Hello, Harford County!

Last summer we were bombarded with news about the highly pathogenic avian influenza (AI) outbreaks in the mid-west. If you've been keeping up with the news, you will have seen that another case was confirmed on a turkey farm in Indiana in January. Since it looks like we aren't out of the woods yet, now is a good time for an update on the current situation and an outlook for the rest of this year. (Much of the following information is from a briefing MDA presented on January 7.)

First, a primer. There are two types of AI. Low pathogenic AI causes only minor sickness and is rarely fatal. The last case of low path AI in Maryland was in 2014 on a commercial turkey farm near Frederick. High pathogenic avian influenza (HPAI) is much more virulent and is what we're facing now. HPAI is very contagious with a mortality rate of 90-100%. HPAI can kill all the birds in a poultry house in a matter of days. There have been only three cases of HPAI in the U.S. prior to the current outbreak. Currently there is no evidence that this strain causes sickness in people or impacts food safety, but it certainly would prove catastrophic to the Maryland poultry industry if it is detected here.

There were 223 detections of HPAI reported in the U.S. between December 19, 2014 and June 17, 2015 that affected more than 48 million birds. The cost of controlling and eradicating the disease during this time period was approximately $1 billion, another $1 billion was lost in poultry export, and an additional $1.5 billion of indirect costs were attributed to the disaster. This was the most expensive agricultural disaster in U.S. history.

HPAI is carried and spread by wild waterfowl, who become contagious but don't show symptoms of the disease. Although HPAI has not yet been detected on the east coast, birds that live on the east coast co-mingle with birds from other areas of the country when they migrate north to Canada. It's very possible that east-coast birds can become infected and spread the disease to domestic poultry as they migrate through Maryland.

AI is transmitted via direct exposure to infected birds, their feces, and their secretions which can be carried on clothing, equipment, and vehicles. Since we have very little ability to control the movement of wild birds, the only way to prevent these materials (con’t...
Correction to January’s “Toxic Plant Profile”

The “Toxic Plant Profile: Rhododendron and Azalea” article that appeared in the January 2016 issue contained an error. The article correctly identified the toxic dose of these plants at 0.2% of body weight in leaves consumed but listed the incorrect number of pounds of leaves toxic to various species. The toxic dose is only 2 pounds of leaves for a 1000 pound cow, 0.3 pounds for a 150 pound goat, and less than a quarter of an ounce for a 5 pound chicken.
Managing Your Dairy Through Financial Fluctuations

In today’s dairy market, producers must be continuously improving in order to stay in the front of the pack and remain profitable. Understanding and managing financials become a key part of achieving success in a dairy business. Dale Johnson, Farm Management Specialist, University of Maryland Extension, will host seminars throughout Maryland, in conjunction with Mid-Atlantic Farm Credit, which will assist producers in improving management through analysis of their past finances and using that information to plan for their future. This seminar will show how to use financial records and tax statements to analyze a farm’s income and expenses in order to identify strengths and bottlenecks in the dairy business. Using simple worksheets, farms will learn how to calculate individual expenses on a hundred-weight and per cow basis, compare these figures to industry averages and, in turn, identify critical areas of management. Lunch will be provided and is generously sponsored by Mid-Atlantic Farm Credit. In addition to being hosted in Harford County, this program will be repeated in Washington, Carroll, Garrett, and Kent Counties. To register for the Harford County session, call the Harford County Extension Office at 410-638-3255. For more information about the program, contact Emily Yeiser Stepp at 301-405-1392 or eyeiser@umd.edu.

Sheep Shearing School

April 15-16, 2016
9:30 a.m. — 3:30 p.m.
Ridgely Thompson’s Farm
Westminster, MD

This event is open to anyone in Maryland, Delaware, or surrounding states who wants to learn to shear sheep. Ownership of sheep or a desire to become a commercial shearer is preferred. The New Zealand method of shearing will be taught. Shearing machines will be provided. Blade shearing will not be taught. Instruction will be provided by Aaron Geiman, agriscience teacher at North Carroll High School, and Emily Chamelin-Hickman, professional shearer. The registration fee is $100 per person and includes a copy of ASI’s Sheep Shearing Notebook and an instructional DVD. Pre-registration is required before April 1. Participation is limited to the first 15 registrants. The minimum age to register is 16. To obtain a registration form, contact Aaron at mdsheepshearingschool@gmail.com or contact the Harford County Extension Office at 410-638-3255. This event is being hosted by the Maryland Sheep Breeders Association.

