Hello, Northeast Ohio Counties!

Well, it was a hot humid weekend but it was dry enough to get some hay in the barn. Despite a few scattered showers on Saturday it was a pretty good weekend for baling hay. Even though the hay is baled and stacked, monitoring for moisture and temperature during the “sweating” period is important to prevent moldy hay or even a barn fire. David has a great write-up this week in his article that details the importance of proper moisture and temperature.

We will be placing Western Bean Cutworm (WBCW) traps out this week. In the next couple of weeks we will be reporting out trap counts right here in the newsletter.

Lee Beers & David Marrison
Extension Educators
Ag & Natural Resources
**Hay Moisture Levels**

By: **Chris Penrose**, OSU ANR Extension Educator, Morgan County and **Dan Lima**, OSU ANR Extension Educator, Belmont County

Source: [http://u.osu.edu/beef/2018/06/13/hay-moisture-levels-2/#more-5330](http://u.osu.edu/beef/2018/06/13/hay-moisture-levels-2/#more-5330)

With the limited opportunities and short windows many have had to make hay so far this year, some hay may have been made at higher moisture levels than we would like. Moisture levels have a direct effect on hay quality. What we have found to be a consistent number in the literature is 20% moisture maximum. To be more specific:

1. Small squares to be 20% or less,
2. Large round, 18% or less and
3. 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.

What happens if we bale hay and the moisture content is too high? Bad things. If lucky, maybe the hay will only mold, but if it is too moist and starts heating, it could catch fire. If the hay heats to 100-120 degrees F, it will be fine; if it goes above that, monitor daily. Once it gets to 140 degrees F, consider tearing down the stack. At 150-160 degrees F, call the fire department, and once it gets to 160 degrees F, there will be smoldering pockets and hot spots, and gases will ignite hay when exposed to air (source: Washington State University Extension, Steve Fransen and Ned Zaugg).

It can be 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, our 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.

OSU Extension Educators, Clif Little and Rory Lewandowski, have developed two videos to help answer questions regarding forage testing, and subsequently interpreting the results of the test(s). These videos can be obtained at: [http://u.osu.edu/beef/2018/06/13/hay-moisture-levels-2/#more-5330](http://u.osu.edu/beef/2018/06/13/hay-moisture-levels-2/#more-5330)
It's probably not Frogeye Leafspot and no Brown Spot IS NOT an economically important disease

By Anne Dorrance

As farmers and consultants have been out checking their soybean stands, they are finding spots on the leaves. The most common spotting on the unifoliates and first leaves is caused by *Septoria glycines*. This is a fungus that overwinters on the previous soybean crop residue and in modern cultivars it is limited to the lower canopy. We’ve done extensive studies on this disease over the past decade and I have yet to attribute an economic value in managing this. We did this one experiment where put chlorothalonil on every week (not a legal application but for research purposes only) and could only measure a 3 to 4 bu increase when the soybean plants were totally clean of this disease. Secondly, applications of herbicide plus fungicide did not manage this disease throughout the season nor do the R3 applications. At today’s fungicide application costs and soybean prices, this is a hard one to even break even on.

The one disease we have gotten substantial response to fungicide applications, is with frogeye leaf spot. There are a few high yielding soybean cultivars that are very susceptible to this disease. Yield losses of 8 to 35 bushels have been recorded. The fungus that causes this disease can overwinter in Ohio, this was confirmed by studies in Illinois as well. This fungus, *Cercospora sojina*, can also spread via large storm fronts, hurricanes from southern states where it can build up and the spores can be carried to new areas. This happened in 2005 and...
again last summer based on my own scouting of test plots. The symptoms are gray centers surrounded by a deep purple circle which forms the lesion. Under high moisture conditions, the spores of the fungus will form in the lesion on the underside of the leaves, actually look like whiskers. There are a few herbicides, adjuvants, foam markers that under the right conditions will cause similar looking symptoms. The easiest way to check is to place leaves with these symptoms in a plastic bag and see if they form the whiskers – or spores overnight. These bags just need humidity – not a lot of free water. Also note, this fungus will infect new leaves and if it is established with every rain event there will be continual infections of the new foliage.

