

“A Fresh Look at Clean Air: Maryland Ambient Air Quality Study Roundtable”

UNIVERSITY OF
MARYLAND
EXTENSION



GROWER LUNCH BREAK NOTES

November 18, 2020

At ALEI's Annual Agricultural and Environmental Law Conference early this month, the above-titled talk was given by the following. (See Page 4 for Grower Lunch Break meeting **recording** link/pass code.)

Presenters:

- ❖ [Margaret Todd](#), Research Assistant, Agriculture Law Education Initiative
- ❖ [Suzanne Dorsey](#), Ph.D., Assistant Secretary, Maryland Department of the Environment
- ❖ [Samantha Campbell](#), President, Keith Campbell Foundation for the Environment
- ❖ [Holly Porter](#), Executive Director, Delmarva Poultry Industry, Inc. (now Delmarva Chicken Association)

Jenny Rhodes attended the live discussion and thought it was a great talk on the topic, giving a regulatory overview of a Maryland Dept. of the Environment study in association with DPI and the Keith Campbell Foundation for the Environment. Margaret Todd started with a **Clean Air Act Crash Course** – very informative and helps us understand particulate matter (PM).

[Margaret \('Megan'\) Todd](#) begins: This study is collecting data on the ambient concentrations of ammonia and particulate matter of 2.5 and 10 on the Eastern Shore.

- Clean Air Act: EPA is required to regulate any airborne pollutant which may endanger public health ('Primary') or welfare ('Secondary', which includes effects on soils, water, crops, vegetation, man-made materials, animals, wildlife, weather, visibility, and climate), enacted in 1970, creating two standards:
 - National Ambient Air Quality Standards (NAAQS)
 - Six criteria pollutants - Pb (lead), O₃ (ground level ozone), CO (carbon monoxide), PM (particulate matter - the pollutants being looked at for in this study), NO_x, SO_x (nitrogen and sulfur oxide, which contribute to acid rain)
 - Diverse, numerous sources
 - Regional average concentrations
 - EPA must review every 5 years
 - Emissions Standards (These are NOT part of this study)
 - Hazardous Air Pollutants that are known to cause cancer or other serious health/environmental impacts. There are currently 187 listed - which ammonia is not one
 - Stationary and mobile sources – like what is coming out of factory pipes
 - Technology based controls

- Next the EPA sets State Designations:
 - Attainment – meaning the area is generally doing great and meeting standards
 - Non-attainment – not meeting the standards
 - Maintenance – only recently began to meet the standards and must provide EPA more info to make sure they stay on track and can get to Attainment status. State Implementation Plan will help bring down the 6 ambient pollutions.

Example at EPA website: https://www3.epa.gov/airquality/urbanair/sipstatus/reports/md_areabypoll.html

- Particulate Matter
 - Particle pollution includes that can get suspended in the air and inhaled into your lungs:
 - **PM₁₀** – inhalable particles (coarse particulate matter)
 - **PM_{2.5}** – fine inhalable particles. A size comparison: a single head hair is 30 times larger than the finest PM_{2.5} (fine particulate matter)
- Ammonia
 - Colorless gas with distinct odor, produced naturally in the environment
 - Excess NH₃ (ammonia) is toxic, harmful to health
 - There are not Federal regulations for ammonia, however, Maryland has Ammonia Regulations
 - Ammonia listed as a Class II toxic air pollutant (TAP)
 - Acceptable Ambient Levels used to evaluate the air quality impacts of all premises within a 3.1 mile radius

Suzanne Dorsey of MDE is next to present - **Lower Eastern Shore Ambient Air Monitoring Project:**

- Came out of concerns raised by citizens of the quality of air on the shore, particularly as it relates to the poultry industry.
- Mission of MDE for the health and wellbeing of all Marylanders. Excited to find resources scientifically valid monitoring stations to analyze what health concerns may exist
- **Control Sites:** Baltimore City (an urban site) and Horn Point (not impacted by poultry industry)
- **Experiment Poultry Sites:** Princess Anne (low density) and Pocomoke City (high density)
- **Objectives:**
 - Collect ambient air data near poultry houses for one year
 - Compare 2 control sites and 2 experimental sites (1 high-density/1 low-density poultry pop.)
 - Publicly avail information in near real time:
 - <https://mde.maryland.gov/programs/Air/AirQualityMonitoring/Pages/Lower-Eastern-Shore-Monitoring-Project.aspx>
 - Used EPA siting criteria for site selections
 - Started collecting data April 2019- today
- Ammonia (NH₃) collected with EPA-approved method. And as Megan stated, there is no Federal ambient air health standard for Ammonia
 - Data compared to 1-hour MDE Air Toxics Screening of 350 ppb (parts per billion); fairly conservative number so they could compare to some health standard
 - Data collected were Fine Particulate Matter (PM 2.5) and Coarse (PM10)
 - Federally approved sampling methods
 - Data compared to: 24-hour NAAQS as we collected the data
 - Collected meteorological conditions at each site: wind speed/direction; temps, rain for each site