2016 Pasture-Based Meat Goat Performance Test

The Western Maryland Pasture-Based Meat Goat Performance Test was initiated in 2006 at the University of Maryland’s Western Maryland Research and Education Center in Keedysville. The purpose of the test is to evaluate the post-weaning performance of meat goat bucklings consuming a pasture-based diet with natural exposure to internal parasites. While on test, the goats are evaluated for growth performance, parasite resistance, and parasite resilience. 2016 will be the 11th year of the test. The nomination period for the 2016 test is from April 15 until June 1. Nomination packets can be downloaded from the blog at mdgoattest.blogspot.com. Goat breeders from any state may nominate up to five male goats to the test. At least two is recommended; half-siblings from the same sire are encouraged. Male goats or any breed or breed cross are eligible. Goats must be born between January 1 and March 15, 2016. They must weigh between 40 and 70 pounds upon delivery to the test site on June 24. Health papers are required for entry into the test. After all data has been collected and evaluated, the top-performing buck and top 10 bucks will be selected and recognized. Growth, parasite resistance, and parasite resilience will be the primary selection criteria. For more details about the test, check out the blog at mdgoattest.blogspot.com.
14th Annual Mid-Atlantic Nutrition Conference

March 23–24, 2016
Wyndham Grand Hotel
Hunt Valley, MD

The Mid-Atlantic Nutrition Conference is recognized as a premier educational event for the animal nutrition industry, focusing on equine, dairy, and poultry nutrition. Local, national, and international nutritionists share new, innovative, and practical research being conducted at universities, in industry, and at government institutions. Regulatory issues and future opportunities are also discussed. All attendees will receive conference proceedings, lunch, and the opportunity to ask questions of all of the experts. To see the full agenda or to register, visit ansc.umd.edu/extension/mid-atlantic-nutrition-conference. This year’s equine session will feature sessions devoted solely to feeding horses engaged in elite equestrian competition. Veterinarians, students, horse trainers, horse breeders, and horse owners should not miss this opportunity to learn about exciting new discoveries related to their equine athletes.

Professional Assoc. of Therapeutic Horsemanship Conference

March 18–20, 2016
University of Maryland
College Park, MD

The Professional Association of Therapeutic Horsemanship (PATH) International, region 2, and the Maryland Council of Equestrian Therapies (MCET) welcome you to attend a weekend of innovation at their 2016 region 2 conference. The University of Maryland is proud to join these organizations and host the event on the College Park campus. Join PATH, MCET, and UMD as they share collective practices and research dedicated to celebrating equines, instructors, therapists, programs, riders, families, and volunteers. For more information and registration instructions, visit www.pathintl.org and select “regional” under the “conferences” tab.

Pesticide Private Applicator Training and Recertification

March 17, 2016
Harford Co. Extension Office
Forest Hill, MD

Those seeking to purchase and/or apply restricted use pesticides are required to obtain certification from Maryland Department of Agriculture (MDA). Training for private applicators is offered at the Harford County Extension Office each year in March and October. For current applicators, the recertification session will be held on March 17 from 1:00 – 3:00 p.m. New applicators may attend the optional training session from 9:00 – 11:00 a.m. on March 17 and will sit for the MDA certification exam on March 24 at 9:00 a.m. Both sessions are free to attend, but advanced registration is requested. To register, please call the Harford County Extension Office at 410-638-3255.

