

Preparing for Corn Silage Harvest Janice Degni, Area Field Crops Specialist

It's not too early to be thinking about harvest. Planting was staggered this year and maturities are following suit. Corn ranges from not yet pollinated to early dent. Use this information for planning harvest order for grain and silage.

60 days, that's the length of time, on average, that it takes for corn silage to mature from silking (pollination) to blacklayer (physiological maturity). We use ½ milkline as the point to start checking whole plant moisture. Seventy percent moisture is the accepted target for beginning harvest, but consideration needs to be given to your farm storage. Bunk silos pack better at the top of the range, while uprights may have excessive seepage above 68% moisture. Dry matter tests will run 2-3 pts above actual field conditions. See Table 1. Target Crop DM Levels for Vertical Silage Systems. Knowing the maturity of your crop and how many days or weeks it takes to harvest allows you to target the moisture for beginning harvest. Moisture will decrease by .5-1 point/day depending on the weather conditions. See Table 2 Description of Kernel Growth Stages and Development.

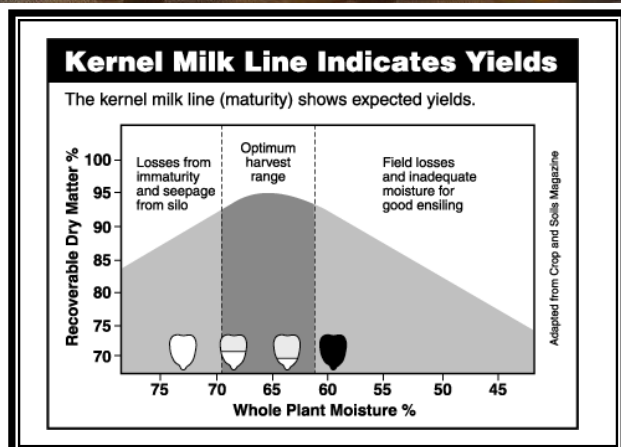
Table 1. Target Crop DM Levels for Vertical Silage Systems

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	

TABLE 2. Influence of Corn Maturity on Grain Yield, Whole Plant Silage Yield and Moisture Content

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 Milkline)	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.



In September evaluate your fields planned for grain corn. If they are more than 6 weeks away from blacklayer, strongly consider shifting gears and leave the more mature corn for grain harvest. 🌟

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We are pleased to provide you with this information as part of the Cooperative Extension Dairy and Field Crops Program serving Broome, Cortland, Chemung, Onondaga, Tioga and Tompkins Counties. **Anytime we may be of assistance to you, please do not hesitate to call or visit our office.** Visit our websites: <http://scnydfc.cce.cornell.edu> & <http://blogs.cornell.edu/organicdairyinitiative/> and like us on Facebook: <https://www.facebook.com/SCNYDairyandFieldCropsTeam>.

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We put knowledge to work in pursuit of economic vitality, ecological sustainability, and social well-being. We bring local experience and research-based solutions together, helping our families and our community thrive in a rapidly changing world.

Building Strong and Vibrant New York Communities

"Diversity and Inclusion are a part of Cornell University's heritage.

We are a recognized employer and educator valuing AA/EEO, Protected Veterans, and Individuals with Disabilities."

HEMP in the News

Janice Degni, Area Field Crops Specialist

Industrial Hemp is said to have over 10,000 uses and unexplored economic development potential. The New York State Industrial Hemp Summit held April 18 focused on the economic potential of an unexplored market for the development of products from fiber, to cosmetics, pharmaceuticals, and as an ingredient in food products.

Janice Degni, Area Field Crops Specialist on the South Central NY Dairy & Field Crops Team is one of 3 Hemp Technical Specialists appointed by Cornell Cooperative Extension. Dr. Christine Smart is coordinating Cornell University and Cooperative Extension efforts to support the development of NYS based research from best suited varieties, pest management, fertility needs to harvest strategies.

Cornell is putting together a plan to deliver up-to-date science-based solutions and information about hemp production and facilitate exchange of information with growers to focus future research needs. Cornell has



established a web page to serve as a clearing house of information, <https://sips.cals.cornell.edu/extension-outreach/industrial-hemp>. The report, *Industrial Hemp from Seed to Market*, provides a review of known market channels, economics of production, legal issues, barriers to growth and a wealth of resources for more information (<https://sips.cals.cornell.edu/sites/sips.cals.cornell.edu/files/shared/documents/industrial-hemp-from-seed-to-market.pdf>).

For more information see *Cuomo signs bill, invests in industrial hemp at Cornell event on page 10.* *

Cow Comfort and Safe Animal Handling Twilight Meeting Recap Betsy Hicks, Area Dairy Specialist

On July 12th, Preble Hill Farm opened their doors to host producers interested in seeing how their facilities have changed through expansion. In addition to the tour of several freestalls on the farm, producers had the opportunity to get some safe animal handling tips from Jim Carrabba with NYCAMH.

