It was great to see a lot of hay made over the 4\textsuperscript{th} of July weekend; but then reality hit when some farmers got over 2 inches of rain on the hay they were trying to make on Monday afternoon. I hope the weather straightens out as the quality of the hay is dropping every day. A lot of fields were not plant this year due our wet weather, I would encourage farmers to read Alan Sundermeier’s article titled “Cover Crops for Prevented Acres.” This is an excellent article; one that is very timely. Hope everyone has a good week.

David Marrison, AG Educator

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\textbf{When Is It Too Late to Fertilize Corn with Nitrogen?}

By Steve Culman & Peter Thomison

Heavy rainfall over the past several weeks has left many producers across the state with few opportunities to side dress their corn with nitrogen. To make matters worse, excessive water means that significant soil nitrogen has likely been lost through denitrification and/or leaching. It’s not uncommon or surprising to see standing corn crops with severe yellowing, indicating some level of nitrogen deficiency. Most of the corn in the state has grown too tall for standard application equipment to pass over without crop damage, and some corn is entering late vegetative stages. Given all this, when is it too late to fertilize corn with nitrogen?

Numerous studies have shown that late season nitrogen rescue applications often pay off. Studies from the University of Missouri and elsewhere have shown that broadcast applications of urea or dribbling on 28% UAN are effective strategies for providing corn with late season nitrogen. Some leaf burn may occur with broadcast urea, but this translates into very little yield loss, if any.

But how late is too late? Trials applying nitrogen as late as tasseling show that this can still be very effective, but after tasseling application has yielded mixed results. Nitrogen uptake slows considerably after tasseling, as the plant shifts focus from soil nitrogen uptake through roots, to translocation of stored nitrogen in vegetative parts into grain. And what about the rate? If no nitrogen has been applied via side dress, full or nearly full nitrogen rates are recommended. Although it is difficult to determine how much soil nitrogen is lost with wet conditions, additional nitrogen may be applied to counter the losses in those extremely wet conditions.
Scabby Wheat Grain? Increasing your Fan Speed May Help
By Pierce Paul

Wheat harvest in now in progress and will continue over the next several days before and after the next showers. Early reports on grain quality indicate that a few fields may have moderate levels of scabby grain, and consequently could have vomitoxin contamination above thresholds set by grain buyers. The threshold set by the US Food and Drug Administration for harvested grain intended for animal and human consumption is 2 ppm, but elevators may accept grain with slightly higher levels, depending on how big of a problem we have and whether or not they can find clean grain to blend. Although head scab was not widespread across the state this year, there were a few small pockets with 10 to 15% scab incidence (10 to 15 out of every 100 heads with some amount of scab). These will likely be the fields with the biggest grain quality and vomitoxin problems.

In addition, the rains we have had over the last few weeks may have contributed to making the situation worst, increasing scabby grain and vomitoxin levels and reducing test weight beyond what you would expect based on the observed levels of scab.

Remember, scab causes kernels in affected heads to become small, shrunken, lightweight, discolored (whitish and pinkish), and contaminated with vomitoxin (and other mycotoxins). So, in general, the more scab you have, the more damaged kernels you will see in your grain lot, and high levels of damaged kernels are often associated with high levels of vomitoxin contamination. However, scab is not the only thing that reduces grain quality. Other late season diseases such as Stagonospora and well as poor weather conditions in the weeks leading up to harvest may also cause kernels to become shrunken and lightweight. So before you start worrying about vomitoxin or even thinking about abandoning your crop, examine your grain lot for the presence of chalky-white, pinkish kernels; this would be a good way to tell whether you have a grain quality problem and whether it is due to scab or some other factor.

Before you begin to harvest, collect and thresh multiple heads (two to three handfuls) from multiple locations across your field and examine the grain for discoloration. If you see a lot of small, shriveled, discolored kernels, you should consider increasing your fan speed during harvest to blow them out. Research in the cereal pathology lab at OSU/OARDC showed that when harvesting wheat from scabby fields, increasing the fan speed and air flow through the combine can reduce the amount of scabby kernels and vomitoxin in the grain lot by an average 30 to 45%, and increase test weight by about 6%. This could reduce price discounts by up to 50%, depending on how badly damaged the grain is. However, there is a limit to which you could increase the fan speed without blowing out healthy kernels, so unless you have to, do not increase the fan speed beyond the default wheat setting of your combine. Usually, if you have less than 5% scabby kernels in your sample, you will not see a major benefit from increasing the fan speed.

Harvest suspect fields separately from healthy fields, and make sure you dry the grain down to below 15% moisture before storage. Store dried grain at cool temperatures (35-45F). This will reduce the risk of further mold growth and mycotoxin problems in storage.

