Cornell University Cooperative Extension SCNY DAIRY & FIELD CROPS TEAM

BROOME - CHEMUNG - CORTLAND - ONONDAGA - TIOGA - TOMPKINS

June 2018

Newsletter

We Welcome Mary Kate Wheeler as our Dairy Farm Business Specialist

Mary Kate will be collaborating with the PRO-DAIRY team to make the Dairy Farm Business Summary and the Dairy Profit Monitor programs available to more producers in the South Central NY region. If you're thinking about making a change on the farm, but you don't have the numbers to back up your decisions, these programs can help you evaluate different options. Mary Kate will be working with a small number of farms to complete a Dairy Farm Business Summary for the 2017 financial year – don't hesitate to reach out if you'd like to take part! If you need help getting your books in order first, she can help you set up a record keeping system that will make it easier to participate in the future. Mary Kate is located in the CCE Tioga County office in Owego. She can be reached at 607-687-4020.

Mary Kate is joining the SCNY Dairy and Field Crops team from the NYS Beekeeper Tech Team, where she provided one-on-one business development support and conducted applied business management research with honey producers. She is excited to use her financial analysis and business planning skills to support our dairy and crop producers.



Mary Kate has an M.S. in Applied Economics and Management from Cornell University and a B.S. in Environmental Studies from Bowdoin College. During her graduate program she spent time in Peru working with farmers on issues of agriculture and climate change. Mary Kate grew up outside Ithaca, NY and now lives in Newfield, where she just welcomed her first beef steers.



Mary Kate was recruited early to help with targeting first cutting dates for optimum quality

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South Central NY Dairy & Field Crops Digest

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 website: <u>http://scnydfc.cce.cornell.edu</u> and like us on Facebook: <u>https://</u>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

"Cornell Cooperative Extension is an employer and educator recognized for valuing AA/EEO, Protected Veterans, and Individuals with Disabilities and provides equal program and employment opportunities"

Save the Date! New York Soil Health Summit

Save the date for the first New York Soil Health Summit. This event, organized by the New York Soil Health project, is for farmers, researchers, agriculture service providers, government agencies, non-profits and policy-makers interested in advancing soil health efforts across the state.

Topics include:

- Local experts/grower panel
- Research and policies relevant to soil health
- Soil Health Roadmap breakout sessions

Don't miss the opportunity to connect with colleagues and contribute critical feedback to the NY Soil Health Roadmap.

Registration, summit agenda, and other details will be coming soon.

For more information, contact David Wolfe (dww5@cornell.edu) or Aaron Ristow (ajr229@cornell.edu). More information about the project: newyorksoilheath.org

Summit details will be updated here: summit.newyorksoilhealth.org



New York Soil Health is funded through New York State Department of Agriculture & Markets.

LEADERSHIP ON THE FARM

This monthly column explores how leadership theory and practice relate to farm business management.

Why think about leadership?

By Mary Kate Wheeler, Business Management Specialist

In the corporate world, companies pay big bucks for leadership training. Businesses with hundreds or even thousands of employees invest in leadership development for managers who supervise dozens of people. This fascination with leadership has grown into an entire profession of leadership coaches and consultants. While corporate culture clearly values leadership, it remains an elusive concept that can be hard to pin down. Leadership is difficult to define, and even harder to measure. How does this important yet vague idea apply to farm businesses and families?

If you are a farm owner, operator, or manager, you may or may not see yourself as a leader, but the people around you surely do. "As a business owner, not only does your family rely on you - so too, do the families of those who work for you. Each employee has a family. Even if you're a small business owner with four employees, you're in essence potentially responsible for an additional ten or fifteen people."¹ The success of your farm business matters, not just to your family and employees, but also to your customers, your suppliers, and your community.

Leadership is about defining success, motivating people, building a strong team, and managing progress towards a future vision.² An effective leader has strong skills in each of these four areas. Fortunately, leadership skills can be learned and strengthened with practice. Leaders are made, not born. In fact, many of the people we regard as influential leaders today have stories of stunning failures that they experienced earlier in their lives. Good leadership does not always guarantee success, as



there are many factors that even a great leader cannot control. However, poor leadership is sure to cause problems for any business.

The purpose of this monthly column is to explore ideas around effective leadership, and practical ways that farm owners and operators can put those ideas to use. Improving leadership on the farm will not only increase the odds of success for your business, but also improve the chances that you, your family, and your employees will enjoy yourselves along the way.

Additional Reading

¹ Gleeson, B. (November 9, 2016). *10 Unique Perspectives on What Makes a Great Leader*. Retrieved from https://www.forbes.com

² Mind Tools. *What is leadership?* Retrieved from https://www.mindtools.com



EVENTS IN THE HISTORY OF HEMP

Source: Hemp History Week. https:// hemphistoryweek.com/about/hemps-history/

The Early Days

Did You Know?

- Industrial hemp has been grown in the U.S. since the first European settlers arrived in early 1600's.
- The Declaration of Independence was drafted on hemp paper.
- George Washington, Thomas Jefferson and John Adams all grew hemp and actively advocated for commercial hemp production.
- Hemp was a staple crop of 1800's American agriculture, reflected in town names like "Hempfield" and "Hempstead."