Jim Carrabba started his presentation with some statistics on injuries and fatalities on farm, linked to animals. He stated that when a person was hurt or killed by a bull on farm, in many instances it was by a bull that had previously never showed aggression. The gathering took this as a reminder to not be complacent whenever working around any group of animals. Jim also showed a couple of videos that producers can use for training workers. Keeping in mind that dairies that participate in the FARM Program need to provide training to workers every year, the links to the videos are provided below. The videos, published by Upper Midwest Agricultural Safety and Health, are also available in Spanish so that all workers on dairies can get good basic safe animal handling training. This website is also a great resource, particularly for dairy producers.

<http://umash.umn.edu/resources/> link for videos

<http://umash.umn.edu/> link to home page



The tour portion of our Twilight Meeting started with co-owner Dr Mike Griep giving an overview of the expansion that the farm has undergone in the past couple decades and describing how the design of the freestall barns has evolved. Steve Hewitt from Vista Builders, contractor for the past few barns, was on hand to talk about his role in planning the facilities. He stated that the planning process is one of the most important steps to take when a farm decides to put up a new facility. Even though a farm may not be able to implement certain facets right away, planning for sprinklers and fans by putting in taller posts along the feed alley and running water lines to the correct spots will make it far easier down the road.

Many thanks to Preble Hill owners, Dave Griswold and family and Mike Griep for opening their doors for a great Twilight Meeting! 🍷

The Academy for Dairy Executives

Developing Leadership and Management Skills
for Young Dairy Professionals

Now accepting applications for
Central NY Academy to begin
December 2017

Applications Due October 20, 2017
[https://prodairy.cals.cornell.edu/
conferences/academy](https://prodairy.cals.cornell.edu/conferences/academy)

This educational program is designed to provide progressive young dairy executives and agri-service personnel the opportunity to increase their knowledge and understanding of the fast changing farming industry and provide the leadership & management skills necessary to run a successful farm.

Topics covered in 3 Sessions

December 12 & 13, 2017 - Colgate Inn, Hamilton
January 23 & 24, 2018 - Hilton Garden Inn, Auburn
February 20 & 21, 2018 - Holiday Inn, Oneonta

- Family Business Management & Communication
- Financial Assessment
- Budgeting and Decision Making
- Building Effective Employee Teams
- Business Risk Management
- Strategic Planning
- And more.....



Cornell University

PRO-DAIRY

For an application & information:

<https://prodairy.cals.cornell.edu/conferences/academy>

Caroline Potter at cjh42@cornell.edu or 315-683-9268

Or CCE Oneida County - Bonnie Collins at bsc33@cornell.edu or 315-736-3394 ext 104

Heat Stress and Dry Cows: Why Should I Cool Them?

Betsy Hicks, Area Dairy Specialist

Fans are expensive. Putting them in takes time. They're always backordered or they come in February. Whatever your excuse is, realize what's left on the table when you don't commit to cooling your dry cows. You've got more at stake than just those cows.

Effects on the Cow

We have known for a long time that cows that experience heat stress will also experience metabolic problems, suffer quality issues with colostrum and will produce less milk than cows that were not heat stressed. Dr Geoff Dahl's group at the University of Florida has studied heat stress extensively. Recent data published in 2013 has shown impaired mammary growth from heat stressed dry cows, leading to decreased milk production in that lactation, as well as an impaired immune system. Heat stress especially in late gestation can compromise placental development – an issue that can manifest itself as fetal hypoxia, or lack of sufficient oxygen supplied to the growing calf. Calves that experience this in utero can suffer from malnutrition and lack of growth after birth.

Effects on the Calf

Calves that are born from cows that experienced dry period heat stress can have a myriad of issues. Birth weights are lower than calves born to cows that did not experience heat stress (Monteiro et al., 2016). Colostrum IgG absorption is compromised, and when couple with malnutrition and lack of growth, weaning weights are also lower than their counterparts that had dams that were not heat stressed. Following these calves from heat stressed cows through, as heifers the number of services per pregnancy was greater, less heifers reached their first lactation, and produced less milk up to 35 days in milk.

Economics of Cooling

Ferreira et al., 2016 discussed the economic feasibility of cooling dry cows across the US, using several factors based on a review of previous literature. In NY, a 387 kg loss per cow (853 lbs) would be experienced by a heat stressed cows in her next lactation (see Figure 1), resulting in a \$75/cow loss if you spread that over the entire herd. They found that in 89% of instances, cooling dry cows was profitable even when building a new dry cow barn was necessary, and very profitable when new construction was not necessary.

