Severity of the PLH infestation depends on the alfalfa height. Short, young regrowth has a lower threshold than taller and older alfalfa. Thresholds to indicate economic response to intervention are listed in the table below.



Alfalfa Height	No. Leafhoppers per sweep
<3”	0.2
3-7”	0.5
8-10”	1.0
11-14”	2.0
15+”	2.0



Adult (top) and nymph stage Potato Leafhoppers.

Fields with PLH above thresholds listed should be controlled to prevent further damage. If the field will be mowed within several days, spray is not warranted.

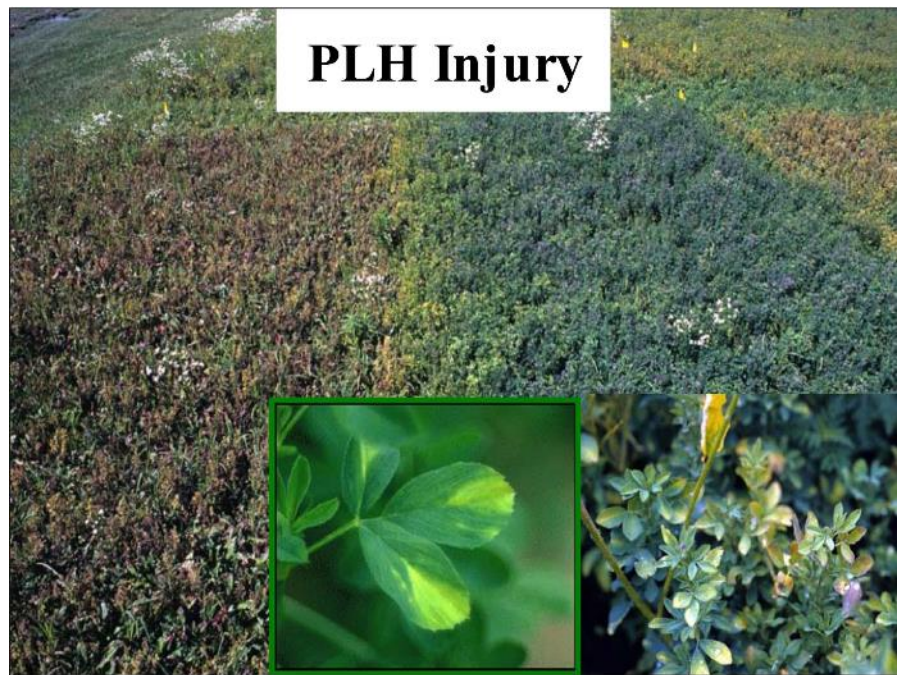
Early harvest is an alternative to spraying, but monitor the regrowth to prevent damage to tender young tissues by surviving PLH. Insecticides are the best option for fields more than 10 days from harvest. Options are summarized in the table below. Always read and adhere to label information.

	Insecticide	Rate per acre	Timing and Restrictions*
<b>Clear Alfalfa Seedings</b>	cyfluthrin (Baythroid XL)	0.0065 - 0.0125 lb AI or 0.8 - 1.6 fl oz product	Wait 7 days for harvest or grazing.
	chlorpyrifox (Lorsban 4E)	0.5 lb AI or 16 fl oz product	Wait 14 days before harvest.
	dimethoate	0.25 - 0.5 lb AI	Wait 10 days before harvest. Do not apply to alfalfa in bloom.
	lambda-cyhalothrin (Warrior II)	0.015 - 0.025 lb AI or 0.96 - 1.60 fl oz product	Wait 1 day before forage harvest, 7 days before hay harvest.
	permethrin (Ambush, Pounce)	0.1 - 0.2 lb AI	For > 0.1 lb/acre, wait 14 days before harvest or feeding. For < 0.1 lb/acre, crop may be harvested immediately.
<b>Mixed Seedings</b>	cyfluthrin (Baythroid XL)	0.013 - 0.015 lb AI or 1.6 - 1.9 fl oz product	Wait 7 days after application to harvest.
	Zeta-cypermethrin (Mustang)	0.014 - 0.025 lb AI or 2.24 - 4.0 fl oz product	Wait 3 days before cutting

From 2017 Cornell Guide for Integrated Field Crop Management, pages 110-111. \*Consult labels for per cutting and per season limits on applications.

Affected fields can look pale and discolored from the road, which indicates damage has already been done. Once mowed, some PLH adults can move to nearby fields.