Updated Field Crop Weed Management Guide

University of Maryland’s weed management guide has been updated for 2016, and hard copies are available for purchase at the Harford County Extension Office. Copies of the 225-page, spiral-bound book can be purchased for $12 each. This is a comprehensive guide and excellent reference manual that includes information about what herbicide products are most effective against specific weeds in various crops, among other information. Limited quantities are available so stop by to pick yours up today.
Spring Fertilizer Rules for Small Grains and Cover Crops

The Maryland Department of Agriculture (MDA) has announced that farmers who planted small grain crops, such as wheat, rye or barley for harvest are allowed under Maryland's nutrient management regulations to “top dress” these small grains with commercial fertilizer as early as February 15 as long as ground conditions are appropriate. The guidelines apply to all farmers growing small grains, including those enrolled in the commodity option of the department’s Cover Crop Program administered through the Maryland Agricultural Water Quality Cost-Share (MACS) Program. As a reminder, Maryland’s nutrient management regulations restrict manure applications until March 1.

“Researchers from the University of Maryland have determined that small grain crops have absorbed the nutrients in the soil and that additional nutrients are required to keep them growing,” said Maryland Agriculture Secretary Joe Bartenfelder. “The extremely warm weather we had beginning in December and continuing into January and early February warrants an earlier application based on the accumulation of Growing Degree Days. In addition, there was little residual nitrogen remaining in the soil following last year’s excellent corn crop.”

The warm temperatures, however, could be a double-edged sword for some small grain crops that may have experienced excessive growth. According to Dr. Robert Kratochvil, Associate Professor & Extension Specialist at the University of Maryland, farmers should survey their wheat and barley crops for winterkill caused by extreme temperature swings before applying additional fertilizer. “They should first determine if the wheat or barley has started to joint,” said Kratochvil. “If it is not yet jointing, there likely was no damage caused by the extreme cold temperatures.”

According to Kratochvil, if the crop has started to joint, farmers should walk their fields to see if there are visible signs of cold damage before applying fertilizer. Although the department’s Cover Crop contract agreement restricts nutrient applications to commodity cover crops before March 1, Maryland’s nutrient management regulations allow top dressing of small grains prior to March 1, under certain conditions and in accordance with University of Maryland nutrient recommendations. The regulations allow farmers to apply half of the spring nitrogen application at green-up and half at plant growth stage Feekes 5-6.

For additional information on the department’s cover crop requirements, farmers should contact their local soil conservation district or the Maryland Agricultural Water Quality Cost-Share Program at 410-841-5864. Questions about winter nutrient applications should be directed to the Nutrient Management Program at 410-841-5959. Farmers with fields that are not suitable for harvest should contact their crop insurance agent for guidance. Source: Maryland Department of Agriculture (MDA).

Poultry Association Seeks Scholarship Applicants

Delmarva Poultry Industry, Inc. (DPI) announces the opening of the application period for the 2016 Delmarva Poultry Industry, Inc. College Scholarship Program. Applications are being accepted for undergraduate and graduate scholarships in the amount of $1,500 or more. Undergraduate applicants must be a Delmarva resident and a student in good standing at any accredited, degree-granting institution in the United States or in the case of graduating high school seniors, accepted to an accredited, degree-granting institution within the United States. Individuals must have an academic major in a subject area relevant to Delmarva’s chicken industry and be planning a career in a segment of this industry. Graduate student applicants must meet the above criteria, with the exception of Delmarva residency. Additionally, the individual must be engaged in research that could positively benefit Delmarva’s chicken industry. Applications must be completed and received on or before 4:30 p.m. on April 1, 2016. Application forms and additional scholarship information are available from Delmarva Poultry Industry, Inc. (DPI), telephone 800-878-244, from the DPI website at www.dpichicken.org by clicking on “College Scholarships” in the left menu bar, or by sending inquiries to morrow@dpichicken.com.
Plan Writers Required to Report Phosphorus Levels

Maryland’s Phosphorous Management Tool regulations require all licensed nutrient management consultants and certified farmers to report soil phosphorus levels for each field in their nutrient management plan to the Maryland Department of Agriculture. The Department, in turn, will use this information to establish a statewide inventory of soil phosphorus levels. Importantly, soil data collected also will be used to determine the “tier” or time-frame that individual farmers must follow when transitioning to the Phosphorus Management Tool. Soil data information was due to the Department last fall, but many farms are still unaccounted for. If you are a licensed consultant or certified farmer and have not submitted your soil information to the department, please contact Bryan Harris of the Nutrient Management Program at 410-841-5959 as soon as possible for guidance in reporting this information.


