BETTER NUTRIENT MANAGEMENT BEGINS HERE

Nutrient Management Program | 2018 Annual Report

MARYLAND DEPARTMENT OF AGRICULTURE

SECRETARY'S Message

"During the year, farmers in the high risk tier group for phosphorus loss began transitioning to the new Phosphorus Management Tool (PMT)."

Extreme weather, marked by excessive rainfall and recurrent flooding, had widespread impacts on Maryland agriculture during the first half of 2018. A cold, wet spring forced many farmers to delay planting. As the season progressed, erratic rainfall patterns stressed newly planted crops and drowned out some fields, forcing many farmers to replant.

Nitrogen loss is always a concern following heavy rains. In 2018, the Nutrient Management Program within the Maryland Department of Agriculture focused its education programs on helping farmers adapt their management practices to unpredictable weather extremes. Continuing education workshops—conducted in partnership with the University of Maryland Extension—focused on the benefits of variable rate nutrient application technology, manure injection, split nitrogen applications, and the use of nitrogen stabilizers to protect against nutrient losses. More than 3,000 farmers and consultants attended these training sessions.

During the year, farmers in the high risk tier group for phosphorus loss began transitioning to the new Phosphorus Management Tool (PMT). This updated tool identifies fields at risk for phosphorus loss and prescribes best management practices to prevent the additional buildup of phosphorus in soils that are already saturated. The tier group includes 96 farmers managing 10,894 acres of land identified as having a high risk for phosphorus runoff based on soil test results. A second tier group of farmers with fields at medium risk for phosphorus runoff will begin using the PMT next year.

It is no secret that dairy farmers are struggling to make ends meet these days as they deal with a changing market and stubbornly low milk prices. The department recognizes the challenges faced by small, family owned dairy farms and in Fiscal Year 2018 directed University of Maryland advisors to give priority to writing nutrient management plans for dairy operations with under 300 animal units. The move helps ensure that these operations remain in compliance and eligible for state cost-share programs.

Overall compliance with the Nutrient Management Program remained consistent in Fiscal Year 2018, with 96 percent of farmers submitting annual reports on how they manage nutrients. The program's enforcement specialists conducted 725 farm audits, focusing on farms with missing soils data and other reporting violations. Fifty-nine percent of these operations were in compliance and the department is working to bring the remaining operations into good standing with program requirements.

On the urban side, the Turfgrass Nutrient Management Program revised its regulations for organic fertilizer products as a result of changes made to the Lawn Fertilizer Law this year by the Maryland General Assembly. The changes make the rules for applying organic fertilizer products consistent with those for synthetic products. The new rules took effect on October 1, 2018. The program continues to train and certify lawn care professionals on fertilizer application techniques and healthy lawn care practices.

The following report more fully describes how farmers and professional fertilizer applicators are practicing better nutrient management.

Joe Bartenfelder,
Maryland Agriculture Secretary

Maryland Nutrient Management Program AND THE CHESAPEAKE BAY

The Nutrient Management Program protects the health of Maryland's waterways by regulating the amount, timing, rate, and placement of commercial fertilizer products and organic nutrient sources used by farmers to grow crops and by lawn care professionals to fertilize lawns. The program works to ensure that nutrients applied to crops and lawns are not impacting waterways. Program staff work closely with poultry, dairy, and other livestock producers to make certain that animal manure—a valuable nutrient resource—is managed in an environmentally sound manner. Guidance is provided by the Nutrient Management Advisory Committee which includes representatives from agricultural interests, environmental groups, the turfgrass industry, University of Maryland, and government agencies.

Agricultural Nutrient Management Program

Farming operations that generate $2,500 in gross income or have 8,000 pounds or more of live animal weight are required by Maryland law to follow nutrient management plans when fertilizing crops and managing animal manure. These science-based plans specify how much fertilizer, manure, or other nutrient sources may be safely applied to crops to achieve yields and prevent excess nutrients from impacting waterways. The program's team of nine nutrient management specialists ensures that plans are developed, updated, and implemented according to state regulations. To further protect water quality, farmers are required to have stream setbacks and livestock exclusion measures in place. Farmers using certain tillage systems are required to incorporate manure and other organic nutrient sources into fields within 48 hours of application and follow specific timing requirements for fall nutrient applications. A ban on spreading manure in winter is being phased in with complete implementation by March 1, 2020. To further protect waterways, farmers with fields containing high soil phosphorus levels are required to transition to the updated Phosphorus Management Tool over the next several years.