To manage this disease, foliar applications at R3 have been very good in Ohio at managing this pathogen. One note is that we have documented that strobilurin resistance is here in Ohio, so if you have any questions please send us these leaves, we do have time to test the fungicide sensitivity before you will need to spray.

**Soybean Tariff: How Much Could it Cost an Ohio Farmer?**

By: Alayna DeMartini  

An Ohio farmer could lose more than half of his or her annual net income if the threatened 25 percent tariff is imposed on U.S. soybeans and corn in China, a study from The Ohio State University has found.

Researchers with the College of Food, Agricultural, and Environmental Sciences (CFAES) have projected a 59 percent loss in annual net farm income based on historical trends in yields on corn and soybeans and projections for price drops in both commodities.

For the study, the researchers compiled data from six Ohio corn and soybean farms of similar size and created a representative Ohio farm comprised of 1,100 acres split evenly between corn and soybeans. They used the representative farm to determine the financial toll a tariff could take on an Ohio farm.

Net annual income on that representative Ohio farm was projected to drop from $63,577 to $26,107 under the proposed tariff, according to the study performed by Ben Brown, manager of
CFAES’s farm management program and Ian Sheldon an agricultural economist, who serves as the Andersons Chair in Agricultural Marketing, Trade and Policy in CFAES.

Across Ohio, the loss of soybean exports to China would be an estimated $241 million annually. The study is the first to show the financial impact a 25 percent tariff on China’s imports of U.S. soybeans and corn could have on an Ohio farmer and on the entire state.

“There are farmers who are struggling across the state,” Brown said. “If the proposed tariffs go into effect, we’re going to have farmers who will have to exit the industry.” The financial losses stem from an expected drop in Chinese demand for U.S. soybeans and corn and in the world price for both crops. “The biggest impact will be on profits from soybeans, however corn is affected too,” Brown said.

Soybeans are Ohio’s largest crop and the state’s top agricultural export. In April, China announced it would impose a 25 percent tariff on U.S. soybeans, corn and over 100 other American products. That was in response to the tariffs that the administration proposed on a range of Chinese imports valued at $50 billion. Other international trading partners, including Canada, the European Union, and Mexico have recently announced retaliatory tariffs in response to U.S. tariffs on steel and aluminum imports as well, that could also dip into the profits of Ohio farmers.

The losses from soybeans sales are projected to be far greater than for corn. Every year, 31 percent of the soybeans and 2 percent of the corn Ohio produces are exported to China. China is the largest buyer of soybeans in the world, and Brazil is its top supplier with the United States being second. If China imposes the threatened 25 percent tariff on U.S. soybeans that will drive up the price that Chinese companies have to pay for U.S. soybeans and encourage them to buy even more soybeans from Brazil, Brown said.

“The U.S. remains the largest producers of soybeans, but it is safe to say that Brazil could become the number one producer of soybeans in the world with increased demand for their products,” said Brown, who along with Sheldon are in the Department of Agricultural, Environmental, and Development Economics within CFAES.

The United States may not be able to regain its share in selling soybeans to China, Sheldon said. He pointed to how the United States lost market share for its beef beginning in 2003 following Japan’s ban on imports of U.S. beef due to cases of mad cow disease in the United States. Taking advantage of the opportunity, Australia was able to increase its exports of beef to Japan, and the United States has not regained its share in that market, Sheldon said.
“Why lose market share when you’re competing as well as you can,” Sheldon said of U.S. exports of soybeans and the prospect of a trade war with China. “It doesn’t make a whole lot of sense to me.”