The first edition of “The Woods in Your Backyard: Learning to Create and Enhance Natural Areas Around Your Home” was published in 2006. Now the guide has been revised and updated! This guide is intended to help landowners of one to ten acres in the Mid-Atlantic area to enhance the stewardship of their land. It includes valuable techniques on caring for your natural areas including how to convert lawn to woodland, how to enhance existing wooded areas, and how to cooperate with neighbors to enhance wildlife habitat. The revised guide includes methods for documenting your natural area projects; tips for identifying wildlife habitats; expanded information on non-invasive plant species; more water resources including tips for creating and maintaining riparian buffers and identifying and preserving wetlands; and a new section on best management practices for soil conservation. The 108-page guide contains more than 100 color photos and illustrations and includes information tables, case studies, appendices, and an index. The second edition is now available to order through Cornell University’s Plant and Life Sciences Publishing for $23 per copy. For more details, visit palspublishing.cals.cornell.edu and search for “The Woods in Your Backyard.”

Become a Master Naturalist Volunteer

The Maryland Master Naturalist Program, a University of Maryland Extension volunteer training program that prepares adults to serve as volunteer naturalists at host sites through the state, is pleased to announce that the application period is now open for spring 2016 volunteer training programs. Individuals accepted into the Master Naturalist volunteer program receive 52 hours of instruction, including hands-on activities and demonstrations, indoors and outdoors. The course also includes at least 8 hours of field trips or trips to a different site. The curriculum includes introduction to Maryland natural history; identification, behavior, and taxonomy of flora and fauna; fundamental ecological principles; how humans affect the landscape; the science of science; and teaching and interpretation. Training sites near to Harford County will include the Benjamin Banneker Historical Park in Catonsville, Oregon Ridge Nature Center in Baltimore, and Lake Roland in Baltimore. Application is made to the program host site, and a full program description including training locations and dates may be found at extension.umd.edu/masternaturalist/become-a-naturalist. The cost of the training is $250 per person upon acceptance into the training.

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“Starting a Farmers’ Market” Workshops

The Maryland Farmers’ Market Association – in partnership with the Maryland Department of Agriculture – will offer a workshop series for Marylanders interested in starting a farmers’ market. This series will give participants access to the association’s experienced staff and provide all the necessary tools and information to run a successful market operation. The department will also provide information on the role of federal nutrition benefits programs at farmers’ markets. For more information or to register, contact the Maryland Farmers’ Market Association at info@marylandfma.org or 410-929-1645.

Market Management: topics will include location and layout, marketing and promotion, staffing, best practices in farmer/vendor management, banking consideration, and data collection. A webinar will be held from 1:00 – 2:00 p.m. on March 16; face-to-face meeting will be held March 17 from 2:00 – 5:00 p.m. in Charlotte Hall, MD.

Food Access, Sales, and Success: topics will include federal nutrition benefits programs for farmers’ markets and farmers’ markets fundraisers, events, and promotions. A webinar will be held from 1:00 – 2:00 p.m. on April 6; face-to-face meeting will be held April 7 from 2:00 – 5:00 p.m. in Annapolis.

Annual Maryland Farmers’ Market Conference

Anyone involved with or interested in the operation of farmers’ markets should consider attending the annual Maryland Farmers’ Market Conference hosted by the Maryland Department of Agriculture. This year’s conference sessions will include marketing tips, updates on regulations guiding the 2016 season, food safety, and much more. Training and certification sessions will also be available for the Farmers Market Nutrition Program, the Seniors Farmers Market Nutrition Program, and the Fruit and Vegetable Check Program. Space is limited to the first 90 guests to register and submit payment. For questions and registration information, contact Shelby Watson Hampton at 410-841-5776 or shelby.watson@maryland.gov.

