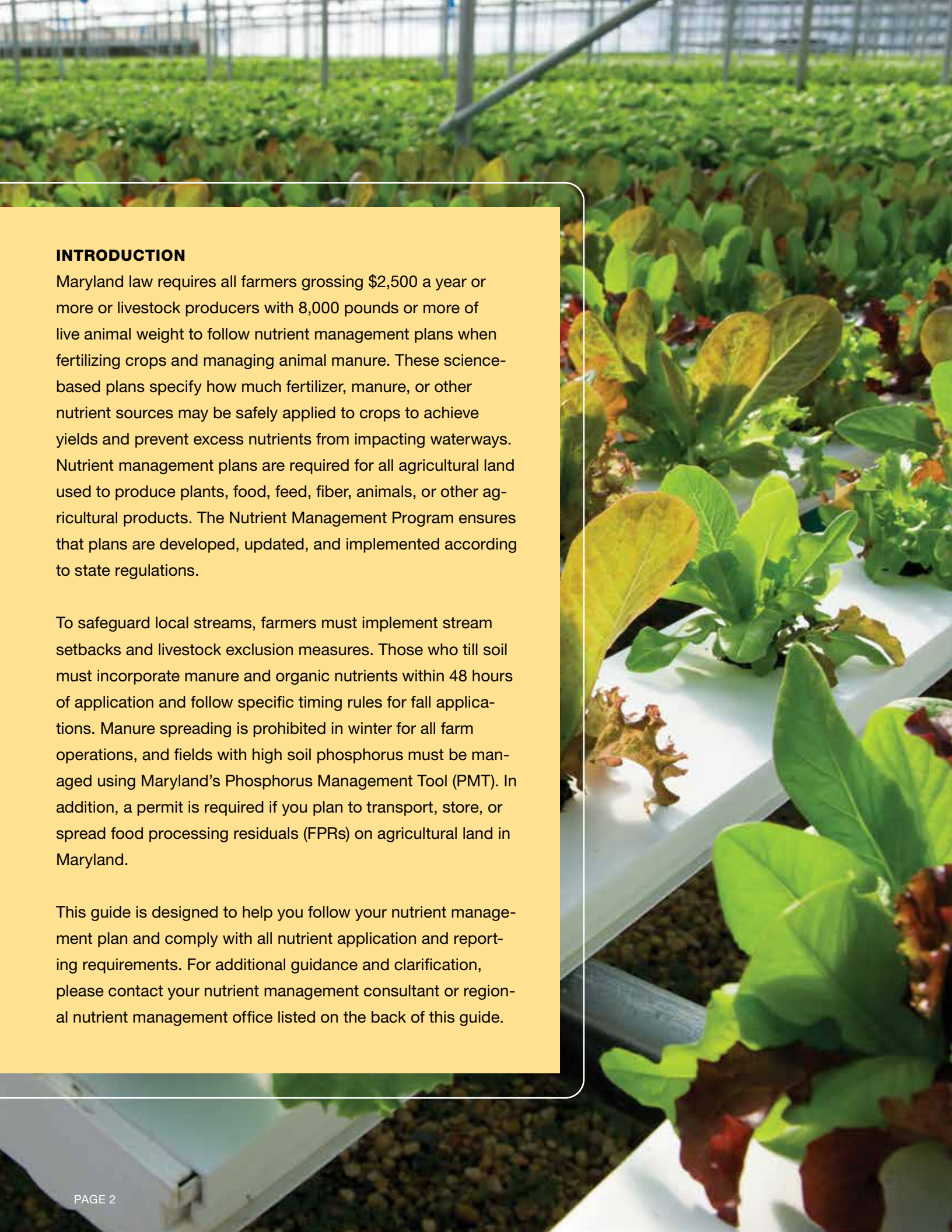
Farming with Your Nutrient Management Plan

A COMPREHENSIVE GUIDE

to Maryland's Nutrient Management Regulations and Requirements

What's Inside:



INTRODUCTION

Maryland law requires all farmers grossing $2,500 a year or more or livestock producers with 8,000 pounds or more of live animal weight 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. Nutrient management plans are required for all agricultural land used to produce plants, food, feed, fiber, animals, or other agricultural products. The Nutrient Management Program ensures that plans are developed, updated, and implemented according to state regulations.

