AG INSIGHT

November 2021

University of Maryland Extension

Baltimore County
1114 Shawan Rd.
Cockeysville, MD 21030
(410) 887-8090
M—F 8:00 a.m.—4:30 p.m.

IN THIS ISSUE

Attention all producers of corn, soybeans, small grains and hay you are invited to attend the

2021 Northern Maryland Field Crops Day Meeting on

Thursday, December 2, 2021.

Location: Friendly Farm Restaurant

17434 Foreston Rd.
Upperco, MD 21155

Time:

8:00 a.m. — to visit commercial exhibits and refreshments
8:30am –1:30pm — Presentations

Presentation topics:

- **Integrated Pest Management**
- **Aerial Cover Crop Seeding & Fungicide Application with Drones**
- **Legal Considerations when Leasing Land**
- **MDA Nutrient Management & Pesticide Updates**

Cost:

$28.00 if you pre-register, or $35.00 at the door, includes an-all-you-can-eat lunch
This meeting serves as Recertification for Maryland private pesticide applicators and offers recertification credits for Pennsylvania Applicators. **In addition, producers can attend specific presentations to also renew their Maryland nutrient applicator's voucher and earn Certified Crop Advisor continuing education credits.**
To register to attend or get more information call the University of Maryland Extension, Baltimore County Office at 410-887-8090, sign up on Eventbrite at https://go.umd.edu/2021_FCD , or fill out the form below and mail to: 1114 Shawan Road, Suite 2, Cockeysville, MD 21030. Make checks out to BCEAC.

Name: _____ Email: _____

Address: _____

_____ Phone: _____

Payment: # attending _____ x$ 28.00 _____

Baltimore County Farm Bureau's Annual Banquet

November 9, 2021 · 6:00pm

The 97th Annual Banquet will include live music, dinner, and a chance to network with your industry colleagues, district legislators, and BCFM members. The evening will include hors d'oeuvres, dinner, beverages, and dessert.

Cost: Free

Location: Summit Manor at the Hereford Fire Hall
510 Monkton Rd., Hereford, MD 21111

Please RSVP to bcfbmd@gmail.com or call 410-823-1789.

Introductory to Small Ruminants Webinar Series: Goats 101

Join UME for an introductory small ruminant webinar series via Zoom. The first two webinars (Small Ruminants 101) will cover the basics of sheep and goat production. The other four webinars (Small Ruminants 201) will cover management, health, nutrition, and marketing. The webinars are free and will be recorded for later viewing as YouTube videos.

- November 1 – Sheep 101
- November 8 – Goats 101
- November 15 – Raising Sheep and Goats
- November 22 – Keeping them healthy
- November 29 – Feeding
- December 6 – Marketing

All webinars will be held at 7:30 pm EST.

To register for the webinar series, go to https://go.umd.edu/srseries

Mid-Atlantic Crop Management School

Registration is now available for the Mid-Atlantic Crop Management School. This years school will be presented **virtually online, but in an asynchronous format.** Recordings of talks will be available online starting on November 15th and will be available for viewing for a period of three weeks. After viewing talks, participants must complete a verification quiz to receive their CE credits.

CCA credits will be available in nutrient, crop, and pest management, as well as soil and water. There will also be nutrient and pest management credits available for several Mid-Atlantic States.

To see the schedule, registration, and this years school design, please visit: https://go.umd.edu/crop21reg

Please contact Nicole Fiorelleno (nfiorell@umd.edu) with any questions about options and credits.

How To Grow Your Own Mushrooms

November 4, 2021 · 1:00pm—3:00pm

This introductory workshop will help you learn how to grow your own mushrooms indoors, for your own use or as a business enterprise.

Join University of Maryland Extension and Mojo Mushrooms at Whitelock Community Farm (*930 Whitelock St., Baltimore, MD 21217)* to learn how to grow your own mushrooms indoors, whether for your own use or as a business enterprise. Participants will have the option of purchasing a myco-kit to take home.

Register online here or call Neith Little at 410-856-1850

Private Pesticide Applicator Certification Training & Exam Dates

The optional training for new private pesticide applicators will be given through the Baltimore County Extension Office on **December 14th** from **1-3 pm** with the exam on **December 21st, 9-11 a.m.** Cost for the new certification class will be **$10**, which includes your own copy of the Maryland Pesticide Core Manual to use as a study guide for the exam.

REGISTRATION IS REQUIRED!

Please call the Baltimore County Extension Office to register (410) 887-8090, or e-mail ecrowl@umd.edu. For a list of additional training dates, visit the Maryland Department of Agriculture website.

Private Pesticide Applicator Re-Certification Options

Again, this year we will be offering multiple ways to renew your private pesticide applicator license.

