SCNY Dairy & Field Crops Digest

Cornell University
Cooperative Extension
South Central New York Dairy & Field Crops Team

Preseason Field Check of Planting Equipment

Paul Jasa, Extension Engineer, University of Nebraska-Lincoln

Before starting to plant, take time to check on how well your planter will perform in the field. As with any piece of equipment, the operator's manual is the starting point for the initial settings and adjustments. Recommendations and trouble-shooting tips are in the manual and also available from others who own and operate similar equipment.

To check your planter in your conditions, take it to the field without any seed in it and make adjustments to improve its performance. By doing this check before planting, you can save valuable time in the field.

Level the planter in the field, making sure that the toolbar is at the proper height and leveled front-to-rear, perhaps even slightly "tail" down. This allows for the full range of movement of the parallel links on the row units, helps keep the planter on the row, and aids in seed-to-soil contact. If the toolbar is too high, the downpressure springs are ineffective. If the toolbar is too low, you may break downpressure springs by over extending them.

Make sure that the planter carrying wheels are exactly centered between the rows and that they are carrying some weight while setting the toolbar height. This is especially important for producers using the ridge-plant system to help keep the planter on top of the ridge. Remember that the toolbar height will change by the height of the ridges and needs to be reset as the carrying wheels settle into the furrow.

Once the planter is leveled, try blind planting with no seed in the boxes or other products on the planter (everything empty). Stop with the planting units in the ground and check to see if the depth gauge wheels are in firm contact with the soil surface. If they are not, tighten the downpressure springs (or increase the air pressure on the airbags, if so equipped) and try planting again. If you cannot tighten the springs, you may have to add extra springs or add weight directly to the row unit to get the gauge wheels in firm contact with the soil. If you cannot turn the depth gauge wheels slightly, especially on wetter soils, you may have to reduce the downpressure to avoid over-compacting the soil next to the seed-vee.

Check to see if you can slip the seeding mechanism drive wheels as the downpressure springs will be lifting the toolbar. You may have to add weight to the planter frame for the springs or airbags to work against and to keep the drive wheels firmly on the ground to reduce slip. Don't loosen the springs to get the drive wheels back in contact with the soil as penetration to seeding depth is necessary. Extra weight will be needed for dry soils or heavy residue and on planters with inter-plant units.

Place a small amount of seed into a couple of seed boxes and plant a short distance. Check seeding depth, seed-to-soil contact, seeding depth uniformity, and seed spacing uniformity. Evaluate seed-vee closing and check to make sure you're not over compacting the seed zone or packing below the seeding depth.

Make the necessary adjustments or add the required equipment to improve planter performance and check the planter again. Even though a preseason planter check was made, all of these items should be rechecked when actual planting begins and as conditions change during the planting season.

Figure 1. When planting, be sure to check the seed depth and seed-to-soil contact at seeding depth to ensure good placement.

MAY 2015

Cornell Cooperative Extension South Central NY Dairy & Field Crops Program

INSIDE THIS ISSUE:

We Need Your Help!

First Cutting Updates – Utilizing Alfalfa Heights as a Predictor for Quality

Betsy Hicks, Extension Dairy Specialist

The SCNY team is going to monitor alfalfa heights this spring to help predict quality and %NDF. Alfalfa height has been proven to be a reliable indicator of NDF values in the field for alfalfa, alfalfa/grass mixed and all grass stands. The team wants to identify fields that can be measured on a weekly basis. If you have fields that we can come out and measure, please let Janice or Betsy know! Results will be compiled on a weekly basis – to receive weekly email/text updates, please contact us at 607.75.5078 with your email address/cell phone number.

The numbers that are indicators for using alfalfa heights for NDF content are as follows:

100% grass stands should be cut when nearby alfalfa is 14 inches tall, to achieve 50% NDF

Begin cutting 50/50 mixed alfalfa/grass stands when nearby alfalfa is 22 inches tall, to achieve 44% NDF

Begin cutting 100% alfalfa stands when alfalfa is 28 inches tall, to achieve 40% NDF

Predicted days to cut are based on daily NDF increases for grasses of 1.0% point, 50/50 mixed alfalfa/grass stands of 0.8% points, and alfalfa of 0.5% points.

Predictions are adjusted for the coming week's weather.

Typically NDF increases about 0.8 to 1.2 per day for grasses, with cooler weather being the lower end of the range and warmer weather being the higher end.

For alfalfa, NDF increases about 0.4 to 0.7 per day, also dependent upon warm/cool weather.

The email will have a table of the locations around the region where we have measured the alfalfa height, as well as the elevation, and target date for harvest. Even if your fields aren't measured, you can use the location and elevation as a guide to conditions that may be similar to your own. ⌘

We are pleased to provide you with this information as part of the Cooperative Extension Dairy and Field Crops Program serving Cortland, Chemung, Tioga and Tompkins Counties. **Anytime we may be of assistance to you, please do not hesitate to call or visit our office.**

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Building Strong and Vibrant New York Communities

"Diversity and Inclusion are a part of Cornell University's heritage.
We are a recognized employer and educator valuing AA/EEO, Protected Veterans, and Individuals with Disabilities."

5 Tough Employee Personalities – and How to Manage Them Effectively

Judith Orloff, MD, Assistant Clinical Professor of Psychiatry at UCLA

At a recent discussion group meeting with young managers in Cortland, the group focused on communication and how to deal with confrontation with their employees. Erica Leubner and Judy Flint from NY Farm Net led the discussion and brought with them a list of 5 tough employee personalities that were hard to manage, as studied by Judith Orloff, MD, assistant clinical professor of psychiatry at UCLA. Chances are, as a manager or coworker, you've had to deal with more than one of these personalities. These 5 types make for good stories after their position turns over, but knowing how to effectively manage the different types may make these employees more effective while they are employed by your farm. -Betsy Hicks

Narcissists - Narcissists demand and thrive on constant attention and praise and have an inflated sense of self-worth. The feelings of others matter little to them, and are often self-absorbed and lack empathy. They take criticism very hard and are liable to react poorly.

How to Manage – Positions of power are actually very good roles for narcissists to fit into. They thrive on that power and take it very seriously. Framing criticism in a way to show them how changing their own behaviors will benefit them is the best way to get them to change. Focusing on how their behavior affects others or the company will do little because of the lack of empathy.

Passive-Aggressive Types – People who are passive-aggressive are showing a type of anger. As such, trying to resolve their issues is something that a manager should resist doing. This type of employee may habitually show up late, promise to do something and then not do it, and make others feel that they are not worth the passive-aggressive person's time or effort because they can't be bothered to show up consistently for them.

How to Manage – Fortunately, passive-aggressive types are capable of empathy as well as having the desire to advance. Using these two traits will help you to motivate them in a positive manner. Setting very clear expectations and precise instructions are necessary to manage this employee effectively. If allowed an open-ended role, they will find loopholes and drive everyone crazy.

Gossips – While almost every single workplace with multiple employees has some amount of gossip, these types of employees take it to the max and find enjoyment in talking badly about their boss, other employees or even competition. This is very destructive behavior and can affect a whole crew of employees.

How to Manage – These employees actually have very good people skills and like talking. If put in a positive role where they can use their skills for the good of the company, they will flourish. Calling them out on gossiping is the first step in managing them, and giving the other employees permission to tell them that they don't want to participate in gossip will go a long way.

Anger Addicts – These types of employees will often lash out, accuse or yell at other employees in response to tensions in the workplace or even at home. They generally give free rein to their emotions and anger and don't care where in which direction it lands. This can be one of the hardest personalities to deal with as a manager.

How to Manager – This employee must be called out on their behavior. Very strong boundaries must set with them, and they probably will have to be taken aside. The opportunity for counseling should be offered. However, if the behaviors continue, this employee may not have a long life within your business, as they can drag down an entire crew single handedly.