Table 1 discusses their findings. As Ferriera shows, default assumptions included \$2,500 barn investment cost per dry cow stall, \$0.44/kg milk price and 11lb/d reduction in milk yield in the subsequent lactation if dry cows were not cooled. These variables were varied one at a time with the other variables set at their default values to determine breakeven values. For NY, keeping the other default

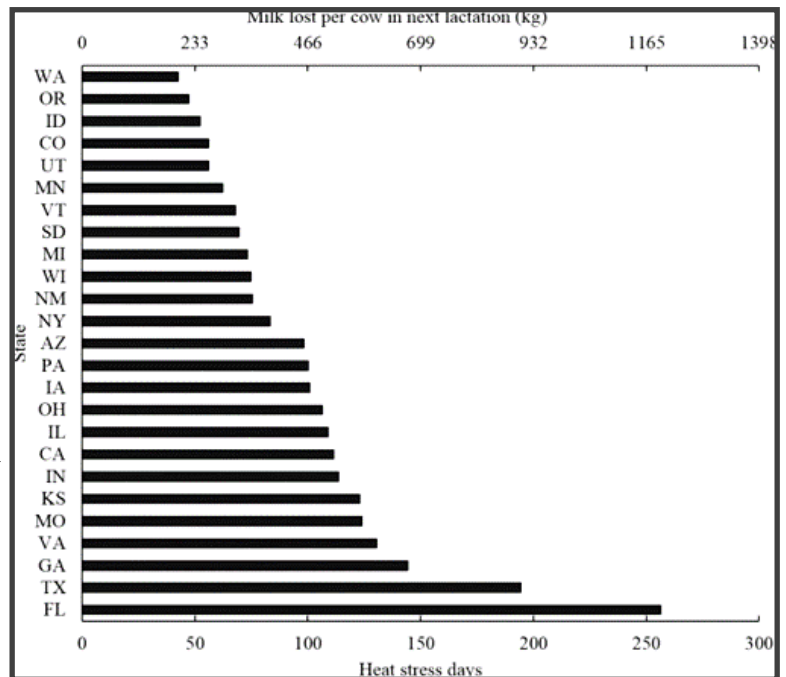


Figure 1. Milk lost per cow in the subsequent lactation (340 d) and days under heat stress for the top 25 states with the most dairy cows. We assumed an average loss of 4.66 kg per 340 d for each day of heat stress.

assumptions static, to break even after building a new dry cow barn with fans and soakers, farms would have to gain a little over 20 lb per cow. Conversely, just adding fans and soakers, cows would only have to go up 1.5 lb per cow to break even!

Dahl also summarizes potential costs, returns and payback estimates of cooling cows during the dry period in the table below (see Table 2). More information on heat stress management of dry cows, as well as a downloadable spreadsheet where farms can customize information can be found at <http://articles.extension.org/pages/73073/heat-stress-management-of-dry-cows>.



photo source biomin.net

State	Barn + fans + soakers			Fans + soakers only	
	Milk increase (kg/cow per d)	Milk price (\$/kg)	Barn investment cost (\$/dry cow stall)	Milk increase (kg/cow per d)	Milk price (\$/kg)
CA	7.37	0.60	1,536	0.55	0.15
WI	10.96	0.83	880	0.77	0.16
NY	9.91 (21.8 lb)	0.76	1,022	0.71 (1.5 lb)	0.16
FL	3.28	0.33	4,106	0.30	0.13
TX	4.30	0.39	2,989	0.36	0.14

Table 1. Breakeven analysis for milk increase in subsequent lactation, milk price, and the barn investment cost, to obtain a payback period of 3 yr for the 3 states with the most dairy cows (California, Wisconsin, New York) and Florida and Texas¹

barn; heat abatement requires actively cooling cows. Barns and fan systems in NY need to be designed for more than one season, so be sure to contact experts when designing your system!

Default assumptions: \$2,500 barn investment cost per dry cow stall, \$0.44/kg milk price, 5 kg/d (11lb/d) reduction in milk yield in the subsequent lactation if dry cows were not cooled. States and number of heat stress days: CA (112), WI (75), NY (83), FL (257), and TX (194). Variables were varied one at a time with the other variables set at their default values. ∞

		Milk Yield (Increase in lbs milk/day)					
		3.0		6.0		9.0	
Milk Price (\$/cwt milk)	Barn Cost	Increase in profit/cow/year (\$)	Pay back time (years)	Increase in profit/cow/year (\$)	Pay back time (years)	Increase in profit/cow/year (\$)	Pay back time (years)
25.00	250	92	4.0	276	1.3	461	0.8
25.00	150	112	2.0	296	0.8	481	0.5
25.00	50	132	0.7	316	0.3	501	0.2
20.00	250	46	7.9	185	2.0	324	1.1
20.00	150	66	3.4	205	1.1	344	0.7
20.00	50	86	1.0	225	0.4	364	0.2
17.50	250	23	15.7	139	2.6	255	1.4
17.50	150	43	5.2	159	1.4	275	0.8
17.50	50	63	1.4	179	0.5	295	0.3

Table 2: Potential costs, returns and payback estimates of heat stress abatement during the dry period in dairy cattle

Indicators of Heat Stress

Dahl also gives recommendations for commercial dairy farmers to track heat stressed cows. Rectal temperatures are good indicators for identifying cows experiencing heat stress, but can be time consuming. Counting respiration rates, however, are a practical tool for monitoring in most situations. Dahl states that an excess of 65 breaths per minute is an indicator of significant heat stress.