References:
http://plantsci.missouri.edu/nutrientmanagement/nitrogen/loss.htm
https://www.agry.purdue.edu/ext/soilfertility/news/Late-seasonnitrogen.pdf
Cover Crops for Prevented Acres
by Alan Sundermeier

Excessive rainfall and prolonged ponding conditions this spring have resulted in many fields remaining unplanted to corn or soybeans this season. These “prevented planting” acres, while unfortunate for this year’s production, should be managed in ways to prevent further soil degradation and to increase soil productivity for next year. Cover crops are an excellent option for producers to consider for protecting their soil and increasing productive capacity for succeeding years. This article from Purdue University briefly describes the benefits of growing cover crops compared to leaving the soil bare and fallow, and then it provides guidance on selecting and seeding cover crops for prevented planting acres: https://ag.purdue.edu/agry/extension/Documents/PreventedPlantingCovers2015.pdf

Choose your cover crops, seeding dates and rates, with the following tools:
Midwest Cover Crops Council Decision Tool, http://www.mccc.msu.edu/selectorINTRO.html (Choose cover crops for your particular goals, planting dates for your county)

Indiana NRCS Cover Crops Seeding Calculator, calculate seeding rates for each species in a mix:

Additional Resources
Midwest Cover Crops Council: http://www.mccc.msu.edu
Herbicide carryover: A good Extension publication from Penn State that fits Indiana is: http://extension.psu.edu/plants/crops/soil-management/cover-crops/herbicide-persistence/herbicide-carryover-table
Purdue Extension cover crops: https://ag.purdue.edu/agry/extension/Pages/cover_crops.aspx

Moisture Levels in Hay
Daniel Lima OSU Extension Educator, Belmont county

We had a very wet June this year and baling hay has been a tough thing for most farmers in the state. Moisture levels have a direct effect on hay quality. What I have found to be a consistent number in the literature is 20% moisture maximum. To be more specific:
Small squares to be 20% or less,
Large round, 18% or less and
Large squares, 16%

Hay baled at 20% moisture or higher has a high probability of developing mold, which will decrease the quality of hay by decreasing both protein and total nonstructural carbohydrates (TNC) AKA energy! The mold will also make the hay less palatable to livestock and could potentially be toxic, especially for horses. Even hay baled between 15%-20% moisture will experience what is known as "sweating". Sweating, in regard to hay bales, refers to microbial respiration, which will create heat and result in dry matter (DM) loss. A good rule of thumb is that you should expect a 1% DM loss per 1% decrease of moisture after baling. As an example, hay baled at 20% moisture that is stored and dried down to 12%; will result in 8% DM loss.

Understandably, June was a double edged sword in regards to losing quality by not baling, or losing quality by baling with moisture levels that are too high. Therefore, my recommendation to ensure adequate livestock nutrition this winter is to have a forage analysis done on the hay baled this year. Once you have those results, develop a corresponding supplemental feed program, if necessary, based on the nutritional requirements of your livestock.
Western Bean Cutworm Flight Has Begun  
By Andy Michel

Our trapping network has started to catch western bean cutworm (WBC) adults, meaning that flight is underway. WBC emergence occurs, for the most part, during July, although it can be extended into August, so we expect our counts to increase. Females lay eggs on corn, and, after hatch, the larvae feed on the tassel, pollen or silk before entering the ear. Late season damage can be quite substantial, as shown in the figure.

From our previous seasons, we have not seen tremendous damage from WBC. Most adults are caught north of US-30, which is about the upper 25% of OH. Additionally, damage reports have centered on extreme northwest and northeast OH, but only a few fields have had economic damage. The extreme rainfalls in June have led to poor or delayed corn development in some areas, or perhaps replants. Females prefer to lay eggs in pre-tassel corn, so any corn that has not tasseled by the 3rd or 4th week of July (which is usually peak flight) is at high risk for WBC infestation.

The best way to control WBC is to scout corn for the presence of egg masses. Egg masses appear in clumps of 25-100, and are first white, then turn purple within 24 hours of hatching. Inspect 20 plants in 5 locations—if 5-8% of the corn has an egg mass, then treatment might be necessary. Bt corn can be a good option, but only varieties with the Cry1F gene or Vip3A will offer control against WBC. See our fact sheet (http://ohioline.osu.edu/ent-fact/pdf/ENT_40_14.pdf) for more information.