Guilt Trippers – People in this category will always let everyone know that they feel slighted. If they were passed up for a favorable job, feel that their role was made more difficult, or feel that someone else was given an easy task, they will lay their grievance on thick.

How to Manage – These employees need to be educated on how to communicate better. Often they are unaware of how their comments are affecting others. They will do better in roles that are independent, and away from other people. ☙

As a manager or coworker faced with a difficult personality, it is important to remember to let go of reactivity to how these people interact in the workplace. Many people will confront these people head on and create hostility, or avoid confrontation altogether, worsening the problem. Managers must not do either of these things and learn how to manage the difficult types. Sometimes, these types won't make it on your farm. Before you throw in the towel on an employee, though, make sure you're assessing how they interact and question yourself if you're managing them in the most effective way. Chances are, altering what you do may help to make them a better

MPP-Dairy payments could start this week for small number of U.S. dairy operations

A small number of U.S. dairy operations could receive Margin Protection Program for Dairy (MPP-Dairy) payments beginning this week according to the USDA Farm Service Agency (FSA).

MPP-Dairy payments are triggered when the national average margin, the difference between the price of milk and the cost of feed, falls below a producer-selected margin trigger, ranging from $4 to $8/cwt., for a specified consecutive 2-month period. Final USDA prices for milk and feed components required to determine the national average margin for the January-February 2015 period were released on March 30.

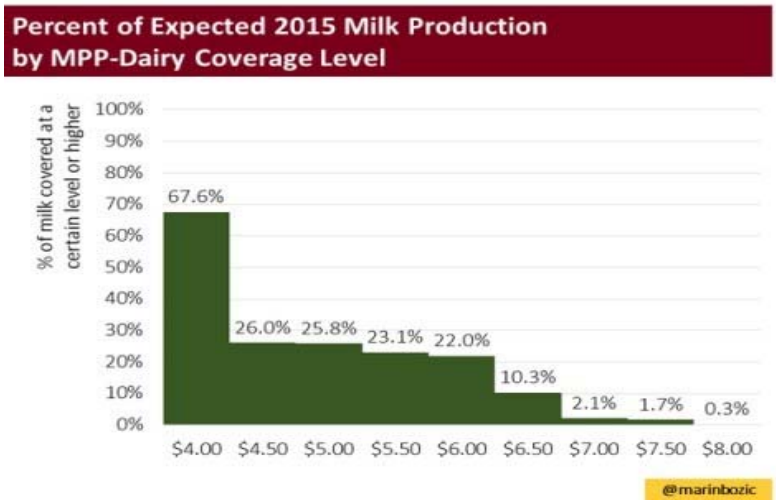
Combined, the January-February MPP-Dairy pay period margin (http://www.fsa.usda.gov/Internet/FSA_File/mpp_prices.pdf) is $7.99554/cwt., resulting in an MPP payment rate of $0.004456/cwt. (just over four-tenths of 1¢/cwt.) for dairy operations selecting an $8/cwt. margin trigger coverage level for 2015.

According to data released by USDA on April 9 (http://www.fsa.usda.gov/programs-and-services/Dairy-MPP/index), of nearly 24,748 dairy operations selecting MPP-Dairy coverage, just 261 selected the $8.00/cwt. margin coverage level for 2015, with a total maximum annual milk production history of just over 1 billion pounds. Production history was based on the highest annual production over a three-year period, 2011-2013.

Based on analysis by Marin Bozic (https://twitter.com/marinbozic/status/586598039864901632), Assistant Professor, Department of Applied Economics with the University of Minnesota-Twin Cities 26% of expected 2015 milk production has MPP-Dairy coverage at $4.50/cwt. or higher, but only 10.3% has a coverage at $6.50/cwt. or higher.

In addition to margins, producers selected the percentage – between 25% and 90% – of their annual milk production history to be covered. Nationally, at the $8/cwt. coverage level, those dairy operators elected to cover about 58% of their annual milk production.

Under the MPP-Dairy program, the eligible milk production history for these producers (about 1 billion pounds X 58%= 583 million pounds) is divided equally over six 2-month pay periods, making 97.2 million pounds (972,000 hundred weights) eligible for the 0.45¢/cwt. payment for the January-February pay period. That adds up to about $43,300 in total payments.



January 2015 margin calculations:
Corn: $3.81/bushel
Soybean meal: $380.02/ton
Alfalfa hay: $174/ton
Final feed costs: $9.26/cwt.
All-milk price: $17.60/cwt.
Milk margin minus feed costs: $8.3356/cwt.

February 2015 margin calculations:
Corn: $3.79/bushel
Soybean meal: $370.38/ton
Alfalfa hay: $172/ton
Final feed costs: $9.14/cwt.
All-milk price: $16.80/cwt.
Milk margin minus feed costs: $7.655395/cwt.

Not only will MPP-Dairy payments be small, but they are also subject to federal budget sequestration, reduced by 7.3%, according to the FSA notice (http://www.fsa.usda.gov/Internet/FSA_Notice/mpp_12.pdf).

Qualifying producers paying the full margin insurance premium in-full will receive a payment based on the amount of covered production history elected by the dairy operation. If the premium has not been paid in-full, payments will apply to the outstanding premium balance remaining for buy-up coverage, thus reducing the premium needed to pay by June 1.

USDA issued payment processing instructions to state and county FSA offices on April 10. Those offices were to begin processing payments to eligible producers on April 13.

Of the 261 selecting the $8/cwt. margin coverage, about two-thirds (171) are in just five states: Wisconsin (69); Minnesota (35); New York (28); Pennsylvania (20); and Michigan (19).

Based on current projections, there's a chance dairy producers covered at the $8/cwt. margin level may also see a small payment for the March-April payment period

However, while those electing the $8/cwt. margin level will be seeing small payments in 2015, the added protection appears costly. In addition to a $100 administration fee paid by all dairy operations participating in MPP-Dairy, buying any coverage above $4/cwt. included additional premium payments.

At the $8 level, insurance premiums were 47.5¢/cwt. on the first 4 million pounds of milk production per year; and $1.36/cwt. on any insured milk above 4 million pounds/year. Premiums were discounted 25% in 2014 and 2015 on covered annual farm production volumes up to 4 million pounds. (See Table Pg. 5) ♦

Repairing harvest ruts this spring

Mike Staton, Michigan State University Ext.

The wet weather and soil conditions occurring fall 2014 shortened the harvest window, forcing producers to harvest some fields when the soil was too wet. As a result, harvest equipment left ruts in these fields. In some cases, the ruts are more than 6 inches deep and in others they are less than 2 inches deep. Most of the harvest ruts I've seen this spring are confined to localized areas within fields. However, in a few cases, deep ruts created by every pass of the combine can be seen (see photo). All ruts deeper than your projected planting depth must be leveled prior to planting for planters and drills to perform properly.

When repairing ruts this spring, the objectives are to fill and level the ruts just enough to facilitate planting operations without causing further soil compaction. Loosening the soil at the bottom of or below the ruts should not be attempted because the tillage tools will need to be operated at greater depths and into soil that is probably too wet. This increases the risk of further soil smearing or compaction to occur. Root growth and crop yields will be reduced in the repaired areas.

Michigan State University Extension recommends secondary tillage implements such as disks, field cultivators, soil finishers and vertical tillage for repairing ruts 2-4 inches deep. For ruts deeper than 4 inches, a chisel plow may be necessary. Always operate the implements as shallow as possible to fill and level the ruts. Multiple passes may be required to achieve the desired degree of leveling.