Planning for Heat Abatement

Some thought should go into the planning for fans, and sprinklers, should you choose to put them in. We must think about heat abatement differently than just ventilation. Ventilation includes bringing fresh air into the

Summer Dairy Research Update Meeting:

● Heifer Reproduction ● Hypocalcemia

Reducing Replacement Heifers Rearing Cost through Improved Reproductive Management

Replacement cows generated by the heifer rearing enterprise are critical to the future of dairy farms. Nevertheless, raising heifers represents a major cost burden accounting for as much as 15 to 20% of the total cost of production. Thus, minimizing the duration of the non-lactating period by reducing days to pregnancy can help reduce farm operating costs. We will present new research data evaluating different reproductive management programs for dairy heifers in commercial dairy farms. The impact of these strategies on the reproductive performance and economics of heifers during their non-lactating period and their first lactation will be discussed.

Fresh Cow Calcium Supplementation: To Treat or Not to Treat

A recent large trial conducted on farms in New York State has provided insight into which cows truly benefit from oral calcium supplementation. We will review the trial results to help you make practical decisions regarding post-calving calcium supplementation in your herds.

South Central NY Dairy & Field Crops Digest



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Cornell University PRO-DAIRY Program
Herd Health & Management Specialist

August 24 7-9 pm

Cornell Vet Teaching Dairy, Tulip Tree Drive, Ithaca
Pre-registration Requested. Call 391-2660 or on-line @ https://scnydfc.cce.cornell.edu/event_preregistration.php?event=577

Robot Farm Tour Recap

Alison Parrott, SCDFC Summer Intern

On Thursday, July 20th, two local farms, Lisleview Farm and Hilltop Divine Dairy, welcomed dairy producers and businessmen alike to their facilities. The morning started out at the Mras family's farm, where they have been using robots for approximately five months. Owner, Chuck Mras, his daughter Jessie and his son Andy discussed the transition process from moving from their tiestall barn to a brand new facility that now houses around 120 Holstein cows and two robots.

Chuck Mras explained how he and his family made the decision to transition to robots and the different steps that were needed along the way in order to get to the end goal of having the robots up and running. He also stressed the importance of not overcrowding the robotic barn as he found that it led to decreased milk production per cow. Andy added that not being tied down to a specific milking time allows them to focus on other important things around the farm, including field work. Jessie spoke about the importance of the activity collars which each milk cow on the farm has as they have helped detect activity like heats and lameness. A common thread by all speakers highlighted the importance of taking advantage of the extra time that the robots allow for.

Bob Church from Fingerlakes Dairy Service was on site as he plays an active role in the design and daily operations of each facility. Bob explained that each farm has a different design that works best for them and how it really is not a "one size fits all" formula. He discussed his experience with the process of designing, building and implementing robots. Participants of the tour had many great, quality questions about topics such as cost, real-life problematics and the overall process from beginning to end.

As soon as the tour portion began, it was obvious that the Mras' did not cut any corners when designing their facility. In motion was the Lely Juno, which is programmed to push up the feed every hour and the rotating brushes were being highly used by the occasional cow walking by. Everyone was eager to see the robots in action and were able to view the cows entering and exiting the robot and just how the robot works. Bob Church and Chuck were also on hand in the viewing room to answer any questions that arose while gathered and watching the robots.

After finishing up in Lisle, the robot tour broke for lunch and reconvened at Hilltop Divine Dairy, where owners Carlton Dawson and Kevin Streeter were present to speak on the behalf of their operation. An operation that has been running for around 7 years, it was great to see and compare the two stops of the tour and how a new facility may differ from one that has seen a lot of cows go through the robot, while all having a common goal. The schedule was similar to the morning stop.

South Central NY Dairy & Field Crops Digest

Kevin, who has a heavy background in nutrition, really drove home on the availability the robot gives them to focus on quality forage and the best nutrition for their cows. He also talked about how he has learned the ins and outs of the robot on their farm, so that he can fix it himself, saving time and money. Being an individual who enjoys not being set to the same schedule every day, the robot has really helped the family's farm prosper by being able to focus on those other important things for their herd. Again, great questions were asked by the tour participants, as they had new questions on how the producer on each farm runs things, since they had already seen the other facility that morning.

Next, Kevin led the group down the feed alley to show off the barn and it was very helpful to see how their barn differed from the one viewed in the morning. Having different designs at each stop really drove home what Bob Church had previously said about having a unique design for each facility because in the end it is about what will work best for the producer. Following, everyone joined together in the robot room to see the lone robot hard at work. With the sunshine starting to fade away and the clouds rolling in, we ended the day right on time for Kevin to meet Carlton up in the field to finish baling some hay.

A huge thank you goes out to the Mras family and Carlton Dawson and Kevin Streeter for showcasing their facilities on a sun shiny day to allow other producers and those in the dairy industry to get a close up look on just what goes on at a robot farm each and every day!

The article below greatly summarizes and explains the many factors that decide whether robots is the best idea for your farm. ✦

http://www.4dbarn.com/files/4dbarn/may_25_2016_robot.pdf



Summer Field Trials

Janice Degni, Area Field Crops Specialist

Fungicide Trial for Control of Northern Corn Leaf Blight

Northern Corn Leaf Blight (NCLB) has become a disease that impacts all corn growers to some extent. The disease has been moderate to severe over the last ten years or so. We had a reprieve last year because of the unusually dry conditions.



