Ag Notes
Harford County Newsletter

UNIVERSITY OF MARYLAND EXTENSION

July 2018

University of Maryland Extension

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M—F 8:00 a.m.—4:30 p.m.

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INSIDE THIS ISSUE:

Hello, Harford County!

The Extension Office will be closed on July 4 in observance of Independence Day

July 4th marks the historic Declaration of Independence of the American Colonies from Great Britain and marks the birth of our Country. We can all recall in history class learning about the Revolutionary War; its significant battles, politics, people, tactics, and events that led to an American victory. But what is also interesting about the Revolutionary War is how agriculture contributed to American independence and the challenges and opportunities the War presented to the American Farmer.

Of the approximately 2.5 million people living in the US Colonies during the American Revolution, about 90% of them were farmers. Many of them were small farms that raised food for their own family, but some were large plantations and produced products for trade and export. Export of agricultural goods to overseas markets became an important and vital part of the Colonies' economy, and would contribute greatly to the War effort. Merchants would often trade agricultural goods for manufactured goods from the more industrialized countries. American agricultural products in these markets were in high demand. As a matter of fact, British law required all exported tobacco from Maryland and Virginia to be shipped directly to Great Britain or another British colony.

In the New England and middle Colonies, their major exports consisted of fish and grain, and were actually forbidden by law to enter Britain except in times of crop failure. As a result, they exported to locations outside of the British Empire. In the deep southern Colonies, indigo and rice were major exports.

When war broke out, American exports to Britain dwindled and exports and trade with other countries became more important. For the years leading up to and during the Revolution, American agriculture exports increased substantially.

What is even more interesting from a local perspective is Maryland and Virginia's contributions to agriculture exports during this time period. In 1772, Maryland and Virginia accounted for over 66% of the wheat and 58% of the Indian corn exported from the Colonies. They were also second in the production of flour for bread and third in barreled pork and beef. And of course you can't talk about Virginia and Maryland without mentioning tobacco. It is estimated at the outbreak of the Revolution, the value of tobacco exports from the Colonies of Maryland and Virginia accounted for 20% of the total value of all exports from the New World, which included the lucrative "sugar islands" in the West Indies.

While the Revolution provided many opportunities for American Farmers, it also brought challenges. British armies, recognizing the importance of agriculture to the young American economy, captured slaves, destroyed crops, and burned farms in an attempt to cripple American agricultural production. These tactics did take a toll on production, and in Virginia, agricultural production did not return to pre-revolution levels until three years after the War ended.

So, as we celebrate the birth of our Country on July 4, maybe we should also take a moment to celebrate the American Farmer for making such important contributions to our independence. Have a safe and happy Independence Day, everyone!

Until next time,
-Andy

Ag Law

FSMA On-Farm Readiness Reviews

Sarah Everhart, Legal Specialist
University of Maryland Frances King Carey School of Law
Article posted to Maryland Risk Management Education Blog

We have written many posts in the last few years on the Food Safety Modernization Act (FSMA) and the Produce Safety Rule (PSR). If you are new to the blog, check out this past post on the Produce Safety Rule and this post to figure out if FSMA applies to your operation. For more information and resources on food safety and FSMA, check out the food safety page of the ALEI website.

In brief, the PSR is a federal law applicable to growers of produce (produce that is typically consumed raw) who earn more than $26,632 (the limit in the law is $25,000 but it is adjusted for inflation) a year in gross sales. The PSR requires farmers to take preventive steps to minimize risk of contamination and keep certain records to prove that the required steps are being taken. The required compliance dates for the PSR vary based on the total gross income of the farm, the largest operations (those grossing more than $500,000 annually) were required to be in compliance by January, 2018, mid-size farms (those grossing between $250,000-$500,000 annually) are required to be compliance by January 2019 and small farms (those grossing between $25,000 - $250,000 annually) are required to comply by January 2020.

The Maryland Department of Agriculture (MDA) entered into a cooperative agreement with the U.S. Food and Drug Administration (FDA) to administer the PSR and inspect farms for compliance. The MDA will begin inspections of the largest operations in 2019. To prepare growers for compliance with the PSR, MDA and the University of Maryland have held Produce Safety Alliance (PSA) Grower Trainings across the state for the past few years. If you have attended a PSA Grower Training and still have questions about how to make your produce operation compliant with the PSR, consider requesting an On-Farm Readiness Review (OFFR).