Perform tillage operations when the soil at or just above the operating depth is dry enough to prevent soil smearing and compaction. Iowa State University agricultural engineer Mark Hanna recommends the following methods for assessing soil moisture conditions:

- Collect a handful of soil from an area between ruts and 2 inches above the operating depth of the tillage tool and form it into a ball. Then throw the ball of soil as if throwing a runner out at first base. If the ball stays mostly intact until it hits the ground, the soil is too wet to till.
- Take a similar soil sample in your hand and squeeze the soil in your fist and use your thumb and forefinger to form a ribbon of soil. If the ribbon extends beyond 2-3 inches before breaking off, the soil is too wet to till.

→ Remember, your objectives with spring rut repairs are to fill and level the ruts without causing further soil compaction. Attempting to loosen the soil below the ruts increases the potential for further soil smearing and compaction to occur. ✶

2015 MPP-Dairy, by Coverage Level

Selected Margin Coverage	Dairy Operations selecting level	Milk production history	Average milk Production covered	2015 milk production eligible
($/cwt.)	(Number)	(Million pounds)	(Percent)	(Million pounds)
$4.00	10,888	97,091.3	90.0%	87,382.1
$4.50	136	481.8	88.5%	426.4
$5.00	741	6,534.3	88.0%	5,747.4
$5.50	505	2,802.8	84.5%	2,367.9
$6.00	3,828	29,584.1	83.1%	24,591.1
$6.50	6,457	22,305.7	76.7%	17,119.3
$7.00	502	1,007.4	82.0%	825.9
$7.50	1,430	4,228.5	71.4%	3,019.6
$8.00	261	1,007.0	57.9%	583.3
Total	24,748	166,318.9	85.4%	142,063.1

Safety on the Farm

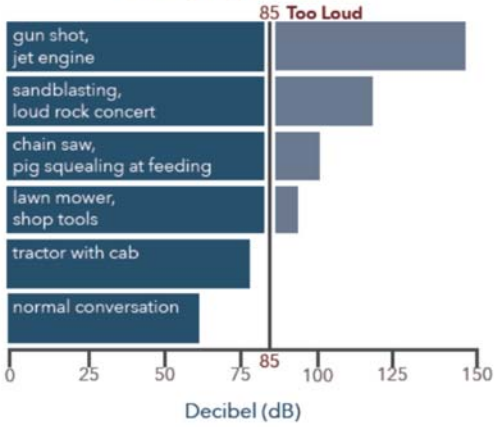
This edition of the digest contains information provided from AgriSafe. Other safety information and training tools can be found on their website at www.agrisafe.org.

Hearing Loss Prevention

Adapting the Hearing Conservation Program for Agriculture

AgriSafe® Network
Protecting the People who Feed America

Decibel Levels of Everyday Sounds



Noise exposure in agriculture impacts all age groups from youth to older adults – not just the typical workforce age population. The agricultural worksite may also be a home, exposing non-working family members to noise that is loud enough to cause hearing loss.

Noise Induced Hearing Loss (NIHL): permanent impairment resulting from exposure to high levels of noise. NIHL can result from either a one-time exposure to noise (burst) or from repeated exposure to loud noises over time.

According to the American Hearing Resource Foundation, one in ten Americans has hearing loss that affects his/her ability to understand normal speech. Hearing loss can be caused by illness or biological issues, but can also result from exposure to noise that is too loud.

Terms to Know:

→ A **decibel** is the measurement used to describe the loudness of a sound.

→ Sounds above the 85 decibel mark, or **permissible exposure limit,** will cause hearing loss over time. The **OSHA Action Level** is 85 decibels – the level that requires initiation of a Hearing Conservation Program.

→ A **hertz** is the frequency or number of sound vibrations per second.

→ **NRR or Noise Reduction Rating** is a measurement of how effective hearing protection devices (like ear plugs or muffs) are at reducing noise exposure.

→ **TWA or Time Weighted Average** is the decibel or sound level over a given period of time, usually 8 hours.

→ A **Hearing Conservation Program (HCP)** is a designed intervention program to prevent hearing loss. An HCP is required when noise levels measure at 85 dB or higher (OSHA's Action Level).

OSHA's Permissible Noise Exposure Table

OSHA standards for permissible exposure (29 CFR 1910.95)

Sound Level dBA Slow Response	Permissible Exposure Time
90 dB	8 hours
95 dB	4 hours
100 dB	2 hours
105 dB	1 hours
110 dB	30 min.
115 dB	15 min. or less

(from standard sound level meter)

Managing Wheat By Growth Stage

Table 1. Wheat management considerations by Feekes growth stages. This table provides a general overview of wheat management decisions by Feekes growth stage.

Feekes Growth Stage	Management Considerations
1.0	Check stands for emergence and uniformity. Check for weeds and apply herbicides if necessary[1]. Begin monitoring for various aphid species (continue through season)[2]. Check seedlings for Hessian fly feeding damage[3].
2.0	Make early nitrogen applications to enhance tillering in thin stands. Avoid excess nitrogen.
3.0	
4.0	Scout for insect and disease problems. Check stands for heaving caused by freezing/thawing cycles. Decide whether post-emergence weed control is warranted.
5.0	Make spring topdress nitrogen applications. Apply herbicides as needed for weed control[1].
6.0	Cutoff for nitrogen applications to avoid leaf injury. Cutoff for some growth regulator herbicides, like 2, 4-D and dicamba[4].
7.0	Scout for insect and disease problems.
8.0	Apply fungicides to protect flag leaf from foliar diseases if necessary. Cutoff for any further herbicide applications unless harvest aid treatments are needed.
9.0	
10.0	Determine if fungicide applications for glume blotch management are needed. Check risk for Fusarium head blight (scab) at www.wheatscab.psu.edu. Check for armyworm feeding. Consider control measures if armyworm feeding is clipping heads.
10.5.1	Apply fungicides to suppress Fusarium head blight if necessary

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Assessing Alfalfa Stands

Marvin Hall, Professor of Forage Management, Penn State College of Ag Sciences

Congratulations, you have survived another long winter. However, maybe your alfalfa wasn't so lucky. Now is the time to do an assessment of the stand to determine if the field should be rotated to corn. A quick and simple method to determine if the stand is worth keeping is to get out there and count the number of live alfalfa plants. If there are less than 4-5 alfalfa plants/square foot then the stand is generally not economical to keep. However, the health of the remaining alfalfa plants is important to consider. Here is a link to a seven minute YouTube video that shows how to conduct a complete assessment of alfalfa stands. ◎

Minimum Till Haylage

-Thomas Kilcer, Certified Crop Advisor, Advanced Ag Systems

Minimum till haylage is a new process where we optimize the forage planted, care- fully watch to harvest at the peak of quality, and then use the mower to mix a pile of dirt, dead bugs, half rotten plant residue into the forage to make sure your feed will have limited milk producing ability.

Looking at the table at the right, the range of ash is considerable. The worst offended are legume and winter forage (triticale). There are two key points this occurs.

Silage Crop	Minimum ash	Maximum ash	Average Ash
Legume	9	13.1	11
Mixed mostly Legume	8.4	12.1	10.3
Mixed mostly Grass	7.1	10.9	8.99
Grass	6.7	11.9	9.3
Triticale	7.48	14.2	10.8

Source: http://dairyone.com/analytical-services/feed-and-forage/feed-composition-library/interactive-feed-composition-library/

First is the setup of the mower. Most farmers drop the pin in and go without looking at the manual or making any adjustments. Most are set to mow much to close for the good of the forage produced, the regrowth of the stubble left behind, and the rapid drying of the crop for same day haylage. Fields are not table top flat. They are filled with little dips, rises, and bumps plus rodent burrow mounds. The closer you mow the more the mower flat- tens the field by incorporating the soil into the forage.

