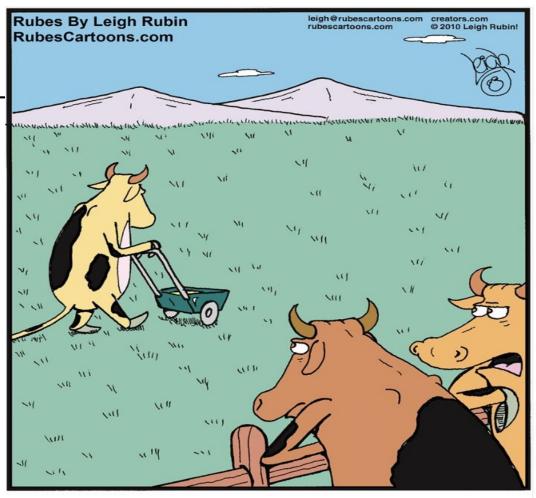
PA FERTILIZER LAW





"It's positively disgraceful. Just look at the way he's fertilizing. Has he no respect for tradition?!"



2022 PA Fertilizer Law

Act 83 of July 11, 2022 (P.L. 1538, No. 83, Chapter 68) Amended November 1, 2023

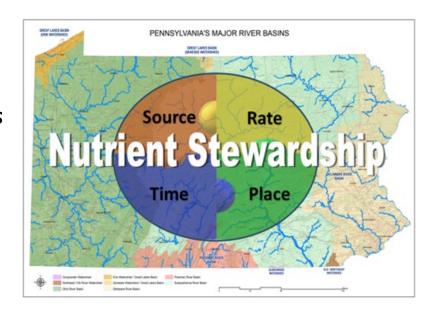


2022 PA Fertilizer Law



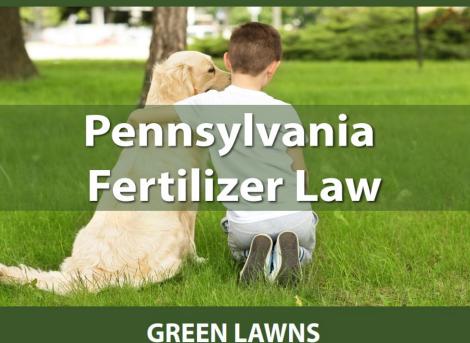
Changes to the Fertilizer Law

- Fee increases for Manufacturers
- Turf fertilizer component restrictions
- Label requirements
- Application rate restrictions
- Environmental site restrictions



Many of the changes are designed to reduce water quality impacts from urban nutrient management.

BE WISE WHEN YOU FERTILIZE!



CLEAN STREAMS

Protecting Pennsylvania's waterways starts at home.

Selecting a proper lawn care program can prevent nutrient loss to our streams.

AGEMENT?



- UNM is designed to employ environmentally sound practices when applying nutrients to turfgrass.
- Balance turfgrass management with watershed protection.
- Education and outreach are important components.
 - ✓ Homeowners are important partners in helping protect water quality in our communities.
 - ✓ Improving nutrient management on managed turf can have far reaching and long-lasting environmental benefits.

PA FERTILIZER LAW



WHAT CAN BE IN A TURF FERTILIZER?

FERTILIZER COMPONENTS



TURF FERTILIZERS MUST CONTAIN:

- **Zero Phosphorus,** unless:
 - Natural organic or organicbased
 - Labeled for turf repair or establishment
- If claiming enhanced
 efficiency nitrogen, must be
 20% of the total unless:
 - Liquid
 - Label contains application rate directions





Why Enhanced Efficiency Fertilizer?



- Designed to control the release of plant available nitrogen (NO_3^-) .
 - Physically
 - Biologically
 - Chemically
- Available when plants need it.
- Reduces nitrogen loss from leaching or volatilization.