To safeguard local streams, farmers must implement stream setbacks and livestock exclusion measures. Those who till soil must incorporate manure and organic nutrients within 48 hours of application and follow specific timing rules for fall applications. Manure spreading is prohibited in winter for all farm operations, and fields with high soil phosphorus must be managed using Maryland's Phosphorus Management Tool (PMT). In addition, a permit is required if you plan to transport, store, or spread food processing residuals (FPRs) on agricultural land in Maryland.

This guide is designed to help you follow your nutrient management plan and comply with all nutrient application and reporting requirements. For additional guidance and clarification, please contact your nutrient management consultant or regional nutrient management office listed on the back of this guide.

1 Implementing Your Nutrient Management Plan

Nutrient management plans detail the optimum use of nutrients to minimize losses to the environment while maintaining crop yields. Soil and manure tests are used to develop application rates that meet projected crop yields based on soil productivity or historic yields of a site. Plans are prepared by University of Maryland Extension advisors, private consultants who are certified by the Maryland Department of Agriculture, or farmers who are certified to develop plans solely for their own operations.

Implementing your nutrient management plan requires you to follow guidelines for the amount, timing, and placement of nutrients for each crop. Plans must be revised and updated before they expire. Most plans are written for one or three years. The expiration date can be found on the plan. Major changes to your operation may require your plan to be modified or updated sooner. In addition, you must have a soil test completed at least once every three years. If you use manure, it must be analyzed for nutrient content at least every other year.

The success of your nutrient management plan in protecting water quality often hinges on whether you have read the plan and communicated its content to other family members, hired employees, or your fertilizer company. Contact your nutrient management consultant if you have questions about your plan. The most important thing you can do is to read and follow your plan—don't allow it to collect dust on a shelf. Some farm employees may need training in equipment calibration and record-keeping.

ADDITIONAL REQUIREMENTS:

Nutrient Applicator Voucher Training

If you apply nutrients to 10 or more acres of cropland, you are required to attend a two-hour nutrient applicator training course once every three years. Free voucher training and recertification courses are offered in fall and winter by the department and Extension at locations across the state. If you are certified to write your own nutrient management plan, you are not required to attend voucher training. However, certified farmers must earn six continuing education credits every three years.

Annual Implementation Reporting

Regulated farmers are required to submit Annual Implementation Reports to the Maryland Department of Agriculture by March 1 summarizing nutrient applications for the previous year. The department mails reporting forms to farmers in January and posts them on its website at **mda.maryland.gov/nutrient-mgmt**. In addition, online reporting is available.

2 Nutrient Application Requirements

Nutrient application requirements vary depending on the crop, season, nutrient source, and weather conditions. Here in Maryland, farmers are required to follow University of Maryland nutrient recommendations and use best management practices that minimize nutrient losses to nearby waterways as outlined in Maryland's Nutrient Management Manual. ***The following requirements apply:***

- Chemical fertilizer may be applied from March 1 through December 15 for an existing crop or a fall planted crop following University of Maryland recommendations.
- Organic nutrients may be applied from March 1 through December 15 for an existing crop, a fall planted crop, or a crop that is planted the next spring following University of Maryland recommendations.
- Poultry litter may be applied in spring and fall for an existing crop or crops planted for the upcoming season, as long as it is applied following University of Maryland recommendations.
- Applying nitrogen in the fall is prohibited on small grains if a fall nitrate test indicates levels greater than 10 parts per million for wheat or 15 parts per million for barley.
- Cover crops must be planted when organic nutrient sources are applied to fallow ground in the fall.
- Winter application (December 16 through the last calendar day of February) of chemical fertilizer is prohibited. ***Exceptions exist*** for green up of perennial forage crops and small grains as well as greenhouse, cool season grass sod production, and vegetable and fruit production, as long as applications are performed following University of Maryland recommendations.
- Use of potash and liming materials is ***not restricted*** in winter.
- Manure deposited directly by livestock is ***not restricted*** at any time of year.
- Manure, biosolids and other organic nutrient sources must be injected or incorporated into the soil within 48 hours of application. ***The following conditions may exempt you from this requirement:***
  1. You are using no-till farming practices.
  2. Livestock manure is deposited directly by animals.
  3. The land is in permanent pasture.

4. The land is being used for hay production.
5. Fields are defined as highly erodible land by USDA-Natural Resources Conservation Service (NRCS) Field Office Technical Guide standards and determination protocols. This exemption requires supporting documentation (a Farm Service Agency map or Soil Conservation and Water Quality Plan signed by a soil conservation district representative).
6. Spray irrigation is being used to apply nutrients to a growing crop.
7. Small grains have been planted for harvest on the land, either as grain or silage. This is considered a standing crop, and therefore exempt from incorporation of organic nutrient sources during spring green up.