Disease resistance in hybrids is variable. The disease organism is continually evolving to overcome partial plant resistance. There are nearly 20 fungicides from two chemical families that are labeled for control of NCLB. The majority of efficacy testing has been done in the Midwest. In NY, CCE and industry rely on that information for our recommendations.

This spring I received grant support from the NY Corn and Soybean Growers Association to compare the performance of pre and post tassel fungicide applications in corn for control of Northern Corn Leaf Blight. I have three cooperating farms in our region and two additional sites being managed by extension colleagues in Eastern and Northern NY.

This study seeks to measure and compare impacts on yields and plant health from early-vegetative and post tassel fungicide treatments for control of NCLB. Yield results will be used to compare cost of fungicide application with value of yield gained. This study will provide data to help define the benefit of late season fungicide application to protect yield.

The three fungicides that will be used in this study are Affiance, Priaxor and Headline Amp. All have two ingredients providing mixed modes of action. Affiance and Priaxor are purported to have 30 days of systemic activity and early application timing when corn is still vegetative which can be combined with post emergence weed control. Headline Amp is rated "very good" for control and is the fungicide used by many custom applicators. Affiance and Priaxor will be applied at the v4-v6 stage. Headline AMP will be applied post tassel. In addition to pathogen control, these fungicides are promoted for offering "plant health" benefits even in the absence of disease pressure.

Trial results have been mixed related to the economic returns associated with plant health benefits. In a season absent of heavy disease pressure there is additional value from this project in evaluating plant



performance, yields and economic returns associated with application of these products. Another question that farmers frequently ask when there is heavy disease and much dead leaf tissue, what is the impact to silage quality? We will collect

samples from each treatment replication for analysis of forage quality.

I couldn't do this project without the assistance from industry reps, agri-service and the farm cooperators. I appreciate the willingness of everyone that is involved with this project. Bushels of thanks go out to farm cooperators; John Currie, John Fleming and Dennis Underwood, Industry reps: Kate Wheeler, BASF and Dave Pieczarka, Gowan who have generously donated product. Carovail (Oriskany Falls): Tom Hartnett and spray operators Mike Hartnett and Mark Collins. Helena's Matt Pinckney and spray operator Jon Richardson. Pat Lynch w/ VanPelt Farms and Jim Saik, at Finger Lakes Agronomics.

Fungicide Demo in Soybeans

Whitemold can be a yield devastating disease in soybeans. I have a demonstration plot comparing untreated beans to treatment with the fungicide Domark® and Domark® with Badge SC, a copper based fungicide. It might make a good site for a get together later in the summer.



Organic soybean production in a rolled rye covercrop.

Organic farmers have limited opportunity to incorporate no-till practices into their production schemes. Reducing tillage and incorporating cover crops into rotation are identified as key factors for supporting and building soil health. Recent university, small plot research has shown that competitive yields (40 bushel range) can be attained using a rotational no-till rolled cover-crop in soybeans providing an opportunity for a no-till crop in the rotation. It reduces labor and fuel demands by eliminating weed control passes beyond termination of the small grain cover crop. The cover crop protects the soil over the winter and adds fresh organic matter. A demonstration trial with farm cooperators, Ed and Eileen Scheffler this summer has been established to provide more on-farm experience with rolled rye. We have a comparison of the rolled rye, vs incorporated rye vs no cover crop all with soybean.



Continued on page 9

Mid-Summer Pest Inventory

Janice Degni, Area Field Crops Specialist

Potato leafhopper tops the charts as the prominent mid-summer pest. Untreated fields have taken a beating. Leaves show significant yellowing and even red hues. Plants in some fields are stunted. I happened to visit Julie Hanson's alfalfa variety trials featuring PLH resistant varieties vs non-resistant and the checkerboard pattern was very clear.



I have not seen leafhopper or soybean aphids attacking soybean to date but I suggest you keep checking. Beans are well into flower now.

Disease status

I may have a completely different story in a month but to date I have seen very little disease in corn or soybean. I've been anticipating early infections because of the constant moist conditions which favor disease development. Others around the state have been seeing rust. The corn I have looked at is still clean. Go figure, I plan a trial to compare treatments for Northern Corn Leaf blight and the disease incidence is currently not visible. Early planted corn is just starting to tassel so there is plenty of time for infection to still occur. Conditions would seem to favor white mold in soybeans. Protective fungicides need to be applied when flowering starts. Industry reps recommend two applications, 2 weeks apart. They also recommend no treatment if you are unwilling to do 2 applications.

Western Bean Cutworm

I manage a trap that monitors for the Western Bean Cutworm moth. I have done this for several years. For the past few years my counts have been low. This week I had 264 moths in the trap. I haven't seen or heard of damage from this pest in our area, but now I am concerned. The North Country get counts like 400 and 800 coming off of Lake Ontario so compared to that my counts are moderate. Nevertheless I think we need to be on the lookout for this pest's damage. What is unique about this caterpillar, which causes feeding damage, is that more than one caterpillar can feed on an ear of corn. Several caterpillars can do significant damage to the grain on an ear of corn. Other caterpillar species are cannibalistic and eat each other, leaving



only one caterpillar to cause ear damage. More details about WBC and its history follow. Please contact me at harvest if you suspect damage from this insect. You can always send a digital picture for diagnosis.