(Continued on p.10)

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It's May 30, it's topping 80 degrees and it feels like midsummer. First cutting is underway with a vengeance. Clear alfalfa is close or exceeds three feet if it hasn't lodged and just showing early buds. It's just about right on schedule considering the late start to spring. Grasses were on target with a mid-May harvest timing. Our measurements recorded 14 inch alfalfa on May 15. We sent three samples (fresh, unfermented) for forage analysis to verify our predictions (Table 1). We started our measurements about a week later this year compared to 2017 but the crop caught up and is maturing on schedule. Topdressing with fertilizer or manure immediately after harvest will boost 2nd cutting yields. Earlier in May hay crop yields looked like they would be lower than normal but rain in the last two weeks of May and some warm weather have really supported growth.

 Table 1. Selected Forage Quality Parameter reported on a Dry

 Matter Basis

popping up all over. Emerged corn looks great! Soybeans are cracking.

Next Task: Weed Control

Post-emergence herbicide applications are recommended at 5" tall or 'soda can' height. The weeds

are cooperating by emerging and growing right now. I highly

encourage the addition of a residual herbicide or two with glyphosate treatments to protect the crop from a later emerging flush of weeds. Annual grasses and some of the large seeded broadleaf annuals like velvetleaf and ragweed will emerge throughout the summer especially if the crop canopy is slow to close. Resolve Q® and atrazine are a standard





Crop	Stage	Harvest	% Adjusted	% aNDF	NEL	IVTD 30hr	NDFD 30hr
		Date	Crude Protein			(% of DM)	(% of NDF)
Clear Grass	Boot stage	5/20	22.0	53.2	.63	87	76
Alf/Grass Mix	Early bud/ late boot- early head	5/21	22.7	48.1	.66	84	66
Clear Alfalfa	Early bud	5/29	23.4	41.6	.72	86	67

herbicides. A half rate of a pre-emergent grass herbicides like smetolachlor, pendamethalin or Outlook®. If you are spraying without a license you are limited to nonrestricted herbicides such as lex® is preloaded with

combination of residual

Retrospective of Crop Season

A February warm up incited spring fever but conditions soon turned back to winter which hung on through April with a vengeance-snowfall each week and squall like storms late into the month. The late start to spring caused some logiams particularly with manure spreading and planting. Cold soil temperatures caused some consideration for delaying planting but calendar date overruled and planting began as soon as soil conditions permitted in early May. All planting; oats, other spring grains, new seedings and corn were going into the ground in early May. Surprisingly once spring's work got started, it progressed pretty smoothly. Heavy damaging thunderstorms have been limited, which is a huge relief since our soil is highly susceptible to erosion so close to tillage. At this time applied nitrogen and that mineralizing from manure should be intact since there hasn't been rain enough to leach it out of the soil.

There have been few reports of early season pests. I've seen only light alfalfa weevil feeding this year and have not heard reports of cut worm yet. Elson Shields, our State Extension



entomologist, tweeted that the first potato leaf hoppers have arrived near Kinderhook, NY.

The earliest emerged corn that I saw was on May 9 in the town of Ithaca. One week later corn was

pendamethalin and Resolve Q. Halex® is preloaded with residual herbicides for annual broadleaves and grasses. You can mix a homemade version with glyphosate and the ingredients in Lumax® (s-metolachlor, Calisto® (mesotrione) and atrazine) or Acuron® which has the same ingredients as Lumax® with the addition of bicyclopyrone.

To avoid hedging your bet and waiting until the tougher to control perennial weeds like horsenettle, bind weed and milkweed are large enough to treat while letting the weeds that are present now continue to grow and penalize yield it's recommended to control that early flush of weeds and plan for a 2nd application to target the perennial weeds. Often the addition of a dicamba salt (Banvel®, Clarity® et. al) speeds burndown and assists control. Permit®* is the post emergence herbicide of choice for nutgrass control although it works best with smaller nutsedge. Yukon is a pre-mix of Permit® and dicamba giving a double whammy to troublesome broadleaf annuals.

For more discussion of weed control options for corn and soybeans read Mike Hunter's articles in this newsletter. I am available for pest management questions and troubleshooting.

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Weed control options for Glyphosate-tolerant (Roundup Ready) Corn

By: Mike Hunter, Cornell Cooperative Extension

Based on when the corn planting season started this spring, there will be corn approaching or at the V3 growth stage (about 5 to 6 inches tall) see photo. Why does this matter? The critical weed free period for corn is V3 to V8. It is very important that there are no weeds present during this timeframe. If you have corn that is V3 or taller right now and have any weeds present you are starting to lose vield.



optimum corn yields. be sprayed with an herbicide. Regardless of the type of corn influence your selection.

the glyphosate tolerant corn should be treated with grasses and broadleaf weeds. Callisto GT will provide glyphosate (i.e. Roundup PowerMax other labelled residual control of annual broadleaf weeds. Sequence will glyphosate product) when the weeds are 2-4 inches tall. provide residual control of annual grasses. The addition of 1 Keep in mind that this is a very narrow window to apply the pint of Aatrex 4L per acre will improve the weed control glyphosate at the correct timing. Just because it is glyphosate performance of Halex GT, Callisto GT and Sequence. tolerant corn does not mean that you can make a late herbicide application without affecting the corn yield.

