

## AG FOCUS



# Chop, Chat, & Chew: The 3 C's of Forage Quality

by Jodi Putman

Temperatures here in the NWNY region have been averaging mid 70's to low 90's with high humidity and copious amounts of rain. Whether it's your 2019 planned crop or an alternative crop, optimizing forage quality will be important as we start to prepare for the harvest season.

The length of cut forages, whether it is haylage, corn silage or another forage crop, has an impact on the final forage quality in several ways. The length of chop has an effect on packing in various storage types, which ultimately affects the fermentation. There's also the effect on fiber.

A short chop will minimize air infiltration into the silo, while longer chop length increases effective fiber in the diet. Theoretical length of cut (TLC) recommendations for alfalfa and grass are 3/8 to 1/2 inch and the TLC for corn is 1/2 to 3/4 inch. Corn harvested for silage at greater than 30 percent dry matter (DM) should be processed to maximize utilization by the animal.

By understanding the 3 C's of forage quality, you can make decisions for your forage harvest that will provide you with a higher-quality end product to feed your herd.

A coarser or longer chop will not pack as well as a finer chop, allowing more air spaces in between forage particles in the storage facility. A finer chop will lend to better packing, regardless of the storage structure or moisture. Length of cut, packing and the amount of air present in the storage structure can affect fermentation. In a proper fermentation, the sugars are mainly used as fuels for the lactic acid bacteria. Drier feeds, poorly packed feed or any other situation that would increase the oxygen level present in the storage structure, will cause more of these sugars to be used by the aerobic bacteria, molds and yeasts. By reducing the amount of time it takes for the pH to drop and oxygen to be eliminated will increase the sugars available for lactic acid production.

So how does length of cut affect effective fiber? A longer cut will provide more physical fiber than a shorter cut. In all cases, a shorter cut will

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Figure 1. Penn State Particle Size Separator. The two screens are offset to show the diameter of the holes.



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## Chop, Chat & Chew: The 3 C's of Forage Quality

(Continued from page 1)

reduce the effectiveness of the fiber. Achieving adequate ration particle size requires using recommended guidelines for forages and TMRs (Table 1.). Particle size guidelines were based on intense research studies at Penn State to further refine the guidelines.

### Particle size effects on the Dairy Cow

Adequate forage particle length is necessary for proper rumen function. Reduced forage particle size has been shown to decrease the time spent chewing and cause a

trend toward decreased rumen pH. When cows spend less time chewing, they produce less saliva, which is needed to buffer the rumen. In comparison, when feed particles are too long, animals are more likely to sort the ration, and ultimately the diet consumed is very different than the original formulated.

**Chat** with Jodi Putman, Field Crops Specialist and Margaret Quaassdorff, Dairy Management Specialist, to discuss your goals for optimizing forage quality through proper harvesting, ensiling, and feedout practices!

Table 1. Corn Silage, haylage, and TMR particle size recommendations for lactating cows.

Screen	Pore Size (inches)	Particle Size (inches)	Corn Silage	Haylage	TMR
Upper Sieve	0.75	> 0.75	3 to 8	10 to 20	2 to 8
Middle Sieve	0.31	0.31 to 0.75	45 to 65	45 to 75	30 to 50
Lower Sieve	0.16	0.16 to 0.31	20 to 30	30 to 40	10 to 20
Bottom Pan		< 0.16	< 10	< 10	30 to 40

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## Upcoming Webinars

August 7, 2019 at 5:00 p.m. EST

"Forming High Performing Down Cow Care Teams"

Dr. Conrad Spangler, Veterinarian, Riverview LLP

<https://www.dccouncil.org/webinar-series>

August 12, 2019 - Noon CST

"Monitoring and improving cow comfort in freestalls and tiestalls"

Presented by Lindsay Ferlito,  
Cornell University Cooperative Extension

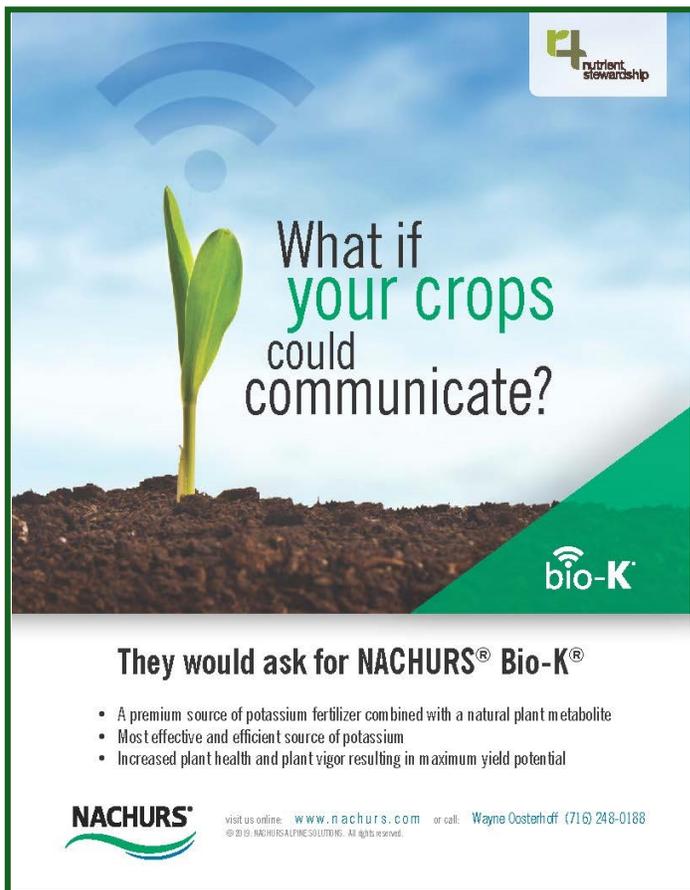
<https://hoards.com/flex-309-Webinars.html>

August 12, 2019, 7:00 p.m. EST

"Dairy Cattle Summer Research Update"