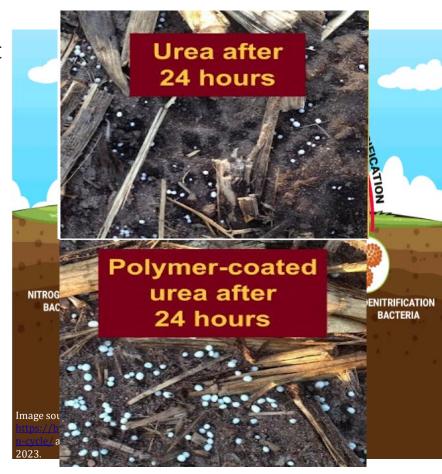


Image source: https://blog-crop-news.extension.umn.edu/2021/03/spring-fertilizer-decisions-should-you.html as retrieved on August 14, 2023.

PA FERTILIZER LAW



WHAT MUST BE ON A FERTILIZER LABEL?

WHAT MUST BE INCLUDED ON ALL FERTILIZER LABELS?

- Brand
- Grade
- Guaranteed Analysis
 - % Total nitrogen
 - % Available phosphate
 - % Soluble potash
- Source of Nutrients
- Directions for Use
- Guarantor Name and Address
- Net Weight

PENNSYLVANIA FERTILIZER LAW

WHAT SHOULD BE ON A FERTILIZER LABEL?

TURF STARTER FERTILIZER 24-10-18

Guaranteed Analysis

Nitrogen (N)	24.0%
Urea Nitrogen*	
	10.09
	18.0%

Derived from: Polymer Coated Urea, Urea, Muriate of Potash, Bone Meal

*19.2% Slowly available nitrogen from polymer coated urea.

Directions for Use

For use when establishing new lawns, repairing lawns, for seeding, or when a soil test indicates a phosphorus deficiency.

Apply 3.75 pounds of product to achieve 0.9 lbs of total nitrogen per 1000 ft² per application.

Do not apply near water, storm drains, or drainage ditches. Do not apply if a heavy rain is expected. Apply this product only to your lawn and sweep any product that lands on an impervious surface (ie. sidewalk, road) back onto your lawn.

Manufactured by:

A Fertilizer Company East Turf Road Fertilizerville, PA

Net Weight: 50 lbs.



ADDITIONAL LABEL REQUIREMENTS FOR <u>TURF</u> FERTILIZER.

- > TURF Fertilizer
 - any fertilizer that mentions turf/lawn
- \triangleright Bulk or ≥ 1-pound packages:
 - Label must include the environmental site restrictions.
 - Product may not be applied near water, storm drains, or drainage ditches.
 - Product may not be applied if heavy rain is expected.
 - Product may only be applied to the intended application site.
 - Material, except liquid, that lands on an impervious surface (sidewalk, driveway, road, etc.) must be swept back onto turf.



ADDITIONAL LABEL REQUIREMENTS FOR NONTURF FERTILIZER.

- **>** Bulk or ≥ 40-pound packages:
 - Label must include the environmental site restrictions.
 - Product may not be applied near water, storm drains, drainage ditches, or to any impervious surface.
 - Product may not be applied if heavy rain is expected.
 - Product may only be applied to the intended application site.



EXEMPTIONS TO LABEL REQUIREMENTS

- Fertilizers containing <u>pesticides</u>:
 - Label does not have to include the environmental statements.
 - Must include the EPA environmental hazard statement.
- Fertilizers labeled for <u>aquatic</u> <u>settings</u>, <u>growing media</u>, <u>indoor use</u> <u>or potted plants</u>.
 - Label does not have to include the application restrictions.

PROHIBITIONS

Fertilizer labels cannot include product use as a snow or ice melt.

PENNSYLVANIA FERTILIZER LAW



HOW THE LAW IMPACTS FERTILIZER APPLICATORS

WHO IS AN APPLICATOR?



- > Anyone who applies fertilizer.
 - Lawn care professional
 - Farmer
 - Homeowner/resident
- ➤ <u>All</u> applicators must follow the Fertilizer Law requirements.



APPLICATOR OVERVIEW



What do applicators need to know about applying fertilizer?

- Currently no license or certification is required.
- > Follow application rates.
- > Follow environmental site restrictions.
- Read the label and follow directions for use.