Instead of a glyphosate only application you may need to some residual weed control in glyphosate tolerant corn: include an additional postemergence herbicide for improved Callisto Xtra (a premix of Callisto and atrazine), Armezon weed control and/or certain hard to control weeds. For Pro (a premix of Armezon and Outlook), ImpactZ (a premix example, if yellow nutsedge is emerged at the time of of Impact and atrazine), Realm Q (a premix of Resolve SG application in a glyphosate tolerant corn situation, consider and Callisto), Revulin Q (a premix of Accent Q and Callisto), adding Permit, Permit Plus (a premix of Permit and Steadfast Q (a premix of Accent Q and Resolve DF). Harmony) or Yukon (a premix of Permit and Banvel) to the glysphosate tank mix. Tank mixing herbicides with different mechanisms of action is also a tactic to slow down the It is important to read and follow all label directions prior to development of resistant weeds.

When applying glyphosate to glyphosate tolerant corn you corn hybrids. Always refer to the herbicide label for the should consider adding an herbicide with soil residual maximum corn height application restrictions. If you have activity to provide season long weed control. This does not any questions about field corn weed control contact Janice allow you to delay the timing of application. Remember, to Degni at (607) 391-2672. avoid yield loss from early season weed competition, you still must apply postemergence herbicides when the weeds are no more than 4 inches tall. Unless the label prohibits reduced rates, it is not necessary to use the full rate of the soil residual herbicide(s) at this time.

The following is a list of herbicides with soil residual activity that are can be tank mixed with glyphosate for use with early postemergence applications on glyphosate tolerant corn hybrids: Acuron, Acuron Flexi, AAtrex (atrazine), Bicep

Early season weed control is Lite II Magnum, Capreno, Cinch ATZ Lite, Degree Xtra, one of the key ingredients for DiFlexx DUO, Harness Max, Harness Xtra, Hornet WDG, Corn Keystone LA NXT, Lumax EZ, Lexar EZ, Outlook + growers need to keep a close atrazine, Prowl 3.3, Prowl H₂O, Python, Resicore, Resolve eye on both the growth stage of Q, Triple FLEX, Triple FLEX II. Many of these products the corn and the size of the listed have specific tank mix directions for use with weeds in fields that have yet to glyphosate in glyphosate tolerant corn.

grown, the stage of growth of Halex GT (a premix of Touchdown Total, Callisto and Dual the corn and the weeds present II Magnum), Callisto GT (a premix of Callisto and at time of application will Touchdown Total) and Sequence (a premix of Dual II herbicide Magnum and Touchdown Total) are postemergence corn herbicides that contain glyphosate herbicide. These three herbicides will control emerged grass and broadleaf weeds plus provide additional residual control of certain weeds. In a postemergence, single pass glyphosate only application, Halex GT will provide residual control of many annual

> Here is a list of additional postemergence corn herbicides that can be tank mixed with glyphosate that will also provide

the application of any of any herbicide. Product labels vary considerably. Only use glyphosate products licensed and labeled for use with glyphosate tolerant (Roundup Ready)



Conventional Soybean Weed Control Revisited Mike Hunter, Field Crop Specialist, CCE North Country Regional Ag Team

Glyphosate resistant (Roundup Ready) soybeans made postemergence weed control relatively easy with a single application. Recently, there have been a renewed interest in conventional soybean weed control options. Many of these soybean growers haven't planted conventional soybeans in well over a decade and the younger soybean growers have never planted conventional soybeans.

Regardless of a growers' reason to plant conventional soybeans, preemergence weed control programs are almost a necessity for growing conventional soybeans. It is extremely difficult to rely on a total postemergence conventional soybean weed control program. We have limited options for controlling broadleaf weeds with conventional soybean herbicides. It is imperative that we start out with a preemergence herbicide before or at time of planting and then be ready to apply a postemergence application to any weeds that escape. Timing of conventional postemergence soybean herbicides is critical because they won't kill big weeds.

Here are some suggested conventional preemergence soybean herbicide programs to consider. These suggestions are based on the assumption that the herbicide will be applied before the soybean and weeds have emerged. The soil residual herbicides are to be used at the full labeled rate based on weed species and pressure. Some of the products application rates are determined by soil type, pH and organic matter content. If sufficient rainfall is received soon after the preemergece herbicide is applied we should expect reasonably good weed control with the following herbicide programs.

For situations where nutsedge, annual grass and broadleaf weeds are a problem, consider tank mixing S-metolachlor (Dual Magnum, Dual II Magnum, Cinch) with Python WDG. If common ragweed is a problem the addition of Dimetric DF (metribuzin (the old Sencor or Lexone)) will improve control. A well planned, total preemergence herbicide program is the Another option would be to use S-metolachlor and Lorox DF. Keep in mind that Lorox DF is weak on velvetleaf.

FirstRate can be used both preemrgence and postemergence in soybeans. It controls most annual broadleaf weeds except eastern black nightshade and only suppression of annual grasses when used preemergence. For annual grass and black nightshade control tank mix FirstRate with either Smetalochlor, Outlook or Warrant.