Option 1: An in-person re-certification training will be offered **December 21st** from 1-3pm at the Baltimore County Ag Center *(1114 Shawan Rd., Cockeysville, MD 21030)*. Credits will satisfy Maryland continuing education credits (CEUs) necessary to renew your private applicator license. There is no cost for this class, but please register ahead of time by calling the office at 410-887-8090 or emailing Erika Crowl at ecrowl@umd.edu. **Please bring your applicator certification number with you to the meeting**.

As a reminder, recertification credits will also be offered at our Extension winter production meetings.

Option 2: Watch pre-recorded, online webinars at your own pace through our University of Maryland Pesticide Portal. You can pick and choose which webinars are of interest to you to obtain the needed credit hours. Complete the request form at https://go.umd.edu/pestandnutrient including your name and contact information. You will be asked to click on what training you are interested in and your certification number and then directed to the video series. These are best watched on a tablet or laptop as there are questions embedded in each video.

Option 3: Complete the Pesticide Recertification Workbook that offers a 30 question quiz. Upon the completion, you will send the quiz to the Baltimore County Extension office and you will receive a notification that you have successfully passed the quizzes and credits have been submitted to the State Department of Agriculture for your pesticide license renewal. This workbook is also approved for **three (3) Delaware** credits and **two (2) core Pennsylvania** credits.

To order your free workbook, please call the Harford County Extension office at (410) 638-3255.

Department Offers Maryland Farmers One-Time $1,000/acre Singing Bonus for CREP Enrollment

Maryland Department of Agriculture, press release

The Maryland Department of Agriculture has increased its one-time signing bonus to $1,000 per acre for eligible farmers and landowners who install forest buffers along qualifying stream corridors through the Conservation Reserve Enhancement Program (CREP). Farmers and landowners with new contracts for CREP practice CP22 riparian buffers effective on or after **October 1, 2021**, are eligible. All other CREP contracts and re-enrollments remain eligible for a $100 per acre signing bonus.

"The Conservation Reserve Enhancement Program is an excellent way for Maryland farmers to earn extra income on their land and improve the water quality of the Chesapeake Bay and its tributaries," said Maryland Agriculture Secretary Joe Bartenfelder. "If you have marginal cropland or pastureland that is next to a stream, wetland, or highly erodible land, you may be eligible to participate. This program is a good investment choice for landowners looking to supplement farm earnings with a steady income stream."

Now in its 24th year, Maryland CREP has helped thousands of landowners plant streamside buffers, establish wetlands, protect highly erodible land, and create wildlife habitats on their properties. CREP is a state-federal conservation partnership that pays landowners attractive annual rental payments to take environmentally sensitive land out of production and install conservation practices that protect water quality and provide wildlife habitat. Rental contracts range from 10 to 15 years for this voluntary program.

New this year, up to 100% cost-share is also available through the Maryland Agricultural [Water Quality] Cost-Share Program (MACS) to establish streamside buffers and wetlands. Free technical assistance to install these and other conservation practices is provided by local soil conservation districts.

If you are a farmer or landowner who is interested in CREP, please contact your local soil conservation district or Farm Service Agency to take advantage of this special offer. Sign-up for Maryland CREP is ongoing and continues until acreage goals are met.

For more information about the one-time CREP bonus payments, please contact Alisha Mulkey at (410) 841-5873 or alisha.mulkey@maryland.gov.

2021 Corn Hybrid Trials

Dr. Nicole Fiorellino, UMD Extension Agronomist, has published the results of the 2021 Maryland Corn Hybrid Trials. The full 30-page report can be downloaded from https://psla.umd.edu/extension/md-crops, or contact the Extension office for a hard copy.

The University of Maryland offers a fee-based, corn hybrid performance testing program to local and national seed companies. The results from these replicated trials provide agronomic performance information about corn hybrids tested at five locations in Maryland considered representative of the state's geography and weather conditions. Data should be used to infer hybrid performance relative to others. When selecting corn hybrids to grow on your farm, you should not simply pick the highest yielding hybrid; rather, choose a hybrid with desirable characteristics and yield across multiple location and multiple years. This implies that the hybrid can perform well in various environmental conditions and has good yield stability.

For more information on how to interpret variety trial results, consult this Fact Sheet: https://extension.umd.edu/resource/what-do-numbers-really-mean-interpreting-variety-trial-results.

Agronomic Budgeting Tools

With the ever-rising cost of production, it is very important when making decisions related to your farm enterprise and grain marketing to compare budgets.

Enterprise budgets provide valuable information regarding individual enterprises on the farm. These tools enable the farm manager to make decisions regarding enterprises and plan for the coming production year. The enterprise budget uses farm revenue, variable cost, fixed cost, and net income to provide a clear picture of the financial health of each farm enterprise.