“Description

Western bean cutworm is a recent immigrant into NYS and is starting to become an economic pest in some counties in NNY and WNY. This insect was historically found in the western Corn Belt where it is a common pest of dry beans and a sporadic pest of corn. Starting in the year 2000, economic damage from this pest was found on corn in Iowa and Minnesota. In subsequent years, this pest has continued to rapidly spread eastward, with the first detection in WNY in 2009. A statewide pheromone trapping effort between 2010 and 2016 has documented the moth continuing to spread eastward across the state and an ever increasing overwintering population.



The adults are mostly dark brown and black, with three characteristic markings that distinguish them from other moths: (1) a white stripe on the top edge of the forewing, (2) a light brown, tan colored dot, and (3) a comma or crescent-shaped mark behind the dot. The adults emerge in late June–early July after fully grown larvae overwinter inside soil chambers in the soil 3–8 inches deep. Mid-flight of the adults usually occurs in mid-July, with adult flight ending by mid to late August. There is one generation per year. Eggs are usually laid on the uppermost portions of the flag leaf in egg clusters averaging 50 eggs per cluster. Eggs are white when laid and then turn purple when just about ready to hatch.

Larvae are tan in color and can be identified by two broad stripes immediately behind head. In addition, since WBC is not cannibalistic, larvae usually occur in groups feeding directly on the developing kernels. The damage caused by larvae feeding on kernels also increases risk of subsequent infection by ear mold fungi, including those capable of producing mycotoxins.

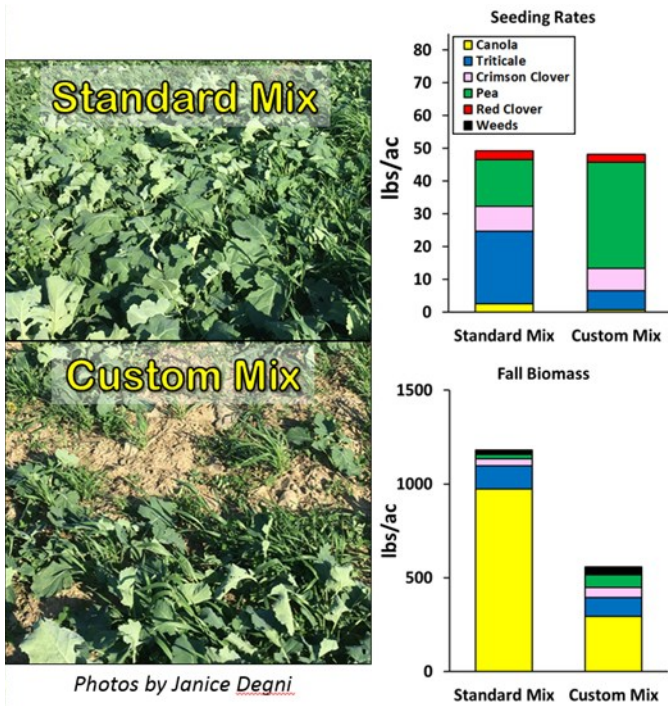
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Multifunctional Cover Crop Cocktails for Organic Systems



I have been working on a project with Thor Oechsner and Penn State researchers to determine the agronomic, environmental, and economic benefits and costs of using cover crop mixtures in an organic corn-soy-wheat

crop rotation. The study is testing a 5 species mixture planted at 8 farm locations across PA and NY. One of the objectives is to understand causes of variability in the expression of mixture across climate and soil nutrient conditions. There is a comparison of the standard mix to the farm's custom mix. We are planning to have a field day at the farm in late summer/early fall to highlight some of the benefits and challenges. Ω



Photos by Janice Degni

Western Bean Cutworm Management

Economic populations of WBC are starting to be reported across the NNY counties. Increasing moth populations are being recorded in WNY and economic populations are expected in future years. The two oldest BT-corn borer events are not effective in controlling WBC and producers should contact Cornell Extension personnel for the current recommendations about effective WBC-BT events.”

Source: Keith Waldron, NYS IPM Program. <https://fieldcrops.cals.cornell.edu/corn/insects-corn/western-bean->

Thank You and Best Wishes to Alison Parrott for all her good work this summer . . .



Alison Parrott has spent the summer working with CCE of Cortland County and the South Central NY Dairy and Field Crops Team. She will be entering her senior year at Cornell University, where she is majoring in agricultural sciences and minoring in education. Upon graduating and completing her master's degree, Alison plans on

becoming an agriculture teacher at the high school level.

Between working with the 4-H program and the team, Alison was kept quite busy. For 4-H responsibilities, Alison visited several summer recreation programs in the area to teach the kids about different topics like soil. She also was heavily involved in the Cortland Junior Fair, happily lending a helping hand where needed, but mostly being involved with the different animal exhibits and shows. With the team, Alison has been very active in a tie stall lameness study, led by area dairy specialist, Betsy Hicks. She also has helped Janice with plant population counts for her applied research and also developed a few interactive displays for growing the public's ag awareness.