Prowl, Sonalan HFP and Treflan are dintroanaline herbicides used for the control of annual grasses and most broadleaf weeds except for common ragweed and black nightshade. These are the products referred to as the "yellows". They are basically interchangeable expect Sonalan HFP and Treflan must be applied pre plant incorporated into the soil. These herbicides can be mixed with S-metolachlor for improved annual grass and black nightshade control. For common ragweed control include Dimetric DF in the tank mix. Python WDG is a soil applied broadleaf herbicide that can also be tank mixed with any of the dinitroanaline soybean herbicides for annual grass and broadleaf weed control.

Pursuit will control many annual grass and broadleaf weeds in soybeans. It is usually tank mixed with either Smetolachlor, Outlook, Prowl or Treflan to broaden control of certain annual weeds. OpTill PRO is a Sharpen plus Pursuit premix with Outlook. OpTill PRO will control many annual grass and broadleaf weeds.

Valor SX or Rowel can be used for preemergence control of annual broadleaf weeds and suppression of annual grasses. For additional grass control include Prowl in the tank mix. For additional broadleaf weed control include one of the following herbicides: Dimetric DF, Lorox, FirstRate or Python WDG.

foundation for growing conventional soybeans. While the success of these programs are dependent on sufficient rainfall to move the herbicide into the soil, our spring rainfall patterns are usually adequate to accomplish this. Try to avoid the temptation to skimp on herbicide rates to save money because rescue weed control options are limited. Always read and follow label directions prior to using any herbicide.

You can fill the bin, but can you empty it? Jessica Groskopf - Extension Educator for Agricultural Economics, University of Nebraska

Farmers in coffee shops often discuss yield as a way of measuring their success. However, full bins do not equate to the highest revenue. With planting finally getting started, the real question is, can you empty the bin? Grain sitting in the bin once equipment hits the field is often forgotten until late summer. Forgotten grain may result in a lower price per bushel than was available at harvest, nullifying the logic of placing it in the bin to begin with.

Spring is a busy time for everyone. Nevertheless, planting is often a prime time to empty the bin and capture higher prices. Farmers wanting to unload their bins and obtain higher prices need to do three things.

- 1. Keep their finger on the pulse of the futures market.
- 2. Watch for changes in local basis.
- 3. Know their accumulating monthly expenses.

Futures Markets

The proverbial "spring price rally" has finally arrived as corn and soybean prices show a strong upward trend. The futures price of corn has improved almost \$0.60/bu from September 1 to May 1. Soybeans have improved \$1.00/bu over that same period. Two primary drivers, planting conditions and reductions in available grain, bring on this annual increase in prices.



Figure 1. Nearby corn futures price, September 1, 2017-May 1, 2018

Basis

Related resources

Cash Price = Futures Price + Basis or

Basis = Cash Price – Futures Price

<u>USDA Agricultural Marketing Service</u> daily updates of <u>spot cash</u> <u>grain prices at Nebraska rural elevators</u>

View historical basis patterns for Nebraska towns at <u>go.unl.edu/basis</u> The futures market is only one component of the cash price of grain. The other component is basis (*see box*). On May 1 Nebraska corn basis ranged from -\$0.37 to -\$0.65, while soybean basis ranged from -\$0.85 to -\$1.28. Although basis differs greatly across the state, at a single location it may only change a few cents per week. Although basis changes are not as volatile or as rapid the futures price, farmers should track the basis of local grain buyers. Buyers will sometimes improve their basis to entice farmers to sell, adding more revenue to farmer's pockets.

Accumulating Expenses

The final consideration should be mounting interest and storage expenses. Depending on your financial situation, these expenses can play a significant role in selling grain out of the bin.

Storage expenses are often the hidden villain of storing grain too long as gains in price may be offset by accumulated storage expense. For example, if a farmer has a commercial cost of storage of \$0.04/bu/ month and this fee has been charged on the first of each month since Nov. 1, 2017, the farmer has already accrued \$0.24/bu in storage expenses (as of May 1, 2018) for the 2017 crop. Farmers with commercial storage need to know the details of their commercial storage fees. Each grain buyer has different fee structures. On-farm storage expenses are often lower than the commercial rate, but on-farm storage is not free. Farmers with on-farm storage are paying for repairs, depreciation, taxes, and insurance on the bins. These costs can be two-thirds to three-fourths of the commercial rate

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Planting Conditions. Planting of the 2018 crop got off to a slow start, but caught up i the last week. The most recent <u>USDA Crop</u> <u>Progress report</u> (ending the week of May 6) shows 42% of Nebraska corn is planted, near the 46% reported last year and for the five-year average. Soybeans are ahead of normal with 16% in the ground, compared to 12% last year and for the five-year average. Uncertainty about the 2018 crop during planting will support prices for the old crop sitting in the bin. Issues with planting may drive prices higher, if only for a moment, providing opportunities for farmers to capture higher prices.

Reductions in Available Grain. The USDA Economic Research Service estimates that approximately 75% of the 2017 U.S. corn was sold by farmers to grain buyers (elevators, feed yards, and ethanol facilities) from September 2017 through April 2018. The remaining 25% is expected to be sold from May through August. Similarly, it's estimated that 87% of U.S. soybeans were sold from September through April. With the bulk of these commodities sold, smaller available supplies will push up the price until quality and quantity expectations are more apparent for the 2018 crop.



Figure 2. Nearby soybean futures price, September 1, 2017-May 1, 2018

and should be recuperated from the sale of grain.

