Maryland Department of Agriculture - Avian Influenza Alert

A highly contagious avian influenza carried by migratory fowl is currently infecting poultry flocks in the Pacific and Central United States. It has not been detected on the East Coast. IMMEDIATELY REPORT SICK BIRDS TO THE MARYLAND DEPARTMENT OF AGRICULTURE (410-841-5810). The strains found in the U.S. have NOT been found to affect humans.

Take steps to protect your flocks:

1. Minimize your flocks access to areas that include ducks, geese, and other wild birds
2. Watch for signs of illness in your birds; quarantine and report sick birds immediately
3. Disinfect and clean areas and items potentially exposed to the virus
4. Growers should keep clothing (boots, coveralls, etc) for each poultry house and not wear them on other areas of the farm

The University of Maryland Extension recommends eliminating all unnecessary personnel from your farm. As a USDA/MDA employee, if you make other farm visits, only visit one per day. Park at the end of the lane, stay away from the production area and clean the undercarriage of your vehicle.

New Online Pesticide Website

Pesticide Licensing and Certification

As a certified applicator or business, you may have received a postcard/renewal notice in the mail from the MDA. Don’t throw it away! They have updated their website with useful information. The new website will allow you to renew licenses, search for certification, print certificates, and get approval for recertification sessions. Your label or document contains information you need to renew your certification, so keep it in a safe place!

https://www.egov.maryland.gov/MDA/pesticides

UME Agriculture Contacts

Jarrod Miller, Agriculture Educator
Soils, Grain Crops, Forage
Somerset Office, 410-651-1350

Jon Moyle, Poultry Specialist,
Lower Eastern Shore Research Center
Wicomico County, 410-742-1178

Jessica Flores, Agriculture FEA
Livestock, Forage, Equine & Poultry
Worcester Office, 410-632-1972

Ginny Rosenkrantz, Horticulture FEA
Commercial Horticulture
Wicomico Office, 410-749-6141
What is the Soil Buffering Capacity?

Soil Buffering Capacity

Anyone paying close attention to soil test reports may notice several measurements for acidity, including a simple pH (water-soil mixture), buffer pH (mixed with a base), or Hydrogen (H) concentration. As a master variable, soil pH is immediately useful for predicting potential limits to agronomic yields. Ameliorating issues with pH is more complex though, as the chemistry of soils across Maryland will vary in their response to liming.

The issue with a simple soil pH is that it only measures “active” acidity, or what is in the soil water. There may also be additional acidity held in reserve on the soil’s cation exchange capacity (CEC). This can mean that a simple pH may not measure the total amount of acid present, particularly if the soil has a high CEC. Any H neutralized by lime based on a simple pH measurement will be replenished by H (and Al) held in reserve on the CEC. Like all other soil properties, the amount of reserve acidity will vary between soil types and across the geologic provinces.

What does Buffer Capacity mean?

Grass strips are a conservation method to reduce the loss of soil through erosion, as well as “buffer” the stream from large influxes of sediment. For pH, buffering capacity is the ability of a soil to resist rapid change in pH through the addition of acids (fertilizers, organic matter) or bases (lime). If a soil has a low buffer capacity, the active acidity measured by a simple pH will closely match the total acidity, as well as the lime necessary to adjust the pH. However, if a soil has a large buffer capacity, lime will be needed to counter the active acidity, as well as the acidity held in reserve. This reserve acidity will slowly release from the CEC, also slowing the liming reaction. If the buffer capacity is ignored, then shortly after the active acidity is neutralized by lime, the reserve acidity will return the pH back to initial levels.

What soil properties increase buffer capacity?

At a moderate soil pH (5.0-7.0), soils with greater CEC will be well buffered. These will include soils with greater clay, oxides and humus (organic matter), which will hold acids and bases in reserve.

Al toxicity is a proven problem and liming can help.

Aluminum in soils is complex, it can be exchangeable on the CEC, absorbed by organic matter, or in a less soluble solid form (hydroxide). The main concern for agronomic production is the exchangeable, free Al, which causes toxicity. Aluminum bound by organic matter or as a hydroxide is part of the total soil acidity, but it probably doesn’t affect plant roots.

Soils can vary in the amount of exchangeable and non-exchangeable Al, and can be simplified by a discussion of parent material. Younger soils, with more complex minerals may need a base saturation of 80% to counter exchangeable Al and to reach a neutral pH. Older, weathered soils with simpler mineralogy and oxides will have more non-exchangeable Al, and can reach a neutral pH at lower base saturations. The same thing can be said for soils with greater organic matter, which will bind enough Al that lower pH’s can reduce toxicity.

How do I use the buffer pH on my report?

Each lab in the Mid-Atlantic may perform a different test of a soils buffer capacity, based on the regional characteristics of their soils. Any recommendation for lime will be based on a target pH, such as 6.0 or 6.5. Any soil sample with a water pH above 7.0 will not have a buffer pH reported, as it is assumed you have no need to raise the pH further. If you do have a buffer pH within your soil analysis, the lower it is, the greater the exchangeable acidity is in your soil, and the more lime will be necessary. For example, a reported buffer pH of 6.9 may indicate little or no lime is needed, but a buffer pH of 6.0 indicates that your soil has additional reserve acidity.