Dr. Julio Giordano, Dr. Rob Lynch, Dr. Martin Perez

<https://prodairy.cals.cornell.edu/webinars/>



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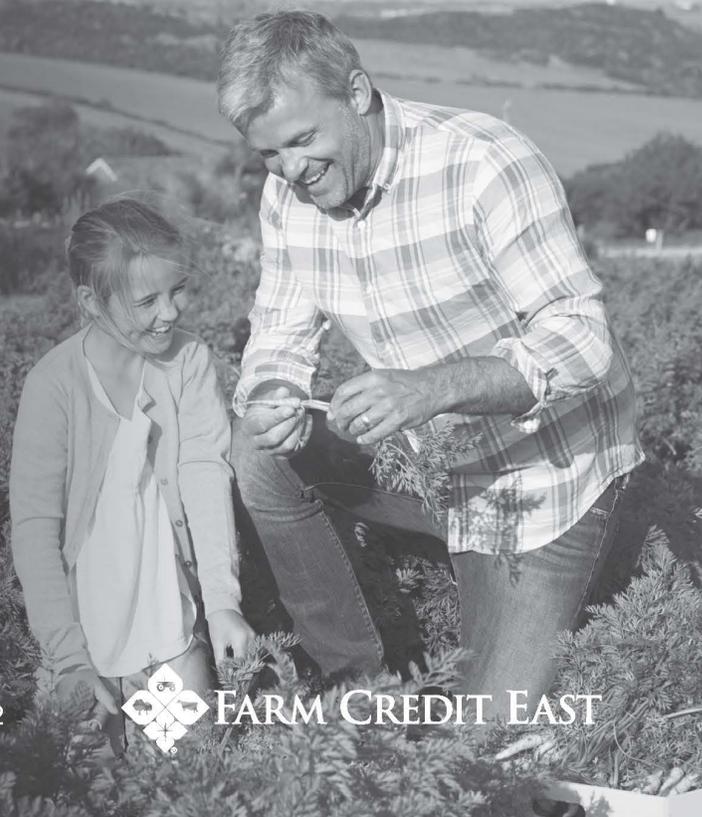


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# Shoo, Flies, Don't Bother Us!

by Margaret Quaassdorff

Flies are not only a bother to our dairy cattle, but they can also exacerbate the spread of diseases such as pink-eye or nematode eye worm. In the milk room or in calf barns, house flies can contribute to increased bacteria in milk fed to calves, and can raise a red flag during a facility inspection. In addition, cows bothered by flies on pasture also burn more valuable calories keeping themselves fly-free, swinging their heads, swishing tails, stomping feet, etc., which can really dig into their time budget for eating and resting. Due to painful bites and general annoyance, production performance is negatively impacted in herds that are infested with stable flies. Some say this can result in a 10 to 30% reduction in milk production, due to reduced feed intake and increased energy expenditure and fatigue.

There are two categories of flies that create difficulties for our dairy cows and calves: barn flies and pasture flies. Within the barn we have the biting stable flies and the non-biting house flies. Out on pasture are the non-biting face flies, and the biting stable flies, horn flies, horse flies, and deer flies.

Integrated Pest Management uses a series of evaluations, decisions, and controls to incorporate an effective, economical and environmentally sensitive approach to pest management. Ken Wise, Livestock & Field Crops Integrated Pest Management Extension Area Educator



Figure 1. Stable flies on the legs of a cow. Photo by Keith Waldron.

for Cornell University, first recommends **keeping the areas around the barn clear of moist, rotting organic matter** where house and stable flies reproduce and mature. Common fly breeding sites are in and around calf hutches, silo leak and spill areas, overly soiled bedded packs, feed and water trough areas, and

manure handling areas. Pasture flies including horn and face flies reproduce in fresh cow manure, and can be extra bothersome for organic and pastured dairy operations. Horn flies can take 20 blood meals a day from cattle, and face flies feed on eye and nasal secretions.

Oral larvicides containing methoprene, tetrachlorviphos, or diflubenzuron, work best to control face flies and horn flies, and may also reduce numbers of house flies and stable flies when fed to correct dosages starting in the spring and continued until cold weather restricts fly activity. The cost for these feed additives can range from \$0.02 to \$0.08 cents per head per day. If you have close farm neighbors, or separate barns in close proximity that are not dosed, it will be an uphill battle if flies are able to easily breed and travel from a neighboring farm or barn to your animals.

If you missed an opportunity in the early summer to **use parasitoids (beneficial insects that counteract fly populations)** as a biological control (\$0.04 per head per day for 12 weeks), many different types of **fly traps can be utilized to control outstanding populations**. Horse and deer fly bites are painful, and because of the flies' quickness, insecticides do not work well, and they are best controlled with H-traps or Horse Pal Traps. Stable flies are attracted to traps that utilize blue spectrum light, where sticky traps work best for house flies. If you still feel that flies are an issue, place a 3 by 5-inch card in the barn where flies tend to land. If a card receives 100 spots per week, it has reached a threshold in which to **employ insecticides as the final means** to reduce the fly population after you are sure that you have eliminated moist organic matter. Thresholds for flies found on the body are in Table 1.

Looking for another alternative? Requiring a 220v outlet that can be reached by a 10-ft power cord, the Spalding Cow-Vac blows horn flies off the body of the cow, and a vacuum system collects them for disposal. This system

(Continued on page 6)

Table 1.	Face Fly	Horn Fly	Stable Fly
Threshold (flies per area)	10 per face	50 per side of animal	10 per 4 legs
*Monitor about 15 animals in the herd to determine thresholds.			

## Shoo, Flies, Don't Bother Us!

(Continued from page 5)

can be set up at the entry or exit of the milking parlor or barn, and will require about a week of patience in training the cows to go through the system. In a 2015 study at the University of Minnesota West Central Research and Outreach Center dairy, horn fly numbers on cows were reduced by 44% when the Cow-Vac was used, where stable and face fly numbers were low, but similar, in both the presence and absence of the Cow-Vac.



www.spalding-labs.com

Trap	House Fly	Stable Fly	Deer & Horse Fly	Horn & Face Fly	Approx. \$/Unit (2015)	Comments
Spot cards	X	X	-	-	\$0.01 per card	Used for monitoring
Sticky tapes	X	X	-	-	\$0.50 per roll	Used for monitoring and reduction of small populations
Spider web fly glue trap	X	X	-	-	\$13 per roll	Can trap thousands of flies with one trap, replace when full, dried out, or dusty
Fly string	X	X	-	-	\$71 for hardware and 1600ft string	Capacity—150 flies/linear foot
Attractant trap	X	-	-	-	\$25 per trap and lure	
Alsynite biting fly /stable fly trap	X	X	-	-	\$10 to \$18 for trap \$20/10 sticky paper replacements	
Knight Stick Biting Fly Trap	X	X	-	-	\$50 w/ 3 disposable wraps	
Horse Pal	-	X	X	-	\$270/trap	
Walk-through trap	-	-	-	X	Varies	Price varies widely depending on whether unit is built or purchased
CowVac walk-through trap	-	X	-	Horn X Face ?	\$7,500	

Estimated Cost Per Trap (2016). Adapted from 2016 Integrated Pest Management (IPM) Guide for Organic Dairies. NYS IPM Publication No. 323.