There is approximately 250 lbs. of dry matter in every bottom inch of an alfalfa field. Most of it has no leaves and is very poorly digested by animals. Cutting higher than the soil level is critical to leaving soil and poor forage behind. In addition, if you are late on harvest (for first cutting straight alfalfa stand, the target is 33 inches tall) and your plant height is above target, you can raise the cutter bar and move the harvest date back to where it was good forage simply by leaving the bottom of the stem in the field.

Note in the table that the grass and mostly grass fields have much less ash both on average and as a minimum. This is because grass farmers have learned that if they scalp their fields, the grass portion of the stand will disappear. Numerous studies have shown that grass regrows from the leaf tissue left. The more left, the faster it regrows for increased total year- ly yield. Those who scalped their fields have little or no grass regardless of the variety plant- ed. Successful farmers of grass leave a 3.5+ inch stubble.

For those capturing extra yield and the highest forage quality by growing winter forages such as triticale, harvest can be problem- atic as can be seen in the tables range and high average ash content. As on farm yields move over 8 – 12 tons of silage/acre, how you mow becomes more important. Wide swath is critical for any chance of same day haylage. To dry this much forage you need air movement around and under it. More importantly, for triticale and for first cut red clover, you will need to move the swath to allow drying of the lower layers. This means utilizing a tedder. If you scalped the field, the tedder and the subsequent rake/merger will need to root in the dirt in order to pick up the crop and move it to a windrow. Tipping the disk mower back or putting on extended skid plates will leave a taller stubble to allow for tedding plus raking/ merging without skyrocketing ash levels. This is very do- able as can be seen in the very low minimum levels of some of the triticale samples sent to the lab. (hand harvested triticale is 6.5—7)

For heavy, high quality crops such as winter for- age or first cut red clover; tedding is key for rapid dry down same day haylage. Sufficient stubble is critical to allow tedding and raking without rooting in the soil to get the crop up.

The second key point is at the mower knife itself. Many use twisted knives that act as propellers to create an up draft so downed material is sucked off of the soil surface and cut. Yes, you are a "good" farmer because your field is clean. Why you want this incorporated forage with no leaves (all stem) and a significant amount of rot and mold into your forage is beyond me. Unfortunately, having clean fields and feeding rotten forage is not the prescription for profitable livestock farming. This updraft sucks loose soil and debris off of the soil surface and into your forage, increasing the ash level. A flat knife and flat disk mower drums will cut uniformly without sucking up soil nor leaving small windrows. As you can see in the picture at the right, the left side of the picture was mowed uniformly and is drying rapidly. The right side has several small windrows that are shaded, losing nutrients, and drying much slower than a true wide swath due to the twisted knife vortex and drum actions.

Many wide swath same day haylage efforts are frustrated by mowers that leave small windrows (on right) instead of a uniform wide swath (on left). Twisted knives contribute to the vortex that creates the windrows that inhibit drying.

So, what is a little dirt in the tons of forage? For starters you have just inoculated a highly digestible, high sugar forage with a range of wild and not so beneficial bacteria. They are not good for your cows or for making silage. Second, Dr. Sniffen of Fencrest LLC found that going from 9 to 11% ash will knock 1.9 lbs of mil k of f per cow per day. On a 100 cow dairy this is loss of over $11,590 in a 305 day lactation of a high forage diet of 50% legume. Yes, you can rebalance the ration at the cost of more grain in order to reach the same milk. Even this has its limits as Dr. Sniffen clearly points out: "the NDF concentration will go up; they balance on the presumed analysis and the fact is that the NDF is not really the higher NDF but the lower NDF. Thus they end up with inadequate effective NDF, and the cows get metabolic consequences."

Grazers, Start Your Engines! Solar Ones That Is!

-Rich Taber, Grazing and Ag Economic Development Specialist, CCE Chenango

It has been a long, cold, and brutal winter indeed! During the month of February, when I was doing chores on my home farm in below zero temps, day after day, like many of you, I endured incredibly cold temperatures, both actual and wind chill. I thought that the winter would never end. Lambing in brutal cold, feeding beef cattle round bales in deep snow when my tractor wanted to get stuck, and even getting that tractor to run, and digging out baleage from huge snow drifts were some of the challenges that I and many of you faced. Now in the warming days of March there is light at the end of the tunnel, and it's time to think about getting our grazing plans in order for the springtime.

There is very little in life that is free, but one thing that we have for free, at least for a few more billion years on planet earth, is sunlight. We take advantage of that free sunlight, or solar engine, by creating good working grazing systems that capitalize on sunlight through photosynthesis. That photosynthesis converts sunlight into energy which green plants capture. Our grazing animals will then convert that energy into useful, saleable products which will feed the world and will provide a livelihood for many of us.

Even though the sunlight is free, to make the solar engine work efficiently, there are a number of items and considerations that we must put into place to make the grazing system work. I will list some of the most important that hopefully will get our collective planning wheels turning again for spring 2015!

First off, we need to be planning on building, updating, or maintaining our grazing infrastructure. If we are new to grazing, we may need some assistance in planning a new grazing system which would include fencing, laneways, and watering systems. This will incur a certain capital expenditure of time and resources. If we are old hands at this, we will need to be fixing and possibly updating our systems. Fencing, ground rods, fence chargers, watering systems, and gates all need to be checked and put back into good working order. A winter like we just had wreaks havoc on a lot of our fence posts and fencing, and these items need to be repaired.

Secondly, we need to be looking at our pastures from the agronomic side. It's always a good idea to soil test our fields and then plan for adding any needed amendments such as seed, fertilizer, manure, and lime. Liming takes a while to correct soil acidity, and maybe it would be better to spread it later in the year, when the soils are a little dryer. Your vendor will appreciate that as the risk of getting big trucks stuck in wet soils is less in the late summer or autumn, generally.

Will we need to put in a new seeding, or can we get by with a frost seeding? What mixture of grasses and legumes should we be planting? Will we need to till up an old, worn out, or rutted fields to get it back into a productive state? One of the nice things about grazing is that in general little tillage is needed, but nonetheless, there are times it might be needed. How about considering a no-till seeding? If that's the case, then the field needs to be prepared well ahead of time to kill the existing sod.

We also need to be thinking about the size of our paddocks, and how often will we move the animals in them? How much livestock do we have? Will we have enough grazing available? We need to guard against over grazing as well as under grazing. Will we want to stockpile any grazing for fall grazing?

Will we need to plant a summer annual to provide feed to animals during dry spells? Should we lay in an extra supply of stored forages as an insurance policy during either excess rainy periods, or drought?

Grazing is as much an art, as it is science. It is a fascinating and satisfying way to farm and to raise animals. It is an ecological contributor to this whole idea of Sustainable Agriculture that so many of us embrace. Soon, we grazers will be answering the annual clarion call of the springtime; a time to graze! ☯

Spring Pasture Management for 2015

Managing the forage resource to better manage and extend grazing opportunities

Kevin Gould, Michigan State University Extension

Spring is "green-up" time for grazing operations. The day the gate opens from the winter drylot is the most enjoyable day for many grazers. This begins the season when the livestock work for the producer instead of the other way around.

Considering current prices for forages and limited forage acres in Michigan, Michigan State University Extension suggests a few management decisions that should be in your grazing plan to better manage and extend your grazing opportunities.

1. Set paddock rotations for a quick rotation across all paddocks. Twenty days is a good goal for the first full rotation. Thirty days is a good average to cover all paddocks for the second and third rotations.

2. Consider adding interior fencing and water systems for improved forage management. The optimal time on a paddock for beef operations is three days.

3. Till your sacrifice paddocks or wintering lots where sod is destroyed and plant annual forages or cereal grain for grazing later in mid-summer. Consider replanting those areas to fall brassicas or combined cool season annuals for grazing after pastures go dormant, generally in late-October or early November.