Should I follow my lime recommendations?

Recommendations to raise the pH of your soil should be considered carefully. You may choose to follow the recommendations given, but be aware they may not reflect the conditions of your soil or crop needs, and are meant to be issued to a wide range of soil types.

Yield increases with lime have been tied to the amelioration of toxic Al, so that applying more lime than is necessary is not economic from an agronomic standpoint. Overliming soils may also reduce the micronutrient content, creating a new and separate issue.

Therefore, as an agronomic producer, you should take time to understand the pH and buffer pH of your soil samples. Are you aware of fields where you had no time to bring to a higher pH prior to the growing season, but still yielded similar crops? Did you see micronutrient deficiencies at a field pH of 6.5 but not at 6.0? Were those similar soils? You can take the recommendations given and further define a lime program for your operation through an intimate knowledge of the landscape.

-Jarrod Miller
2015 Mid Atlantic Precision Agriculture Equipment Field Day

**When:** August 5th, 2015  
**Where:** Somerset County Civic Center, 11828 Crisfield Ln, Princess Anne, MD 21853  
**Time:** 9am to 4 pm (Registration starts at 9am, talks being at 10.)

The 2015 Mid-Atlantic Precision Ag Equipment Field Day is coming to the Lower Eastern Shore! This field day is a way to get recent information from Universities and Agri-businesses about the latest technology and ideas. Vendors, equipment demonstrations and a farmer panel are also planned. You must register online for this event, search on Eventbrite or use this link: [https://2015precisionag.eventbrite.com](https://2015precisionag.eventbrite.com)

Come hear and see the latest in a rapidly evolving industry. Talks include:

- Soils for Precision Ag
- Big Data
- Legal Aspects of UAV’s (drones)
- How to best utilize your data

Nutrient and pesticide CEU’s will be available. Free lunch will be provided.

---

**Poultry Growers Meeting**

**When:** August 28, 2015  
**Time:** 11 a.m. to 2 p.m.  
**Where:** Somerset Extension Office

**Topic:** 'Securing Your Farm' by Ag Law

This event will cover a host of legal issues that impact commercial poultry operations.

Please check back for more details and registration as we get closer to August.

***A light lunch will be provided

For more information, contact: Jon Moyle at 410-742-1178 or jmoyle@umd.edu

---

**Estate Planning Workshop**

**When:** August 26, 2015  
**Time:** 9 a.m. to Noon  
**Where:** Wicomico Extension Office

Having an up-to-date estate plan is an important part of any farm or business. This workshop series will cover the features of an estate plan, tax considerations and what you need to consider before developing the estate plan.

These workshops are sponsored by the Agriculture Law Education Initiative and the Maryland Crop Insurance Education Program.

**For more information contact:**  
Jarrod Miller - (410)-651-1350
Agricultural Research Updates

**Loss of Nitrogen Fertilizer on Coarse Textured Soils**

Nitrogen may be lost as ammonia (gas) or leached out as nitrate. Ammonia losses were greater in dry soils, with losses ranging from 11-18% of applied fertilizer. Nitrate leaching ranged from 48 to 66% of applied fertilizer under wet conditions. Leaching was greatest for UAN followed by UAN with additives. Polymer coated urea performed the best under all circumstances, losing less than 1% N under dry conditions.


**Livestock for Biological Control of Phragmites**

Rotational goat grazing was successful at reducing the invasive wetland plant, *Phragmites australis*. Cover of *Phragmites* was reduced from 100 to 20% in field tests, where goats had no choice but to graze *Phragmites*. Cows and horses were also observed to readily consume this invasive species.


**Cover Crop Mixtures Have Similar Water Use to Single Species Plantings**

Cover crop mixtures are advocated for their reduced water use compared to single species. A study conducted in Colorado and Nebraska observed a 10 species cover crop mixture and crop water use. The study reported no differences in water use with a mixture of cover crops versus a single species.


**Transitioning to Organic Agriculture: Effects on Soilborne Diseases**

Rhizoctonia root rot and sudden death syndrome (SDS) were observed during the 3 year transition to organic fields. An overall decrease in root rot was observed, compared to a rise in *Fusarium virguliforme* (the cause of SDS). Specific treatments were not consistent in their results.


**Soil Properties after 10 Years of Animal Waste Application**

10 years of cattle manure application to soils in Kansas improved resistance to compaction, which was related to the increased organic matter observed in the soils. Total carbon, bulk density and optimum water content also improved with manure application.


**Phosphorus Mobilization in a Coastal Plain Tributary**

Microbial activity and pH fluctuation play a role in the release of P from creek sediments around the Chesapeake Bay. The release of P was greater in headwater sediments (near agriculture) than lower reaches. Salinity and temperature promoted the release of P in insignificant amounts, but tides were hypothesized to play a role in the dilution and removal of P from the upstream portion of the creek.