## 2019 NY Corn and Soybean Contests by Mike Stanyard

The annual corn and soybean yield contests sponsored by the New York Corn & Soybean Growers Association are underway. On the next page is the 2019 yield contest entry form. This form and contest rules can be found on the NY Corn & Soybean Growers Association web page at <https://nycornsoy.org/>. Entry forms must be postmarked by Friday, August 30 and mailed or emailed to Mike Stanyard. Cost is \$30 per entry. This year the grand corn and soybean champions win an all-expense paid trip for two to the 2020 Commodity Classic in San Antonio, TX. The deadline for the National Corn Yield Contest sponsored by the National Corn Growers Association is July 31 and the entry form can be found on their webpage at <https://www.ncga.com/for-farmers/national-corn-yield-contest>. Please remember that this is a different contest than the state contest sponsored by the NYC&SGA. I would encourage growers to enter both corn contests. Applicants in the NGCA contest can use their contest harvest results to fulfill the requirements in the NYC&SGA contest as long as they fill out the entry form and pay the entry fee by August 30. Good Luck!

# 2019 New York Grain Corn and Soybean Yield Contests

## Entry Form and Field Designation



**Entries must be RECEIVED and PAID by August 30, 2019**

Name \_\_\_\_\_ Farm Name \_\_\_\_\_  
 \*Only one person per farm may enter and no more than two entries each for corn and soybean\*  
 Address \_\_\_\_\_  
 Town \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_ County \_\_\_\_\_  
 Email \_\_\_\_\_  
 Home Phone \_\_\_\_\_ Work/Cell Phone \_\_\_\_\_  
 Sponsor(if sponsored) \_\_\_\_\_

Grain Corn Entry #1  
 Hybrid \_\_\_\_\_  
 Company \_\_\_\_\_  
 County \_\_\_\_\_

Grain Corn Entry #2  
 Hybrid \_\_\_\_\_  
 Company \_\_\_\_\_  
 County \_\_\_\_\_

Soybean Entry #1  
 Variety \_\_\_\_\_  
 Company \_\_\_\_\_  
 Maturity group (circle one): 0 1 2 3  
 County \_\_\_\_\_

Soybean Entry #2  
 Variety \_\_\_\_\_  
 Company \_\_\_\_\_  
 Maturity group (circle one): 0 1 2 3  
 County \_\_\_\_\_

*I hereby agree that all the contest information provided by me pursuant to this Yield Contest shall be the property of the New York Corn and Soybean Growers Association and can be used and distributed at the sole discretion of the Association.*

Signature of the Entrant \_\_\_\_\_ Date \_\_\_\_\_

Number of grain corn entries (limit 2 per farm) \_\_\_\_\_ x \$30/entry Total \_\_\_\_\_  
 Number of soybean entries (limit 2 per farm) \_\_\_\_\_ x \$30/entry Total \_\_\_\_\_

New NYCSGA membership  Renew NYCSGA  
 (\$99/year membership not required to enter state contest)

Total Enclosed \_\_\_\_\_

**Method of Payment (check one) :**

Bill my seed provider-name/phone# \_\_\_\_\_ (contest only)  
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Return to: Mike Stanyard, Cornell University Cooperative Extension, Wayne County CCE  
 1581 Route 88N, Newark, NY 14513 Email: mjs88@cornell.edu. Questions? Call 585-764-8452

**If this form is properly submitted, you will receive the appropriate Harvest Report Forms in the mail or email if provided.**



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# Ask Extension: A state agency asked, “Do you happen to know of any hog farms that are for sale in New York State? A Chinese company is interested in purchasing one.” by Nancy Glazier

I was asked this question recently. My initial response was, yes, there may be some farms for sale, but other questions needed to be answered first. China is one of the countries being ravaged by African Swine Fever (ASF), so why is the company looking to come to NY? The agency asking the question had no knowledge of ASF and was sending it to NYS Dept. of Ag and Markets for assistance. Here is some background information on this highly virulent swine disease.

ASF is a highly contagious and deadly virus which has impacted domestic and feral pigs of all ages with no known cure. It is harmless to people. It has now become the largest animal disease outbreak in history, according to Dirk Pfeiffer, veterinary epidemiologist with the City University of Hong Kong. China has lost over 350 million hogs from infection and culling, more than the number of hogs in the U.S. (74.6 million, USDA NASS). China is the largest hog producer in the world with many small operations, which may impact eradication.

ASF is also found in the European Union, Russia, plus other parts of Europe and Asia. It was first identified in parts of sub-Saharan Africa in 2007 in wild warthogs and then in domesticated hogs. It made a jump to Eurasia in suspected uncooked scraps of pork (swill).

Signs of the illness are high fever, decreased appetite, and weakness. The skin may be blotchy, red or black lesions on ears, snouts, lower legs, or tails. Other signs may be diarrhea, vomiting, abortion, nasal discharge, coughing, or difficulty breathing. Death usually occurs within 7 to 10 days though sudden death may occur in newly infected herds. The virus can live in the environment, feces and tissues of infected swine for months. Hogs that survive may be carriers of the infection for months.

Will ASF make it to the US? Chances are it won't arrive in live hogs. Monitoring of imports is critical – pork products and feed. The USDA does not allow imports of pigs or fresh pork products from areas of the world where ASF is present. Pork producers should be asking where their feeds come from and whether any imports were tested. Illegal imports are also imperative to monitor, since the infection may live on smoked pork or frozen products for many months. It could potentially take 5 to

10 years to eradicate the disease from a country, depending on the level of biosecurity and eradication practices.