Turfgrass Nutrient Management Program

Maryland's Lawn Fertilizer Law authorizes the department to train, certify, and license individuals and companies hired to apply lawn fertilizer to non-agricultural land. The department's training and certification program—developed in partnership with the University of Maryland—focuses on fertilizer application restrictions, soil science, and best management practices that can be used to help protect waterways from nutrient runoff. A compliance program ensures that fertilizer applications are made following University of Maryland application and timing recommendations.

AGRICULTURAL Nutrient Management Program

Phosphorus Management Tool

Maryland's Phosphorus Management Tool (PMT) regulations require farmers with high soil phosphorus levels to begin using the new PMT to identify fields at risk for phosphorus loss. Future applications of manure would be limited on fields with high soil phosphorus levels. In addition, farmers will be required to implement best management practices that prevent the additional buildup of phosphorus in soils that are already saturated. The move provides waterways with enhanced protection against phosphorus runoff and helps Maryland meet its Chesapeake Bay cleanup goals. To give farmers time to make needed adjustments to their operations, the PMT regulations are being phased in over the next several years.

- ***Soil test data results*** have been submitted for 1,114,418 acres of land or 87 percent of Maryland's 1,277,930 acres of regulated farmland. The data indicate that most farm fields are not at risk for phosphorus loss and may still benefit from manure as a crop fertilizer. Approximately 20 percent of the farm fields tested have soil phosphorus levels that will require use of the PMT. The program continues to target farms that have not submitted soils data for audits and inspections.
- ***Tier groups have been established*** for farmland required to transition to the PMT based on soil phosphorus Fertility Index Value (FIV) results. The tier group designation determines when the farmer must transition to the PMT.
- ***The highest risk group*** (FIV 450-499) began transitioning to the PMT in 2018. This group includes 96 operations managing 10,894 acres.
- ***The medium risk group*** (FIV 300-449) will begin transitioning to the PMT in 2019. This group includes 252 operations managing 54,271 acres.
- ***The low risk group*** (FIV 150-299) will begin transitioning to the PMT in 2020. This group includes 1,313 operations managing 122,705 acres.
- ***High risk farms*** (FIV 500 or greater) are already banned from receiving additional phosphorus applications.

Compliance and Enforcement

Maryland farmers are required to follow nutrient management plans that specify the amount, timing and placement of nutrients for each crop. These plans are prepared by University of Maryland Extension advisors, certified private consultants, or farmers who are certified by the department to develop plans for their own operations. Maintaining compliance requires farmers to keep their plans updated, submit Annual Implementation Reports summarizing nutrient applications for the previous year, and follow their nutrient management plans when fertilizing crops and managing livestock manure. The department's team of nine nutrient management specialists analyzes Annual Implementation Reports and conducts site visits to verify that farmers are following their plans.

FIGURE 1:
Annual Implementation Reports Submitted *(as of June 30, 2018)*
5,340 Total Regulated Farms

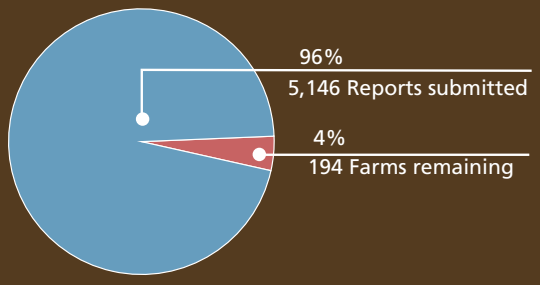
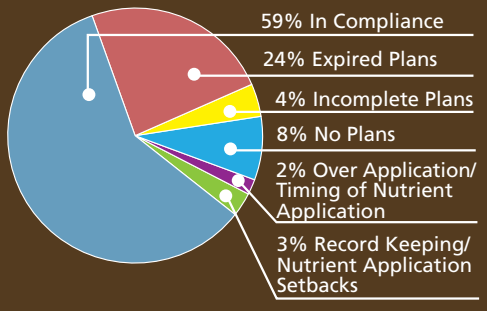