PENNSYLVANIA FERTILIZER LAW



APPLICATION RATES



TURF FERTILIZER APPLICATION RATE RESTRICTIONS

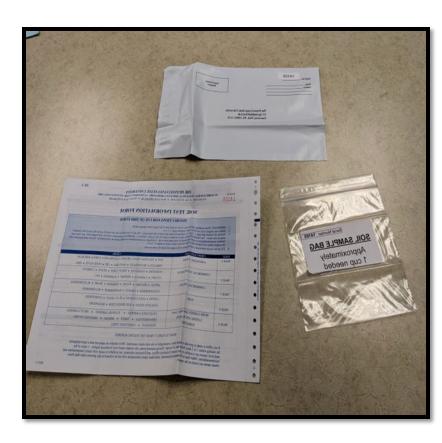
- ➤ **Nitrogen application** cannot exceed:
 - 0.7 pounds/1000 ft² readily available N per application
 - 0.9 pounds/1000 ft² total N per application (unless labeled as enhanced efficiency)
- **Zero Phosphorus** unless:
 - Establishing vegetation for 1st time
 - Reestablishing or repairing turf
 - Using enhanced efficiency phosphorus, natural organic or organic-based fertilizer
 - \leq 0.25 lbs/1000 ft² per application
 - $\leq 0.50 \text{ lbs}/1000 \text{ ft}^2 \text{ per year}$
- \triangleright Rates can be modified when using a recent soil analysis (\leq 3 years)

SOIL TEST KITS



Where can you purchase soil test kits?

- Penn State Extension Offices
 - https://extension.psu.edu/county-offices/
 - Purchase kits for \$10
 - Collect soil sample and mail to PSU Agricultural Analytical Services Lab (AASL)
- Download form directly from AASL and mail in soil sample with payment.
 - https://agsci.psu.edu/aasl/soiltesting/fertility/soil-fertilitysubmission-forms



34

1.03

1.18

1.32

1.47

1.76

1.62

1.91

2.06

2.21

2.35

2.50

2.65

2.79

Rate of Fertilizer to Apply per 1000 Square Feet Pounds of Nitrogen desired per 1000 sq. ft. (Granular Material) 0.5 0.35 0.4 0.45 0.55 0.6 0.65 0.7 0.75 8.0 0.85 0.9 0.95 1.25 5 8.00 9.00 10.00 11.00 12.00 13.00 14 00 15.00 16.00 17.00 18.00 19.00 7.00 20.00 25.00 6 7.50 8.33 10.00 10.83 11 57 12.50 13.33 14.17 15.00 15.83 16.67 20.83 5.83 6.67 9.17 11.43 12.14 12.86 5.00 5.71 6.43 7.14 7.86 8.57 9.29 10 00 10.71 13.57 14.29 17.86 8 8.75 6.25 4.38 5.00 5.63 6.88 7.50 8.13 9.38 10.00 10.63 11.25 11.88 12.50 15.63 7.78 3.89 4.44 5.00 5.56 6.11 6.67 7.22 8.33 8.89 9.44 10.00 10.56 11.11 13.89 10 7.00 3.50 4.00 4.50 5.00 5.50 6.00 6.50 7.50 8.00 8.50 9.00 9.50 10.00 12.50 11 6.36 7.27 3.18 3.64 4.09 4.55 5.00 5.45 5.91 6.82 7.73 8.18 8.64 9.09 11.36 12 4.58 5.33 6.67 7.50 7.92 2.92 3.33 3.75 4.17 5.00 5.42 6.25 7.08 8.33 10.42 13 3.85 5.38 6.15 6.92 2.69 3.08 3.46 4.23 4.62 5.00 5.77 6.54 7.31 7.69 9.62 14 4.29 3.21 3.57 3.93 4.64 5.00 5.71 6.07 6.43 8.93 2.50 2.86 5.36 6.79 7.14 Nitrogen 4.57 15 5.33 6.33 2.33 2.67 3.00 3.33 3.67 4.00 4.33 5.00 5.67 6.00 6.67 8.33 16 4.38 5.00 7.81 2.19 2.50 2.81 3.13 3.44 3.75 4.06 4.69 5.31 5.63 5.94 6.25 17 4. .2 2.06 2.35 2.65 2.94 3.24 3.53 3.82 4.41 4.71 5.00 5.29 5.59 5.88 7.35 18 3.39 4.44 6.94 1.94 2.22 2.50 2.78 3.06 3.33 3.61 4.17 4.72 5.00 5.28 5.56 Percent 19 3.58 2.89 1.84 2.11 2.37 2.63 3.16 3.42 3.95 4.21 4.47 4.74 5.00 5.26 6.58 20 3.50 1.75 2.00 2.25 2.50 2.75 3.00 3.25 3.75 4.00 4.25 4.50 4.75 5.00 6.25 21 3.33 4.29 1.67 1.90 2.14 2.38 2.62 2.86 3.10 3.57 3.81 4.05 4.52 4.76 5.95 Fertilizer's 22 1.59 1.82 2.05 2.27 2.50 2.73 2.95 3. .8 3.41 3.64 3.86 4.09 4.32 4.55 5.68 23 2.39 3 .14 1.52 1.74 1.96 2.17 2.61 2.83 3.26 3.48 3.70 3.91 4.13 4.35 5.43 24 2.92 3.13 3.33 3.54 3.75 3.96 4.17 5.21 1.40 2.00 2.29 Z.3U Z./ 1 1.07 1.00 I 2.80 25 1.40 1.60 1.80 2.00 2.20 2.40 2.60 3.00 3.20 3.40 3.60 3.80 4.00 5.00 26 1.35 2.50 2.69 2.88 3.08 3.27 3.46 3.65 3.85 4.81 1.54 1.73 1.92 2.12 2.31 27 2.59 2.96 3.33 1.30 1.48 1.67 1.85 2.04 2.22 2.41 2.78 3.15 3.52 3.70 4.63 28 2.50 1.25 1.43 1.61 1.79 1.96 2.14 2.32 2.68 2.86 3.04 3.21 3.39 3.57 4.46 29 2.41 1.21 1.38 1.55 1.72 1.90 2.07 2.24 2.59 2.76 2.93 3.10 3.28 3.45 4.31 30 1.33 1.17 1.50 1.67 1.83 2.00 2.17 2.33 2.50 2.67 2.83 3.00 3.17 3.33 4.17 31 1.29 2.90 2.26 2.58 1.13 1.45 1.61 1.77 1.94 2.10 2.42 2.74 3.06 3.23 4.03 32 2.34 1.72 2.19 2.50 3.91 1.09 1.25 1.41 1.56 1.88 2.03 2.66 2.81 2.97 3.13 33 2.12 2.73 1.06 1.21 1.36 1.52 1.67 1.82 1.97 2.27 2.42 2.58 2.88 3.03 3.79