See Iowa State University on <u>Computing a Grain Storage Rental Rate</u>. If you are operating on a line of credit, the longer you hold grain in the bin, the more interest expense you are accruing. An additional cost is any accumulation of interest expense on an operating note (or any interest-bearing account that may be paid back with receipts from grain sales or investment interest opportunities) while grain is held in storage. To calculate the interest expense per bushel, multiply the cash price at harvest by the annual interest rate of your operating note, then divide that total by twelve.

Harvest Cash Price x Operating Interest Rate)/12 Months = Interest Cost/Bu/Month

That is, if the Nov. 1, 2017 cash price at Kimball was \$3.19 and the annual operating note interest rate was 5%, the interest cost would be calculated as

(\$3.19 x 0.05)/12=\$0.013/bu/month

Additional considerations for timing sales include cash flow needs, truck availability, and grain quality.

Developing a Written Grain Marketing Plan

The best way to keep track of futures, basis, and accumulating expenses is to have a written grain marketing plan. For help in creating one, see these CropWatch articles:

- <u>Extension App for Grain Marketing Plans Now Available for</u> <u>Android</u> https://cropwatch.unl.edu/2018/extension-app-grainmarketing-plans-now-available-android
- <u>Develop a Grain Marketing Plan in 5 Easy Steps</u> https://cropwatch.unl.edu/2017/developing-grain-marketingplan-5-easy-steps
- <u>Grain Market Outlook and Effective Grain Marketing Plan 2018</u> https://cropwatch.unl.edu/2018/grain-market-outlook-andeffective-grain-marketing-plan-2018

Millets: Forage Management

By Brian Lang, Extension Crop Specialist, IOWA STATE UNIVERSITY. University Extension

Introduction

Millets are major grain crops world wide, but in Iowa their use is mainly as annual summer forage production as hay, silage, green-chop, and pasture. The sudan/sorghum forages are often the first choice for summer annual forage production, but millets have been gaining in popularity.

Millets grown in Iowa include:

· Pearl Millet -- also called Cattail Millet.

· Japanese Millet -- also called Barnyard Millet. Seed shatter may lead to Barnyardgrass weed problems.

 \cdot <u>Foxtail Millet</u> -- German and Siberian varieties seem to be the most popular for forage use.

 \cdot <u>Proso Millet</u> -- also called hog, hershey, and broomcorn millet.

Forage Selection for Livestock

All millet forages are good feed for beef and sheep. The choice of millet is largely dependent on seasonal needs and intended harvest management @ silage, pasture, green-chop, hay, etc. Dairy -- There is some evidence1 that Pearl Millet may cause butterfat depression in milk. Therefore, recommendations for use of Pearl Millet with lactating dairy are either to:

- \cdot limit feed the millet and monitor butterfat levels
- \cdot or simply avoid its use for lactating dairy

<u>Horses --</u> Do not feed Foxtail Millet as a major component of their diet. Foxtail Millet acts as a laxative2 and contains a glucoside called setarian that may damage the kidneys, liver, and bones.

Table 1. Establishment and Harvest Information for Millet Forages.					
Forage millet	Seeding rate	Typical dry matter & cutting schedule	Days from planting to 36-inch height or boot stage	Harvest at boot stage or 36-inch height down to	Height when to graze, Height to graze to, Grazing interval
Pearl	25-30	4 to 6 tons 2 to 3 cuts	45 to 50 days to 36- inch height	6 to 10 inches of stubble to allow for optimum regrowth	18 to 30 inches, 6 to 8 inches, 3 to 4 weeks
Japanese	25-30	3 to 5 tons 2 cuts	45 to 55 days to 36- inch height	6 to 10 inches of stubble to allow for optimum regrowth	Lack of information on grazing potential
Foxtail	15-25	2 to 3 tons 1 cut	50 to 60 days to boot stage	2 inches, little regrowth	Graze aftermath growth after 1 st cut
Proso	15-25	2 tons 1 cut	40 to 50 days to boot stage	2 inches, little re- growth	Graze aftermath growth after 1 st cut

Establishment Tips for Millets

- <u>Date of planting</u>: June 1 to July 15.
- <u>Soil temperatures at planting</u>: 65°F and increasing. The minimum soil temperature is more critical than planting date.
- <u>Seeding depth</u>: $\frac{1}{2}$ to 1 inch deep.
- <u>Seeding method</u>: Most common method is to use a grain drill. Achieve good seed-to-soil contact (press wheels or cultipacker) for best results.
- <u>Seeding rate</u>: Typical seeding rates are listed in Table 1. Use lower rates for grazing manage-ment and production on lighter soils, and higher rates for hay management.

Soil pH and Fertility

Millet forages grow well in soil pH levels between 5.5 and 7.5. Typical nitrogen (N) recommendations under multiple harvest management (Pearl Miller and Japanese Millet) would be 50 to 80 lbs./ac. N preplant, and 40

to 50 lbs./ac. N after each harvest. For Foxtail and Proso Millet, just use the preplant recommendation.

Remember to use N credits from manure, forage legumes, and soybeans if applicable.

Weed Management

Delay planting until soil temperatures are warm enough for the first flush of weeds to be controlled by tillage. This coincides with recommended soil temperatures for planting millet. These warm soil temperatures allow for relatively quick emergence and growth of millets such that herbicides are rarely needed.