Biosecurity will play a huge role in slowing the spread including:

- Limit visitors and vendor access to the farm
- Use proper disinfectants
- Limit outdoor exposure of domestic hogs to any feral hogs
- Control insects in and around operations
- Don't feed uncooked garbage, animal tissues, or waste products

Vigilance is key to keeping pork production healthy and viable in the US. If there is an outbreak of ASF, exports will cease and impact the nation's \$6.4 billion in exports. If you suspect an infection or experience high death loss contact your veterinarian immediately. Honestly, this goes for any species of livestock; don't hesitate to ask for help with any high death loss. Let me know if you would like additional information.

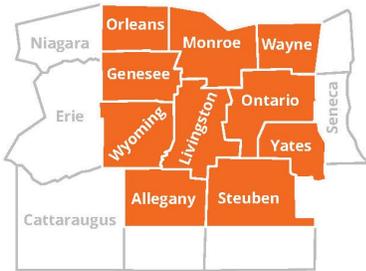
The poster features the USDA logo at the top left. The main title is "AFRICAN SWINE FEVER" in large, bold, black letters. Below it is the subtitle "Know the Signs and Symptoms" in blue. The poster is divided into several sections: "REPORT SICK PIGS" with a sub-heading "THERE IS NO TREATMENT or VACCINE for ASF. Protect your herd by knowing the signs and immediately reporting any sick pigs."; "WHAT TO LOOK FOR" with a list of symptoms including high fever, loss of appetite, depression, weakness, red/blotchy skin, and vomiting; "HOW TO REPORT" with instructions to contact a veterinarian or animal health official. There are illustrations of a pig, a thermometer, and a person holding a smartphone. At the bottom, there is a yellow and black "REPORT SICK PIGS" logo with the phone number 1-866-536-7593. The footer contains the text "Help keep U.S. pigs free of this deadly disease! Need more info? www.aphis.usda.gov" and a small note about the USDA's equal opportunity policy.



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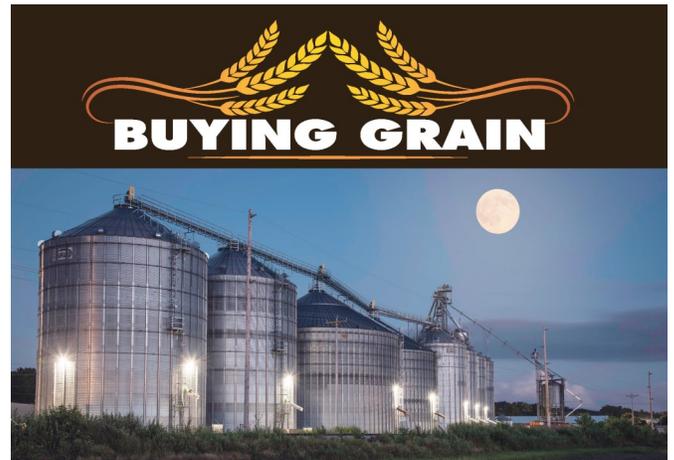
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## Welcoming a New Team Member



We are pleased to announce that Brandie Waite has accepted the administrative assistant position with the Northwest NY Dairy, Livestock and Field Crops Team effective June 24. She is a Genesee County native, having grown up in Elba, NY. Brandie comes to us from the Cooperative Extension of Genesee County, where she worked for seven years as the administrative assistant for the 4-H, Agriculture and Master Gardener programs. She has B.S. in Studio Art from SUNY Brockport and will be working out of the CCE Genesee office in Batavia. In her spare time she enjoys gardening and has a passion for growing cut flowers, especially Dahlias. She is also an active Master Gardener volunteer in Genesee County.

Please join us in welcoming Brandie to the NWNYS Team!



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# Safety Videos for Dairy Employees

by Libby Eiholzer

New employees need to receive safety training *before* they face exposure to risks in the workplace. That means that it's not sufficient to hold one safety training per year for all employees on the farm (unless you have not hired any new employees that year). Many farms rely on NYCAMH (New York Center for Agricultural Medicine and Health) to conduct safety training. While NYCAMH is set up to help farms meet the OSHA requirement for annual safety training, NYCAMH can't possibly provide safety training for all new dairy employees in NY on or before their first day of work.

The good news is that there are materials to help you provide some basic safety training before a new employee begins working, or at any time during their employment. The NYCAMH website hosts a great video series titled "Considering Human and Animal Safety," <https://www.nycamh.org/resources/videos.php>.

These videos are in both English and Spanish, and cover a variety of topics for jobs around the farm. Part one includes Outside Animal Care, Milking Barn Safety, and Feeding and Other Safety Issues (20 minutes total). Part two includes General & Outside Worker Safety, Milker & Calf Caretaker Safety, and Feeder Safety (35 minutes total).

You'll notice that the farms in the videos look different than ours- that's because the videos were created by the High Plains Intermountain Center for Agricultural Health and Safety (HICAHS). Although you'll see people working with cows in dry lots, the principles taught in the videos apply just as well to our freestall barns.

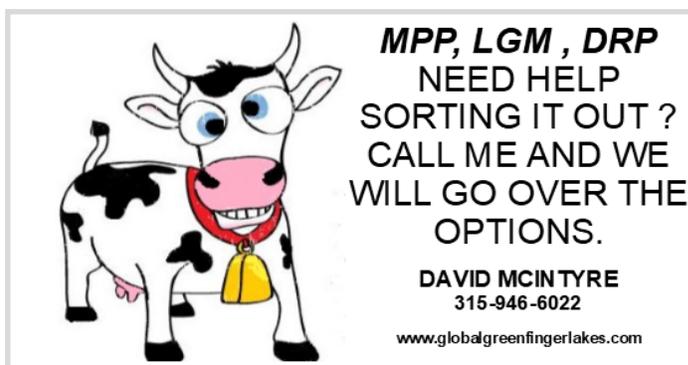
View the videos first to help you decide which videos are appropriate for the different positions on your farm. When you click on the YouTube link, you'll see a brief description under the video that explains exactly what is covered. For example, "Feeding and Other Safety Issues (Dairy Safety Training Part I, Section 3)," discusses working with PTOs, tractors, loaders, mixers, and other large machinery, as well as using ATVs and working around manure lagoons. If you're tight on time, you could make a note to skip the section on ATVs if that's not relevant for your farm, or for that particular employee.

