

Staging Corn Maturity for Harvest

By Janice Degni, Area Extension Field Crop Specialist

When will your corn be ready? There were early plantings and late planting this year and maturity in the field is following suit. **Sixty days** is the length of time, on average, that it takes for corn silage to mature from silking (pollination) to black layer (physiological maturity). We use ½ milk line as the indicator to start checking whole plant moisture. Typically in a dry year whole plant moistures run dryer than milk line alone would indicate. At 1/4 milklane, we expect DM to be about 35%. Seventy percent moisture is the long-term accepted target for beginning harvest for bunks, but consideration needs to be given to your farm storage. Nutritionists are encouraging targeting higher dry matters to increase starch levels. It's a balancing act to strike the DM where you can pack well and preserve maximum nutrients. Bunk silos pack better at the top of the range, while uprights may have excessive seepage above 68% moisture (See Table 1). Whole plant dry matter samples will run 2-3 points above actual field conditions (that is the corn will be wetter). Knowing the maturity of your crop and how many days or weeks it takes to harvest allows you to target the moisture for when to start harvest. (See Table 2) Moisture will decrease by .5-1 point/day, which is weather dependent.

Oxygen limiting structure	
Corn silage	40-65% DM [35-60% moisture]
Conventional Concrete & Stave Structure	
Corn Silage :	
Under 60 feet	32-36% DM [64-68% moisture]
Over 60 feet	Increase 2% DM per 10 ft vertical height
Source: Mike Hutjens, U of Illinois, Urbana. http://qualitysilage.com/wp-content/themes/twentyten/PDF/TowerSiloManagement.pdf	

Where are we at this season with Growing Degree Days (GDD)?

I ran GDD totals from May 1-Aug 7 for four representative sites across the region: Auburn, Freeville, Elmira, and Whitney Point. The data is summarized from official weather stations. The placemark I am using is 2000 GDD as the target for reaching maturity for silage harvest. Your harvest timing will need to be adjusted for your

Maturity Stage	Avg cal Days To Maturity	GDU to Maturity	% Max Yield		% Moisture	
			Grain	Whole Plant	Grain	Whole Plant
Silk	50-55	1100-1200	0	50-55	---	80-85
Blister	40-45	875-975	0-10	55-60	85-95	80-85
Late Milk	30-35	650-750	30-50	65-75	60-80	75-80
Early Dent	20-25	425-525	60-75	75-85	50-55	70-75
Full Dent (1/2 Milk-line)	10-15	200-300	90-95	100	35-40	65-70
Blacklayer	0	0	100	95-100	25-35	55-65

Assumes 20 GDU/day to maturity.
Adapted from Carter, P.R. 1993. Pioneer Hi-Bred International, Inc..

Growth Stage	80 day hybrid	110 day hybrid
Emergence	110	110
Silk Stage	1,100	1,400
½ Milk Line	1,800	2,400
Maturity (black layer)	1,900	2,500

Site	Earliest	Average	Latest	Season Length in Days		
				Min	Mean	Max
Auburn	10/12	10/22	11/08	147	167	192
Freeville	9/17	10/09	11/01	112	147	167
Elmira	9/19	10/15	11/04	127	158	192
Whitney Point	9/19	10/12	11/03	126	160	178

Source: Climod 2 Weather data. 2009-2023 Summary. <http://climod2.nrc.cornell.edu/>

planting date, conditions and maturity groups. You can use the Climate Smart Farming GDD calculator for your fields. You select them on map and the program provides the graph predicting season GDD accumulations. The following graphics show the predicted dates to reach 2000 GDD's across four selected locations.

(Continued on page 3)

The South Central New York Dairy and Field Crops Program is a Cornell Cooperative Extension partnership between Cornell University and the CCE Associations in 6 Counties.



Cornell Cooperative Extension

South Central NY Dairy and Field Crops Program

We are pleased to provide you with this information as part of the Cooperative Extension Dairy and Field Crops Program serving Broome, Cayuga, Cortland, Chemung, Tioga and Tompkins Counties. **Anytime we may be of assistance to you, please do not hesitate to call.** Visit our website: <http://scnydfc.cce.cornell.edu> and find us on social media! Facebook, YouTube, & Twitter!