- Nutrient applications are prohibited from December 16 through the last calendar day of February. This requirement applies to all poultry and livestock operations, regardless of size.
- An emergency provision allows the department to work with farmers on a case-by-case basis to prevent an overflow from liquid manure storage structures during winter, when spreading manure is otherwise prohibited. The exemption is only for on-farm generated manure that cannot be stored due to extraordinary circumstances. It does not apply to biosolids or food waste.
- If you decide to seek an emergency waiver, you must submit proof that you have attempted to obtain manure storage.
- If approved, you must implement environmental protections to safeguard water quality, including the application of manure on vegetative cover and the use of a 100-foot buffer zone next to waterways.
- If you are granted an emergency exemption, you are prohibited from applying liquid manure if the ground is saturated, snow covered, or hard frozen two inches or more.
- For application requirements regarding Food Processing Residuals (FPRs), please refer to page 11 of this manual.

3 Setbacks for Nutrient Application

A nutrient application setback is a vegetated area ranging from 10 to 35 feet from an eligible waterway where nutrients may not be applied in order to protect water quality. Maryland's nutrient management regulations require setback information identifying these areas to be included on farm nutrient management plans.

If you apply nutrients to crop fields, you are required to adhere to the setback distance as determined by the method of application. If nutrients are custom-applied, it is your responsibility to inform the applicator of the setback requirements. The setback indicator chart shown below may be used to satisfy the Nutrient Management Program's reporting requirements. A map is recommended, but not required.

Maryland Nutrient Management Program
Nutrient Application Setback Indicator

Farm Name(s)	Is Surface Water Present on the Farm that Requires a Setback? (Yes or No)	Field(s) Requiring a Nutrient Application Setback*	Nutrient Application Setback Required (Indicate with "Yes" in appropriate column or columns)		
			Livestock on Pasture ≥ 10 ft.	Directed Application** ≥ 10 ft.	Broadcast Application or Sacrifice Lots*** ≥ 35 ft.

If a field contains multiple sources of surface water (i.e. a pond and a stream), list each separately or identify on the map.

***Directed application is a directed spray application (vertical fan or drop nozzle), air flow application, knifed/injected application of nutrients, and planter applied nutrients.*

****Broadcast application or sacrifice lots: spinner spreaders (manure or fertilizer), high volume horizontal nozzles, and manure spreaders (box type with beaters, splasher plates for liquid, side discharge V-type).*

THE FOLLOWING NUTRIENT APPLICATION SETBACK REQUIREMENTS APPLY:

- A minimum 10-foot setback is required for all nutrient applications adjacent to surface waters and streams.
- A 35-foot setback is required when using broadcast fertilizer application methods. No crops may be grown on the 10-foot setback except pasture and hay. The remaining 25-foot setback may have crops, but may not be fertilized unless a direct application method is used.
- Pastures and hayfields are subject to a 10-foot setback.
- Nutrients may not be applied mechanically within the 10-foot setback area.
- Livestock are not allowed in the setback; however, flash grazing is allowed.
- Fencing to control livestock may not be required in all cases. If you do not have stream protection measures in place, contact your soil conservation district to schedule a farm visit. District staff can evaluate the site to determine whether fencing is needed or alternative practices such as watering facilities, livestock crossings, or vegetative exclusion will help protect water quality. The district will provide you with the necessary documentation to meet this requirement. If alternative practices do not inhibit access, the department may require fencing.
- Livestock sacrifice lots require a 35-foot setback from surface water.

WHEN DO NUTRIENT APPLICATION SETBACKS APPLY?

If the watercourse is:	It is defined as a:	For crop and pastureland adjacent to the watercourse, a setback is:
Natural ***and*** either perennial or intermittent	Stream	Required
Channelized ***and*** perennial ***and***: A. Lies within a floodplain soil map unit, or B. Lies within a hydric soil map unit mapped as a narrow, elongated feature in a fluvial (stream-like) floodplain position, or C. Lies within a "B" slope or greater soil	Stream	Required
Channelized and intermittent	Ditch	Not Required
Ephemeral (natural or channelized)	Ditch	Not Required

4 Requirements and Best Management Practices for Temporary Manure Stockpiling (Staging)

Temporary field stockpiling (staging) of poultry litter and other dry organic nutrient sources with 60 percent or less moisture content is allowed under Maryland's nutrient management regulations when other immediate use options and alternatives are unavailable. Dry process waste is primarily associated with poultry operations but can also come from swine, beef, or dairy cattle operations. To minimize the duration of temporary field stockpiling, work with your integrator to schedule manure applications as close to spring planting as possible so that crops have a readily available nutrient source when they need it most.