**Phytophthora Blight First 2018 Report in Ohio – Huron County**

By Sally Miller, OSU Plant Pathologist


Phytophthora blight was diagnosed last week in pepper plants from Huron County, Ohio. This is several weeks earlier than we normally see Phytophthora blight in northern Ohio, but heavy rains and periods of high temperatures likely contributed to an early appearance of the disease. Growers should scout both peppers and cucurbits for typical symptoms of Phytophthora blight. *Phytophthora* is a water mold that thrives under conditions of high moisture and high temperature. It produces motile spores (zoosporangia) that are attracted to plants, then form a structure that allows them to infect, and aggressively attack any type of plant tissue. Zoospores can be splashed onto leaves, stems and fruits during rain events and overhead irrigation. Phytophthora blight is often seen first in low spots or other poorly drained areas of production fields, but the disease also occurs on well-drained, even sandy soils if the environmental conditions are right. An integrated, preventative program to manage Phytophthora blight is more effective than in-season rescue treatments with fungicides. During the growing season, fungicide application is the main option for management of Phytophthora blight (see below). In small plantings prompt removal of diseased plants is also recommended.

Effective management of Phytophthora blight in peppers requires an integrated approach:

**Crop rotation.** *Phytophthora* produces structures called oospores that can survive for a number of years in the soil. Plan to rotate out of peppers, cucurbits or green beans for 4-5 years if Phytophthora blight has been a problem.

**Resistant varieties.** A few pepper varieties are resistant to the root rot phase of the disease. In general, these varieties are susceptible to the crown rot phase, which affects foliage and fruits. Varieties with moderate to good resistance to Phytophthora blight are: Paladin, Aristotle, Declaration, Intruder, Vanguard (bell); Hechicero (jalapeño); and Sequoia (ancho).

**Well-drained soil.** Avoiding standing water is critical to limiting the movement of *Phytophthora* from plant to plant.
Avoid surface water for irrigation. We have found *Phytophthora* in irrigation ditches and ponds as early as late June in vegetable production-intensive areas in Ohio. Using surface water for irrigation is risky, especially if *Phytophthora* is present in fields near surface water sources.

**Plant on raised beds.** Prepared properly, raised beds will help prevent standing water near pepper plants. If possible beds should be domed, and there should be no depressions in the soil surrounding the plants.

**Sanitation.** *Phytophthora* can be moved from an infested field to a clean one on soil clinging to boots, equipment, etc. Power washing to remove soil is a good first step, followed by rinsing with a sanitizer. Do not build cull piles containing discarded peppers or cucurbits – plant material needs to be disposed of, preferably by burying, far from fields and surface waters.

**Fungicides.** There are a number of fungicides labeled for use on peppers to manage Phytophthora blight (see table below). The newest product, Orondis, has very good efficacy against this disease. It is available as a pre-mix with either Revus (Orondis Ultra), Ridomil (Orondis Gold) or Bravo (Orondis Opti). There are many restrictions on the use of Orondis – including the number of applications (no more than 1/3 of total applications for Phytophthora blight) and when it can be applied (to the soil or to the foliage but not both). Orondis Ultra and Orondis Gold can be applied in transplant water or through the drip, although Orondis does not move much in soil and emitters need to be right next to the plant. If the pepper variety is susceptible to Phytophthora blight, it may be a good idea to apply Orondis Gold or Orondis Ultra at planting, and follow up later with a program containing at least two of the fungicides with activity against Phytophthora (see table). If the pepper variety is resistant to Phytophthora, any of the three Orondis products can be used in a foliar fungicide program that includes other effective fungicides. The Bravo component of Orondis Opti will not help with Phytophthora blight, but will control anthracnose. Orondis Gold is considerably more expensive than Orondis Ultra and Orondis Opti, and resistance in Phytophthora to the Ridomil component of Orondis Gold has been found in numerous locations.
For in-season control where an at-plant application of one of the Orondis products has not been made, foliar applications can be very effective if undertaken preventatively. Results of our research in 2016/2017 on squash indicated that Orondis Ultra could be alternated with Presidio, Ranman or Tanos + Kocide with equivalent results (see chart Squash Phytoph Orondis foliar 1 slide-2eauh2g).

