



## New Hampshire's Turf Fertilizer Law - What You Should Know

### Introduction

Nitrogen and phosphorus are nutrients essential for the growth of plants. However, an overabundance of these nutrients can cause pollution in waterways. In New Hampshire, more than half of the nitrogen pollution to Great Bay can be traced back to urban and suburban nonpoint source pollution, including fertilizer runoff. Nonpoint source (NPS) pollution, unlike pollution from industrial and sewage treatment plants, comes from many different sources. NPS pollution is caused by rainfall or snowmelt moving over and through the ground. As the runoff moves, it picks up and transports natural and human-made pollutants, finally depositing them into lakes, rivers, wetlands, coastal waters and ground waters.

Once in our waterways, fertilizers designed to make our lawns lush and green may cause harmful algae blooms and degrade aquatic ecosystems. As algae grow and then decompose, they block sunlight from reaching aquatic plants, rob the water of oxygen, and threaten underwater life. Algae blooms also reduce water clarity which can lead to fewer opportunities for fishing and swimming.

When fertilizers, either synthetic or organic, are applied in the proper amounts at appropriate times during the growing season, lawns will thrive and the risk of fertilizer nutrients entering our waterways will be reduced. Because of concerns over lawn fertilizer runoff, the New Hampshire legislature passed a bill in 2013 regulating the use of nitrogen and phosphorus in turf fertilizers that are sold at retail.<sup>1</sup> The goal is to help homeowners maintain healthy lawns without applying unnecessary fertilizer. Golf courses, parks, athletic fields and sod farms are exempt from the restrictions.

All fertilizers sold in New Hampshire are labeled with a guaranteed analysis consisting of three numbers such as 22-0-3. These numbers stand for the percent, on a dry weight basis, of nitrogen, phosphorus (as phosphate), and potassium (as potash) contained in that fertilizer. These three nutrients are not available in sufficient quantities in many existing soils so we add them to the soil in the form of fertilizer. Nitrogen is associated with leafy green growth,

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### Nitrogen Summary<sup>1</sup>

When applied according to the label, no turf fertilizer sold at retail shall

- exceed 0.7 pounds per 1,000 square feet of *soluble* nitrogen per application
- exceed 0.9 pounds per 1,000 square feet of *total* nitrogen per application
- exceed an annual application of 3.25 pounds per 1,000 square feet of total nitrogen

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phosphorus is essential for root growth, and potassium helps regulate water movement within the plant as well as increasing the grass plant's ability to withstand stress.

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## ***Did You Know?***

**Most NH soils provide all the phosphorus that a home lawn needs. Phosphorus fertilizers should be used only on newly established or repaired lawns, or on lawns testing deficient in phosphorus. Annual applications may not exceed a rate of 1 pound per 1,000 square feet of available phosphate.**

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### **Nitrogen Applications**

The amount of nitrogen a lawn needs can depend on many factors. The age of the lawn, its intended use, grass species, soil properties, and local conditions can all affect your nitrogen needs. If an unfertilized lawn has been acceptable, then there may be no need to fertilize. Many lawns however, need at least a yearly application of nitrogen because few soils can supply enough nitrogen throughout the growing season to produce a healthy, dense lawn capable of resisting weed invasion. To reduce the amount of nitrogen fertilizer needed, return clippings from mowing to the lawn. If clippings from mowing are returned to the lawn, the amount of nitrogen fertilizer needed can be reduced by 50%.<sup>2</sup> This means that only half of the amount recommended on the fertilizer bag need be applied. New lawns or lawns less than ten years old may need the full amount of recommended nitrogen.

New Hampshire State Statute<sup>1</sup> (RSA: 431) as modified in 2013 states that no turf (lawn) fertilizer sold at retail shall exceed 0.9 pounds per 1,000 square feet of total nitrogen per application when applied according to the instructions on the label. Furthermore, no turf fertilizers sold at retail shall exceed 0.7 pounds per 1,000 square feet of soluble nitrogen per application when applied according to the label. This new law applies to synthetic (manufactured) fertilizers, natural inorganic fertilizers (from a mineral nutrient source), and natural organic fertilizers (derived from either plant or animal products).