4. Hay supplies have returned to "normal" carryover levels. This means there will be some opportunity to purchase year-old supplies in some cases at discounted prices compared to the past two years.

5. Take soil samples and fertilize as needed to reach forge yield goals. Your land resource is your most important asset in the grazing/forage operations so work to manage and improve productivity from your resource.

6. Consider crop residues, either grazed or mechanically harvested, as a portion of your winter forage supply. This will reduce winter hay needs and could possibly maintain or grow your livestock numbers. Ration balancing is recommended when incorporating crop residues into cattle diets.

Corn Planting Date not as Important as Other Factors

-Chad Lee, Extension Agronomist, University of Kentucky

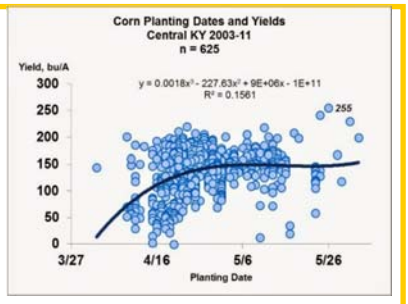
For many producers, spring planting is late. While everyone is anxious to get a crop planted, corn yield may not be as tied to planting date as we think. In fact, planting into good soil conditions may be just as important as planting date.

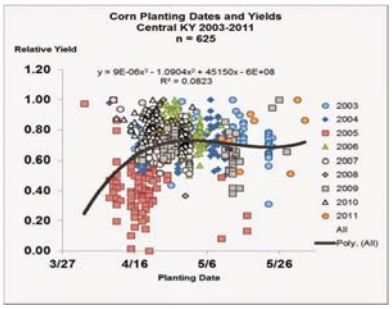
Over the past few years, farmers have sent me planting dates and yields from their fields. We found that planting date has little effect on corn yield. We had 625 fields from Central Kentucky where we compared yield to planting date. The resulting curve had an r-square of 0.0823, which basically means that there is no relationship between planting date and yield in Central Kentucky (Fig. 1). When comparing planting date to yield from 59 fields in the Green River area, the r-square was only 0.1512. Again, there is very little relationship between planting date and corn yield.

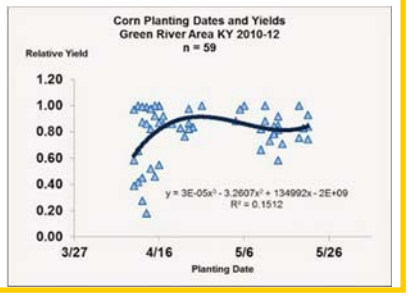
The Central Kentucky fields had planting dates that ranged from April 2 to June 2 from 2003 to 2011. Highest yields were reported for planting dates of The Green River Area fields were planted from April 10 to May 21 from 2010 to 2012. Having data from 2003 to 2011 spans a large range of environments and conditions.

Historically, optimal planting dates ranges from April 1 to May 1 in western Kentucky and April 15 to May 15 in central and eastern Kentucky. However, the ideal dates for a single year can vary widely as seen in Figure 3. For Central Kentucky, the best planting date in 2005 was April 10. In 2009, the best planting date was May 29. For 2011, the best planting date was May 31.

While planting date is important, it probably is less important than planting into good soil conditions and it is certainly much less important than July rainfall.







Spring Nitrogen Management—Form and Timing

Emerson Nafziger, University of Illinois

Most corn producers have planned their spring N program for 2015, and many have already started to implement their program. Such plans might include fall ammonia application, early spring application of ammonia or another form of N, or plans to apply all of the N at or after planting. In recent years there has been a trend towards more applications per crop, and it's not unusual today to have N applied three or four times on the same field.

In 2014 we initiated a large study with funding (from the Illinois fertilizer checkoff program) administered by the Nutrient Research and Education Council (NREC) board. One of our goals is to compare yields from different N programs. These included fall versus spring N and early spring versus split N applications in on-farm trials, and comparison of 15 different ways to apply the same rate of N in the spring in small -plot trials at several of UI research centers.

June rainfall at the three sites where we ran these trials in 2014 ranged from 8 to 10 inches, or more than twice normal amounts. This might have meant above-normal N loss potential, though we did not have water standing on these plots. We chose to use 150 lb of N as the rate for comparison; this compares to the MRTN (N rate calculator) rate of about 160 lb for corn following soybeans in central Illinois and of about 140 lb of N in northern Illinois. Using a "medium" N rate was intended to help bring out differences in N availability to the crop.

Yields at the different sites were similar at this N rate, ranging from about 200 to 220 at Monmouth and DeKalb, and from about 215 to 240 at Urbana (Table 1). Included in these trials was a full set of N rates, ranging from 0 to 250 lb per acre using UAN injected at planting time. The maximum yield at Urbana was 238 bushels per acre, reached at 230 lb N; at Monmouth the maximum yield was 235 bushels per acre reached at 224 lb of N; and at DeKalb the yield reached a maximum of 223 bushels at 225 lb of N. The range of yields at the 150-lb N rate applied using different forms and timings included the maximum yield (from higher N rates) in the trials at Urbana and DeKalb, but not at Monmouth.

While there were considerable differences among sites in how treatments ranked in terms of yield, most of the N forms and application times we compared produced similar yields when averaged across sites (Table 1). Over the three sites, the highest -yielding treatment (urea plus Agrotain broadcast at planting) yielded statistically more than the five treatments that yielded 215 bushels per acre or less, while the second-best treatment (all of the N as UAN sidedressed at V5) yielded significantly more than only the two lowest-yielding treatments (ESN and UAN + Agrotain, both broadcast at planting).

None of the other treatments differed significantly from one another, in large part because they changed rank so much from one site to another. When this happens, it lowers the predictive ability of experiments like this, since we have no way to predict how a treatment that did well at one site but not another will perform at either site (or across sites) in 2015 or 2016, or in your field this year or in future years. This is why we do trials at different sites over several years.

The 2014 results do raise the possibility that few if any of these N form and timing treatments may, in the end, stand out as being consistently better or worse than another. This isn't alarming, but it does provide a hint that the list of "acceptable" ways to apply N might turn out to be a little longer than we might have thought. While we need to be cautious about any predictions, this also hints that some of the treatments that we've considered should produce higher N use efficiency – such as sidedress or split N applications – might not always do so consistently.

The highest-yielding treatment – urea + Agrotain all broadcast at planting – has not been a common method of applying N in Illinois, and may not even be considered by some to be a sound method. That we saw it do well in 2014 in no way means that it's the "best new" way to apply N. But with Agrotain as protection against loss of N from urea due to urease activity, with urea sometimes competitively priced as a source of N, and with the speed and ease of application, this practice could gain some traction if it continues to do well compared to other treatments. It probably makes sense to wait until we see more results before committing to it, although running some strips to compare it against another method of N application might be worthwhile.

(Continued on page 12)

It's dangerous to speculate about why a treatment might have done well at one site but not another based on weather differences between the two sites. In part that's because the weather among sites was reasonably consistent in 2014 – rainfall was normal or below normal in May and above normal in June at all three sites, July was cooler than normal, and there was little stress throughout the season. It's also the case that the weather in 2015 will probably be different than in 2014, with some of our more imaginative speculation overturned as a result. Delaying all of the N to sidedress UAN or splitting 100 lb at planting with 50 lb at sidedress did much better at DeKalb and Monmouth than at Urbana, perhaps reflecting more loss from early-applied N at those two sites. On the other hand, dribble-applying UAN at planting worked well at DeKalb but not at Monmouth. It's not likely that we would have been able to find such differences in either the plants or the soils back at the time of application.