Janice Degni

Team Leader & Field Crops Specialist

607.391.2672

jgd3@cornell.edu

Betsy Hicks

Area Dairy Specialist

607.391.2673

bjh246@cornell.edu

Donette Griffith

Administrative Assistant

607.391.2662

dg576@cornell.edu

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(Utilize Cover Crops to Enhance Resilience to Weather Stressors, Continued from page 6)

The University of Vermont published a Guide to Interseeding cover crops in northern New England. Available as a pdf: [https://www.uvm.edu/sites/default/files/Northwest-Crops-and-Soils-Program/Articles and Factsheets/ Guide to interseeding cover crops in northern New England.pdf](https://www.uvm.edu/sites/default/files/Northwest-Crops-and-Soils-Program/Articles%20and%20Factsheets/Guide%20to%20interseeding%20cover%20crops%20in%20northern%20New%20England.pdf)

Incentive Programs

I encourage you to take advantage of incentive programs. They typically cover a portion of the cost of cover crop seed and planting while you receive 100% of the benefits of the cover crop, which increase year over year.

There are many opportunities to fund cover crops through your local Soil and Water Conservation District (SWCD). SWCDs have access to state grants that can support cover crops for a few consecutive years and farms including the Chesapeake Bay Watershed are eligible for the annual Upper Susquehanna Coalition (USC) Cover Crop funds. The USC contracts with SWCDs to fund acres and the state awards SWCD's on behalf of the farm, so farmers should reach out to their county's SWCD for details on applying. Check with your SWCD to see if your watershed has a targeted program. Each SWCD has their own way of running cover crop programs and the per acre rate incentives vary between counties and programs. Reach out ASAP to see if fall 2024 funding is available. If you are interested, call your county rep as soon as possible. Unless otherwise noted.

Broome County SWCD – Justin Puglisi (607) 724-9268 x5
(Broome County holds sign ups in the spring for fall cover crop program.)

Cayuga County SWCD – Jason Cuddeback (315) 252-4171

Chemung County SWCD – Jim Diederich (607) 739-2009

Cortland County SWCD – Amanda Barber (607) 756-5991
(Cut off for sign ups is Friday, Sept 20th)

Tioga County SWCD – Danielle Singer (607) 687-3553

Tompkins County SWCD - Paul Gier (607) 257-2340

References:

Yhost, Jason. Benefits of Cover Crops https://www.linkedin.com/posts/jason-yhost-42a135250_the-benefits-of-cover-crops-for-the-activity-7111334217006866432-ynxx

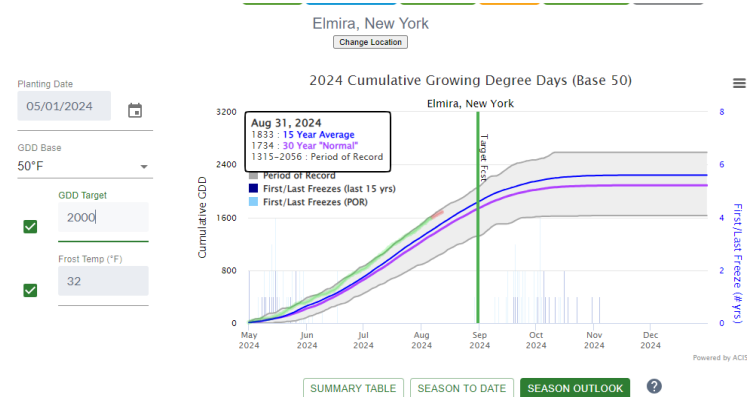
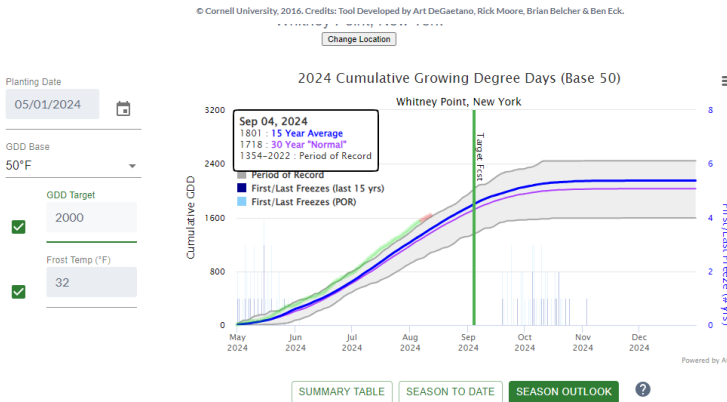
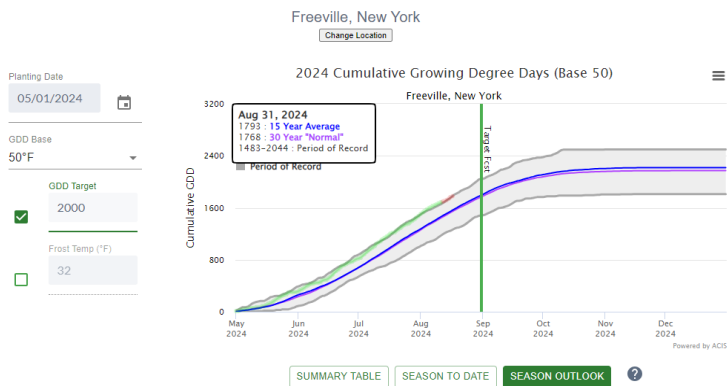
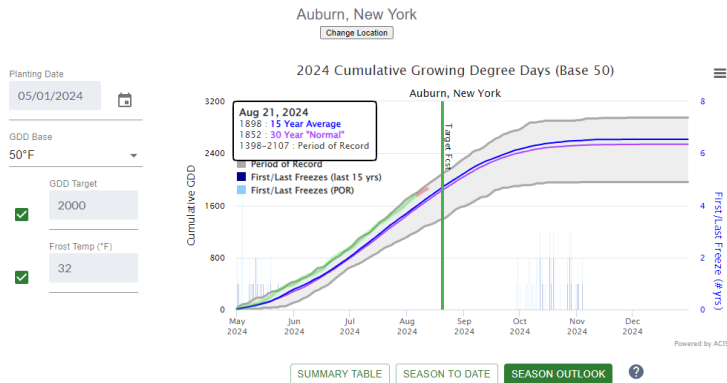
Managing Cover Crops Profitably. SARE 3rd edition. <https://www.sare.org/wp-content/uploads/Managing-Cover-Crops-Profitably.pdf>