The (OFRR) program was developed by the National Association of State Departments of Agriculture and in Maryland it is being coordinated by the MDA with assistance from the University of Maryland (UMD) and the University of Maryland Extension (UME). OFFRs are a free, voluntary, and non-regulatory service to assist produce growers in answering questions regarding compliance with the PSR. OFFRs are conducted by a team of 3-4 professionals from MDA, UMD and/or UME who will discuss and observe farm practices that may include growing, harvesting, and postharvest activities on the farm.

Farmers who have interest in having an OFRR of farm or who questions about implementation of the PSR should email Produce.Safety@maryland.gov, call MDA at 410-841-5769 or complete the OFRR request form online at http://mda.maryland.gov/fsma. Farmers that need general help with on-farm food safety including the PSR should contact Justine Beaulieu (by email: jbeauli1@umd.edu or by phone: 301-405-7543).

Agronomy

Maryland Commodity Classic

July 26, 2018
Queen Anne's County 4-H Park
Centreville,MD

Growers are invited to attend the Maryland Commodity Classic on Thursday, July 26, 2018, at Queen Anne's County 4-H Park. Hosted by the Maryland Grain Producers Association, Maryland Soybean Board, Maryland Grain Producers Utilization Board, and Mid-Atlantic Soybean Association, the annual meeting is the premier event for grain farmers in the region. Research presentations from 9:30-10:30 a.m. will update farmers on checkoff-funded projects conducted to address local growing issues. Exhibits and informational displays to present the latest innovations in technology, research and equipment will open at 10:30 a.m. The afternoon program begins at 1:30 p.m. and will include awarding college scholarships and updates from sponsor leaders and USDA. The Classic will conclude with the famed Crab Feast, Pork and Chicken Barbecue. Event tickets are $10 before 2:30 p.m. and $20 after 2:30 p.m. No entry is permitted after 3:30 p.m. For more information, call (443) 262-8491 or email lindsay@gmail.com. Maryland Grain Producers Association members received a free ticket - join today!

What Can I Do To Manage Scab in 2019?

Andrew Kness, Agriculture Extension Agent
University of Maryland Extension, Harford County

***Figure 1**. Wheat head with FHB. Photo: Andrew Kness, University of Maryland.*

If you grew wheat this year, chances are you don't have to look too hard to find head scab/Fusarium head blight (FHB). The excessive rainfall, humidity, and warm temperatures that we had around wheat flowering provided the perfect habitat for *Fusarium graminearum*, the causal agent of FHB, to thrive. If you have FHB, you have few options to manage it at this point except turning up the fan speed on your combine to blow out the infected kernels; but what can you do in 2019 to better your odds?

To understand your options you need to understand the lifecycle and biology of *F. graminearum*. The pathogen survives on residue, particularly that of wheat, barley, and corn and will persist through the winter on this material. During periods of wet, humid, and warm temperatures in the spring, the fungus will produce spores. If wheat or barley is growing in the field, the spores are splashed up onto the heads via rain or carried by the wind. If the wheat or barley is flowering, the spore can germinate and infect the plant through the flower; it cannot get into the plant any other way. This is why we recommend fungicide application at flowering. Once the pathogen infects the flower, it grows within the spikelet, bleaching it in the process (Figure 1) and infects the developing grain, causing shriveled, light weight, discolored kernels called tombstones. Infected grain may contain deoxynivalenol (DON) vomitoxin. FHB not only reduces yield, but has the potential to contaminate your grain with DON.

With that in mind, here are some tips for managing FHB in 2019.