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Multiflora Rose Problems in Pastures? Control it Now!

By: Dwight Lingenfelter, Penn State Extension Associate, Weed Science

As spring progresses, multiflora rose aggressively grows and eventually blooms in late May/early June. Several tactics can be used to control this problem weed and these methods will be briefly discussed.

Mechanical control methods include mowing, which requires repeated mowings per season for several years, and excavating, which involves pulling individual plants from the soil with heavy equipment, can be costly, time-consuming and laborious. However, these are viable means for multiflora rose management. Also, management techniques which include biological controls have been used. Two of the more prominent biocontrol agents are rose rosette disease (RRD) and herbivores such as goats or sheep. RRD is a virus which is slowly spreading in our region of the country. Multiflora rose plants infected with RRD usually die within two years. Though RRD may not eradicate the multiflora rose problem, it should help reduce it over the long run. If managed properly, goats and sheep can help control multiflora rose. Research has shown that initially 8 to 10 goats and/or sheep pastured with compatible livestock (cattle) can help reduce rose and other brushy infestations.

Although the above control practices help, several herbicides provide good control of multiflora rose, especially when applied during the bud to bloom growth stages.

Three foliar applied herbicides suggested for late-spring/summer are:

- metsulfuron (Cimarron Plus)
- Crossbow
- Glyphosate

Glyphosate has been more effective in Penn State research at fall application time. Products like Milestone and ForeFront generally are not as effective on multiflora rose; while 2,4-D and dicamba (Banvel/Clarity) are not effective.

Metsulfuron (sold as a generic or as Cimarron Plus) provides good control of multiflora rose and can be used as a broadcast or spot treatment. For best control apply either product at a rate of 1 oz/A plus a surfactant for broadcast treatments or 1.0 oz/100 gallons water plus surfactant for spot treatments. Applications should be made in the spring, soon after plants are fully leafed-out. Rose plants must be less than 3 feet tall for treatment to be effective. There is no application to grazing interval for metsulfuron.
Foliar applications of Crossbow can be effective on multiflora rose. For spot treatments, use 4 to 6 fl oz/3 gallons water and spray until foliage is uniformly wet. For broadcast applications, use 1.5 to 4 gallons of Crossbow in enough water to deliver 10 to 30 gallons of spray per acre. Early to mid-June is an excellent time to make these applications. Follow-up treatments may be necessary. An interval of 14 days is required for lactating dairy if using 2 gallons/A or less.

Glyphosate can be used as spot treatments on isolated patches of multiflora rose. Apply a 1 percent solution (about 1 qt/25 gallons water) of glyphosate with a hand-held sprayer. Uniformly wet leaves and green stems, but avoid runoff. Application should be made in late summer or early fall when plants are actively growing (after fruit formation). A 7-day interval is required for grazing animals.

No matter which control tactic is used, follow-up maintenance practices are a must for long-term control. Removal of dead brush, annual mowing and adequate soil fertility are examples of practices that should be used to maintain control of multiflora rose and in turn, will encourage pasture growth.

For more information on multiflora rose and its management refer to the publication Multiflora Rose Management in Grass Pastures which can be accessed at: https://extension.psu.edu/multiflora-rose-management-in-grass-pastures-an-integrated-approach

**Ashtabula County Beekeepers Association to Meet on June 23 in Jefferson**

The Ashtabula County Beekeepers Association will hold their next meeting on Saturday June 23, 2018 at the Jefferson United Methodist Church located at 125 E. Jefferson Street in Jefferson, Ohio. A potluck dinner will begin at noon followed the meeting at 1:00 p.m. The featured speaker for this meeting will be Peggy Garnes, VicePresident OSBA, who will present on Sustainable Nucs. The next meeting will be held on July 21, 2018