The 2015 trials will include fall-applied NH_3, and a fall-spring split. We also added a treatment in which we'll apply some of the N as late as tasseling time. This is a practice that some seem convinced is on its way to becoming common, given recent observations that newer hybrids take up a greater percentage of their N after pollination than older hybrids did. It is not at all clear why, even if plants take up 40 percent of their N after pollination, soil that was fertilized with N early in the season would be unable to supply that amount. In fact, N mineralization rates in mid-season run 3-4 lb of N per acre per day in better soils, and this would be enough to provide at least 40% of total crop N requirement (of roughly 1 lb per bushel) over the six weeks following pollination, whether or not any fertilizer N were still present in the soil. We'll see what the data tell us.

Most of us can take comfort from the fact that just about any method we choose for putting N on the corn crop is likely to work reasonably well, though no method is entirely safe from unusual weather or crop conditions. We only need to look back to 2012 to find a year when no method of applying N worked very well; when water (too much or too little) becomes the main limitation for a crop, things like N management may make little difference.

A sound N management program should, though, take costs into account – not just the costs of trips across the fields and of the fertilizer material, but also the indirect costs that include such things as the chance for yield loss or of more expensive forms or application methods we might need to use if we can't get N on when we expected to. Most changes we are inclined to make in how we manage N today involve increasing the complexity, and this often comes at a cost in time, expense, or uncertainty. Such costs have to be covered by consistent improvement in yields.

Table 1.

Yield ranks of N form and timing treatments at three Illinois sites in 2014. The N rate was 150 lb per acre for all treatments. Unless otherwise indicated, UAN was injected 2-3 inches deep between rows, and urea, SuperU, and ESN were broadcast-applied. PT = at planting time; AT = Agrotain®; dribble = surface placement between rows. There was no incorporation by tillage.

	Rank out of 15 treatments			Over 3 sites	
Timing and form	Urbana	Monmouth	DeKalb	Rank	Yield
Yield range:	216-241	199-224	204-220		
PT UAN	9	9	6	9	218
PT UAN 50 bdcst + UAN 100 V5 SD	4	11	8	5	219
No PT-UAN at V5 SD	8	1	4	2	222
No PT-UAN dribble V9 SD	13	4	5	10	217
PT UAN 100 + UAN 50 V5 SD	12	2	1	3	220
PT UAN 100 + urea+AT 50 V5 SD	14	10	7	12	214
PT UAN 100 + UAN 50 dribble V9	6	3	13	7	218
PT UAN 100 + urea+AT 50 V9	15	12	10	13	213
PT UAN dribble	11	14	2	11	215
PT Urea+AT	1	8	3	1	224
PT SuperU	2	7	11	4	219
PT ESN	7	15	14	15	211
PT UAN+AT broadcast	10	13	12	14	213
PT NH_3	3	5	15	8	218
PT NH_3+N-Serve	5	6	9	6	219

Corn rootworm resistance to Bt: Update on field failures: Recognizing and combating the problem

-Chris DiFonzo, Field Crops Entomologist, Michigan State University, Lansing, MI

Handy Bt Trait Table

Rootworm resistance to Bt corn has been confirmed in western states like Iowa and Minnesota, and in 2012/13 suspicious field failures were sampled in Michigan and New York. Bioassays conducted by colleagues in Ontario showed that rootworms from several of the Michigan fields survived hybrids expressing Cry3Bb1 or Cry3A Bts, a sign of resistance.

Now is the time to become familiar with the risk factors and symptoms of field failures, and to learn what to do about it. Entomologists from universities in the eastern corn belt (Purdue, MSU, Ohio State, Penn State, Cornell, University of Guelph) cooperated to develop a consensus recommendation for our region, which focuses on CROP ROTATION. Our goal is to preserve the usefulness of Cry3Bb1 and other rootworm Bts for producers and industry as long as possible.

Most corn hybrids planted in the U.S. now contain one or more transgenic traits for weed or insect management. These traits are meant to increase flexibility and profitability for producers, but sometimes also lead to questions or cause confusion about their spectrum of control or refuge requirements to delay resistance. This bulletin provides a handy one-stop-guide to understand sales materials, bag tags, and the hybrids you purchase.

Table 1 lists the names of the important events transformations of one or more genes) in corn, their more familiar Trade Names, the protein (s) expressed, and their pest targets. Table 2 lists specific trait packages (combinations of events) sold by various seed companies, with their spectrum of control plus refuge % and location. In recent years, the pyramiding of Bt traits allowed for the reduction of some refuges from 20% to 10% or 5%, depending on the trait package. Some hybrids still require a structured refuge planted as a block or series of rows (within, adjacent to, or ~½ mile from the Bt field), but many hybrids are now sold as a convenient refuge-in-the-bag (RIB). But it is still important to take the following steps:

*Understand the biology of each trait, the expected level of control, and refuge requirements;

*Confirm that the seed you ordered the previous year is the seed delivered in the spring;

*Keep good planting records and save a representative sample of bags or bag tags;

*For herbicide applications, Ask Twice-Spray Once, especially if you hire a custom applicator;

*Most important, if you see unexpected damage or poor performance of a trait (especially damage from corn rootworm), contact your seed dealer and extension educator immediately so that the field can be visited while the problem is still fresh and samples can be taken.

This is critical to identify and manage cases of rootworm Bt resistance.⊗

This bulletin strives for completeness, but keeping track of Bt traits isn't easy. For a searchable, easy-to-use database of GM crop approvals, see the ISAAA web site at http://www.isaaa.org/gmapprovaldatabase

Table 1. Event names for proteins expressed in Bt corn plants

Trade name	Event name	Protein(s) expressed	Insect Target or *Herbicide Activity*
Agrisure CB/LL	Bt11	Cry1Ab+PAT	corn borer + *glufosinate tolerance*
Agrisure Duracade	5307	eCry3.1Ab	rootworm
Agrisure RW	MIR604	mCry3A	rootworm
Agrisure Viptera	MIR162	Vip3Aa	broad lep control
Herculex 1 or CB	TC1507	Cry1F + PAT	corn borer + *glufosinate tolerance*
Herculex RW	DAS-59122-7	Cry34Ab1/Cry35Ab1+PAT	rootworm + *glufosinate tolerance*
Roundup Ready 2	NK603	CP4 EPSPS	*glyphosate tolerance*
YieldGard CB	MON810	Cry1Ab	corn borer
YieldGard VT Pro	MON89034	Cry1A.105+Cry2Ab2	broad lep control
YieldGard VT RW	MON88017	Cry3Bb1+CP4 EPSPS	rootworm + *glyphosate tolerance*

Abbreviations used in Table 2:

Herbicide Activity:

GT glyphosate tolerant

LL Liberty Link, glufosinate-tolerant

RR2 Roundup Ready 2, *glyphosate-tolerant*

Insect Targets:

BCW black cutworm

CEW corn earworm

ECB European corn borer

FAW fall armyworm

RW corn rootworm

SB stalk borer

SWCB southern corn borer

TAW true armyworm

WBC western bean cutworm

Table 2. Bt corn trait packages, with spectrum of control and refuge requirements.
(Updated 6 April 2015)