- Know your variety! If you plan to grow and market quality grain, the you need to know your varieties. Unlike barley, wheat does have some resistance to FHB, although it is not complete resistance. Some varieties are more resistant than others, so my suggestion is to grow a variety that has the best resistance and yield potential. Consult with your seed rep and utilize the data from our wheat variety trials. A collaborative project between the University of Maryland and University of Delaware screens wheat varieties for resistance to FHB. The data can be found here, or call your Extension Office for a copy.
- Use a fungicide at flowering. Unless we have an exceptionally dry spring, you'll likely need a fungicide application to protect against FHB. Use the Scab Risk Assessment Tool to help assess your risk. Time your application at the start of flowering (Feekes 10.5.1) and up to 5 days thereafter. Use a triazole fungicide, particularly Caramba (metconazole), Proline (prothioconazole), and Prosaro (prothioconazole + tebuconazole). Do not use strobilurin fungicides! See my article on scab fungicides for more information.
- For the 2019 growing season will be a new product from Syngenta, called Miravis Ace (adepidyn). This will be a new mode of action fungicide (SDHI) to be used on FHB, and should help us with managing resistance by rotating it with the triazoles. Preliminary University testing shows that Miravis Ace does well against FHB; however, claims of a wider application window seems questionable at this point, so application timing will still be critical.
- Select your best fields. Since *F. graminearum* can survive on small grain and corn residue, planting wheat or barley behind soybeans is better than following corn. *F. graminearum* doesn't survive well on soybean residue. If you are following corn, consider a light tillage pass with a vertical till tool to size residue. This will accelerate residue decomposition, killing some of the surviving *F. graminearum*.

It is important to utilize as many management strategies as possible for FHB. Host resistance can only provide about 50% FHB suppression in wheat (and 0% in barley), and **fungicides can only provide 50% suppression at best**. Growers must use a combination of variety selection, fungicides, and cultural practices to achieve a high quality wheat or barley crop.

Field Crop & Vegetable Twilight Tour

August 8
4:00-9:00 PM
Central Maryland Research & Education Center
Upper Marlboro, MD

You are invited to attend a Field Crops Research Twilight, Barbecue and Ice Cream Social at the Central Maryland Research & Education Center, 2005 Largo Road, Upper Marlboro, Maryland on Thursday, August 8, 2018 from 4:00 pm to 9:00 pm**.** A barbecue dinner will be served at 4:00 pm followed by homemade ice cream prior to the evening tour. University of Maryland Extension Educators and Specialists will showcase their field crop, vegetable and fruit research plots.

Please arrive on-time as the tour will start promptly at 6:00 pm. This event is free, however, a reserved meal ticket is required. Registration by August 6, 2018 is required to reserve meal ticket. If you need special assistance to participate, please contact the Anne Arundel County Extension office at (410) 222-3906 by August 6, 2018.

For full meeting details and registration information, contact any Dave Myers at the Anne Arundel County Extension office at (410) 222-3906 or register online.

Know Your Beneficial Insects: Assassin Bugs

Emily Zobel, Agriculture Agent Associate
University of Maryland Extension, Dorchester County

Assassin bugs (Reduviidae) are generalist predators that feed on a wide variety of insect pests including stinkbug (adults and nymphs), leaf beetles, leafhoppers, small-medium size caterpillars. They are in the order hemipteran, (true bugs) so they feed with a piercing-sucking beak. There are over 160 species of assassin bugs in North America, but the three most common ones found in fields and gardens are the spined assassin bug, the wheel bug, and the elongate assassin bug. Assassin bugs are generally larger (1/2-3/4") with long legs, and round eyes on a narrow head.

Due to their red and gray color assassin bug nymphs often get confused with other true bugs nymphs such as squash bug nymphs. However, assassin bug nymphs have longer legs and thinner abdomens. They are also highly mobile and are not found in groups compared to plant feeding nymphs. Assassin bugs are great biological control agents. To keep and conserve them in your field use IPM and avoid using broad-spectrum insecticides when possible.

Figure 1. *Assassin bug nymph (top) feeding on a spotted cucumber beetle. Adult wheel bug (bottom) feeding on a stink bug. Image: E. Zobel, University of Maryland.*

Reducing Heat Stress in Cattle

Erika Crowl, Agriculture Agent Associate
University of Maryland Extension, Baltimore County

Just last month most of us were wondering where the warm, sunny days were and now I think we have officially found the summer heat. Now is the time that cattle producers should be aware of potential heat stress in their cattle. Although pastured cattle tend to be less susceptible to heat stress than cattle in feedlots, hutches, or free stalls, management is still essential for all cattle operations.

Cattle that are experiencing heat stress will exhibit signs that include panting, excessive slobbering, increased respiration rates, and bunching of the herd. The ideal temperature range for cattle is between 25 and 70 degrees Fahrenheit. We tend to forget to factor in the humidity levels when we are talking about outside temperature. As the humidity level increases, the temperature at which the cow exhibits signs of heat stress decreases. Believe it or not, cattle can enter heat stress at 75°F with 95% humidity.