The 2021 Maryland enterprise budgets were developed using average yields and estimated input cost based upon producer and farm supplier data. The figures presented are averages and vary greatly from one farm to the other. It is therefore crucial to input actual farm data when completing enterprise budgets for your farm.

UMD has several agronomic crop budgets available for download at https://extension.umd.edu/programs/agriculture-food-systems/program-areas/farm-and-agribusiness-management/grain-marketing/crop-budgets. Paper copies are available upon request at the Extension office.

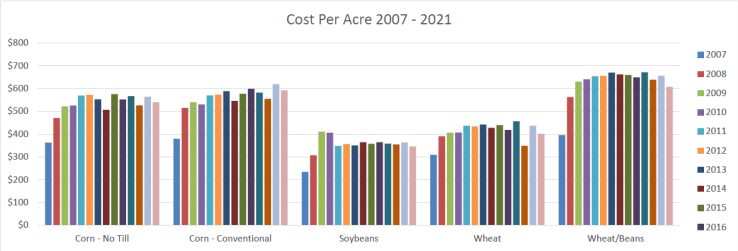

Illustration from the 2021 Field Crop Budget

Frost Can Cause Hazards in Forages

Dr. Amanda Grev, University of Maryland

With the first freeze of the fall just around the corner, remember that a frost can result in potential hazards for certain forages. When a plant freezes, changes occur in its metabolism and composition that can cause toxicity issues for livestock. A few issues to be on the lookout for are discussed below.

Prussic Acid Poisoning

Sorghum species like sorghum, sudangrass, sorghum-sudangrass hybrids, and johnsongrass contain a cyanogenic compound called dhurrin within the plant. Under normal circumstances, the dhurrin is bound within plant tissues and remains non-toxic. However, if the plant tissue is injured by some sort of stressor such as a frost, the plant cell membranes can become damaged. This damage releases enzymes that can break down the dhurrin, resulting in the formation of a highly toxic hydrogen cyanide compound commonly referred to as prussic acid.

Prussic acid hinders the animal's ability to transfer oxygen in the blood stream, resulting in asphyxiation. Ruminant animals are most susceptible, with a prussic acid concentration as small as 0.1% of dry tissue considered dangerous. Symptoms of prussic acid poisoning can appear within minutes following ingestion, with common symptoms including excessive salivation, difficulty breathing, staggering, convulsions, and collapsing. The greatest levels of prussic acid can be found in the leafier parts of the plant, particularly in new growth, and young, growing plants contain more prussic acid than older plants. To prevent prussic acid poisoning, follow these recommendations for grazing or harvesting frosted forages.

Grazing: Do not graze sorghum species on nights when a frost is likely, as high levels of the toxic compounds are produced within hours following a frost. After a killing frost, wait at least 7 to 10 days before grazing or green chopping forage, as prussic acid levels are highest in plant leaves and do not begin to decline until after the leaves have dried. After a non-killing frost, do not allow livestock to graze until the regrowth has reached a minimum of 2 feet in height or 2 weeks have passed, as the regrowth will likely contain high levels of prussic acid. When returning to grazing, don't turn animals in hungry and use a heavier stocking rate and rotational grazing to reduce the risk of animals selectively grazing leaves or young growth that may still have higher concentrations of prussic acid present.

Harvesting: Proper field curing or ensiling can help reduce the potential for toxicity in harvested forages because prussic acid is volatile and some of the toxic components will dissipate as a gas during the drying or fermentation process. Forages should be ensiled for a minimum of 8 weeks if there was a risk of high prussic acid levels at the time of chopping. The prussic acid content in hay can be reduced by as much as 75% during the curing process, so hay is typically not hazardous when fed to livestock. Forages can also be analyzed prior to feeding to ensure the toxic compounds have been reduced to a safe level for consumption.

Nitrate Toxicity

Sorghum species, along with several other species including millet, brassicas, oats, and other small grains, are susceptible to nitrate accumulation. Under normal growing conditions, nitrate from the soil is absorbed by the roots of forage plants and is supplied to the upper portions of the plant, where it is converted into plant protein. However, under adverse environmental conditions such as drought, frost, or sudden weather changes, plant growth ceases and metabolism slows but the plants

continue to take up nitrogen from the soil, resulting in a buildup of nitrates within the plant. Nitrate levels will remain high until there is new leaf growth, which increases photosynthesis and provides energy to utilize the excess nitrate.

