Cornell Cooperative Extension
North Country Regional Ag Team

Ear to the Ground

Field Crops, Forages and Soils Updates for NNY ***8 May 2020***

Soil temperatures across the North Country are finally warming, but warmth is limited to afternoons.

- Soil temperature is a good indicator of suitability for planting and fertilizing many important crops. We like morning 2" or 4" depth temps to be at least 50-60 for most annual crops, and our North Country soils have been very slow to approach that range. A few sunny days over the last couple of weeks have helped warm soils during the afternoons, but overnight low temps have cooled soil into the 40s again.
- NYS Mesonet stations across NNY report 2" soil temps and May 8th at 8:00 AM readings are summarized in the table below. These 2" temps range from 42 in Cape Vincent to a high of 48 in Essex. These Mesonet temps are measured in sod, so tilled soils could be a couple of degrees warmer in the afternoons, but morning temps are likely to be similar.

County	Station Location	Elevation	Soil type	2" Soil Temp, ºF
Lewis	Osceola	1093'	Colton cobbly fine sand	45
Lewis	Glenfield	838'	Hudson silt loam	45
Lewis	Copenhagen	817'	Plainfield fine sandy loam	43
Lewis	Croghan	1375'	Croghan fine sand	44
Jefferson	Belleville	475'	Collamer silt loam	44
Jefferson	Cape Vincent	275'	Benson-Galoo complex	42
Jefferson	Wellesley Island	285'	Hudson silt loam	43
Jefferson	Philadelphia	430'	Rhinebeck silt loam	44
St. Lawrence	Hammond	367'	Matoon silty clay loam	47
St. Lawrence	Edwards	682'	Roundabout silt loam	45
St. Lawrence	Potsdam	422'	Hailesboro silt loam	47
St. Lawrence	Louisville	279'	Hogansburg fine sandy loam	44
Franklin	Malone	775'	Madalin silt loam	45
Franklin	Gabriels	1758'	Colton gravelly loamy sand	43
Clinton	Ellenburg	977'	Schroon fine sandy loam	44
Clinton	Chazy	186'	Malone gravelly loam	44
Essex	Essex	182'	Kingsbury silty clay loam	48
Essex	Ticonderoga	274'	Scio silt loam	47

Cold injury, or imbibitional chilling, in corn is a risk this spring – considerations for NYS and NNY.

- Despite cold soil temperatures, plenty of corn and a little soybean has been planted across the North Country. This past week, Joe Lawrence warned NYS corn growers and consultants to think about potential cold injury to germinating seeds during our cold spring weather, particularly when a cold rain occurs after planting. It's not a common problem, but the forecast for the coming week could put some fields at risk, if conditions play out just right. Joe explains further and shared an article, which is linked in the 'Additional Resources' section at the end of this bulletin…
    - Imbibition refers to the process of a seed soaking up water, to begin its germination processes, in the first 48 hours or so after planting. If, during this 48 hour window, soil temps drop below 50, chilling injury can reduce germination and seedling growth because as water is absorbed, the developing cells can be ruptured. After this 48 hr window, imbibition-

related injury is no longer a risk, though cold temps can still delay germination and emergence, which increases exposure to pathogens if soils are also too wet.

- If soils are cold AND cold rain soaks down to the seed depth, then this enhances the probability of injury.
- If you're concerned about this risk but need to push ahead with planting, given the dry soil conditions, consider these ideas:
  - Watch the temperature and rain forecast and plan for field conditions for 48h after planting.
  - Consider a slightly higher population, to accommodate a lower germination percentage.
  - Our impulse is to plant shallow early, to get plants up quicker – BUT, don't plant too shallow when the following 48 hrs may pose a chilling risk. Plant a little deeper to decrease the likelihood of a cold rain soaking down to the seed.
  - We like to plant fast when conditions allow, BUT, don't plant the whole farm while these injury risks exist. Limit this risk by planting just a portion of your acres.

First cutting alfalfa height monitoring for 2020 is underway

- We measure first cutting alfalfa heights across the North Country each week to help predict optimal nutritional quality of alfalfa-grass fields based on Jerry Cherney's research at Cornell. Cold weather has limited alfalfa growth so far this spring. Alfalfa averaged about 5.6" across NNY this week. 2018 and 2019 averages for this first week of May were 6.8" and 6.6" respectively.
- Week 2 of our measurements will be published mid-week next week, along with relevant observations and guidance for alfalfa and grass forages.

Black cutworm numbers this spring are low, so far.

- Pheromone trap catches of black cutworm moths in PA and NY have been low so far. Nothing alarming.
- This is a pest that caused serious damage to some farms in 2019 and is best managed with IPM methods - by early-season scouting and treating when population rises above threshold, as summarized in the table below. Search for larvae in the soil around the base of a cut plant.

Corn stage	Seedling	V2	V3	V4
Threshold, cut plants per 100 plants	2	3	5	7

Spring forage seedings and grass fertilization.

- New perennial forage seedings should be planted by May 15.
- Apply N to grass fields (if less than 50% legume and no manure history) NOW, if it's not already on. Ideally, N should be timed just prior to the increase in plant demand to limit risk of losses to ground and surface water and to the atmosphere.