How Liquid Are Our Farmers?  
By Paul Neiffer, CPA  
Source: http://www.farmcpatoday.com/2015/07/06/how-liquid-are-our-farmers/

I was browsing the latest publication from the Kansas City Federal Reserve on the Farm Economy. Nathan Kauffman released a report on June 25, 2015 titled “Today's Corn Prices, Yields Look Like 2009”. Although the gist of the article detailed how corn prices and yields for 2015 look very similar to 2009 (at least until the last week), the part I focused on was chart 2 showing the current ratios of farmers by age for 2012 and 2013 compared to a 1996-2006 average. During the ten-year average, the current ratio for all ages was near the 2:1 level. The current ratio compares the total current assets (cash, accounts receivable, inventories and prepaid expenses) divided by total current liabilities (farm operating line of credit, accounts payable and accrued liabilities plus the current portion of long-term debt that is due this year). Normally, the higher this ratio the better.

During 2012, these ratios exploded higher especially for older farmers. Farmers between age 45-65 saw their current ratio grow from about 2 to slightly more than 4 and for those farmers older than age 65 saw their current ratios jump to 8:1.

During 2013, the current ratio for farmers over age 65 saw their ratio fall back to 5:1 and for almost all other farmers, it fell back to the 2:1 area. I have a feeling that the current ratio for 2014 data will show even a greater reduction in the ratio.

Liquidity is the lifeblood of a farm financial structure. It is like oil in an engine. If you have a enough of it, the engine runs well and you have access to all of the horsepower. If you run out of it or don’t have enough, the engine either runs at a lower capacity or finally seizes up and stops running. If a farm runs out of liquidity, then the overall farm operation will be like the engine with low or no oil.

You can add more liquidity by any combination of the following: 
• Appropriate mid/long-term borrowing on equipment or land,
• Net income that is retained by the operation,
• Sale of long-term assets,
• Equity infusion by current/new owners

How does your operation compare to these trends. Don’t wait to long to fix it.

Invasive Insects Workshop Set for July 23 in Chardon, Ohio
The Ohio Woodland Stewards Program will present FOREST HEALTH: Invasive Insects--a workshop for landowners faced with the challenge of numerous invasive insects changing their wooded landscape. The workshop will explore what you can do about the insects that are here in Ohio as well as those in nearby states. An outdoor afternoon field trip will explore the wooded area at Big Creek Park to see the impacts of some of these insects. The workshop begins with registration at 8:30 a.m., July 23 at the Big Creek Park, Geauga Park District, 9160 Robinson Road, Chardon.

Pre-registration is required by July 16. Cost is $35 per person, which includes educational materials and lunch. For more information, contact 614-888-3421, ohiowoods@osu.edu, or go to http://woodlandstewards.osu.edu to register online and to download the brochure. Several payment options are available. The agenda includes: Introduction to Invasive Insects, Emerald Ash Borer, Asian Longhorned Beetle, Viburnum Leaf Beetle, Spotted Lantern Fly, Thousand Canker Disease, Hemlock Woolly Adelgid, Gypsy Moth, What To Do If You Find One, and In the Field – Impacts of the Insects on the Forest.

The instructors are Kathy Smith, forester and director, Ohio Woodland Stewards, and Erik Draper, assistant professor, Geauga county director and Extension horticulture educator, both with Ohio State University Extension. Participants in the Ohio Forest Tax Law program are eligible for five hours of continuing education credit. OSU Extension sponsors the Ohio Woodland Stewards Program in cooperation with the Ohio Division of Forestry to help people manage their trees, forests and related resources.

Vegetable of the Week- Tomato
By Cindy Meyer, meyer.842@osu.edu

One of the most commonly grown veggie plants is the tomato. Tomatoes are nutritious and very versatile. From stew, salsas, ketchup, juice, to eating them fried, they are a nice addition to the dinner table especially when you can open a can of homegrown tomatoes for a dish in the winter. They come in variety of different colors from yellow (my favorite), orange, black, purple, to red. Sizes range from cherry types to giant beefsteak types, with one slice covering a whole sandwich.

There are so many varieties of tomatoes and each year more become available. Newer or more modern cultivars as opposed to heirloom varieties offer more disease-resistance, which can help cut down on the instances of disease in your tomato plantings, especially in wet, humid weather patterns like what we have been experiencing over the last few weeks across the State. Tomatoes can also be classified according to their growth habit. Determinate make great patio tomatoes because they reach a certain height and stop growing. They also typically set all their fruit within a couple of weeks’ time once mature. Indeterminate tomato plants continuously grow and produce more fruit. These types do better if they are staked and are in a raised bed or even better yet an in-ground garden where they have more space.

Tomatoes grow best in well-drained, fertile soils but will do just fine in most types. Tomatoes also generally ideally grow in a slightly acidic soil with a pH of 6.2 - 6.8. Tomato plants require full sun, meaning the more sunlight they receive, they better they will perform. The planting site should receive at least 6 - 8 hours of direct sunlight per day.
Ashtabula County
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Stephanie Glotz

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