2.94

3.68

PENNSYLVANIA FERTILIZER LAW



ENVIRONMENTAL SITE RESTRICTIONS



TURF FERTILIZER ENVIRONMENTAL SITE RESTRICTIONS

- Maintain a <u>15-foot buffer</u> from banks of surface waters.
 - Unless using targeted application technology for establishing stream buffers
- Do not apply near water, storm drains, or drainage ditches.
- Do not apply if heavy rain is expected.
- Apply to intended application area only.
- Sweep any product that lands on impervious surfaces back onto turf.
 - Sidewalks
 - Driveways
 - Roads









TURF FERTILIZER ENVIRONMENTAL SITE RESTRICTIONS

- Use a properly calibrated device intended for fertilizer.
- Reduced fertilizer application between December 15 & March 1.
 - 0.5 pounds of total Nitrogen/1000 ft²/application
- Do not apply to snow-covered or frozen ground.
- Do not use as an ice or snow melt.
- Dispose of and store fertilizer properly. Follow label instructions.
 - Prevent overapplication
 - Prevent discharge to waterways













NON-TURF FERTILIZER ENVIRONMENTAL SITE RESTRICTIONS

- Maintain a 15-foot buffer from banks of surface waters.
 - Unless using targeted application technology for establishing stream buffers
- Do not apply near water, storm drains, or drainage ditches.
- Do not apply if heavy rain is expected.
- Apply to intended application area only.







NON-TURF FERTILIZER ENVIRONMENTAL SITE RESTRICTIONS

- Use a properly calibrated device intended for fertilizer.
- Do not apply to frozen or snow-covered ground
- Do not use as an ice or snow melt.
- Dispose of and store fertilizer properly.
 Follow label instructions.
 - Prevent overapplication
 - Prevent discharge to waterways









QUESTIONS?