Cold nighttime temperatures and wheat herbicides – avoid crop damage

Keep a close eye on the low overnight temperatures in the upcoming forecast. Crop injury can occur when cold temperatures occur before or after application of some of the commonly used wheat herbicides. When in doubt, wait for warmer day and nighttime temperatures.

NNY Weather Summary for April 1 through April 30, 2020.

The 2020 growing season has started out cold and dry. April GDD_{50} accumulations for NNY have been about 12% of normal, though this early deficit can be easily overcome if the weather warms beyond our immediate cool weather forecasts. Soils are dry as we've received an average of about 56% of normal precipitation. Across NNY, areas are 0.30" to 2.39" shy of our 15-year average precipitation for April. Forecasts for the next week include some rain for most areas, so we may be able to get some much needed moisture for spring crop development.

		- - - - - - - Accumulation from April 1 to April 30, 2020 - - - - - - -					
		- - - Precipitation, in - - -			**- GDD Base 50F -**		**GDD Base 40F**
County	**Town/Village**	**Total**	**DFN**	**Days**	**Total**	**DFN**	**Total**
Clinton	Champlain	2.31	-1.85	13	4	-34	87
	Ellenburg Depot	2.78	-0.94	15	**0**	-29	45
	Beekmantown	1.92	-1.52	13	3	-38	78
	Peru	2.15	-1.01	10	1	-41	71
Essex	Whallonsburg	**3.23**	**-0.34**	**8**	1	-44	81
	Ticonderoga	2.92	-0.74	9	2	**-49**	97
Franklin	Bombay	1.89	-1.77	18	**18**	-25	**106**
	Malone	1.69	-1.96	14	8	-30	74
	Chateaugay	2.35	-1.79	17	4	-32	59
Jefferson	Rodman	3.02	-1.00	17	5	-40	62
	Cape Vincent	1.81	-2.00	16	7	**-21**	70
	Evans Mills	2.16	-1.59	16	7	-45	89
	Redwood	2.28	-2.13	17	8	-34	98
	Antwerp	2.04	-1.68	17	5	-36	81
Lewis	Talcottville	2.85	-1.13	**19**	0	-33	**43**
	Martinsburg	2.13	-1.31	16	2	-40	76
	Carthage	2.43	-1.32	17	3	-41	77
St. Lawrence	Gouverneur	1.75	-2.24	16	4	-35	78
	Hammond	2.00	-2.05	15	7	-31	83
	Ogdensburg	1.78	**-2.39**	13	6	-30	92
	Canton	1.60	-2.06	12	6	-38	82
	Madrid	1.46	-2.19	11	7	-33	80
	North Lawrence	1.47	-2.19	14	7	-40	85
	Louisville	**1.38**	-2.36	12	6	-32	88
Average		**2.14**	**-1.65**	**14**	**5**	**-35**	**78**

* 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. **High** and **low** values within each column are highlighted.

Research project - Report seedcorn maggot or wireworm damage to corn or soybeans.

- Cornell researchers, NYS IPM and CCE specialists are collecting data on the efficacy, usefulness and perceived need for some potentially-banned pesticide products for our NYS farms. To do this, we need your help with reporting losses to early season pests, like seedcorn maggot and wireworm,

in your corn and soybean fields. These pests are often bigger risks in 1st year corn and no-till or organic systems.

- Report any issues with a quick text, phone call or email to Mike or Kitty, with the specific field location soon after planting, while pests are still active and can be confirmed (by V2 stage). We'll visit the field to confirm the pest and damage and may count plant stand to estimate potential yield losses. Location and farm identity will remain anonymous. We only need to ID and quantify losses, not where they occur.

<u>Keep an eye out for marestail - and let us know if you find it.</u>

- Glyphosate resistant marestail populations are now present in NNY. In no-till, strip-till and very minimum till (i.e. one pass with a vertical tillage tool) situations, burndown herbicides will be necessary to control emerged marestail prior to planting. Marestail can be either a summer annual or winter annual. The winter annual marestail rosettes are present right now (see photo) and as it warms up these will begin to bolt and grow tall quickly. Once resistant marestail gets any taller than 6 inches, it becomes very difficult to control in soybeans. It can also be a problem weed in both corn and winter cereal grains.
- Check your fields now to see if any marestail is present. Mike Hunter has recommended burndown control options for soybeans in a recent article here.

Marestail rosette, May 4, 2020 in soybean stubble in Jefferson County, NY. Photo by M. Hunter.

<u>Also let us know about cereal leaf beetle infestations or damage in small grains.</u>

- We also ask for your help researching cereal leaf beetle biocontrol in small grain crops. If you find infestations or damage, please contact Mike or Kitty so we may visit the field to confirm the pest and damage and to look for evidence of parasitoid wasps on the larvae.

- For this project, larvae may be collected from your field to determine parasitism rates, and could be used to determine potential for control with parasitoid wasps. Results from Tompkins County in 2019 were promising

<u>Additional resources:</u>

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. 2019. New York USDA-NASS.
4. Northeast Regional Climate Center
5. NYS Mesonet
6. Cold Soil Temperature and Corn Planting Windows. 2018. Elmore et al, U Nebraska Extension
7. Burndown Herbicide Options in No-Till Soybeans. 2020. M. Hunter. What's Cropping Up Blog, Cornell Field Crops.

For more information about field crop and soil management, contact your local Cornell Cooperative Extension office or your CCE 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