GAP Food Safety Training for Fruit and Vegetable Producers

The Maryland Department of Agriculture (MDA) and University of Maryland Extension (UME) will be conducting a series of regional food safety training workshops for fruit and vegetable producers. (The March 15 date is the closest location to Harford County, but the program is being repeated at additional locations.) These one-day workshops are important for small- and large-scale producers who want to understand how to meet current FDA Food Safety Modernization Act Produce Rule requirements or are considering Good Agricultural Practice (GAP) certification. The training will provide assistance in writing and implementing a GAP program for both wholesale growers and direct marketers. Topics covered include: highlights of the FDA Food Safety Modernization Act Produce Rule; Good Agricultural Practices such as addressing pre-harvest and post-harvest water quality issues; an update on current food safety research; writing a food safety plan; and MDA/University of MD programs to assist producers in implementing GAP. A portion of the training will be spent helping producers write their own food safety plans. Register online at gap16.eventbrite.com; if you have questions or encounter difficulties registering online, please contact Bryan Butler at bbutlers@umd.edu or 410-386-2760. The fee for the program will be $15 and includes lunch.
Beware of On-Farm Manure Storage Hazards

By Bill Field, Extension Safety Specialist, Purdue University

The uses of livestock confinement systems and large capacity, on-farm, liquid manure storage facilities have become well-established practices throughout Indiana. The primary advantages of liquid manure storage facilities are that they make the waste handling process less demanding on your time and allow for applications of manure on croplands at more convenient or appropriate times. In general, there are three types of liquid manure storage systems being used: large manure storage tanks located directly underneath the livestock housing area; manure storage located away from the livestock housing areas in open lagoons or ponds; and above ground, silo-type, manure storage structures.

In all three types, the manure is flushed from the livestock housing area with added water and then agitated by various means to form a liquid slurry. This slurry is then pumped periodically from the storage area into applicator tank wagons or through irrigation systems for application on cropland as a valuable fertilizer and soil conditioner.

When animal waste of any type is being stored in large quantities, a number of hazards are present for both man and animal. The most obvious hazard is the potential danger of falling into one of the large open storage areas and drowning. There is also the danger from gases which are produced as the manure is decomposed by bacterial action. During the decomposition process, a variety of gases are released which can be hazardous to both people and livestock. The most common of these gases include: ammonia, carbon dioxide, methane, and hydrogen sulfide. Knowing the nature of these gases and the effects they might have on you should reduce the potential risk of working around manure storage areas.

Ammonia (NH₃) is a strong alkali which has a sharp characteristic odor found also in common household ammonia. In low concentrations, 1 percent or less, it can irritate the eyes, nose, and throat. Concentrations as low as 3 to 5 percent can cause harsh coughing, and severely irritate the eyes, throat and lungs and has the potential of being fatal. Flushing irritated skin or eyes with water is the best first-aid treatment.

Carbon dioxide (CO₂) is an odorless, nontoxic gas, which is part of the air we breathe. Yet, in concentrations of 3 to 6 percent, it can cause exposed workers to have labored breathing, drowsiness, and headaches. A 30 percent or higher concentration can cause death by suffocation since it replaces the oxygen available for breathing. In addition to manure decomposition, carbon dioxide is also a byproduct of livestock respiration.

Methane (CH₄), a highly flammable, nontoxic gas is also released during the decomposition process. There are reports of a confinement building being blown off its foundation when a pocket of methane beneath the structure was ignited by sparks from a welding operation. Asphyxiation is also possible in a confined space with a high concentration (5 to 15 percent) of methane. Methane is extremely difficult to detect without gas detection instruments because it is odorless, but it should be anticipated as being present in all manure storage areas.