CSF Climate Smart Farming
Powerful and user-friendly climate tools for farmers in the Northeast

CSF Growing Degree Day Calculator

Tools Resources Climate Team Programs Videos



Status of Growing Degree Days in Our Region

May 1– August 14, 2024

Month	Monthly Total	Season Cumulative Total	Average Daily Accumulation by Month
May	334	334	11
June	516	850	17
July	682	1532	22
August (1-14)	251	1783	18

Month	Monthly Total	Season Cumulative Total	Average Daily Accumulation by Month
May	380	380	12
June	552	932	18
July	621	1553	26
August (1-14)	288	1841	20

Month	Monthly Total	Season Cumulative Total	Average Daily Accumulation by Month
May	348	348	11
June	509	857	17
July	685	1542	22
August (1-14)	275	1817	20

Month	Monthly Total	Season Cumulative Total	Average Daily Accumulation by Month
May	371	371	12
June	524	895	17
July	673	1568	22
August (1-13)	295	1821	21

The following guidelines can improve corn silage related to maturity: by Michael F. Hutjens, Professor Emeritus, University of Illinois—Urbana-Champaign

- ⇒ Watch milk line to gauge harvest
- ⇒ Silage dry matter should range from 30 to 36 percent (depending on the storage unit).
- ⇒ Kernels should be soft and broken at ensiling time.
- ⇒ Silage pH should range from 3.8 to 4.2 after ensiling.

Characteristics of the Beef x Dairy Industry in NYS

By Betsy Hicks & Margaret Quaassdorff

The usage of beef sires on dairy farms more than doubled from 2015 to 2019. In recent years, New York sale barns reported that beef x dairy (BxD) calves consistently brought \$50- \$150 over a standard dairy bull calf. Because of the premium for black-hided calves, many dairy farmers have tried to capitalize on this novel market without fully understanding the BxD industry and the implications of an inferior calf entering the beef supply chain.

Data presented in the white paper are from a Qualtrics survey conducted online between the months of October 2020 and June 2021. Farmers were surveyed to assess how they utilize beef sires in their dairy herds, their criteria in selecting dairy animals to breed to beef sires, and sire selection criteria. Farmers were also surveyed on their management practices of producing, raising, marketing and selling BxD cattle, as well as information needed by them to further their knowledge.