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RIGHT RATE

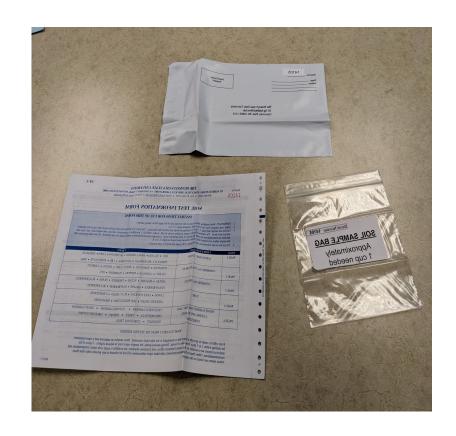


CALCULATING APPLICATION RATES



Know the Rate - Don't Guess. Soil Test!

- A soil test conducted within the last 3 years.
- Penn State University soil test procedures.
- Rates recommended by Penn State University or other PA institute of higher learning.
- Contact your local Penn State Extension office for soil test kits and procedures.
 - \$10 for "kit" covers cost of test





What will the soil test tell you?

- pH
- Phosphorus (P)
- Potassium (K)

SOIL NUTRIEN	T LEVEL	S	Below Optimum	Optimum	Above Optimum
Soil pH	5.5				
Phosphorus	15	ppm			
Potassium	81	ppm			



What will the soil test tell you?

ear

- Recommendations:
 - Lime
 - Nitrogen (N)
 - Phosphate (P₂O₅)
 - Potash (K_2O)

Limestone needs, lb/1000 square feet

90

Limestone

Apply the quantity of limestone recommended to the left to your soil in a single application unless it exceeds 100 lb/1000 square feet. If the recommendation exceeds 100 lb/1000 square feet, split the recommended amount into 2 or more separate applications, 4 to 6 months apart. Optimum soil pH can be maintained by testing your soil every 2 to 3 years and following limestone recommendations. See additional comments on back of report for adjusting application rates, as-needed, and additional considerations.

Nutrient nec	eds, lb/1000	square feet/
1 to 4	3.5	3.0
N	P ₂ O ₅	K ₂ O

Vitrogen (N), phosphorus (P_2O_5) and potassium (K_2O) needs for optimum turf growth are isted to the left. Apply these nutrients following guidelines provided below and on the back of this report for a 2 to 3 year period and retest to determine if adjustments are needed.



What will the soil test tell you?

Developing a turfgrass fertility program to meet your objectives

The first step is to determine how much nitrogen to apply. There is no reliable soil test to predict the amount of nitrogen needed for turfgrass throughout the growing season. The appropriate rate of nitrogen fertilizer is determined based on the grass species being grown and how intensively you wish to manage your lawn. Guidelines provided below will help you make the best decision for your conditions. See additional comments on back of report.

<u>High maintenance program</u>: For a high quality lawn containing predominantly Kentucky Bluegrass, apply a total of 2 to 4 lbs of nitrogen/1000 square feet/year with the annual total amount split into 2, 3, or 4 applications over the course of the growing season. New lawns (less than 4 years old), lawns growing on marginal soils, lawns receiving significant traffic, and/or where clippings are removed typically benefit from these higher rates of nitrogen.

Low to medium maintenance program: For a lawn containing predominantly Kentucky Bluegrass, apply a total of 1 to 2 lbs of nitrogen/1000 square feet/year. If using 2 lbs of nitrogen/1000 square feet/year, split the total amount into 2 applications and apply in spring and late summer or fall. Established lawns that are over 4 years old, growing on good quality soil, with minimum traffic, and where clippings are not removed typically perform adequately with these lower rates of nitrogen.

If P₂O₅ and/or K₂O are needed, try to find a fertilizer grade with N-P₂O₅-K₂O in a ratio similar to needs of your lawn. If P₂O₅ and K₂O are not needed, apply a fertilizer containing nitrogen only. Apply fertilizer to turf at a rate that will provide 0.75 to 1.0 lb nitrogen per 1000 square feet per application (this typically matches the label rate on most lawn fertilizers). See additional comments on back of report.