FIGURE 2:
Results of 725 On-Farm Audits
(Fiscal Year 2018)

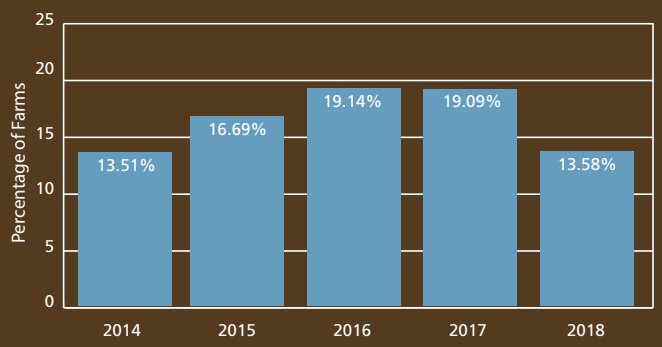


- ***Nutrient Management Plan Submissions***—New farming operations are required to submit copies of their initial nutrient management plans to the department. This is the first step toward achieving compliance. By the end of the fiscal year, the department had nutrient management plans on file for 5,361 regulated farm operations. Nutrient management specialists locate new farming operations and pursue enforcement actions against the handful of operators who have not submitted their initial plans.

- ***Annual Implementation Reports***—Farmers are required to update their nutrient management plans before they expire and submit Annual Implementation Reports—in lieu of plans—to the department by March 1 summarizing nutrient applications for the previous calendar year. By the end of the fiscal year, approximately 96 percent of regulated farmers managing about 1.3 million acres of land had submitted these reports. The department issued $48,500 in fines against 194 operators for late or missing implementation reports.

- ***On-Farm Audits and Inspections***—Enforcement specialists conducted 725 on-farm audits in Fiscal Year 2018 focusing on farms with missing soils data or a history of compliance issues. The number of audits is down from 2017 due to staff vacancies that have since been filled. Fifty-nine percent of the audited farms were in compliance. The department is actively pursuing full compliance for all audited operations. In Fiscal Year 2018, the department issued $51,750 in fines against 63 operators for violations.

FIGURE 3:
Farm Audits and Follow-up Inspections
Percentage of Farms Receiving Inspections
(Fiscal Years 2014-2018)



Let's Talk Manure Injection

Ten years ago, Stan Culp began injecting liquid manure into his cornfields instead of spreading it on top. For Culp—who farms in Carroll County—manure injection offers an environmentally sustainable way to recycle manure produced by his 135-head dairy operation and an adjacent swine operation. The practice works well with no-till farming systems, prevents nutrient runoff and ammonia losses, preserves surface residue, and reduces erosion.

"Seven of the ten years that we've been injecting have been good," said Culp.

"My yields have been steadily increasing, but this year has been a challenge due to all the moisture."

Nevertheless, Culp says that he would not shy away from injections. "If we were to surface spread and you have heavy rains, well, you know what can happen."

Culp says that he uses the injected manure as a starter fertilizer for his corn crop. The only other nutrient that he applies is a nitrogen sidedress in July.

Another advantage of injecting manure into the soil is the smell—or lack of it. "It virtually eliminates the odor and the neighbors really appreciate that," Culp said.

Culp takes his role as an environmental steward seriously. He takes advantage of the department's cost-share grants for manure injection, manure transport, cover crops, and other best management practices.

This year, he put in a new slurry storage system by combining state and federal cost-share funds. The new system safely contains all of the manure produced by his livestock during the winter months, when spreading is not allowed. "We are catching everything," he said.

Certification, Licensing and Education Programs

To ensure the quality of nutrient management plans written for farmers, the department oversees a training, certification, and licensing program for nutrient management consultants and farmers who want to prepare their own plans. The following activities took place in Fiscal Year 2018:

- ***Nutrient Management Exam Training***—The department trains and certifies consultants to provide farmers with nutrient management plans that balance nutrient inputs with crop requirements. During the fiscal year, the department offered two training and exam sessions for prospective consultants. Thirty-five new consultants were certified, bringing the total number of certified consultants to 1,419.

- ***University of Maryland Consultant Program***—The department funded 20 University of Maryland advisors in Fiscal Year 2018 who provide farmers with nutrient management plans free of charge.