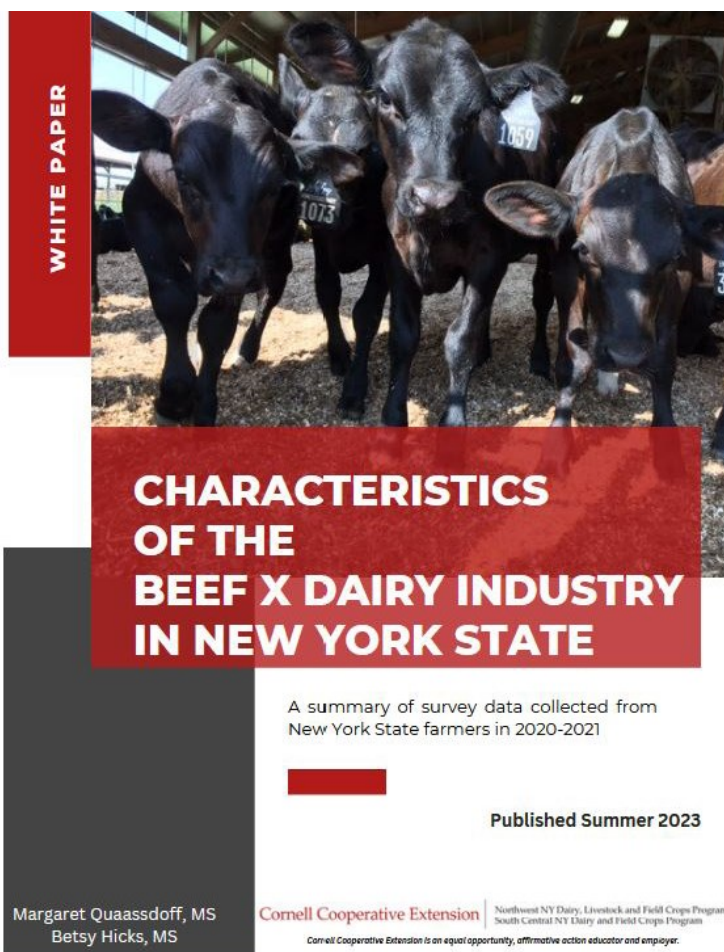
The majority of BxD calves are leaving dairy farms at less than a week old, however there are still a number of farms raising these cattle to different timepoints across the state implementing a variety of management and feeding strategies. This combined with the scarcity of on-farm scales and actual growth measurement data make it nearly impossible to gauge the “best” way to encourage farmers to incorporate a BxD enterprise into a farm’s business strategy.



Breeding for beef x dairy calves is becoming a common practice on dairy farms regardless of breed. Pictured here is beef cross calf out of a Jersey cow. Photo by M. Quaassdorff.

Results from this survey led to establishing several keys for the viability of the beef x dairy industry in New York State.

1. Proper Sire Selection at the Dairy Level
2. Excellent Newborn Management
3. Proper Nutrition and Efficient Growth Rates
4. Networking, Marketing, and Infrastructure Development
5. Economics and Benchmarking



Visit the following link to read the Characteristics of the Beef x Dairy Industry in NYS-White Paper: <https://tinyurl.com/beefxdairyNYS>

P.S. Exciting news! There has been so much progress in the Beef x Dairy Industry in NYS since 2021, and we are looking to learn what dairy farmers, buyers, and growers are doing now. Stay tuned for our follow-up survey to be launched this summer!



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- Live cattle handling demonstrations

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- BQA Certification and industry updates
- Classroom demonstrations

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Utilize Cover Crops to Enhance Resilience to Weather Stressors

by Janice Degni, Extension Field Crop Specialist

The benefits of cover crops are familiar to many farmers today. Planting cover crops has earned the reputation of being an important contributor to building soil health. Improved soils health reduces soil's vulnerability to erosion, improves soil tilth or aggregation, builds **organic matter** and improves water and nutrient storage, availability and exchange in the soil and feeds soil organisms. Improved soil health is one of our best defenses against extreme weather conditions.

There is a lot of buzz about cover crops and the benefits of cc mixtures. It's true that a mix of species can provide a wider array of benefits. The benefits that particular species can provide cover a range of benefits including; erosion control, scavenge nitrogen, build soil, fight weeds, and use as feed by mechanical harvest or grazing. Cover crop mixes usually fit in a mid to late summer planting window and work well after a small grain harvest potentially before planting winter wheat.

As everyone knows winter small grains are the staple cover crop in field crops because they fit well into the rotation particularly after corn silage harvest.