PLH suck plant sap from leaf tissues, inject their saliva and cause a 'burn' on leaf tips. Leaves may also have a yellow or purple color. Plants become stunted as a result of damage to the vascular system. Growth is slowed and nutritional quality is reduced – mainly protein content.



Scout, sweep and when a field over threshold is identified, treat or mow within a few days. Call for help.

- It's side-dressing time. N management in corn for 2017 – The 2017 has been general cool and super wet. Planter-delivered N is probably gone – from the combination of plant uptake and rain leaching. The pre-sidedress nitrate test (PSNT) is a good tool for some guidance in 2<sup>nd</sup> year corn and beyond, or in fields where manure N sufficiency is in question. (In other words, in 1<sup>st</sup> year corn and in fields with adequate manure N, the PSNT is not needed.) The PSNT is a simple nitrate test on ordinary, immediately dried soil samples. The normal guidelines are as follows:
  - If the nitrate content is 25ppm or greater, no additional N is recommended.
  - For nitrate content of 21ppm or less, fertilize according to the Cornell Field Crops Guide.
  - For fields where nitrate is 21-24ppm, consider applying just 25-50 lbs N.

This year, however, nitrate concentrations have all been low overall, as a result of cool soils and rain washing nitrates away every few days. Fields with slightly lower nitrate levels than 21 or 25ppm may still not need additional N. View PSNT results from your farm together as a group and with your understanding of field history of sod, legume and manure applications to guide decisions. PSNTs will continue to be lower than normal until soils warm a bit and rains slow down. This is a good season for predictive models like Adapt-N.

- Delayed weed control in corn. We are beginning to see a lot of taller corn with larger weeds in the fields that have not yet been sprayed. These corn fields need to be treated with an herbicide before it is too late. We are now at a point in the growing season when this is your last chance to get the weeds controlled. In some cases the corn may already be too tall for a “rescue” postemergence corn herbicide application.

Before a field of taller corn is sprayed you need to ask the question “how tall can the corn be when you spray?” Postemergence corn herbicides have restrictions on the maximum height of the corn at the time of application. Once corn reaches 12” tall, atrazine and atrazine-containing premixes are no longer an option. There is even a 30” corn height restriction for glyphosate applied to glyphosate-tolerant (Roundup Ready) corn and a 24” corn height restriction for glufosinate applied to glufosinate-tolerant (Liberty Link) corn.

Late postemergence herbicide choices for conventional corn are somewhat limited once the corn exceeds 20 inches in height. Most, if not all, late total postemergence conventional corn herbicide programs will require more than one product in the tank mix. Correctly identifying the weeds present and actually measuring the heights of both the corn and weeds will be critical. The heights of the weeds will often times dictate the rates of many of these herbicides. Pay close attention to the herbicide labels and the adjuvants necessary to add to the spray tank.

Here is a list of some postemergence herbicides and the over the top maximum corn heights as listed on the label for taller corn:

- Accent Q - 20" or V6
- Acuron Flexi - 30" or V8
- Aim - V8
- Armezon Pro - 30" or V8
- Banvel/Clarity - 36"
- Beacon - 20"
- Buctril - Before tassel
- Callisto - 30" or V8
- Capreno - V6
- Diflexx - 36"
- Diflexx DUO - 36" or V7 (7<sup>th</sup> leaf collar)
- Harmony SG - 16" or 5 collars
- Hornet WDG - 20" or V6
- Impact/Armezon - up to 45 days before harvest
- Laudis - V8
- Northstar - 20" or V6
- Option - V6
- Permit - Layby (about 36" tall corn)
- Permit Plus - 6<sup>th</sup> leaf or 5 collars
- Realm Q - 20" or V7
- Resolve Q - 20" or before V7
- Resource - V10
- Revulin Q - 30" or V8
- Spirit - 24" or V6
- Status - 36" or V10
- Steadfast Q - 20" but before V7
- Stinger - 24"
- Yukon - 36"
- Zemax - 30" or V8

- It's too late for herbicides on most or all spring oats and barley – Wet conditions have prevented lots of spring oat and barley fields from being sprayed on time and many are now going to be impossible to spray. Once the grain crop has reached the boot stage, most available herbicides can no longer be applied without stunting grain development.
- Poison hemlock is problematic in Franklin County. Poison hemlock is common throughout the United States. Lately, it's been noticed spreading along roadsides and into hay fields in Franklin County. It is very toxic for sheep, cattle, swine and horses. It is also extremely poisonous to humans, if eaten. Animals are poisoned by eating even small amounts of green or dried hemlock. The toxicity persists in dry hay.