- ***Farmer Training and Certification***—The Nutrient Management Program and University of Maryland Extension train and certify qualifying farmers who want to become certified to write nutrient management plans for their own operations. Regional workshops are offered for farmers managing livestock, poultry, crop, and nursery and greenhouse operations. To become certified, farmers must learn the basics of nutrient management planning, pass a specialized nutrient management exam, and initially work with a nutrient management specialist or Extension specialist to develop their plans. In Fiscal Year 2018, the department trained and certified 25 farmers to write nutrient management plans for their own operations. To date, 675 farmers have been trained and certified.

- ***Nutrient Applicator Voucher Training***— Farmers who apply nutrients to 10 or more acres of cropland are required to attend an applicator training course once every three years. In Fiscal Year 2018, the department partnered with University of Maryland Extension to conduct a series of statewide voucher training sessions attended by 526 farmers.

- ***Continuing Education***—Certified consultants are required to take 12 hours of continuing education credits every three years. During the year, the department and Extension sponsored 144 continuing education courses attended by 3,163 individuals. Classes focused on enhanced nutrient management practices including variable rate applications, mapping equipment technology, split applications of nitrogen fertilizer, and the use of stabilizers to protect against nitrogen losses.

In April, the department hosted a workshop on manure injection and nutrient management practices for more than 50 dairy farmers and agricultural representatives in Western Maryland.

TURFGRASS
Nutrient Management Program

Maryland's Lawn Fertilizer Law helps protect the Chesapeake Bay and its tributaries from excess nutrients entering its waters from a wide range of non-agricultural sources, including golf courses, public parks, recreation areas, athletic fields, businesses, cemeteries, and home lawns. Lawn care professionals hired to apply fertilizer to lawns must be certified by the department or work under the direct supervision of an individual who is certified. Additionally, the law requires both homeowners and lawn care professionals to obey fertilizer application restrictions, use best management practices when applying fertilizer to lawns, observe fertilizer blackout dates, and follow University of Maryland fertilizer recommendations.

Certification and Licensing—During the year, eight regional professional fertilizer applicator exams were attended by 118 lawn care professionals. As of June 30, 2018, the program issued 906 business licenses and 1,550 professional fertilizer applicator certificates. Another 1,550 lawn care company employees have been trained to apply fertilizer to lawns while working under the supervision of a certified professional.

Training, Certification and Licensing—Professional fertilizer applicators are required to complete two hours of continuing education each year to renew their annual certificates. During the fiscal year, the program offered 16 recertification courses and approved numerous training courses offered by private industry and trade groups.

Annual Activity Reports—License holders are required to file an annual activity report with the program by March 1 covering the previous year. By the end of the fiscal year, the program had received activity reports for 900 businesses representing a 96 percent compliance rate.

Enforcement Activities—During the year, 207 record reviews were conducted. Thirty warnings were issued and ten violations were resolved through follow-up inspections and education.

Revised Regulations—Following legislative changes made to the Lawn Fertilizer Law during the 2018 session of the Maryland General Assembly, the program revised its regulations for organic fertilizer products to make them consistent with those for synthetic products. Additionally, the changes give professional fertilizer applicators more choices in the products they can use. The revised regulations took effect October 1, 2018.

Homeowner Outreach—The program continued to educate citizens about Maryland's Lawn Fertilizer Law through partnerships with the University of Maryland Master Gardeners, news releases, social media, the Internet, and public events. The program worked with local jurisdictions and homeowner associations to ensure that contracts written for lawn care services were in line with state laws and regulations. In addition, a new brochure on the importance of soil testing was developed and distributed at public events.

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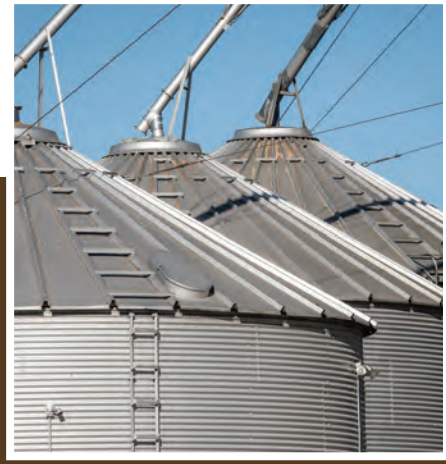

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