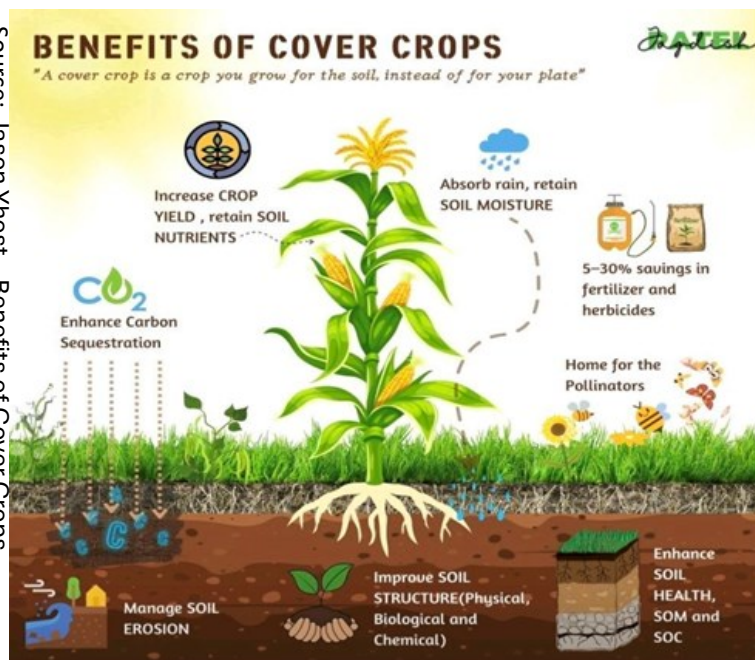
Planting winter rye is reliable and offers many benefits.

Managing Cover Crops Profitably reports the following reasons for rye's widespread use:

- It is winter-hardy, allowing it to grow longer into fall and resume growth earlier in the spring than most other cover crops.
- It produces a lot of biomass, which translates into a long-lasting residue cover in conservation tillage systems.
- It crowds out and out-competes winter annual weeds, while rye residue helps suppress summer weeds.
- It scavenges nutrients—particularly nitrogen—very effectively, helping keep nutrients on the farm and out of surface and ground water.
- It is relatively inexpensive and easy to seed.
- It works well in mixtures with legumes, resulting in greater biomass production and more complete fall/winter ground cover.
- It can be used as high-quality forage, either grazed or harvested as rylage.
- It can fit into many different crop and livestock systems, including corn/soybean rotations, early or late vegetable crops, and dairy or beef operations.

Working cover crops into grain crops is a challenge because of the late fall harvest. Interseeding during the growing season in grain crops has had successes and failures. Herbicide programs may need to be adjusted so that the cover crop is not injured or killed. Drilling improves establishment over broadcasting but is slower and more limited in timing. Soil moisture at seeding benefits

Source: Jason Hnost – Benefits of Cover Crops



establishment.

The University of Nebraska-Lincoln reports,

"For corn, there is an opportunity to drill cover crops in between rows via interseeding early season between 2-V6 stage (two to six fully developed leaves) or broadcast cover crop seed late in the season at the R5.5 (full dent) corn stage.



In soybean, cover crops can be drilled after harvest or broadcasted late in the season. Unlike in corn, the interseeding of cover crops into soybean with an adapted drill before R2 stage (full flowering) in 30-inch row

spacing setting has not been widely tested. Also, farmers still have questions regarding cover crop water use, variety selection, seeding rate, seeding timing, the negative impact of residual herbicides on cover crop establishment, and the possible impact of the cover crops in the current (soybean) and following (corn) cash crop yield."

To read the full report click here: <https://cropwatch.unl.edu/2024/interseeding-cover-crop-soybean>

(Continued on page 2)

Cropping Notes: Reflections on Crop Growth this Season

By Janice Degni, Area Extension Field Crop Specialist

A mild winter had everyone itching to get started early but spring snow and rains mostly held everyone off the fields until May when corn planting got going in earnest in early May and progressed fairly smoothly. Rain may have caused some short delays but as seasons go this one has been on the lower side of the stress scale. From the time crops emerged, their growth has been steady. I believe tassel emergence beginning the week of July 14 is the earliest I have seen. See the summary of growing degree days on p. x which helps to explain the early development. Early planted corn was well above the “knee high” by the 4th of July mark. Some reaching hip or shoulder height. Crop color has been good season long. It looks like the N needs are getting dialed in well and the right products to meet N needs are being used.

Yield reports for first cutting haycrop were mostly above average. Quality is somewhat varied. Some have reported a better yield for 2nd cutting. Rainfall has been sporadic and getting moisture to benefit the crop is a crucial factor and can make a big difference from one town to the next.