Trait Family Product	Bt protein(s)	Insects controlled or *suppressed* Above-ground----------In soil		Herbicide tolerant?	Refuge %, placement (for the MIDWEST)
AGRISURE					
Agrisure GT/CB/LL, 3010A	Cry1Ab	ECB SWCB *CEW FAW SB*	---	GT LL	20% structured-½ mile
Agrisure 3000GT, 3011A	Cry1Ab mCry3A	ECB SWCB *CEW FAW SB*	RW	GT LL	20% structured-w/in, adj
Agrisure Viptera 3110	Cry1Ab Vip3A	BCW CEW ECB FAW SB SWCB TAW WBC	---	GT LL	20% structured-½ mile
Agrisure Viptera 3111	Cry1Ab mCry3A Vip3A	BCW CEW ECB FAW SB SWCB TAW WBC	RW	GT LL	20% structured-w/in, adj
Agrisure 3122 E-Z Refuge	Cry1Ab Cry1F mCry3A Cry34/35Ab1	BCW ECB FAW SB SWCB WBC *CEW*	RW	GT	5% in the bag (RIB)
Agrisure Viptera 3220 E-Z Refuge	Cry1Ab Cry1F Vip3A	BCW CEW ECB FAW SB SWCB TAW WBC	---	GT	5% in the bag (RIB)
Agrisure Duracade 5122 E-Z Refuge	Cry1Ab Cry1F mCry3A eCry3.1Ab	BCW ECB FAW SB SWCB WBC *CEW*	RW	GT	5% in the bag (RIB)
Agrisure Duracade 5222 E-Z Refuge	Cry1Ab Cry1F Vip3A mCry3A eCry3.1Ab	BCW CEW ECB FAW SB SWCB TAW WBC	RW	GT	5% in the bag (RIB)
HERCULEX					
Herculex 1 (HX1)	Cry1F	BCW ECB FAW SB SWCB WBC *CEW*	---	LL RR2 (most)	20% structured-½ mile
Herculex RW (HXRW)	Cry34/35Ab1	---	RW		20% structured-w/in, adj
Herculex XTRA (HXX)	Cry1F Cry34/35Ab1	BCW ECB FAW SB SWCB WBC *CEW*	RW		20% structured-w/in, adj
OPTIMUM					
TRIsect	Cry1F mCry3A	BCW ECB FAW SB SWCB WBC *CEW*	RW	LL RR2	20% structured-w/in, adj
Intrasect	Cry1F Cry1Ab	BCW ECB FAW SB SWCB WBC *CEW*	---	LL RR2	5% structured-½ mile
Intrasect Leptra	Cry1F Cry1Ab Vip3A	BCW CEW ECB FAW SB SWCB TAW WBC	---	LL RR2	5% structured-w/in, adj
Intrasect XTra	Cry1F Cry1Ab Cry34/35Ab1	BCW ECB FAW SB SWCB WBC *CEW*	RW	LL RR2	20% structured-w/in, adj
Intrasect XTreme	Cry1F Cry1Ab mCry3A Cry34/35Ab1	BCW ECB FAW SB SWCB WBC *CEW*	RW	LL RR2	5% structured-w/in, adj
AcreMax (AM)	Cry1F Cry1Ab	BCW ECB FAW SB SWCB WBC *CEW*	---	LL RR2	5% in the bag (RIB)
AcreMax RW (AMRW)	Cry34/35Ab1	---	RW	LL RR2	10% in the bag (RIB)
AcreMax1 (AM1)	Cry1F Cry34/35Ab1	BCW ECB FAW SB SWCB WBC *CEW*	RW	LL RR2	10% in the bag *(RW)* & 20% structured-½ mile *(CB)*
AcreMax TRIsect (AMT)	Cry1F Cry1Ab mCry3A	BCW ECB FAW SB SWCB WBC *CEW*	RW	LL RR2	10% in the bag (RIB)
AcreMax Xtra (AMX)	Cry1F Cry1Ab Cry34/35Ab1	BCW ECB FAW SB SWCB WBC *CEW*	RW	LL RR2	10% in the bag (RIB)
AcreMax XTrem (AMXT)	Cry1F Cry1Ab mCry3A Cry34/35Ab1	BCW ECB FAW SB SWCB WBC *CEW*	RW	LL RR2	5% in the bag (RIB)
YIELDGARD / GENUITY					
YieldGard CB (YGCB)	Cry1Ab	ECB SWCB *CEW FAW SB*	---	RR2	20% structured-½ mile
YieldGard VT Rootworm	Cry3Bb1	---	RW	RR2	20% structured-w/in, adj
YieldGard VT Triple	Cry1Ab Cry3Bb1	ECB SWCB *CEW FAW SB*	RW	RR2	20% structured-w/in, adj
Genuity VT Double PRO (or as RIB complete)	Cry1A.105 Cry2Ab2	CEW ECB FAW SB SWCB	---	RR2	5% structured-½ mile (or 5% in the bag (RIB))
Genuity VT Triple PRO (or as RIB complete)	Cry1A.105 Cry2Ab2 Cry3Bb1	CEW ECB FAW SB SWCB	RW	RR2	20% structured-w/in, adj (or 10% in the bag (RIB))
Genuity SmartStax RIB Complete	Cry1A.105 Cry2Ab2 Cry1F Cry3Bb1 Cry34/35Ab1	BCW CEW ECB FAW SB SWCB WBC	RW	LL RR2	5% in the bag (RIB)
OTHERS					
Smartstax (or as Refuge Advanced)	Cry1A.105 Cry2Ab2 Cry1F Cry3Bb1 Cry34/35Ab1	BCW CEW ECB FAW SB SWCB WBC	RW	LL RR2	5% structured-w/in, adj (or 5% in the bag (RIB))

Management of Corn Diseases

Fungicide Efficacy for Control of Corn Diseases (Revised April 2015)

The Corn Disease Working Group (CDWG) has developed the following information on fungicide efficacy for control of major corn diseases in the United States. Efficacy ratings for each fungicide listed in the table were determined by field testing the materials over multiple years and locations by the members of the committee. Efficacy ratings are based upon level of disease control achieved by product, and are not necessarily reflective of yield increases obtained from product application. Efficacy depends upon proper application timing, rate, and application method to achieve optimum effectiveness of the fungicide as determined by labeled instructions and overall level of disease in the field at the time of application. Differences in efficacy among fungicide products were determined by direct comparisons among products in field tests and are based on a *single application* of the labeled rate as listed in the table. **Table includes systemic fungicides available that have been tested over multiple years and locations. The table is not intended to be a list of all labeled products**[1]. Efficacy categories: NR=Not Recommended; P=Poor; F=Fair; G=Good; VG=Very Good; E=Excellent; NL = Not Labeled for use against this disease; U = Unknown efficacy or insufficient data to rank product

Fungicide(s)										
Class	Active ingredient (%)	Product/Trade name	Rate/A (fl oz)	Anthracnose leaf blight	Common rust	Eyespot	Gray leaf spot	Northern leaf blight	Southern rust	Harvest Restriction[2]
QoI Strobilurins Group 11	Azoxystrobin 22.9%	Quadris 2.08 SC Multiple Generics	6.0 - 15.5	VG	E	VG	E	G	G	7 days
	Pyraclostrobin 23.6%	Headline 2.09 EC/SC	6.0 - 12.0	VG	E	E	E	VG	E	7 days
	Picoxystrobin	Aproach 2.08 SC	3.0 – 12.0	VG	VG-E	VG	F-VG	VG	U	7 days
DMI Triazoles Group 3	Propiconazole 41.8%	Tilt 3.6 EC Multiple Generics	2.0 - 4.0	NL	VG	E	G	G	G	30 days
	Prothioconazole 41.0%	Proline 480 SC	5.7	U	VG	E	U	VG	G	14 days
	Tebuconazole 38.7%	Folicur 3.6 F Multiple Generics	4.0 - 6.0	NL	U	NL	U	VG	U	36 days
	Tetraconazole 20.5%	Domark 230 ME Multiple Generics	4.0 – 6.0	U	U	U	E	U	G	R3 (milk)
Mixed modes of action	Azoxystrobin 13.5% Propiconazole 11.7%	Quilt Xcel 2.2 SE Aframe Plus 2.2 SE	10.5 - 14.0	VG	VG-E	VG-E	E	VG	VG	30 days
	Cyproconazole 7.17% Picoxystrobin 17.94%	Aproach Prima 2.34 SC	3.4 – 6.8	U	U	U	E	VG	VG	30 days
	Flutriafol 19.3% Fluoxastrobin 14.84%	Fortix 3.22 SC	4.0 -6.0	U	U	U	E	VG	VG	R4 (dough)
	Pyraclostrobin 13.6% Metconazole 5.1%	Headline AMP 1.68 SC	10.0 - 14.4	U	E	E	E	VG	VG	20 days
	Pyraclostrobin 28.58% Fluxapyroxad 14.33%	Priaxor 4.17 SC	4.0 – 8.0	U	VG	U	VG	U	G	21 days
	Trifloxystrobin 32.3% Prothioconazole 10.8%	Stratego YLD 4.18 SC	4.0 - 5.0	VG	E	VG	E	VG	VG	14 days

[1]Additional fungicides are labeled for disease on corn, including contact fungicides such as chlorothalonil. Certain fungicides may be available for diseases not listed in the table, including Gibberella and Fusarium ear rot. Applications of Proline 480 SC for use on ear rots requires a FIFRA Section 2(ee) and is only approved for use in Illinois, Indiana, Iowa, Louisiana, Maryland, Michigan, Mississippi, North Dakota, Ohio, Pennsylvania, and Virginia.