When livestock consume forages with normal nitrate levels, the nitrate is broken down by rumen microbes to nitrite and then further to ammonia, which is converted to protein. With high-nitrate forages, nitrites accumulate faster than they can be converted to ammonia, and the accumulated nitrite is absorbed into the bloodstream. Nitrite combines with hemoglobin to produce methemoglobin, which is incapable of transporting oxygen, ultimately leading to asphyxiation. Symptoms of nitrate toxicity are related to a lack of oxygen in the blood and include weakness, difficulty breathing, rapid heartbeat, staggering, muscle tremors, and inability to stand. Affected animals typically show signs of poisoning within a few hours after consumption, and ruminant animals are most susceptible due to the rapid conversion of nitrate to nitrate by rumen microorganisms.

Nitrate levels are typically measured as nitrate nitrogen (NO_3-N) on a parts per million (ppm) basis. Levels under 550 ppm NO_3-N are typically considered safe to feed for all classes of livestock. Levels between 550 and 1100 ppm NO_3-N may cause problems in pregnant and young animals, and levels between 1100 and 2200 ppm NO_3-N are typically considered toxic and should be fed with caution. Levels above 2200 ppm NO_3-N are likely unsafe to feed. Unlike prussic acid, which accumulates in the leafiest portion of the plant, nitrates tend to accumulate in the lower portion of the stem and stalks. To prevent nitrate poisoning, follow these recommendations for grazing or harvesting frosted forages.

Grazing: Avoid grazing susceptible forages when growth ceases due to drought, frost damage, or other adverse conditions. When grazing forages with suspected nitrate accumulation, introduce and acclimate livestock gradually. Feeding a low-nitrate forage or hay prior to turning livestock out onto high-nitrate forages will reduce the amount of nitrate consumed; avoid turning hungry livestock out onto a high-nitrate field. Graze high-nitrate forages in the afternoon when nitrate levels tend to be the lowest, and stock lightly so animals can selectively graze the leaves which are lower in nitrate concentration.

Harvesting: Delaying harvest until stress conditions have passed will help to lower nitrate levels within the forage and prevent toxicity. Because nitrates accumulate in the base of the plant, risk can also be reduced by cutting higher and leaving more stubble. The ensiling process can reduce nitrate concentrations by 30 to 60% following complete fermentation due to microbial degradation. However, nitrate concentrations are stable in cured hay so use caution if the forage must be baled and leave at least 12 inches of stubble to avoid baling the most toxic part of the plant.

Like with prussic acid, forages can be analyzed for nitrate concentrations prior to feeding. If forages are known to have higher than ideal nitrate levels, diluting the forage by incorporating a low-nitrate forage into the diet will reduce the overall nitrate consumption by the animal. Introducing the toxic forage slowly will help animals adapt, as well as feeding small amounts frequently rather than one large feeding. Increasing the energy content in the ration by offering a grain or high-carbohydrate feed can also help by enhancing metabolism in the rumen and aiding in the conversion of nitrates to protein, helping livestock to better tolerate higher nitrate levels in their diet.

Bloat Potential

Frothy bloat is the most common type of pasture bloat and results from the formation of a stable foam in the rumen that minimizes the animal's ability to expel rumen gases. Consumption of forages containing high levels of soluble protein, such as alfalfa and clover, can contribute to stable foam production. Livestock suffering from bloat may indicate discomfort by stomping their feet or kicking at their belly. They will appear distended on the left side, and may die within hours.

Following a frost, plant cells rupture, producing small plant cell wall fragments and increasing the amount of K, Ca, and Mg present, all of which can increase the risk of bloat. Be aware that forage with bloat potential can be more likely to cause bloat for a few days following a frost event. If grazing pastures with high concentrations of bloat-inducing species like alfalfa or clover, waiting a few days to a week following a hard frost is a good management practice to reduce the risk of bloat.

Upcoming Women in Ag Webinars

Register online to watch the **FREE** webinars every 2nd and 4th Wednesdays of the month at 12pm.

- **November 10**– Wildlife Management
- **December 8**– Helping Farmers to be Good Neighbors

To watch previous webinars, visit the MidAtlantic Women in Agriculture YouTube channel,

https://www.youtube.com/c/MidAtlanticWomeninAgriculture/featured

UNIVERSITY OF MARYLAND EXTENSION

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DATES TO REMEMBER

Nov 1– Dec 6	Intro to Small Ruminats Webinar Series. 7:30pm. FREE. Register online.
Nov 4	How to Grow Mushrooms. 1:00pm– 3:00pm. Free. Baltimore, MD Register online.
Nov 9	Baltimore County Farm Bureau Banquet. 6:00pm. Free. Hereford, MD. Call 410-823-1789.
Nov 10	Women in Ag Webinar: Wildlife Management. Noon. Free. Register online.

Check out these additional online resources

Agronomy News	Ag Marketing
Ag Law Initiative	Extension Website
Fruit & Vegetable News	Nutrient Management
Sheep & Goat Newsletter	Women in Ag

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