Hydrogen sulfide (H₂S) is a very poisonous gas having a readily recognizable "rotten egg" odor. A concentration of only 50 parts per million (comparable to only 3 pounds of sugar mixed with 62,500 pounds of salt) can cause dizziness, irritation of the respiratory tract, nausea, and headache. With concentrations exceeding 1,000 parts per million, death from respiratory paralysis can occur with little or no warning. Only recently a 16-year-old Wisconsin farm worker collapsed and died while cleaning a confinement calf barn located over a 100,000 gallon liquid manure tank. Hydrogen sulfide was reported as the cause of death. The manure tank was being agitated at the time and only one of the five ventilating fans in the facility was being operated. There is also a report of a young boy climbing into a manure tank wagon to remove accumulated manure and succumbing to hydrogen sulfide gases trapped within the tank. Hydrogen sulfide is considered the most dangerous of the by-products of manure decomposition. Both carbon dioxide and hydrogen sulfide are heavier than air, and will tend to settle to the lower areas of the storage facility and remain in high concentrations even after ventilation.

In addition to adhering to proper construction and maintenance procedures for liquid manure storage facilities, owners should be encouraged to follow a few precautionary measures to protect both workers and livestock from harmful manure gases. They are as follows:

- Know the physical effects of the various gases released during manure decomposition. If at any time these effects are detected, it is critically important that both workers and livestock are evacuated from the area or ample ventilation provided.
- Maintain adequate ventilation in all confined areas where livestock are housed or livestock waste is stored. This is especially true if the manure is being agitated, since agitation causes a rapid release of gases. Even with the facility's ventilation system operating, high levels of toxic gases can accumulate quickly. Ventilation recommendations are available from a number of sources including your local Cooperative Extension Educator.
- If the power fails, open all windows and doors and remove livestock if possible. Many farmers with livestock confinement operations have invested in portable or emergency power generating units to insure livestock housing areas continuous power for ventilation.
- Wear a self-contained breathing apparatus and safety
rope with a second person standing by if you must go into a liquid manure storage tank. Most specialists generally agree that there are very few legitimate reasons why anyone should have to enter a manure tank. Entering one without an adequate air supply can be fatal.

- Since a methane/air mixture can be highly explosive, prohibit smoking or other open flames in confined housing or manure storage areas.
- Concerning open storage of liquid manure in ponds or lagoons, precautionary measures should also be taken to reduce the risks to people and livestock.
- Manure ponds or lagoons should, if at all possible, be fenced in to prevent access by children or livestock. Open lagoons can appear deceptively solid during warm weather and lure the curious out onto the surface.
- Signs should be posted around the perimeter of the lagoon providing a clear warning of the existing hazards.

The National Institute of Occupational Safety and Health estimates that about a dozen farmers have lost their lives and many more have become physically ill by the effects of manure gases. Therefore, the need for local emergency rescue and medical personnel to also have a better understanding of the hazards of manure gases is evident.

**Collection of Agricultural Plastics for Recycling**

Harford County Farm Bureau, in partnership with Maryland Environmental Services, will host several collections of agricultural plastics this spring. Plastics will be accepted 8:00 a.m. – 2:00 p.m. from April 4-9 and from June 6-11, 2016 at the mulch and compost facility at Scarboro Landfill (3135 Scarboro Road in Street). The following will be accepted: polypropylene bale twine, white supersacks and feed bags, white bale wrap, clear stretch wrap, clear greenhouse covers, and stacked polystyrene greenhouse trays. All plastics should be as clean as possible and stored under cover to minimize moisture. Farms should separate plastics by type (for example, do not mix baling twine with bale wrap) and plastics should be tied into bundles for ease of handling. Plant containers should be stacked. Farmers should be prepared to unload and separate materials on their own as staff may not necessarily be available to assist. Please call Melissa Filliagi at 410-638-3417 or send an e-mail to mfili@menv.com to provide your estimated day and time of arrival.

Dear Friends of Extension—I will be away from the Extension Office on maternity leave for a minimum of eight weeks beginning mid-March 2016. Publication of this newsletter will be put on hold during my leave but will resume later this spring. During the absence, I will do my best to keep you updated through our electronic channels, including our e-mail listserv and Facebook page. Thank you for your understanding, and remember that you can contact the office any time!

Sincerely,

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March 2016

Ag Notes

Harford County Newsletter

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