Management of Small Grain Diseases

Fungicide Efficacy for Control of Wheat Diseases (Revised 3-31-15)

The North Central Regional Committee on Management of Small Grain Diseases (NCERA-184) has developed the following information on fungicide efficacy for control of certain foliar diseases of wheat for use by the grain production industry in the U.S. Efficacy ratings for each fungicide listed in the table were determined by field testing the materials over multiple years and locations by the members of the committee. Efficacy is based on proper application timing to achieve optimum effectiveness of the fungicide as determined by labeled instructions and overall level of disease in the field at the time of application. Differences in efficacy among fungicide products were determined by direct comparisons among products in field tests and are based on a single application of the labeled rate as listed in the table. Table includes most widely marketed products, and is not intended to be a list of all labeled products.

Efficacy of fungicides for wheat disease control based on appropriate application timing

Fungicide(s)												
Class	Active ingredient	Product	Rate/A (fl. oz)	Powdery mildew	Stagonospora leaf/glume blotch	Septoria leaf blotch	Tan spot	Stripe rust	Leaf rust	Stem rust	Head scab	Harvest Restriction
Strobilurin	Picoxystrobin 22.5%	Aproach SC	6.0 - 12	G[1]	--	VG[2]	VG	E[3]	VG	VG	NL	Feekes 10.5
	Fluoxastrobin 40.3%	Evito 480 SC	2.0 – 4.0	G	--	--	VG	--	VG	--	NL	Feekes 10.5 and 40 days
	Pyraclostrobin 23.6%	Headline SC	6.0 - 9.0	G	VG[2]	VG[2]	E	E[3]	E	G	NL	Feekes 10.5
Triazole	Metconazole 8.6%	Caramba 0.75 SL	10.0 - 17.0	VG	VG	--	VG	E	E	E	G	30 days
	Propiconazole 41.8%	Tilt 3.6 EC[4]	4.0	VG	VG	VG	VG	VG	VG	VG	P	Feekes 10.5
	Prothioconazole 41%	Proline 480 SC	5.0 - 5.7	--	VG	VG	VG	VG	VG	VG	G	30 days
	Tebuconazole 38.7%	Folicur 3.6 F[4]	4.0	NL	NL	NL	NL	E	E	E	F	30 days
	Prothioconazole19% Tebuconazole 19%	Prosaro 421 SC	6.5 - 8.2	G	VG	VG	VG	E	E	E	G	30 days
Mixed modes of action[5]	Metconazole 7.4% Pyraclostrobin 12%	TwinLine 1.75 EC	7.0 – 9.0	G	VG	VG	E	E	E	VG	NL	Feekes 10.5
	Fluxapyroxad 14.3% Pyraclostrobin 28.6%	Priaxor	4.0 - 8.0	G	VG	VG	E	VG	VG	G	NL	Feekes 10.5
	Propiconazole 11.7% Azoxystrobin 13.5%	Quilt Xcel 2.2 SE[4]	10.5 - 14.0	VG	VG	VG	VG	E	E	VG	NL	Feekes 10.5
	Prothioconazole 10.8% Trifloxystrobin 32.3%	Stratego YLD	4.0	G	VG	VG	VG	VG	VG	VG	NL	Feekes 10.5 35 days
	Cyproconazole 7.17% Picoxystrobin 17.94%	Aproach Prima SC	3.4-6.8	VG	--	VG	VG	E	VG	--	NR	45 days

[1]Efficacy categories: NL=Not Labeled; NR=Not Recommended; P=Poor; F=Fair; G=Good; VG=Very Good; E=Excellent; -- = Insufficient data to make statement about efficacy of this product.

[2] Product efficacy may be reduced in areas with fungal populations that are resistant to strobilurin fungicides.

[3]Efficacy may be significantly reduced if solo strobilurin products are applied after stripe rust infection has occurred.

[4]Multiple generic products containing the same active ingredients also may be labeled in some states. Products including tebuconazole include: Embrace, Monsoon, Muscle 3.6 F, Onset, Orius 3.6 F, Tebucon 3.6 F, Tebustar 3.6 F, Tebuzol 3.6 F, Tegrol, and Toledo. Products containing propiconazole include: Bumper 41.8 EC, Fitness, Propiconazole E-AG, and PropiMax 3.6 EC. Products containing propiconazole + azoxystrobin include: Aframe Plus, Avaris 2XS.

[5]Products with mixed modes of action generally combine triazole and strobilurin active ingredients. Priaxor is an exception to this general statement and combines carboxamide and strobilurin active ingredients.

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CALENDAR OF EVENTS

June 4 **Small Grains Field Day** **DEC Credits** Musgrave Research Farm, 1256 Poplar Ridge Rd., Aurora 9:30am-12:00pm Learn about the latest research and management practices for small grains at the Musgrave Research Farm in Aurora. DEC and CCA credits will be available to participants.

July 7-11 **Cortland County Junior Fair,** 4849 Fairground Ave., Cortland, NY
Fore more information visit **http://www.cortlandfair.com/**

July 7-11 **Tioga County Fair,** Marvin Park, Owego, NY
For more information visit **http://www.tiogacofair.com/**

July 14+15 **2015 North American Manure Expo,** Chambersburg, PA
For more information and registration details visit
http://www.manureexpo.org/

July 21-25 **Tompkins County 4H Youth Fair,** 4H Acres, 418 Lower Creek Rd., Ithaca, NY
For more information **visit http://ccetompkins.org/4-h-youth/activities-events/4-h-youth-fair**

Aug 1 **Farm City Day,** Carey's Farm, 305 Lick St., Groton, NY
For more information visit **http://ccetompkins.org/agriculture/events/farm-city-day**

Aug 4-9 **Chemung County Fair,** Fairgrounds, 170 Fairview Rd., Horseheads, NY
For more information visit **http://www.chemungcountyfair.com/**

May-1st Cut **Monitoring Alfalfa Heights—**to receive weekly email/text updates, please contact us at 607.75.5078 with your email address/cell phone number. See page 2 for more information.

Save the Date! OSHA Regulations Workshop

Week of August 24-28, 2015, Hosted by McMahon's E-Z Acres, Homer

The team is organizing a workshop focusing on OSHA regulations on dairy farms. Pro-Dairy Staff Karl Czymmek and Jim Carraba from NYCAMH will be speaking on the Dairy Dozen, farm safety and what to do to be compliant with OSHA standards. We will also have a farm that went through an unplanned OSHA inspection to talk about their experience and what they did to get and stay in compliance. Producers that attend can claim the safety session as training for their own records. For questions, call Betsy at 607.753.5213 or email bjh246@cornell.edu.