“Alison has been instrumental in carrying out my Tie-Stall Lameness Research Project this summer. Her efforts in measuring stalls, cows and helping prep loggers for each farm this summer have been invaluable! Thank you for all your hard work, especially the early mornings after each fair!” -Betsy

One of Alison's favorite tasks of the summer was coordinating a Robot Farm Tour, which along with a couple other workshops, helps make up the summer schedule for workshops and meetings. In her free time, Alison enjoys spending time outside, usually working with her dairy show cows, which she shows around the state throughout the summer. She also keeps busy feeding calves and other chores around the farm. ♦

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Cuomo Signs Bill, Invests In Industrial Hemp At Cornell Event

Matt Hayes, Managing Editor & Social Media Officer, CALS, Cornell University

Gov. Andrew Cuomo thinks New York can be the national leader in industrial hemp, and he is investing in agricultural research to help make it happen.



Gov. Andrew Cuomo signs the hemp bill. Looking on, from left, are: Howard Zemsky, president and CEO of Empire State Development and commissioner of the New York State Department of Economic Development; Cornell President Martha E. Pollack; state Sen. Thomas O'Mara; and Assemblywoman Donna Lupardo.

New legislation signed by Cuomo at Cornell on July 12 removes legal obstacles impeding access to hemp seed in a bid to streamline research and farming opportunities. The bill classifies industrial hemp as an agricultural commodity and creates a working group to advise the state on research and policies concerning a plant that is of the same genus and species as marijuana but contains only traces of the psychoactive chemical THC.

Cuomo, touting the state's strong agricultural economy, said he sees hemp as a commodity with the potential to boost job growth in agriculture and manufacturing. He committed \$5 million in state funding to support research into the production of industrial hemp, with \$1 million to fund immediately an ongoing partnership between the College of Agriculture and Life Sciences (CALS), SUNY Morrisville, the New York State Department of Agriculture and Markets, and Empire State Development.

This summer, under the federal Industrial Hemp Farming Act of 2015 allowing hemp research trials, Cornell has been undertaking research in Ithaca, the New York State Agricultural Experiment Station (NYSAES) in Geneva, New York, and with 25 partner farms across the state. More than 1,700 acres will be under cultivation this season as Cornell taps into its multidisciplinary expertise in plant pathology, breeding, genetics, seed technology, soil and entomology to determine optimal growing practices in the state's diverse growing conditions.

Drawing on New York's legacy as an innovation leader, especially in agriculture, Cuomo was clear about his aspiration: "We want to be the nation's leader in hemp production."

Kathryn J. Boor, the Ronald P. Lynch Dean CALS, said: "Making industrial hemp a success in New York depends on smart investment in research in the agricultural sciences. Backed by Cornell researchers and our strong network of agricultural expertise in every county in the state, New York is poised to be a national leader in this emerging crop."

She added, "Gov. Cuomo's continued support provides our state's farmers the opportunity they need to innovate and compete in this exciting new market."

A thriving hemp market already exists, as the plant is used to make food, paper products, clothing, consumer goods and a multitude of other products. New York is now making it easier to allow farmers to grow a crop that generated nearly \$600 million in U.S. sales in 2015.

Christine Smart, interim director of the School of Integrative Plant Science and professor of plant pathology, said the multidisciplinary expertise in the school provides farmers the knowledge they will need for successful production.

She said faculty will focus on everything from secondary metabolites that can be used for medicinal purposes, to breeding varieties that are adapted to New York environments, to field trials that identify the best commercially available varieties that are tolerant of insects and diseases.

Hemp research at Cornell is currently divided into two parts: campus farm trials that explore fiber, grain and dual purposes, and partnerships with growers to compare environmental conditions across New York.

Don Viands, professor of plant breeding and genetics, is leading the research trials in Ithaca. Larry Smart, professor of horticulture, is conducting research at NYSAES and leading efforts with partner growers as he and his team measure stand establishment across a variety of soils and planting methods.

Together with Cornell Cooperative Extension specialists, the researchers will survey for pests and diseases to determine how varying conditions impact yield.

The state also announced \$5 million to launch the Industrial Hemp Processors Grant Fund. The program will fund eligible businesses for capital costs up to \$250,000 related to processing industrial hemp, including new construction and purchase of equipment, according to Cuomo, who envisions industrial hemp as being a boon to processors as well as growers.

The bill also establishes a 17-member Industrial Hemp Working Group to identify opportunities to promote industrial hemp and make recommendations concerning research and policy. Representatives on the group include two from CALS: Larry Smart and Julie Suarez, associate dean of governmental and community relations.

At the event, Cuomo praised Cornell for its work in agriculture and other areas of research. "Cornell is such a gem for the entire state, and it does so much good work on so many different levels," he said, adding that he's excited about the leadership of President Martha E. Pollack, who in April became the university's 14th president.