Are you using other training videos as well? An idea that some farms are trying out is using Google Classroom to post links to all of the training resources that they are using to onboard new employees. That can include video links, standard operating procedures, maps, and other documents that are important for employees to view. You can use Google Forms to create short quizzes for employees to create after viewing the videos and/or materials. All you need to set this up is a Gmail account.

As always, remember to document any training that you give. NYCAMH also has a bilingual safety training roster that you can print here: <https://www.nycamh.org/resources/osha-ny-dairy-lep.php>.



The video series "Considering Human & Animal Safety" is a great resource for training dairy employees. <https://www.nycamh.org/resources/videos.php>



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# Soil Compaction Problems and Solutions by Ali Nafchi

## Introduction

In agriculture, soil compaction reduces rooting, infiltration, water storage, aeration, drainage, and crop growth. Soil compaction occurs when soil particles are compressed together especially when the soil is wet destroying soil structure, reducing porosity, and leading to a more dense soil that is hard for crop roots and water to penetrate. Field operations, such as silage crop harvest when the soil is wet, can lead to severe soil compaction. Soil compaction severely limits the volume of soil that the roots can explore for water and nutrients. Compacted soil also limits the movement of water into the soil, thereby creating conditions that favor soil erosion and runoff.

## Soil Profile

The soil profile usually is comprised of three distinct textural layers: **A** horizon sandy to sandy-loam, **E** horizon - yellowish-brown sandy to sandy-clay, and **Bt** horizon - sandy clay loam (Figure 1). The **E** horizon is often plagued with a hardpan layer that has a much higher bulk density than optimum for crop production. The hardpan layer exhibits a great amount of variability in depth and thickness in this region, and usually is present at 10 to 16 inches deep and is typically 2 to 8 inches thick (Gorucu et al., 2006). This compacted layer limits the ability of the plant roots to penetrate into the **Bt** horizon for uptake of water and nutrients, therefore, reducing yields, limiting productivity, and making plants more susceptible to drought stress. The **E**-horizon must be broken so that roots can grow into the subsoil or **Bt** horizon, which contains a majority of moisture and nutrients in the soil profile. Compaction caused by farm operations affects the yield of field crops in several ways

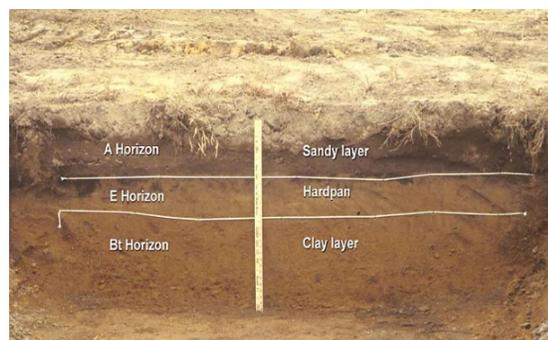


Figure 1. Common agricultural soil profile (A.K. 2017)

(Arvidsson et al., 1991; Filipovic et al., 2006). On dry conditions, soil compaction is managed using tillage before planting, which has been shown to improve yields (Garner et al., 1989, 1991 and 2017; Khalilian et al., 2004, Marshall et al., 2016). The recommended tillage depth varies for different regions, usually about 12 to 16 inches (30 to 40 cm.) deep (Garner et al., 1984; 1974; Raper et al., 1994).

## How to Identify/Measure Soil Compaction?

In fields where soil compaction exists, specific practices need to be carried out to ameliorate the compaction. The first step in managing soil compaction is to determine if a compaction problem exists. A simple way to observe compaction is to use a spade to dig up a section of the soil along with crop roots. Another simple observation is to pull out well-grown pigweeds or plants with long roots to observe compaction effect on roots. You will be able to see if roots are becoming restricted at certain depths or if they are able to grow deep into the soil (Figure 2). A compacted soil layer feels denser than the layers above, and the compacted soil structure appears to be in layers rather than crumbs. A quantitative way to detect a compacted layer is by using a soil penetrometer (compaction meter). Penetrometers use a metal probe with a cone-shaped tip to measure the force required to push through the soil (Figure 3). This force may be expressed in Mega-Pascal or PSI. In addition, in fields with compacted soil, you may be able to see reduced water infiltration, water stand for a longer than normal time after rain or irrigation, and uneven crop stands.



Figure 2. Deep grown roots VS Shallow roots

(Continued on page 14)

## Soil Compaction Problems and Solutions

(Continued from page 13)



Figure 3. Soil penetrometer (Compaction meter)

### How to improve or fix soil compaction?

Several methods may be used to reduce soil compaction and improve soil condition. However, prevention of soil compaction may offer the best alternative for reducing its detrimental effects. Reducing the loads applied to the soil or spreading the loads out over the soil surface may decrease the depth and degree of soil compaction. Sometimes producers who have used conventional tillage systems for decades may have gradually created compacted soil conditions and reduced yields. Increased soil compaction is often reported when producers switch to a conservation tillage system (Potter and Chichester, 1993). Minimum or no-till practice and control traffic are primary recommendations to avoid soil compaction and to enhance soil conditions. On the other hand, increased soil organic matter, could lead to reduced effects of soil compaction (Thomas et al., 1996; Marshall et al. 2016). Increased organic matter may also lead to an increased amount of water in the soil profile that is available for crop use during the growing season. Cover crops are particularly effective in increasing the amount of organic matter near the soil surface. The use of cover crops has also contributed to reduced effects of soil compaction, mostly by contributing to increased water infiltration and storage (Raper et al., 2000). Deep-rooted cover crops (such as rye) significantly reduced soil compaction in the E-horizon (10-15 in depth), reduced soil strength (Figure 4), and increased soil moisture contributed towards higher crop yields (Williams

et al. 2015; and Marshall et al. 2016). Another positive benefit of cover crops and increased organic matter is that the soil is better able to support vehicle traffic (Ess et al., 1998).