READ THE LABEL

- Guaranteed analysis
 - %N, P, K by weight
- Directions for use
 - Application rates
 - Site restrictions

FERTILIZER 24-0-18

GUARANTEED ANALYSIS

TOTAL NITROGEN (N)	24%
Urea Nitrogen* 24.0%	
Soluble Potash (K ₂ O)	18%

Derived From: Polymer Coated Urea, Urea, Muriate of Potash

*19.20% Slowly Available Nitrogen from Polymer Coated Urea.

Directions for Use:

To feed at the rate of 0.9lb Nitrogen (N) per 1,000 sq. ft., apply this product at 3.75 lbs per 1,000 sq. ft.

Use in accordance with recommendations of a qualified individual or institution, such as, but not limited to a certified crop advisor, agronomist, university crop extension publication, or apply according to recommendations in your approved nutrient management plan.

Do not apply near water, storm drains or drainage ditches. Do not apply if heavy rain is expected. Apply this product only to your lawn and sweep any product back onto your lawn. Do not apply to frezen or snow-covered ground.



How do you determine the amount of fertilizer to apply?

> Select a fertilizer that will provide the best source of recommended

nutrients.

Lbs. nutrient per 1000 ft ²		
per year		
N	P_2O_5	K ₂ O
1-4	0	2



FERTILIZER 24-0-18

GUARANTEED ANALYSIS

TOTAL NITROGEN (N) 24	%
Urea Nitrogen* 24.0%	
Soluble Potash (K ₂ O) 18	3%

Derived From: Polymer Coated Urea, Urea, Muriate of Potash

*19.20% Slowly Available Nitrogen from Polymer Coated Urea.

Directions for Use:

To feed at the rate of 0.9lb Nitrogen (N) per 1,000 sq. ft., apply this product at 3.75 <u>lbs</u> per 1,000 sq. ft.

Use in accordance with recommendations of a qualified individual or institution, such as, but not limited to a certified crop advisor, agronomist, university crop extension publication, or apply according to recommendations in your approved nutrient management plan.

Do not apply near water, storm drains or drainage ditches. Do not apply if heavy rain is expected. Apply this product only to your lawn and sweep any product back onto your lawn. Do not apply to frozen or snow-covered ground.



How do you determine the amount of fertilizer to apply?

- Typically use Nitrogen for calculation
- Split application over course of growing season
 - 0.9 lbs total N per application

Nitrogen Application Calculation

Lawn needs 2 lb N/1000 ft²/year 24-0-18 Fertilizer

Total N = 24% (Decimal form = 0.24)

Split into 2 applications of 0.9 lbs N

0.9 lb N /1000 ft² \div **0.24** N in fertilizer =

3.75 lbs. of 24-0-18 fertilizer per 1000 ft² per application



How do you determine the amount of fertilizer to apply?

➤ Using fertilizer rate, you can calculate the amount of Phosphate and Potash that will be also applied.

Phosphate Application

24-0-18 Fertilizer Total $P_2O_5 = 0\%$

*No phosphorus is allowed unless establishing or repairing lawn or a soil test indicates a deficiency.

Potash Application

24-0-18 Fertilizer

3.75 lbs of fertilizer being applied

Soluble K₂O is 18%

3.75 lbs x 0.18 = $0.68 \text{ lb of } \text{K}_2\text{O}/1000 \text{ft}^2 \text{ per}$ application



How do you determine number of bags of fertilizer for your lawn?

- ➤ Determine the area one 50 lb bag of fertilizer will cover at application rate.
 - 50 lb bag of 24-0-18
 - Divide pounds in bag by application rate
 - Multiply by 1000 ft²

Area Covered by 50 lb Bag

50 lb bag \div 3.8 lbs = 13.2

 $13.2 \times 1000 \text{ ft}^2 = 13,200 \text{ ft}^2$

- Determine the number of bags of the fertilizer you need for your 20,000 ft² lawn:
 - Divide square feet by area covered by 50lb bag.

Number of 50 lb Bags Needed

 $20,000 \text{ ft}^2 \div 13,200 \text{ ft}^2/\text{bag} =$

1.5 bags per application

1.5 x 3 applications = 4.5 bags



What if you are using an enhanced efficiency fertilizer?