I wonder if we have fallen away from including some boron in alfalfa topdress. Alfalfa needs boron particularly when we expect high production. A topdress of 0-10-40 with boron (approx. 2 lbs/ac) is still a recommended practice. Reddish leaves can indicate a boron deficiency in alfalfa.

Soybean has also looked great this season and are filling pods to the top of the plants now. Dr. Bill Cox, retired Extension Grain Specialist always said August makes the crop, referring to rainfall to help the beans fill out. Considering the rain fall from Post Hurricane Debby, now a tropical storm should carry the crop development needs. It has been an interesting season for damaging storms bringing high winds, even tornados and pockets of damaging hail.

The hail damaged corn that I have seen looks terrible, the leaves are severely shredded but being damaged before pollination is the saving grace. The later the corn is in maturity the greater yield loss can be. The tattered leaves can still photosynthesize and will be replaced by later emerging leaves that do the bulk of the work as the crop matures.



Crop damaging pests this season include potato leaf hopper (PLH). I feel like we may have gotten a little lax in watching for this pest. It can hurt the yield in high numbers particularly when conditions are dry. Sweeping after early season thunderstorms to see if they have arrived is a good practice. The insect is tiny. Many insects live in a hay field, and many are beneficial meaning they prey on other damaging pests. You cannot detect a PLH population by kicking the

stubble. Sweeping is the best method to monitor, identify and count this insect. Once you see yellowed and/or reddish alfalfa leaves the

damage has been done. PLH resistant varieties offer protection from infestation. New seedlings need to be monitored and potentially treated if warranted because it takes a year of maturity to exhibit the resistance.

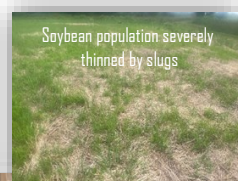


Source Purdue University Pest&Crop Newsletter

The other early season pest was slugs. They were easy to spot. There have been some incidences of damaging feeding particularly in no-till crops with cover crop stubble serving as shelter and food source.

In-season and Late season Pests Weed control can be a challenge and effective, low-cost herbicide programs are rare. Often a 2-pass program (pre-emergence and post emergence) is needed. We need to keep an eye out for escapes and develop a plan for control next season. Be on the lookout for any large or prolific pigweed plants that stand out above the canopy in soybeans or in and around corn fields.

Keep your eyes open for tar spot infections in corn. Dr. Gary Bergstrom, Extension Plant Pathologist, Professor Emeritus, confirmed tar spot disease of corn in Niagara and Wyoming Counties August 13. He tells us, “These are the first confirmations in New York for the 2024 growing season. Except for very late planted field or sweet corn, corn is past the latest growth stage (R3) when foliar fungicide application might reasonably result in a positive economic return on investment (<https://cropprotectionnetwork.org/publications/fungicide-application-reminders-to-optimize-management-of-tar-spot-and-return-on-investment-in-corn>). Yet, it is very important for growers to record the presence of tar spot in their fields this season. The pathogenic fungus carries over between growing seasons *only in* infected corn residues. Knowing that a field has infected corn residues (and hence, a source of spore inoculum for next year) should lead a grower to consider rotating that field to a crop other than corn next year. This should also cause a farmer to consider choosing corn hybrids for 2025 that have a moderate level of resistance/tolerance to tar spot. Moderately resistant hybrids are now available from several seed companies and in a range of maturity groups, though seed may be limited, and growers should place their orders early. Spores can also be windblown to other nearby corn fields, so knowing whether tar spot is present in a town/county is critically important to track the spread of tar spot in the state. I am again coordinating a survey for tar spot in New York State in 2024. I can confirm a tar spot diagnosis from a good quality cell phone photo that illustrates the characteristic raised black stomata (<https://cropprotectionnetwork.org/publications/an-overview-of-tar-spot>). You can text photos to me at 607-316-2940, along with information on County and Town location. I will then add newly positive counties to the national map of tar spot occurrence (<https://corn.ipmPIPE.org/tarspot/>). Thanks for your partnership in this survey!”





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Upcoming Events Calendar

Sept 12 1—3:30 pm	Tioga Pasture Walk Michael Troyer's Farm Candor, NY
Oct 25-26	October Stockmanship & Stewardship event— Buffalo, NY See page 5 for details
Early Nov (TBD)	Feeder School in 2 locations to be announced

Cropping Notes...continued from page 7