Some 2,4-D labels allow postemergence application for broadleaf control. Follow label directions. These labels usually restrict harvesting or grazing of forage for 14 days after application.

Harvest Management

Grazing—Best choice for grazing tends to be Pearl Millet, or more specifically, the newer developed hybrid Pearl Millets. Best utilization for grazing is to subdivide pastures and graze in a rotation. Stagger plantings to help spread out plant growth and development for best grazing potential. Stocking rates of 4 to 6 animal units.

per acre should provide for uniform and efficient utilization of forage. Leave 6 to 8 inches of stubble for rapid regrowth and tiller development. If forage height gets too tall for efficient grazing, consider ensiling or green chop.

Hay -- The easiest millet to hay is Foxtail and Proso Millet. Pearl Millet stems are too coarse to allow for a good hay option. Japanese Millet stems are coarser than Foxtail and Proso Millets but thinner than Pearl Millet. Because of the stem thickness, Japanese Millet is still challenging to hay, but with proper management it can be accomplished. For all millets, hay harvest should be done prior to heading stage.

Foxtail and Proso Millet -- These millets rarely provide sufficient regrowth to economically justify another hay harvest. Utilize regrowth by grazing. Awns of mature Foxtail Millet heads have caused feeding problems.

Japanese Millet -- Leave 6 to 10 inches of stubble for best regrowth. Use the higher recommended seeding rates for hay production to reduce stem thickness and provide a dense stubble to help hold the cut forage off the soil surface and aerate the cut forage swaths.

Condition using more roller pressure than for conventional hays. Create

as wide and fluffy a windrow as possible. Do not turn the windrow until all of the plants on top of the windrow are dry enough for baling.

Silage -- Harvest is recommended anytime from boot to soft dough stage. Wilt forage to appropriate moisture depending on storage structure (upright, bagged, bunker, etc.).

Green-chop -- Requires more timely labor than for other harvest systems, but it avoids trampling from grazing and potential dry-down problems from haying.

Forage Quality

Millets provide good quality feed. However, quality will vary with harvest management, soil fertility, weather conditions, and the choice of millet forage. Table 2 provides forage quality data from a single research trial conducted in 1990 at the University of Minnesota Research Farm at Rosemount. Use the table only as a rough guideline of forage yield and quality of millets.

Nitrates

Millets may accumulate nitrates under conditions of heavy N fertilization and limited soil moisture. Plant growth reduces nitrate levels by dilution

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Forage	Harvest schedule	Dry matter yield tons/ac.	Crude protein %	RFV
Pearl millet	1-cut	5.4	11.5	77
	multiple cuts	5.7	17.2	92
Japanese millet	1-cut	3.5	14.1	82
	multiple cuts	5.0	16.6	87
Foxtail millet	1-cut	3.5	12.3	77
Proso millet	1-cut	3.0	12.8	88
Sudangrass	1-cut	6.2	16.0	76
	multiple cuts	6.2	17.2	88
Sorghum-sudan	1-cut	7.3	9.7	75
	multiple cuts	5.8	18.2	95

and limited soil moisture. Plant growth reduces nitrate levels by dilution and metaboliam of nitrate into protein. Nitrate concentrations are greater in stems and highest in the lower 6 inches. Since harvest management of Pearl and Japanese Millet recommends leaving at least 6 inches of stubble, nitrates rarely pose a problem. If harvesting a drought-stressed crop, leave a concentrations of nitrates in feedstuffs.

high stubble height. Nitrate is stable in hay. The hay curing process will not reduce nitrate levels. However, proper ensiling will reduce nitrate concentrations by 40 to 60%. Forages suspected of high nitrate levels should be tested by a laboratory. See Table 3 for guideline on

Table 6. Guidelines for Nitrate in Feedstuffs⁵

Nitrate (NO_3) concentration		
(%)	ppm	Comments
0.00 - 0.44	0 - 4,400	This level is considered safe to feed under all conditions.
		This level should be safe to feed to non-pregnant animals under all conditions. It may
0.44 - 0.66	4,400 - 6,600	be best to limit its use for pregnant animals to 50% of the total ration on a dry basis.
0.66 - 0.88	6,600 - 8,800	Feeds safely if limited to 50% of the total dry matter in the ration.
		Feeds should be limited to about 35 to 40% of the total dry matter in the ration. Feeds
0.88 - 1.54	8,800 - 15,400	containing over 0.88% nitrate should not be used for pregnant animals.
1.54 - 1.76	15,400 - 17,600	Feeds should be limited to 25% of total dry matter in ration. Do not use for pregnant animals.
over 1.76	over 17,600	Feeds are potentially toxic. Do not feed.

¹NO3 concentration, ppm $/4.4 = NO_3$ -N concentration, ppm

Prohibition Round I

During the 1930's hemp was lumped under the umbrella of "marihuana" and made effectively illegal under the 1937 Marihuana Tax Act, a law that required farmers to register their hemp crops with the Fed's and purchase an exorbitantly expensive tax stamp. The very next year Popular Mechanics named hemp The New Billion Dollar Crop for its multitude of uses.

World War II

During World War II, hemp was of such necessity to the war effort that the USDA produced an educational video and accompanying literature to encourage farmers to grow hemp for the war effort. More than 150,000 acres of hemp were cultivated as a part of the USDA's "Hemp for Victory" program. Read our blog article discussing hemp and World War II, or click here to watch the full Hemp for Victory video.