- ✓ % Total N % Slow Release = Available N

 24% total N 19.20% slow-release N = 4.8% available N
- ✓ If applying 3.75 bs of fertilizer/1000 ft², how much available nitrogen is being applied?*

 $3.75 \text{ lbs}/1000 \text{ ft}^2 \text{ X}.048 = 0.18 \text{ lbs available N}/1000 \text{ ft}^2$

*This amount should not exceed 0.7 lbs/1000 ft²

FERTILIZER 24-0-18

GUARANTEED ANALYSIS

Derived From: Polymer Coated Urea, Urea, Muriate of Potash

*19.20% Slowly Available Nitrogen from Polymer Coated Urea.

Directions for Use:

To feed at the rate of 0.9lb Nitrogen (N) per 1,000 sq. ft., apply this product at $3.75 \, lbs$ per 1,000 sq. ft.

Use in accordance with recommendations of a qualified individual or institution, such as, but not limited to a certified crop advisor, agronomist, university crop extension publication, or apply according to recommendations in your approved nutrient management plan.

Do not apply near water, storm drains or drainage ditches. Do not apply if heavy rain is expected. Apply this product only to your lawn and sweep any product back onto your lawn. Do not apply to frozen or snow-covered ground.

PENNSYLVANIA FERTILIZER LAW



Water Quality Protection Strategies

LAWN CARE CONSIDERATIONS



KNOW YOUR LAWN

- Soil
 - Texture, structure, compaction, pH
- Plant species
 - Cool vs Warm Season
- Use/Management





Perennial Ryegrass

TIMING

- Apply fertilizer when your grass is actively growing.
 - Spring
 - Fall
- Reduces nutrient loss
 - Promotes proper lawn growth
 - Protects waterways
 - Saves you money



Tall Fescue and Kentucky Bluegrass



Increase Mow Height

- Raise mower deck
- Maintain cutting height of approximately 3 inches
- Promotes a healthier, denser lawn
- Reduces weeds
- Reduces lawn stress
- Increases water infiltration and reduces runoff

Leave Clippings

- Leaves and grass
 - Mulching mowers
- Source of slow-release nutrients
- Increases organic matter



As Mowing Height Decreases

Depth of Rooting Decreases

And Maintenance Increases



Encourage Diversity

- Add turfgrass species variety.
 - PSU Extension Turfgrass and Lawn Care home page:
 - https://extension.psu.edu/tre es-lawns-andlandscaping/turfgrass-andlawn-care
- Include legumes as nitrogen fixers.
- Select mat forming perennial ground covers appropriate for your site conditions.

- Can reduce pesticide and nutrient needs.
- Can improve lawn health and overall biodiversity.





Stream Buffers

- Do not mow up to stream banks.
- Leave a vegetative buffer.
 - Slows water movement
 - Filters water
 - Enhances wildlife habitat
 - Stabilizes stream banks





What are other practices that can help reduce runoff or reduce nutrient need?

Lawn Conversion

- DCNR:
 - Kelsey Mummert, Lawn Conversion Program Coordinator
 - https://www.dcnr.pa.gov/Conservation/Water/LawnConversion
- PACD:
 - Holly Miller, Program Manager
 - Grants for landowners to work with CD to convert lawns



Community Involvement



Pledge to Be Wise When You Fertilize

- Develop an incentive program.
- Homeowners who pledge could get some type of "reward."
 - Stormwater credits
 - Sign for their yard
 - ?



Resources



- Department of Agriculture Website
 - <u>www.agriculture.pa.gov/Plants Land Water/Fertilizer</u>
- Penn State Extension
 - Turfgrass and Lawn Care home page:
 - https://extension.psu.edu/trees-lawns-and-landscaping/turfgrass-and-lawncare
 - LEARN NOW video: How Can I Manage My Lawn to Reduce Pollution?

https://www.youtube.com/watch?v=a2T Xwf5DIo&t=252s

FINAL QUESTIONS?





PA FERTILIZER LAW



For more information:

Denise Uzupis

Natural Resource Program Specialist Bureau of Plant Industry

Phone: 717-257-6548

Email: <u>duzupis@pa.gov</u>

Website: agriculture.pa.gov/fertilizer



Scan the QR Code to learn more!

Thank you!