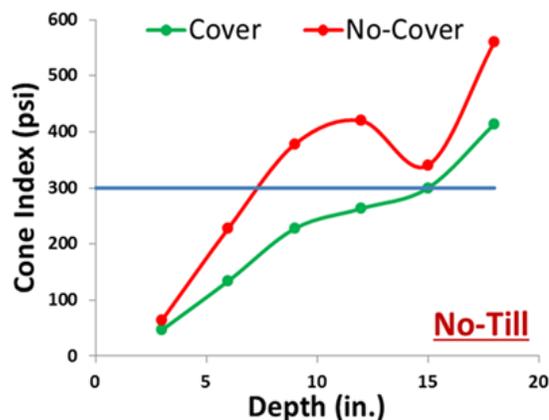


Figure 4. Effects of cover crop on soil strength and compaction (Marshall et al. 2016)

### When should I subsoil?

When severe soil compaction exists, tillage may be necessary to break hard layers and manage severely compacted soils. Tillage below depths of  $\approx 13.8$  inches (35 cm) is referred to as subsoiling (ASAE Standards, 1999). Cone index is the most accepted measure of soil compaction and has been used to determine when roots are restricted and can no longer expand into soil. This term is defined as the force required to insert a standard 30° cone into the soil (ASAE Standards, 2004a, 2004b). When values of cone index approach ( $\approx 217$  to 300 psi), root growth becomes limited (Taylor and Gardner, 1963) and hard layers in soil need to be broken (Figure 5). It is also important to note that subsoiling should be done at the correct moisture content or it may do more harm than good. A wet soil will be smeared, creating a plow-pan (Hardpan). The optimum time to subsoil depends upon several factors, including maximizing belowground soil disruption, minimizing aboveground soil disruption, and minimizing tillage energy requirements. Tillage forces and soil disruption from the soil with the lower moisture content found to be greater than soil with higher moisture content (Raper et al. 2002).

(Continued on page 15)

## Soil Compaction Problems and Solutions

(Continued from page 14)

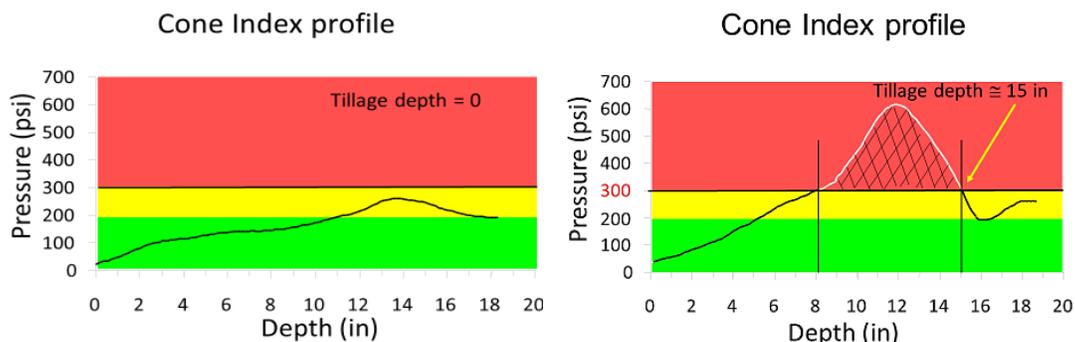


Figure 5. Soil strength measured by cone penetrometer and need of tillage

### Useful References and Information:

[Influence of tillage and cover crops on soil properties](#)

[Soil compaction: how to do it, undo it](#)

[Using soil moisture to determine when to subsoil](#)

[A guide to successful subsoiling](#)

[ASAE-Standard Penetrometer](#)

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2005 Peterbilt 378; 475 HP CAT C15, Jake Brake; 10-Spd Manual; 200" WB; 12,000# F/A; 46,000# Locking Rears on Chalmers Susp; Polished Alum Wheels; Dual Exhaust & Air Cleaners; 738,651 Miles. Stk #5821 - \$55,000



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**TRI-DRIVE Chassis**  
**20K/69K Rears**  
2007 KENWORTH T800B; 475 HP CAT C15; 18-Spd. Manual; TRI-DRIVE Cab & Chassis; Hendrickson Air Ride; 20K F/A; 69K Triple Locking R/A; 260" WB; 23'6" Frame Behind Cab; 160" Cab To Center of Center Drive; 4.30 Ratio; 219,167 Miles; Stk. #5892 - \$58,000



2004 KENWORTH T800 CAT C15 435hp, 10 spd, Double frame, Full locking 46,000 rears, 16,000 fronts, Air lift axle, Cat C15 single turbo 4.33 axle ratio, 10 speed transmission 280" WB, 206" CT, 268" total usable frame, 241,888 Miles, Stk 5959 - \$52,900



**46K Lockers**  
**CAT 6NZ**  
2004 KENWORTH T800; 525 HP CAT 6NZ; 18-Spd. Manual Trans.; Clean Daycab w/220" WB; 46K Full Locking Rears; KW 8-Bag Air Ride; 4.11 Ratio; Stk. #5725 - \$58,000



**44K Lockers**  
**Allison Auto**  
2008 PETERBILT 367; Daycab; 435 HP Cummins ISX; Allison Auto. Trans.; Tandem Axle; 24.5 Tires; Alum./Steel Wheels; 202" WB; 14,000# F/A; 44,000# Full Locking Rears; Wetline; 109,212 Miles; Stk. #5843 - \$55,500



**Clean, Heavy**  
2006 INTERNATIONAL 7600; 330 HP Cummins ISM Diesel; 10-Spd.; Col. or Red/Black; 22.5 Tires; Steel Wheels; 256" WB; Double Frame Flatbed w/ Moffet Forklift Carrier; Steerable Lift Axle; 22" Deck; (We Will Separate The Deck); 319,213 Miles; Stk. #5731 - \$37,900



**46K Rears**  
**CAT 6NZ**  
2003 KENWORTH T800; 475 HP CAT C15 6NZ Turbo; 8LL Manual Trans.; Clean Daycab w/12,800# Front Axle; 46K Rears On KW 8-Bag Air Ride; 4.11 Ratio; 186" WB; Wetline; 447,898 Miles; Stk. #5925 - \$53,000



**18K/60K Rears**  
**Allison Auto**  
2010 PETERBILT 365; 350 HP Cummins ISM Engine; Allison Auto.; Long, Double Frame Cab & Chassis w/300" WB; 227" CT; 31" Frame Behind Cab; 18,000# F/A; 60,000# R/A On Hendrickson Susp.; 87,267 Miles; Stk. #5907 - \$62,900