Prohibition Round II

In 1970 industrial hemp was classified as marijuana under the Controlled Substances Act despite decades of government funded agricultural research that identified industrial hemp varieties as unique in structure and function. Hemp farming in the U.S. became illegal as the rise of synthetic fabrics and fibers skyrocketed, and many other countries followed suit.

Hemp Today

U.S. manufacturers currently import raw hemp from Canada, Europe, and China while domestic farmers miss out on this profitable opportunity to grow hemp. Hemp not only nets up to 2.5-times the value of U.S. corn and soy, it also has wide-reach environmental benefits including soil remediation, prolific pollen production for our bees and beneficial insects, and no synthetic pesticides nor fertilizers necessary to grow.

Progress is being made. In 2014, Kentucky, Vermont and Colorado became the first states to grow hemp in decades and did so under Section 7606, Legitimacy of Industrial Hemp Research, of the 2014 Federal Farm Bill. Amendments to Congressional Appropriations bills have also been passed to prohibit DEA and DOJ from spending tax dollars to deter hemp farming for research in states where it is legal. Hemp farming is now legal in 33 states. In 2017, 24,841 acres of hemp were grown in 19 states.

As recognition of hemp's excellent nutritional profile grows, along with the demand for regenerative agricultural practices and advancements in plant-based innovations, hemp stands to once again be a vital and viable crop in the United States and around the world.

All of the hemp material used in the United States is grown outside of the U.S. It is a \$500 million crop that our farmers and manufacturers are not able to take part in. The future is estimated at more than a trillion dollars.

The 2014 Farm Bill allowed colleges and universities to grow and study hemp. The U.S. Senate added a key measure extending the rights to state agriculture departments. This cleared the way for states to license individual farmers to grow hemp. Kentucky and North Carolina are aggressively pursuing industrial hemp for their farmers. 2018 nearly 100 farmers permitted to grow Industrial Hemp in NYS. Source: http://maui.hawaii.edu/hooulu/2016/01/15/industrial-hemp-a-history-and-overview-of-the-super-crop-and-its-trillion-dollar-future/

Manure and Road Reminder

By: Karl Czymmek, Cornell CALS PRO-DAIRY, and Tonya Van Slyke, NEDPA

With warmer weather finally in the forecast, farms are poised to move a lot of manure in the coming weeks. Before transferring manure to fields, check soil conditions, tile outlets and weather forecast to see if prohibited or high risk conditions are present or if heavy or persistent rain is in the forecast.

During wet weather, the CAFO Permit indicates that the <u>Revised Winter and Wet Weather Guidelines (http://nmsp.cals.cornell.edu/publications/files/</u><u>WinterSpreadingGuidelines2015.pdf</u>) should be followed.

Manure may not be applied to saturated wet soils and conditions are considered to be "high risk" when significant rain is forecast within 48 hours or when tile outlets are flowing at least moderately from field drainage. Fields for application should be selected carefully in these conditions. It is always a good idea to monitor tile outlets during application.

Some roads may still be very vulnerable to damage from repeated trips with heavy loads. If you are not on a first name basis with your local road officials, make it a point to reach out to have a conversation about steps you can take to reduce the wear and tear from your equipment traffic on roads.

Bunko Silo Covers: Know What You Are Buying When Replacing Tire Inventory

By: Karl Czymmek, Cornell CALS PRO-DAIRY

New York Farm Bureau with support from Northeast Dairy Producers Association and PRO-DAIRY continue to work with NYS DEC to address challenges with the new <u>regulations for waste tire</u> <u>usage (https://www.dec.ny.gov/docs/materials_minerals_pdf/</u> <u>enfdisltr.pdf</u>) While discussions continue and progress is being made, the implementation deadline (May 2018) is approaching and many farms are taking steps to comply. We should appreciate that DEC has indicated a willingness to use enforcement discretion, meaning there will be some level of flexibility in the enforcement of this regulation, at least initially. But the lack of suitable replacement options and uncertainty about what to do with existing tire stocks on farms as well as costs for all of this present serious challenges and are part of the ongoing discussion agenda with DEC.

<u>Caution</u>: It is important to understand that radial tire sidewalls may contain protruding wires that present a hazard to workers and could penetrate plastic covers and contribute metal into the feed supply. Consider if this risk is worth taking with your herd. Bias ply sidewalls without wires can be purchased, but supply and availability are reported to be limited. One producer reports noticing an increase in hardware disease after cutting a number of radial tires in half, and cases declined substantially after eliminating those from use on the bunker. We are also hearing that some receivers of used tires require them to be clean - not simply rain clean, but hosed off. To avoid rejected loads, be sure you know the requirements before sending old tires for disposal. Be aware that burning and on-farm burial of used tires is not legal.

For more general information on the topic, see the article <u>Reducing</u> <u>Mosquito Breeding Sites When Using Tires as Anchors for Silo</u> <u>Covers (https://extension.psu.edu/reducing-mosquito-breeding-sites-</u> <u>when-using-tires-as-anchors-for-silo-covers</u>)

Additional information is also provided by NYFB below.