Poison-hemlock ingestion is frequently fatal. Sheep may be poisoned by eating as little as 100-500g of green leaves. Cattle that eat 300-500g may be poisoned. Signs usually appear within an hour after an animal eats the plant. Animals die from respiratory paralysis in 2 to 3 hours.



Poison hemlock in a roadside in Franklin County, June 2017.  
Photo by Kitty O'Neil

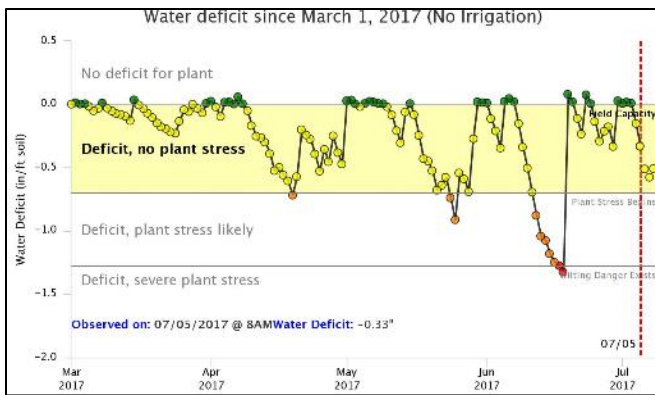
- NNY Weather Summary for April 1 through June 30, 2017.

		----- Accumulation Since April 1, 2017 -----					
		--- Precipitation, in ---			- GDD Base		
		--			50F -		GDD Base 40F
County	Town/Village	Total	DFN	Days	Total	DFN	Total
Clinton	Champlain	15.68	+2.69	52	679	-45	1378
	Ellenburg Depot	16.08	+3.83	59	603	-44	1262
	Beekmantown	13.24	+1.69	49	716	-18	1418
	Peru	14.33	+3.61	48	732	+10	1445
Essex	Whallonsburg	15.92	+4.08	48	738	+11	1469
	Ticonderoga	16.16	+3.64	49	743	-41	1474
Franklin	Bombay	19.51	+7.42	55	707	-1	1400
	Malone	17.70	+5.60	62	689	+39	1381
	Chateaugay	20.39	+7.55	64	655	-8	1327
Jefferson	Rodman	17.88	+6.31	49	649	-58	1363
	Cape Vincent	15.58	+5.03	63	564	-39	1267
	Evans Mills	19.09	+7.76	53	679	-94	1409
	Redwood	19.91	+7.27	59	628	-88	1328
	Antwerp	17.89	+6.61	49	625	-66	1328
Lewis	Talcottville	15.29	+2.98	51	547	-40	1226
	Martinsburg	19.63	+8.67	47	641	-43	1346
	Carthage	17.25	+6.10	53	642	-56	1350
St. Lawrence	Gouverneur	19.58	+7.26	55	593	-56	1288
	Hammond	18.99	+6.74	55	615	-40	1309
	Ogdensburg	20.51	+8.51	59	641	-41	1336
	Canton	19.81	+7.55	57	667	-41	1356
	Madrid	19.41	+7.80	56	660	-32	1346
	North Lawrence	19.14	+6.48	59	695	-30	1391
	Louisville	20.32	+8.12	59	658	-18	1346
<b>Average</b>		<b>17.89</b>	<b>5.97</b>	<b>55</b>	<b>657</b>	<b>-35</b>	<b>1356</b>

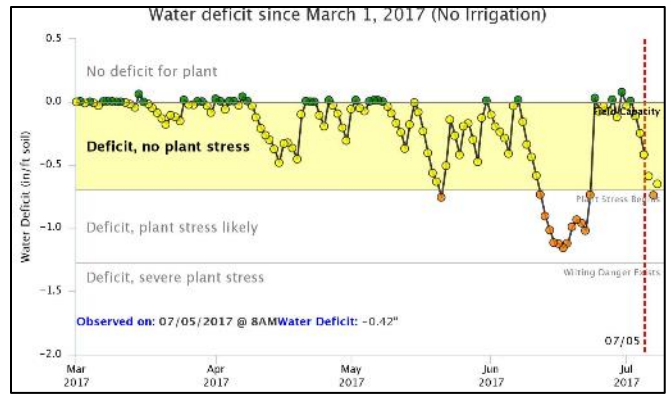
\* Precipitation in inches, temperature in Fahrenheit, DFN = difference from 15-year average, Days = days with precipitation. Calculated from [ACIS NRCC 2.5-mile gridded datasets](#). Highs and lows in each column are highlighted in red.