There are several management options a farmer can do to decrease heat stress. The most important is to offer shade, good ventilation, and more water. Shade can be provided by trees, buildings, or temporary shade structures. Cattle that are pastured and rotated through fields should be moved in the evening to reduce heat stress. If the only area that has access to shade is a small paddock, it would be better than then being out in a large pasture with no shade at all. For cattle inside a barn, increasing the ventilation is very important. You can do this by installing fans or opening the sides of the barn. For producers who have calves in hutches, a temporary shade cloth is a great way to provide shade to those calves. It has been shown in an Alabama study that installing an 80% shade cloth at least 4 feet above the hutches will reduce the temperature inside the hutches by 3°-4°F. There should also be an increase of the amount of water available to the cattle. Cattle will increase their water consumption by 10-20% during hot days. Water intake is also highly correlated with milk production. Making sure those waterers are clean and filled with fresh water is important.

Another management option is dietary alterations. It is known that cattle will reduce their feed intake during hot weather. When reducing forage intake, the probability of acidosis will increase. This is the time to be feeding a more nutrient dense ration that includes a high quality forage and more concentrates. Higher quality forages typically digest faster than lower quality forages and concentrates contribute less heat in the fermentation process; therefore, you are maintaining the same nutrient requirements while reducing heat production. A farmer should also consider feeding about 60% of the ration at night to reduce the potential feed spoilage and increase the feed intake during cooler temperatures.

Managing heat stress can be time consuming, but it will help prevent economic losses. It is shown that heat stress in cattle can decrease milk production, lower fertility and conception rates. With these management options you should see an improvement in your herd during these hot summer months.

Pigweeds in Maryland Pasture

Brian Campbell, Grazing Specialist
USDA NRCS

"Pigweed" can refer to any weedy member of the genus *Amaranthus* (which includes the popular love-lies-bleeding flower). In Maryland agriculture, the most problematic of these summer annuals include redroot pigweed (*A. retroflexus*), smooth pigweed (*A. hybridus*), tall waterhemp (*A. tuberculatus*), and the notoriously herbicide-resistant Palmer amaranth (A. *palmeri*). By far, though, the most prevalent pigweed in Maryland pastures is spiny amaranth (*A. spinosus*). It is important to be aware that there are other pigweeds in Maryland and that they can cross to create hybrids. In 2011, an herbicide-resistant cross between spiny amaranth and Palmer amaranth was discovered in Mississippi. Identification of pigweeds can be challenging, even at maturity. Spiny amaranth's most distinguishing characteristic is the painful spines located where its branches meet the stem.

Livestock usually eat pigweeds without any apparent harm and the foliage can be a high-quality forage – low in cellulose and high in crude protein. However, pigweeds can store relatively large amounts of nitrates, making them potentially dangerous to livestock via nitrate poisoning. Ruminants like cattle, goats, and sheep are most at risk, with hogs and horses less so. Many other forage plants and pasture weeds that can be excellent forages also pose nitrate-poisoning potential when grown in nitrogen-rich environments. These include cereal grains – especially corn, millet, oats, rye, and sorghum; close relatives johnsongrass and sorghum-sudangrass; and forbs like dock, lambsquarter, ragweed, smartweed, and sunflower.

Pigweeds tend to be tolerant of drought and a wide range of soil conditions. In my experience, spiny amaranth is most prevalent in heavy-use areas like dirt sorting pens, holding areas, sacrifice lots, and around watering troughs. Because it is one of the few plants that can thrive in these highly compacted soils, spiny amaranth gets to take advantage of the large levels of nitrogen that livestock deposit at these sites. For these reasons, the places where spiny amaranth is likely to be prolific are also the nitrogen-rich places where it is most likely to cause nitrate poisoning.

Herbicide resistance in pigweeds is relatively high and will continue to grow, even as farmers increasingly rotate through different classes of herbicides to fight that resistance. Some states are experiencing pigweed that is resistant to 3 or 4 classes of herbicide: a scary situation for row crops that rely on herbicide applications! Managers of pastureland have much more flexibility than those growing row crops in that they can spot-mow clusters of pigweed as needed to prevent these annuals from producing seed. A targeted mowing campaign that cuts the plants near the ground before or during flowering should greatly reduce the incidence of pigweed over time. Pre-emergent herbicides and post-emergent herbicides with multiple modes-of-action (that are labelled for pigweed) are also important options.