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1999 MACK RD688S DUMP TRUCK; 400 HP Mack E7; Engine Brake; 8LL Trans.; Rubber Block Susp; Tri-Axle; 19" Steel Body; 20,000# F/A; 46,000# R/A; 22.5 Tires; 248" WB; Spoke Wheels; EXPORT PRICED!!!; 777,148 Miles; Stk. #5902 - \$19,500



**Heavy Spec Chassis, Clean**  
2005 PETERBILT 357; 370 HP Cummins ISM; 8LL Trans.; Quad Axle Cab & Chassis w/Double Frame; 16K F/A; 44K Full Locking Rears; (2) 11K Steerable Lift Aides; Air Trac Susp.; 22" Frame Behind Cab; 212" CT; 302,500 Miles; Stk. #5831 - \$48,500



**CAT 550HP**  
**20K/46K Rears**  
2006 WESTERN STAR 4900FA; 550 HP CAT C15; 18-Spd.; Double Frame Daycab w/Wetline; 20K F/A; 46K Full Locking Rears; Airliner Susp.; 218" WB; 468,617 Miles; Stk. #5985 - \$37,500



**46K Lockers**  
**600 HP**  
2011 KENWORTH W900B DAYCAB; 600 HP Cummins ISX; 18-Spd.; Engine Brake; Air Ride Susp.; 14,000# F/A; 46,000# Full Locking Rears; 22.5 Tires; 236" WB; Air Slide 5th Wheel; Engine Rebuild @ 176,170 Miles; Service Records Available; 327,006 Miles; Stk. #5238 - \$56,900



**Winch Truck**  
2007 WESTERN STAR 4900SA WINCH TRUCK; Detroit 455 HP; Engine Brake; 10-Spd.; Walking Beam Susp.; 22,000# F/A; 65,000# R/A; 87,000# GVW; 12,00x24 Tires; 315" WB; Takeda 37,500 lb. Ruffneck Winches; 19" Deck; Pockets For Gin Poles; Tail & Center Rollers; 12,00x24 Off-Road Tires Rear; 24" Double Frame Behind Cab; 4-Spd. Aux. Trans.; 194,751 Miles; Stk. #5906 - \$43,500



**20K/46K Rears**  
**Allison Auto**  
2006 INTERNATIONAL 7600; 335 HP Cummins ISM; Allison Auto.; 5.55 Ratio; 22.5 Tires; 220" WB; 20,000# F/A; 46,000# R/A; Double Frame Cab & Chassis w/17" Frame Behind Cab/Muffler; 136" CT; 83,267 Miles; Stk. #5766 - \$39,900



**4,400 Gal. Tank**  
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2006 KENWORTH T800; 475 HP CAT C15; 18-Spd. Manual; Clean, Low Mile Water Tanker w/Hamm's 4,400 Gal. Steel Tank w/Pump; 20K F/A; 46K R/A; 256" WB; Neway Air Ride; 36" Bunk; 121,630 Miles; Stk. #5908 - \$50,000



**46K Lockers**  
**106,000 Miles**  
2005 KENWORTH W900 CAB & CHASSIS; 335 HP CAT C13; 8LL Trans.; Engine Brake; Hendrickson Susp.; 18,000# F/A; 46,000# Full Locking Rears; 4.88 Ratio; 24.5 Tires; 250" WB; Clean, Low Mileage Southern Truck; 106,595 Miles; Stk. #5718 - \$49,900



**20K/58K Rears**  
**Allison Auto**  
2011 INTERNATIONAL 5600 Cummins ISM 425hp, with Allison automatic, Double frame cab and chassis 18,740 Lbs. front axle, 52k rears on Hendrickson suspension, 242" wheelbase, 24" of frame behind the cab, 176" C-T. Muffler takes up 12" of these dimensions, 21,980# chassis weight, 124,301 Miles; Stk. #5997 - \$44,900



**550 HP**  
**20K/50K Rears**  
2005 KENWORTH C5000; 550 HP CAT C15; 20,000# F/A; 50,000# R/A; Chalmers Susp.; 4.39 Ratio; 24.5 Tires; 272" WB; Tulsa Ruffneck Winch; 17" x 9" Deck w/Tail-Roller; 21" Frame Behind Cab; 192" CT; 343,792 Miles; Stk. #5911 - \$49,500



2008 KENWORTH T800 WINCH/OIL FIELD TRUCK; 400 HP CAT C13; Engine Brake; Air Ride Susp.; 38,480# F/A; 46,000# Full Locking Rears; 4.10 Ratio; 333" WB; Twin Steer, Double Frame Truck w/360" Bridge Measurement, Premier Tiltex Pump, Pullmaster HL25 Winch; Max.Lift 350 Crane; Will Separate Pump, Winch & Crane From Chassis; 256" CT; 30" Frame Behind Cab; 298,383 Miles; Stk. #5910 - \$45,900



2003 KENWORTH W900 Cummins ISM 320hp, Allison automatic, Clean, low mile cab and chassis with 20k front axle, (2) 11k steerable lift axles, 44k full locking rears on Chalmers suspension, 5.43 ratio, 250" wheelbase, 21" of frame behind the cab, 156" C-T. Muffler takes up 12" behind the cab. Stk #6016 - \$54,900



2010 INTERNATIONAL 5600; 425 HP Cummins ISM; Allison Automatic Trans.; 172" WB; Wetline; 20K Front Axle; 58K Rears On Hendrickson Susp.; 12R24.5 Rubber; 226,177 Miles; We Can Stretch This Tractor To Any Length For HD Cab & Chassis; Stk. #5943 - \$47,000



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2004 WESTERN STAR 4900S 430 HP CAT C12; 18-Spd. Manual; Clean, Low Mile Tank Truck w/4,360 Gal. Steel Tank & Bowie 3" Pump; 19K F/A; 46K Full Locking Rears; 252" WB; Chalmers Suspension; 133,613 Miles; Stk. #5979 - \$39,500

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# A Difficult Conversation: What to Say When an Employee Doesn't Measure Up

by Timothy X. Terry, Harvest NY

Difficult conversations, no one likes them, but they are an inevitable part of life especially if part of your life is to lead and manage people. Organizing and delegating work assignments can be tough enough to do well, but when you have to take an underperforming individual to task that's when the stomach acids can really begin to churn.