- Manure storage structures should be completely utilized before starting a stockpile.
- Record the date the stockpile was started.
- Manure in temporary stockpiles must be land applied no later than the first spring following the placement of the stockpile.
- The stockpile area must be:
  - — At least 100 feet from any surface water and irrigation or treatment ditches, or 35 feet away if a vegetative buffer is in place.
  - — At least 150 feet from wells, springs, and wetlands.
  - — At least 300 feet from a well that is down gradient from the stockpile.
  - — At least 200 feet from any residence outside the operator's property.
  - — Outside flood-prone areas and areas prone to ponding.
  - — No farther than 150 feet from the top of a 3 percent slope with no diversion installed.
- Stack the stockpile at least 6 feet high; make sure it is peaked to allow it to shed rainfall.
- Stockpile materials should be stockpiled in a manner that prevents nutrient runoff.
- If the manure stockpile will be exported off the farm, record the date that the manure was shipped along with the name and address of the recipient and an estimate of the tonnage exported.
- Following removal of the stockpile, thoroughly scrape or clean the ground and restore the area to its original condition. If necessary, reseed the area with grass or an agronomic crop to facilitate nutrient uptake.
- Place subsequent stockpiles in the same location to minimize environmental impact.

SUMMARY: Maryland Nutrient Management Application Requirements

- You may apply chemical fertilizer from March 1 through December 15 to an existing crop or a fall planted crop following University of Maryland recommendations.
- Organic nutrient sources may be applied from March 1 through December 15 to an existing crop. Additional restrictions and conditions for organic nutrients applied in the fall (September 9 through December 15) are described in the *Maryland Nutrient Management Manual*.
- You must inject or incorporate manure, biosolids, and other organic nutrient sources into the soil within 48 hours of application. There are exceptions for no-till farming systems, spray irrigation on a growing crop, permanent pastures, hay production fields, and highly erodible fields.
- Fall application of nitrogen is prohibited on small grains if a fall nitrate test indicates levels greater than 10 parts per million for wheat or 15 parts per million for barley.
- Cover crops must be planted when organic nutrient sources are applied in fall.
- A minimum 10-foot setback is required for all nutrient applications adjacent to surface waters and streams.
- A 35-foot setback is required when using broadcast fertilizer application methods. Only pasture and hay may be grown on the 10-foot setback area. The remaining 25-foot setback may have crops, but may not be fertilized unless a direct application method is used.
- Pastures and hayfields are subject to a 10-foot setback. Livestock are not allowed in the setback area.
- Livestock stream protection practices are required.
- Livestock sacrifice lots require a 35-foot setback from surface water.
- Winter application (December 16 through the last calendar day of February) of chemical fertilizer is prohibited. There are exceptions for green up of perennial forage crops and small grains as well as greenhouse, cool season grass sod production, and vegetable and fruit production, as long as applications are performed following University of Maryland recommendations.
- Nutrient applications are prohibited from December 16 through the last calendar day of February.
- If nutrients are custom-applied, ***it is your responsibility—as the farmer—to inform the applicator of the setback distance based on the method of application.***

5 Phosphorus Management Tool (PMT)

Maryland's Phosphorus Management Tool (PMT) regulations require farmers with high soil phosphorus levels to use the PMT to identify the potential risk of phosphorus loss from farm fields and prevent the additional buildup of phosphorus in soils that are already saturated. Soils with high phosphorus levels are typically found on farms that have used manure or poultry litter as a crop nutrient over an extended period of time.

Fertility Index Value (FIV) is a measurement of phosphorus in the soil as determined by a laboratory test of a soil sample. A level between 51-100 is considered "optimum" for crop production. FIV levels above 100 indicate that the soil contains more phosphorus than the crop needs. ***Farm fields with high soil phosphorus levels identified by a Fertility Index Value of 150 or greater are required to be managed using the PMT. If a farm field scores less than 150 FIV, phosphorus may be applied to the land following University of Maryland recommendations outlined in the Maryland Nutrient Management Manual.***

PHOSPHORUS TESTING REQUIREMENT

Maryland's PMT regulations require certified nutrient management consultants and farmers who prepare their own nutrient management plans to submit soil test phosphorus data to the department every six years. Soil test phosphorus data was collected in 2015 and 2021.