On March 1, 2018, the NYS Department of Environmental Conservation issued an Enforcement Discretion Letter regarding the enforcement of Part 360 as it relates to waste tires used on bunk silos. The letter provides for an additional year, until May 3, 2019, for DEC to provide enforcement discretion for farmers who are in compliance with either Part 360.12 (c)(2)(iv) or BUD 1137-0-00.

The <u>DEC letter</u> (<u>https://www.dec.ny.gov/docs/</u> materials_minerals_pdf/enfdisltr.pdf) states:

"This is to advise you, that subject to the terms set forth in this letter, the New York State Department of Environmental Conservation ("DEC" or "Department") will exercise its authority to utilize enforcement discretion with respect to certain provisions of 6 NYCRR Part 360, Part 361, Part 364 and Part 365 of the newly enacted Part 360 Series. The DEC will exercise this authority regarding the above provisions until either May 3, 2019 or an amendment to the present rule is promulgated, whichever is earlier. All other provisions of the Part 360 Series remain in effect and will be enforced.

Waste tires used to secure tarpaulins

The new Part 360 Series, which addresses the use of waste tires to secure tarpaulins in common weather protection practices, requires adjustments to better suit the needs of the agricultural community. The Department will utilize its enforcement discretion with respect to the enforcement of 6 NYCRR Subpart 361-6, as long as the use of waste tires to secure tarpaulins is done in accordance with the predetermined beneficial use found at Part 360.12(c)(2)(iv) or BUD 1137-0-00, dated December 4, 2014, which permits the use of waste tires to anchor plastic film or other cover material for corn silage, haylage or other agricultural feeds if certain

suage, nayiage or other agricultural jeeds if certain conditions are met."

Part 360.12(c)(2)(iv) states the following: (iv) waste tires required to secure tarpaulins in common weather protection practices such as agricultural storage covers and salt pile protection, provided the number of passenger tire equivalents used does not exceed 0.25 passenger tire equivalents per square foot of cover or bunker area, and whole tires are cut in half or have sufficient number of holes drilled in them to prevent retention of water;

BUD 1137-0-00 states the following:

Therefore, the Department has determined that the use of waste tires for bunker silos on agricultural operations is a legitimate beneficial use pursuant to 6 NYCRR 360-1.15(d). This determination applies to any farm in New York State. The BUD is subject to the following conditions:

- 1. This BUD applies when the waste tires are received at the farm. The amount of waste tires received cannot exceed the amount needed for bunker silos. Any waste tires that are not used for bunker silos for a period of more than 18 months must be removed from the farm.
- 2. Procedures (such as drilling holes in the waste tires), must be in place to minimize standing water and insect breeding during storage and use of the waste tires.
- 3. Waste tires stored at the farm, when not in use on the bunker silos, must be stored away from combustible materials and from potential ignition sources. Procedures and means to extinguish fires must be in place at all times.
- 4. The burial of waste tires is prohibited.
- 5. The burning of waste tires is prohibited.
- 6. No routine reporting to the Department is required. Any correspondence related to this BUD, should be sent to: Sally Rowland, Ph.D., P.E. NYSDEC Division of Materials Management Bureau of Waste Reduction & Recycling Albany, NY 12233-7253
- 7. The Department reserves the right to rescind or modify this BUD at any time, if it finds pursuant to 6 NYCRR 360-1.15(d)(4), that any matter serving as the basis for this BUD is incorrect or no longer valid, or the Department finds there has been a violation of the conditions of this BUD. All administrative protocols in 6 NYCRR Parts 622 and 624 will be followed.
- 8. This determination does not exempt the farm from other local, state or federal requirements.

NYFB continues work with DEC to address farmers' concerns with implementation of Part 360 as it relates to waste tires on bunk silos.

Cornell University Cooperative Extension SCNY DAIRY & FIELD CROPS TEAM

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CALENDAR OF EVENTS

June 6-9 HEMP History Week visit https://hemphistoryweek.com/about/hemps-history/ Watch the Hemp for Victory Film at https://www.youtube.com/watch?v=p52Epx6lJes

June 12Dairy & Beef Pasture Walk3940 Bussey Road Syracuse, NY

July 3 Seed Gowers Field Day

NYSIP Foundation Seed Barn: 791 Dryden Rd., Rt. 366 Ithaca, NY http://events.cornell.edu/event/2018 cornell seed growers field day

8:30am-12:00pm DEC/CCA credits requested

Contact Fay Benson with questions at afb3@cornell.edu or 607.745.3807

11:30am-2:00pm

Topics: Breeding Small Grains, Disease Management of Small Grain, Switchgrass, and Hemp, Forage Varieties, Pest Management, and Breeding, Certified and Foundation Seed Update, Seed Treatment Survey.

July 12 Aurora Farm Field Day

1256 Poplar Ridge Road Aurora, NY Pre-register at fieldcrops.org 9:30am-3:30pm DEC/CCA credits requested

Topics: Comparison of Soybeans and Wheat Under Conventional and Organic Management, Forage Intercropping and Double Cropping for Resilience, Integrated Management of Diseases and Mycotoxins in Malting Barley, Managing Corn Diseases through Breeding and Genetics, Decision Agriculture: Crop Sensors for Predicting Yield and Managing Nitrogen for Corn, Western Bean Cutworm... What Now?, Soybean Cyst Nematode: 'Take the Test and Beat the Pest', Opportunities and Challenges with Perennial Grains in NY.