The second half of any battle with weeds is to fill the void with plants that you actually want. One suggestion for the nitrogen-rich, compacted soils dominated by spiny amaranth is sorghum-sudangrass. Without vegetation, heavy-use livestock areas will erode or become extremely compacted. Even if nothing else about the plant is appealing, spiny amaranth does a good job of repairing soils damaged by compaction and excess nitrogen.

Figure 1. *Spiny amaranth. Image: Edwin Martin, Lady Bird Johnson Wildflower Center.*

2018-2019 MDA Cover Crop Sign-Up

June 21-July 17

Soil Conservation District

The annual sign-up period for Maryland Department of Agriculture's cover crop program will take place June 21 - July 17 at soil conservation district offices statewide. This popular grant program provides farmers with cost-share assistance to offset seed, labor, and equipment costs to plant cover crops on their fields this fall to control soil erosion, reduce nutrient runoff, build healthy soils, and protect water quality in streams, rivers and the Chesapeake Bay. Governor Larry Hogan has allocated approximately $22.5 million for Maryland's 2018-2019 Cover Crop Program. Contact your local Soil Conservation District office for more information.

LEAD Maryland Applications Open

Now thru October 1

www.extension.umd.edu

The LEAD Maryland Foundation is seeking applications for the next class of LEAD Fellows. The LEAD Fellowship Program works to increase the numbers and capacities of leaders serving agriculture, natural resources, and rural communities. Program participants will complete a series of multi-day seminars held throughout Maryland and Washington, D.C., along with a travel study and class project in 2019 and 2020 .

Program information, calendar, and link to the on-line application are available at: https://extension.umd.edu/lead-maryland

All interested applicants are encouraged, before submitting an application, to coordinate and communicate with co-workers, supervisors, family members, or any others who may need to support the applicant. Fellows will need time away from other responsibilities to fully complete the fellowship, and need to pay a participation fee (tuition). Completed applications and references are due October 1, 2018.

The LEAD Maryland Fellowship Program is a University of Maryland Extension program serving the entire state. The LEAD Maryland Foundation funds a large share of the program and governs many aspects of the fellowship management. Contact Susan Harrison at (410) 827-8056 or leadmd@umd.edu for more information.

Ag Night at Ripken Stadium!

August 7

6:00 PM

Ripken Stadium

Aberdeen, MD

Bring the family out for a fun night at the ballpark celebrating Harford County agriculture! There will be educational displays and information booths from University of Maryland Extension, Soil Conservation, animals, and equipment starting at 6PM, followed by the ballgame at 7:05! Purchase your tickets online. A portion of the ticket sales goes towards supporting the Harford County 4-H program, and the North Harford and Harford Tech FFA Chapters. Ticket sales close July 27!

Great resources are just a click away!

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Dates to remember

21 June-17 July. 2018-2019 Cover Crop sign-up. Contact Soil Conservation.

11 July. Women in Agriculture Webinar: Stress Management on the Farm. 12 PM. Free. Register online.

17 July. Agriculture Trade Webinar. 12-1 PM. Free. Register online.

23-28 July. Harford County Farm Fair.

25 July. Women in Agriculture Webinar: Farm Transition Taxes & Medicaide Estate Recovery. 12 PM. Free. Resister online.

3 Aug. Maryland Nutrient Management Certification Exam. Annapolis, MD. $50. Visit MDA's website for more info.

26 July. Maryland Commodity Classic. 9:30 AM. Centreville, MD. $10 before 2:30, $20 after. Call (443) 262-8491.

7 Aug. Ag Night at Ripken Stadium. 6 PM. Ripken Stadium, Aberdeen, MD. $15. Tickets available online.

8 Aug. Field Crop & Vegetable Twilight Tour. 4-9 PM. Central Maryland Research & Education Center, Upper Marlboro, MD. Free. Register online or call (410) 222-3906.

15 Aug. 4R Technology Field Day. 8:30-2:30 PM. Wye Research & Education Center, Queenstown, MD. Free. Register online.

23 Aug-3 Sept. Maryland State Fair.

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