SPECIAL PROVISIONS AND CONSIDERATIONS

The following special provisions allow farmers to apply phosphorus to crops when it would otherwise be restricted by the PMT. For additional guidance, contact your nutrient management consultant or regional nutrient management specialist.

- ***Tissue Analysis***—Crop tissue, such as the leaves of a corn plant, may be analyzed as an indicator of crop health and nutrient deficiency. If a phosphorus deficiency is indicated, you may add phosphorus to the crop following University of Maryland recommendations.
- ***High Phosphorus Crops***—Vegetable and tobacco crops with proven higher phosphorus needs may receive phosphorus applications at planting.
- ***Organic Crops***—Certified organic farmers who rely on animal manures as a source of both nitrogen and phosphorus for crop production may apply limited amounts of phosphorus under certain conditions.
- ***Alternative Use***—Farmers adopting Maryland Department of Agriculture-approved alternative use technologies to lower the phosphorus content in animal manure may apply limited amounts of phosphorus.

6 Rules for Using Food Processing Residuals

If you plan to transport, store, or spread food processing residuals (FPRs) on agricultural land in Maryland, you will need a permit from the Nutrient Management Program. FPRs are byproducts from the production and processing of food products such as milk and poultry that can be used as a nutrient source for crops.

The Nutrient Management Program oversees the transport, storage, and land application of FPRs on Maryland farms to ensure that these products are managed to protect air and water quality. If you are a Maryland farmer who uses FPRs, here's what you need to know and do:

STEP 1: APPLY FOR A PERMIT

- If you plan to transport, store, or land apply FPRs on Maryland farmland, you must first obtain an annual ***Food Processing Residuals Utilization Permit.***
- ***A separate permit*** is required for each activity (transport, storage, or applying).
- A compliance bond is required for each permitted activity.
- Annual permit applications for ***transport and storage*** are due by ***November 15*** and will be issued by January 1.
- Annual permit applications for land application of FPRs are due by ***January 15*** and will be issued March 1, when land application of nutrient sources resumes.
- All FPRs must be applied to fields following Maryland's nutrient management regulations.
- ***Nutrient management staff will make site and field inspections to ensure compliance.***
- To request a permit application, please call the Nutrient Management Program at ***410-841-5959.***

STEP 2: FOLLOW FPR APPLICATION RULES

MARCH 1 – OCTOBER 31

- ***Injection***—Liquid FPRs with >90% moisture content must be injected directly into the soil.
- ***Incorporation***—Solid or semi-solid materials with <75%-90% moisture content must be mixed into the soil the same day they are applied
- Ensure ***95% soil coverage*** of the applied material.
- You may apply one application per field, per season:
  - — SPRING: March 1 to June 30
  - — SUMMER: July 1 to September 9
  - — September 10 to October 31
- Plant a harvestable crop:
  - — Within ***40 days*** of a spring FPR application
  - — Within ***21 days*** of summer/fall applications
- Surface applications on pastures or hay fields ***are not allowed.***

NOVEMBER 1 – DECEMBER 15

- A single FPR application is permitted if the FPR is injected into soil that supports an existing crop or cover crop that was planted by ***October 15.***

For more information, please consult the Maryland Nutrient Management Manual on our website at **mda.maryland.gov/nutrient-mgmt**

MARYLAND DEPARTMENT OF AGRICULTURE
Field Office Phone Numbers

WESTERN MARYLAND
Allegany, Garrett, and Washington counties
410-279-3506

Frederick and Montgomery counties
667-270-2529

CENTRAL AND SOUTHERN MARYLAND
Anne Arundel, Calvert, Charles, Prince George's, and St. Mary's counties
410-980-9479

Baltimore, Carroll, and Howard counties
443-223-0403

EASTERN SHORE
Caroline, Queen Anne's, and Talbot counties
410-353-5660

Cecil, Harford, and Kent counties
410-991-3114

Dorchester, Somerset, Wicomico, and Worcester counties
667-270-1465

Statewide Concentrated Animal Feeding Operations
410-507-4949

Maryland
Department of Agriculture

Office of Resource Conservation

Nutrient Management Program
50 Harry S. Truman Parkway
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410-841-5959
Email: nminfo.mda@maryland.gov
Website: mda.maryland.gov/nutrient-mgmt

PLEASE READ: The information provided in this booklet is for general reference purposes only. For specific information on Maryland's nutrient management regulations, please contact the regional nutrient management specialist serving your county.

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