Despite our enormous rainfall totals across the region (50% more than normal), we have experienced brief periods of plant stress from inadequate moisture. Water deficit graphs for grass are shown below for Martinsburg and for Beekmantown, the 2 locations with the most and least above-normal rainfall.

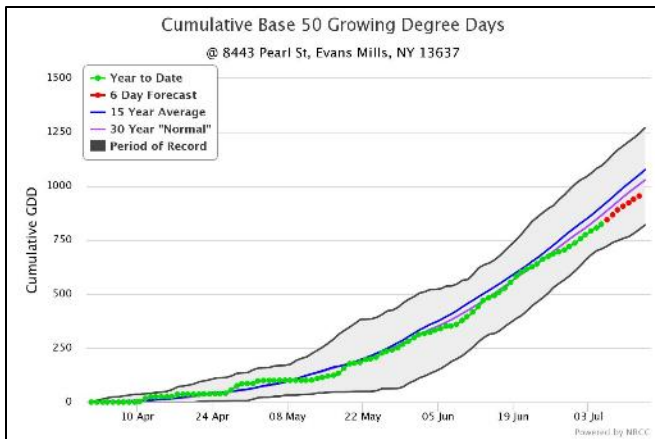
GDD accumulations are below normal for all locations shown except for Malone, Peru and Whallonsburg. Graphs of GDD<sub>50</sub> accumulations are shown for Evans Mills and for Malone, 2 locations with the most extreme variations from the 15-year norm.



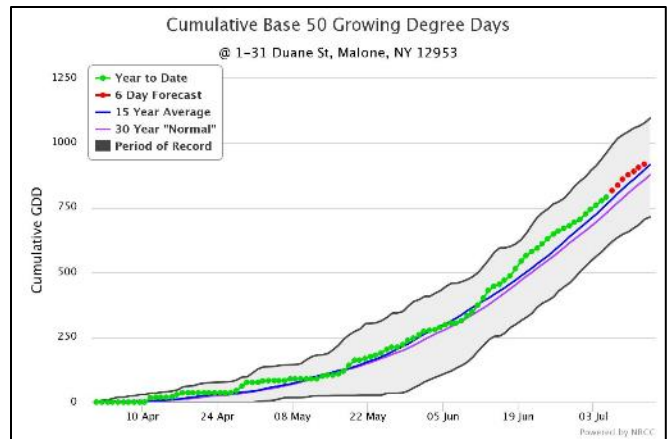
Water deficit for Martinsburg, NY. March to early July 2017



Water deficit for Beekmantown, NY. March to early July 2017



Cumulative GDD<sub>50</sub> for Evans Mills, NY. April through June 2017



Cumulative GDD<sub>50</sub> for Malone, NY. April through June 2017

Linked documents and additional resources:

1. [Cornell Cooperative Extension's North Country Regional Ag Team Web Resources](#)
2. [New York Integrated Pest Management \(NYSIPM\) Web Resources](#)
3. [Weekly Crop Progress & Condition Report. 2017. New York USDA-NASS.](#)
4. [Northeast Regional Climate Center](#)
5. Poison Hemlock info <http://poisonousplants.ansci.cornell.edu/conium.html> and <https://www.ars.usda.gov/pacific-west-area/logan-ut/poisonous-plant-research/docs/poison-hemlock-conium-maculatum/>

For more information about field crop and soil management, contact your local Cornell Cooperative Extension office or NNY Cornell University Cooperative Extension Regional Field Crops and Soils Specialists, Mike Hunter and Kitty O'Neil.

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Our Mission

“The North Country Regional Ag Team aims to improve the productivity and viability of agricultural industries, people and communities in Jefferson, Lewis, St. Lawrence, Franklin, Clinton and Essex Counties by promoting productive, safe, economically and environmentally sustainable management practices and by providing assistance to industry, government, and other agencies in evaluating the impact of public policies affecting the industry.”

*Building Strong and Vibrant New York Communities*

Cornell Cooperative Extension provides equal program and employment opportunities. NYS College of Agriculture and Life Sciences, NYS College of Human Ecology, and NYS College of Veterinary Medicine at Cornell University, Cooperative Extension associates, county governing bodies, and U.S. Department of Agriculture cooperating.