**David’s Weekly News Column**
For Publication in the Jefferson Gazette on June 20

Hello, Ashtabula County! One of the biggest hurdles that farmers have to overcome each year is the weather. For the 2018 cropping season, our farming has been a holiday experience. So, what do I mean by this? We have had two major windows to plant crops and make hay across the county. Can you guess when the two windows were? If you guessed the days leading into and the weekends of Memorial Day and Father’s Day, than you are very correct! I know in both
cases, many picnics and family gatherings happened around the tractor versus the comfort of the backyard.

Last week was a critical week for local farmers. After the showers passed on Wednesday, our farmers went full tilt to plant soybeans and make hay. Outside of a weird weather day on Saturday, we had a nice window to get a lot of field work done. It has been a struggle this year due to excessive rain, so last weekend was a blessing.

It has especially been challenging for farmers making hay as during this time of the year it takes at least a couple days for hay to dry enough to bale. I can personally tell you how stressed farmers are when making dry hay as it seems like the weather forecast is always changing.

As an example, when I looked at the forecast last Wednesday, it said no rain until Monday evening. As soon as we had the hay on the ground, the forecast changed and predicted a chance of rain on Saturday! Panic then set in as I had calculated that I would need until Saturday to get it dry enough. Thankfully, we had beautiful temperatures, low humidity and bountiful winds on Thursday and Friday, which allowed us to get the hay baled on Friday. Thank goodness for vacation days.

One of the questions I get from farmers, especially those new to making hay is how do you know when it is dry enough to make. This is the exact question I would ask my dad as a kid. While he was able to tell me the text book answer on moisture levels, he also taught me how to judge when it was ready by its feel, smell, and sound. I think it is so appropriate to have the chance to make hay on father’s day weekend as making hay with my dad is still one of my fondest memories. For new folks getting into making hay. Find a farmer who has been making hay all their life and volunteer to help them. Exchange your labor for learning the “art” as you will never find what is meant by the feel, smell and sound of hay making in a text book.

So, now for the science. There are different recommendations for moisture levels depending on the size of the bale. Small square bales should be at 20 percent or less moisture, large round bales at 18 percent or less moisture, and large square bales at 16 percent or less moisture.

My colleague Chris Penrose recently shared some of the

Northeast Ohio Agriculture

OHIO STATE UNIVERSITY EXTENSION
Ashtabula and Trumbull Counties
risks for baling hay too wet. The first is that 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. The mold will make the hay less palatable to livestock and could potentially be toxic, especially for horses.

Even hay baled between 15% to 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 loss. It is not uncommon for internal temperatures to reach 110 degrees while the bales “sweat.” For hay made over 20% the sweating increases and can drive the temperature up which can lead to bad things. The first is mold but the second is fire! Once the hay heats over 145-150 degrees the risk for fire escalates.

Our weekly e-newsletter over the past few weeks has shared a lot more science on hay making. Last week, we featured why you should dry hay in as wide of a windrow as possible and this week we featured Chris Penrose’s article on hay moisture. Back issues of our newsletter can be found at: go.osu.edu/ag-news

To close today’s column, I would like to share a quote from Hedy Lamarr who stated “I am not ashamed to say that no man I ever met was my father's equal, and I never loved any other man as much.” Have a good and safe day!

**Upcoming Extension Program Dates**

The following programs have been scheduled for Northeast Ohio farmers. Complete registration flyers can be found at: [http://ashtabula.osu.edu/program-areas/agriculture-and-natural-resources/upcoming-educational-programs-deadlines](http://ashtabula.osu.edu/program-areas/agriculture-and-natural-resources/upcoming-educational-programs-deadlines)

Soil Health Testing Field Day - Wednesday, July 11, 2018

Cattlemen’s Meeting & Tour – Thursday, August 30, 2018