Most of us on the front lines of agriculture are introverts by nature which makes us uniquely qualified to work with animals or spend long, solitary hours on the tractor. Unfortunately, it often leaves us wanting when we need to "have a conversation" with someone.

## What to do, what to do...

For those of us so conversationally challenged it may help to put part of that burden on the individual(s) in question. First ask them how they feel they are doing and how they are determining that – in other words, what measures are they using.

This does a few things:

1. It opens up the dialogue in a non-confrontational manner, and keeps you from coming across as the bad cop.
2. Gives you valuable insight into what they are thinking and/or their understanding of the job requirements. Perhaps they weren't sufficiently trained by their supervisor. (It's not unusual for a new employee to be given a cursory once-over of the job and then left to fend for themselves.)
3. It gives you immediate feedback on where to go next.

Best case scenario: they're on the same page. Great! Now you can move on to crafting a solution. More likely, however, they are only part of the way there, or worse, they are totally clueless. This is where you let them know that their feedback is helpful in understanding their present state, but you'd like to share your perception of their performance, how you arrived at that assessment, and your expectations for going forward. Use specific examples and/or metrics in your assessments and expectations so there are no vague uncertainties or erroneous assumptions in the employee's mind.

## Clarify the Non-Negotiables

Here is where you have the chance to outline your expectations that are non-negotiable. For example, you might say that they need to be at work (punch in) by 3:30 so that the first milkers can go on by 4:00. Or maybe, all calves need to be fed and bedded by 10:00. Understand, though, if it is non-negotiable it has to be humanly possible. It may not be possible to begin milking at 4:00 only because the night crew doesn't finish with the treated cows until 3:45 and the parlor needs to wash, or there has been a glut of heifer calves so they are caring for 30% - 40% more calves than usual. This is where dialogue comes in handy. You may discover something you didn't know, or uncover a problem that didn't exist before. Through dialogue you begin to collaborate, rather than dictate, a solution.



Be very specific in describing the actions or behaviors you expect. Times, dates, days of the week, anything else that is specifically quantifiable provides clear guidelines on what is expected. Moreover, should termination become a factor you have concrete evidence to support your actions.

## The Solution

As mentioned earlier, the solution should be a collaboration rather than a decree. First, ask them how they plan to pick up the slack. Giving them the opportunity for input will give them "buy-in" to the solution and increases the likelihood of success. You may have to fill in the gaps in their plan. Next, agree on a timeline and a method of communication. Lastly, set a deadline to achieve specified results, as well as clarify what will happen if they are not met.

Difficult conversations will never go away, but if they are approached as a dialogue it will reduce your work (and maybe indigestion), invite employee buy-in in the solution, and increase the likelihood of a successful result.

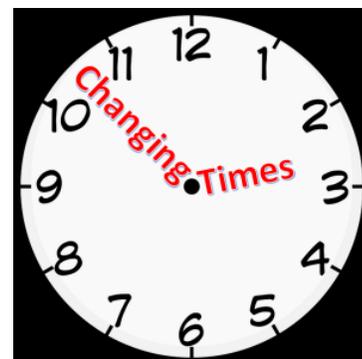
# Dramatic Changes for Farm Labor Management in New York

by Richard Stup, Cornell University

Everyone in New York agriculture is aware of the recent, epic political struggle about the state's farm labor laws. The governor signed the Farm Laborers Fair Labor Practices Act on July 17th. It's time for us to start thinking about how to manage in a different legal environment. The essential goals for farm human resource managers remain the same:

1. Operate a profitable, growing agricultural business.
2. Provide high-quality, engaging, and safe jobs that can attract farm employees and provide them a good standard of living.
3. Produce excellent, safe, and nutritious food for people who live both near and far.

Our challenge is to plan and manage to meet the goals above while complying with federal and (new) state labor laws. First, we need to understand the changes; this article begins discussion of 3 major changes: **overtime, collective bargaining, and a weekly day of rest**. Each of these issues is complicated and we will discuss more completely in later posts, but following is my summary of these major changes and initial management considerations. Read the full article here: <https://agworkforce.cals.cornell.edu/2019/07/02/dramatic-changes-for-farm-labor-management-in-new-york/>



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- 6** *BQA at Empire Farm Days*, 4:00-7:00 p.m., Rodman Lott Farm, 2973 NYS 414, Seneca Falls, NY 13148. Cost \$15 per person/ \$25 per farm. Contact Nancy Glazier for details: 585-315-7746 or [nig3@cornell.edu](mailto:nig3@cornell.edu).
- 6-8** *Empire Farm Days*, Tues & Weds: 9-5, Thurs: 9-4, Rodman Lott and Son Farms, 2973 State Route 414, Seneca Falls, NY, 13148. Visit the NWNY Team on Aug 8 in the Cornell Building. For more information visit: <https://empirefarmdays.com/>
- 13&14** *Bovine Reproduction & AI Training*, 9:30am - 3:30pm, Oakfield, NY. See page 12 for full event information.
- 29** *Soil Health Field Day*, 10am - 2pm, Macauley Farms LLC, 5815 Swan Hill RD, Mount Morris, NY 14510. Cover Crop Mixtures and Demonstration. For more information contact: [aristow@farmland.org](mailto:aristow@farmland.org)



## September 2019

- 24&25** *Bovine Reproduction & AI Training*, 9:30am - 3:30pm, Shortsville, NY. See page 12 for full event information.
- 24-29** *Multi-State Stocker Tour*, Save the Date. Leave Ithaca, travel to Ohio, Kentucky, West Virginia, Pennsylvania and return to Ithaca. Planned stops include 2014 Stocker of the Year, [Young Cattle Company](#), attend the Beef Bash at the [University of Kentucky C. Oran Little Research Station](#), custom backgrounder/stocker enterprise, holistic stocker enterprise, and many more. Cost ~\$700-800/person based on double occupancy, includes transportation from Ithaca, lodging and some meals. Contact Michael Baker if interested 607-255-5923 or [mjb28@cornell.edu](mailto:mjb28@cornell.edu)
- \* *Look for Pre-Harvest Corn Silage Workshops and Dry Down Days*, More information coming soon. Check the NWNY Team's website for dates and details: <https://nwnyteam.cce.cornell.edu/>

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