2015 Fair and Show Requirements

Avian Influenza Testing Requirements for all Poultry Exhibitions in Maryland.

1. NO WATERFOWL WILL BE ALLOWED INTO FAIRS AND SHOWS FOR 2015.

2. ALL Poultry must be tested for avian influenza, in state and out of state, within 10 days prior to entry, or originate directly from an NPIP Avian Influenza Clean or Monitored flock, due to the increasing threat of Highly Pathogenic Avian Influenza, currently in the Midwest and Pacific United States.

Flock testing is available. Contact your local extension office or the MDA webpage.

Blessing of the Combines

Worcester County Extension Open House!

Date: Saturday, August 1, 2015
Location: 305 Bank Street Snow Hill, MD
Time: 11:00am – 3:00pm

The University of Maryland Worcester County Extension (Worcester County UME) will be hosting an open house as part of Snow Hill’s Annual Blessing of the Combines event! As part of the annual event, Worcester County UME will be showcasing how MD Extension serves the community in farming, youth, health and wellness, and home gardening.

Kid activities and light refreshments will be provided at the UME Worcester County office during this town event. Come out and join the fun! - Jessie Flores

Is Manure a Solid Waste?

Ag Law Webinar
August 6th, 2015
Noon

- A Federal district judge has ruled that manure can be a solid waste
- A lawsuit has been filed with the EPA to regulate air emissions from animal feeding operations

To find out more sign up for an online webinar: https://livestockrcrawebinar.eventbrite.com

17th Annual Commodity Classic

July 23, 2015
Queen Anne’s 4-H Park
Route 18 between Queenstown & Centreville.
10:00 a.m. to 5:30 p.m.

Tickets:
$10. Price will increase to $20 after 2:30 p.m.

Contact the MGPA for tickets and information:
410-956-5771
Lynne.mdag@gmail.com
www.marylandgrain.com

On Farm Poultry Freezer Technology is Available

Freezing technology can be an alternative to composting for poultry mortality. Although freezer units have been around for a while, regulatory agencies in Virginia and Delaware recently listed them as a best management practice. The Delaware NRCS also offers cost share through the EQIP program. A February 2015 article in the Delmarva Farmer listed many benefits including a reduction in odor, flies and vultures on the farm. The disadvantages are the upfront cost, which can be $4,800 for each freezer. A fact sheet from the NRCS describes freezers as being 40 cubic feet and able to hold 1,500 lbs of dead birds. They are designed to operate between 10°F and 20°F.

The NRCS fact sheet lists two sources of freezers that meet their specifications:
Brummel Poultry Supply, Texas: 908-855-7217 (jasonbrummell@yahoo.com) OR
Greener Solutions, Millsboro, DE: 302-934-9500
## Extension Events

<table>
<thead>
<tr>
<th>Date</th>
<th>Event Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>08/05</td>
<td>Precision Ag Equipment Day, Somerset Civic Center</td>
</tr>
<tr>
<td>08/06</td>
<td>Manure and the Law Webinar, Online Event</td>
</tr>
<tr>
<td>08/07</td>
<td>Nutrient Management Exam, Annapolis, Cambridge</td>
</tr>
<tr>
<td>08/26</td>
<td>Estate Planning Workshop, Wicomico Extension Office</td>
</tr>
<tr>
<td>08/28</td>
<td>Poultry Growers Workshop, Somerset Extension Office</td>
</tr>
<tr>
<td>09/19</td>
<td>Year Round Grazing Systems Field Day, UMES</td>
</tr>
</tbody>
</table>

### Other Events

<table>
<thead>
<tr>
<th>Date</th>
<th>Event Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>07/24-07/28</td>
<td>Somerset County Fair, Princess Anne</td>
</tr>
<tr>
<td>07/30-8/1</td>
<td>The Great Pocomoke Fair, Pocomoke</td>
</tr>
<tr>
<td>08/01</td>
<td>Blessing of the Combines, Snow Hill</td>
</tr>
<tr>
<td>08/07-08/09</td>
<td>Worcester County Fair, Snow Hill</td>
</tr>
<tr>
<td>08/14-08/16</td>
<td>Wicomico County Fair, Salisbury</td>
</tr>
<tr>
<td>08/28-9/27</td>
<td>Maryland State Fair, Timonium</td>
</tr>
</tbody>
</table>

Dorchester Ext. Office ~ 501 Court Lane, Room 208 ~ Cambridge, MD 21613 ~ 410-228-8800 ~ Fax 410-228-3868  
Somerset Ext. Office ~ 30730 Park Drive ~ Princess Anne, MD 21853 ~ 410-651-1350 ~ Fax 410-651-0806  
Wicomico Ext. Office ~ P.O. Box 1836 ~ Salisbury, MD 21802 ~ 410-749-6141 ~ Fax 410-548-5126  
Worcester Ext. Office ~ P.O. Box 219 ~ Snow Hill, MD 21863 ~ 410-632-1972 ~ Fax 410-632-3023

Want to receive this newsletter electronically? E-mail jarrod@umd.edu and type LES AG Newsletter into the subject line.