Pollack said Cornell is proud of the university's roots in New York and is committed to building a better future for the state. "This research will help New York capitalize on this emerging crop and create jobs and opportunities across the state," she said. ☐

Assemblywoman Donna Lupardo shows Cornell President Martha E. Pollack and Gov. Andrew Cuomo products made in New York with hemp.



Robert Barker/ University Photography

John May Farm Safety Fund

John May Farm Safety Fund Eligibility Requirements Expanded to Help More Farms!

What is new?

We have expanded our eligibility criteria to now include New York State dairy farms with up to 699 mature dairy cattle, as well as increasing the annual gross cash income to \$349,999 for all farms!

About the program:

As the first program of its kind in New York State, this cost sharing program allows farmers to make lifesaving safety upgrades. "We're excited to integrate this program into the portfolio of health and safety services we offer to the agricultural community," says NYCAMH's Director, Julie Sorensen. "The John May Safety Fund (JMFSF) fills a gap in services to small farms, where slim profit margins often make it difficult to do more than what is needed to keep the farm running every day."

What kind of projects?

Any project that directly improves safety on the farm will be reviewed. Some examples include but are not limited to:

- The purchase and installation of equipment to improve animal handling safety
- Repairing or replacing broken or outdated machinery that poses a safety risk
- Repairing or replacing faulty electrical systems

- Making necessary changes to operations to become OSHA compliant

- Adding or replacing worn out safety signage

Who can apply?

The program is geared toward smaller farms of all commodities. Awardees must meet the following eligibility requirements:

- Resident of New York State
- Active farmer (part-time or full-time)
- Annual gross cash farm income is \$10,000 - \$349,999 OR dairy farm has fewer than 700 mature dairy cattle.

Where to apply and how it works:

Applications to the program may be submitted at any time and may be obtained online at <http://www.nycamh.org/programs/john-may-farm-safety-fund/>, by calling

NYCAMH at (800) 343-7527 (ask for the John May Farm Safety Fund) or emailing info@nycamh.org. The number of awards and the award amount will be determined by NYCAMH on a first-come, first-served basis.



Headlocks installed using JMFSF funds

Spotlight on Safety



The photo above is from Jason Detzel's beef farm. With funds from the JMFSF, he installed headlocks in an existing pen to enhance his animal handling system. At left, Jason and John VanDerwerken, NYCAMH Agricultural Safety Educator, shake hands at the completion of a follow-up safety survey, after the headlock system was installed.



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CALENDAR OF EVENTS

- Aug 23** **Farm Safety and OSHA Workshop, Volles Farm**, 2849 Buckwheat Rd. Marietta 10 am—2:30 pm
Presenters: Karl Czymmek, PRO-DAIRY and Keith Gillette & Michael Cappelli, NYSDOL
Topics: OSHA Updates and Summary of Farm Safety Audits by DOL
- Aug 24** **Summer Dairy Research Update: Heifer Reproduction and Hypocalcemia** 7 pm—9 pm
Cornell Vet Teaching Dairy, Tulip Tree Drive (off Route 366 across from Vet College), Ithaca
Topics: Reducing Replacement Heifers Rearing Cost through Improved Reproductive Management and
Fresh Cow Calcium Supplementation. There is no cost to attend. Registration is requested.
Call 607-391-2660 or on-line at https://scnydfc.cce.cornell.edu/event_preregistration.php?event=577. Details p 5.
- Sept 9** **Onondaga County OnFarm Fest 2017** 10 am – 3 pm
Visit 8 Host Farms throughout Onondaga County and explore what farming is all about. Visit the OnFarm Fest
website at www.OnFarmFest.com for farm locations and more information. Admission is Free.

And Now a Word on this Year's Potential Corn Silage Quality Kevin Putnam, Dairy Specialist NY/NE, Dupont-Pioneer

Over the last couple of weeks I have been asked multiple times, what will 2017 corn silage quality be like given the rain we have had so far, and is there anything we can do about it? The answer, as always, it depends. The reason it depends is mainly due to three factors, pollination, current inventory, and progress of the current crop. All of which are variable given drought conditions in areas last year, and delayed planting for many this year. In this email I hope to explain what corn silage quality could potentially be, and what management strategies could be utilized to improve it.

What is the potential NDFd of 2017 corn silage?

If we are only considering the fiber portion, which we would be with NDFd, then we have the potential to be disappointed. Corn silage NDFd is determined pre-silk, this is when the plant is building structure in the form of fiber, lignin, and cross linking (rebar that ties it all together). Once the plant goes reproductive its main focus is its offspring, the ear, this is why we typically see little to no plant growth after pollination. The main factors that affect corn silage fiber digestibility are moisture, sunlight, and heat (in that order). Dr. Mike VanAmburgh has said that moisture has a 7x greater the effect on NDFd when compared to sunlight and heat. Even though we have a lot of corn at different growing stages around the countryside right now, it's pretty safe to say that most of the pre-silk growth has come during wet conditions. Not that I have to remind anyone, but this comes after one the worst droughts on record in 2016, and with that record high NDFd levels. So we are looking at potentially having 2017 corn silage be a complete 180 from 2016, from an NDFd standpoint. Read more on our website in *Announcements*.