- Pocomoke City – higher density site
 - 29 broiler houses within a 1-mile radius
 - 70 houses within a 2-mile radius
 - More poultry houses outside of 2-mile radius
- Princess Anne – lower density site (UMES Farm)
 - No broiler houses within 1-mile radius
 - 7 houses within 2-mile radius
 - More poultry houses outside 2-mile radius

MDE Results:

- None of the data collected in either the experimental or control sites came near the NAAQS Health Standard.
 - NAAQS PM 2.5 24-hr = **35 micrograms/cubic meter was the Standard**
 - All sites' data showed they were significantly below this Standard
 - Experimental sites were *slightly above* control sites on the average 24-hour max standard
- Again, data collected for PM 10, none came near the Federal Health Standard
 - NAAQS PM 10 24-hr standard = **150 micrograms/cubic meter was the Standard**

Ammonia (NH₃)

- NH₃ Summary To Date - Time Series Chart: NH₃ - Hourly NH₃ Concentrations April-Sept 2020
 - Standard: 1-hr MDE NH₃ Air Toxics Screening Level = 350 ppb (parts per billion)
 - Data collected so far all sites significantly below of MDE Standard

Samantha Campbell, introduced her father's foundation, the Keith Campbell Foundation. Funded the MDE

Holly Porter, explains why the industry got involved. It started several years ago when groups were trying to put emphasis on public health concerns. No data to prove what most growers know, that the industry does not affect ambient air as the bills that are being put forward professed. However, there were no ambient air monitoring stations on the lower eastern shore to show what the impacts might be. How can we gather more data and information, so we started discussions with MDE experts on this. The Campbell Foundation was interested in partnering and had funds and resources. Overall it's been very effective and we are starting to see the data.

Jenny Rhodes asked if there is weather data to lay over that data. MDE does have more complex data, graphs that showed scientific collection weather and wind. Public information – the charts and tables – are on the MDE website.

<https://mde.maryland.gov/programs/Air/AirQualityMonitoring/Pages/Lower-Eastern-Shore-Monitoring-Project.aspx>

Bud Malone asked about correlating production practices and noted the Princess Anne site was surrounded by a field of corn. Would this have any bearing of localized effects? Holly said yes, when you look at the date of spike, it very much correlated with the field side dressing with the corn.

Jon Moyle asked if they can get the wind and weather charts for next Tuesday's environmental MDE meeting.

Chris Brosch asked if MDE are the right folks to ask what kind of weather data makes a difference? Holly believes that can lead to additional research. Has not identified what that would be yet. Wind inversion, Jenny says, could make a difference. And wind shift between seasons says Holly. There is a lot of questions still to be researched.

Sean Clougherty - have you been able to relay this data to State Legislature yet? Holly has had one-on-one with legislators, shared the site, and has shared site with all eastern shore delegation, trying to share far and broad so people can take a look at it. She wants to let them know that the data is out there and is continually collected and hopefully will help to answer some questions. Jon Moyle – data is on the website, it's very interesting.

Here is the Zoom recording of our Nov. 18 Grower Lunch Break:

https://umd.zoom.us/rec/share/H57ulddMk-orSg_hiDHXLD29sPUUp7eESJiLqIVPnw1ydVhRQpt0YDEtWZan_R0L.109v8v2pANKZCfi- **PASSCODE: SLQpn5p^**

Next Grower Lunch Break with Extension: WED., DECEMBER 2, AT NOON

Topic: “Recognition of Common Broiler Diseases”

Speaker: Dan Bautista, DVM, MS

Senior Technical Services Veterinarian for Zoetis



HOW TO JOIN:

<https://umd.zoom.us/meeting/register/tJ0kfuyhqjispGNzp8wlhemiV6PeHRsJpxntO>



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