The guaranteed analysis of a lawn fertilizer is listed on the product label. Nitrogen sources and their solubility are listed individually. Water-soluble nitrogen (WSN) is quickly and readily available to the plant. Slow-release nitrogen (SRN) sources become available to the plant over a period of approximately 8 to 12 weeks. Slow release nitrogen sources include water-insoluble nitrogen (WIN) and various engineered sources of nitrogen called controlled release nitrogen (CRN). Most turf fertilizers are manufactured with a combination of WSN and SRN so that a percentage of the nitrogen is readily available to the plant and the rest is available slowly over time. A minimum of twenty percent of the nitrogen should be in slow-release form, but some experts suggest fifty percent or even more be provided in slow-release form.<sup>3</sup>

The law also states that no turf fertilizer sold at retail shall exceed an annual application rate of 3.25 pounds per 1,000 square feet of total nitrogen when applied according to the instructions on the label. Look on the bag for the amount of fertilizer recommended for the area of your lawn. When purchasing fertilizer, try to buy only enough fertilizer for the size of your lawn.<sup>4</sup>

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You also need to know about additional local and state laws related to fertilizer application. For example, under the Shoreland Water Quality Protection Act<sup>5</sup>, it is illegal to apply any fertilizer within 25 feet of the reference or high water line of many water bodies in New Hampshire. Only lime can be applied within 25 feet of the reference line. Beyond 25 feet but within 50 feet, only low phosphorus and slow release nitrogen (SRN) fertilizers may be used. Also check local ordinances as some cities and towns have additional restrictions.

## **Phosphorus Applications**

Established lawns do not have a high phosphorus requirement; simply leaving grass clippings on the lawn will often supply sufficient phosphorus. Most lawn fertilizers for sale now contain little or no phosphorus because phosphorus run-off into New Hampshire's lakes, streams and ponds has had a negative impact on water quality. Phosphorus concentration is naturally low in our waterways, and even the addition of small amounts can stimulate the growth of algae and undesirable aquatic plants. Phosphorus contamination in fresh waters results in lakes and ponds that are unsuitable for swimming, fishing and other recreational activities.

New Hampshire law (RSA:431) states that no fertilizer sold at retail that is intended for use on turf (lawn) shall exceed a content level of 0.67% available phosphate unless specifically labeled for establishing new lawns, for repairing a lawn, for seeding, or for use when a soil test indicates a phosphorus deficiency. In addition, no fertilizer sold at retail that is intended for use on newly established or repaired lawns, or for lawns testing deficient in phosphorus shall exceed an application rate of 1 pound per 1,000 square feet annually of available phosphate.

For those who want to maintain a lawn using natural organic lawn fertilizers there are several blended organic fertilizers available that do not contain phosphorus. When using organic lawn fertilizers you need to be vigilant, because it is easy to over-apply phosphorus. Many organic turf fertilizers tend to contain lower nitrogen concentrations than synthetics. This means that the total fertilizer amount needed to meet the nitrogen requirement can result in over-application of phosphorus. Get a soil test to determine what is needed in these situations. All lawn fertilizers registered and sold at retail for use in New Hampshire have product labels that are reviewed by the New Hampshire Department of Agriculture, Markets, and Food for compliance with the law.

The amounts of nitrogen and phosphorus in retail turf fertilizers under the new law are the suggested maximum amounts to maintain healthy lawns while considering water quality impacts from fertilizer run-off. As stated above, lower amounts or even no lawn fertilizer may be needed, depending on the individual situation.

## **Soil Testing**

Get a soil test before seeding a new lawn and at least once every three years following establishment. The University of New Hampshire Cooperative Extension provides soil analysis and nutrient recommendations for home lawns that are in compliance with the new law. You can submit a soil sample for analysis by downloading the Home Grounds and Garden or the Commercial Landscape soil test forms and following the directions.<sup>6</sup> The UNHCE soil test will measure the soil pH (acidity), as well as phosphorus, potassium, calcium, magnesium and lead levels in order to provide you with the best fertilizer and lime recommendations for your soil.

UNHCE does not test for nitrogen. Nitrogen can be very mobile in the soil environment, making the use of

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a soil test impractical as a basis for application due to the lag time between sample collection and test result delivery. Nitrogen recommendations are based on turfgrass needs and the client's desired maintenance level.

Timing fertilizer applications properly can help reduce the potential for fertilizer runoff. Don't apply turf fertilizer if heavy rains (1 inch or more in 24 hours) or thunderstorms are predicted, especially if the lawn is on a slope. The late August/early September (approximately Labor Day) fertilization period is the most important for cool season grasses. Fall lawn fertilizer applications should be complete before September 15 in northern New Hampshire and by October 1 in southern New Hampshire.

Unused lawn fertilizer should be returned to its original container and stored in a safe place for future application. Weighing the bag and recording the weight prior to storage will aid in determining how much area the remaining fertilizer will cover. Applying the right fertilizer at the right rate at the right time in the right place will help preserve the health of our waterways for future generations.

## References

- <sup>1</sup> [NH Fertilizer Law](#), RSA 431, 2013.
- <sup>2</sup> Rutgers Cooperative Research Extension Fact Sheet 633, [Fertilizing the Home Lawn](#), 2003.
- <sup>3</sup> New England Interstate Water Pollution Control Commission (NEIWPC): [Regional Clean Water Guidelines for Fertilization of Urban Turf](#): Final Report to the New England and New York State Environmental Agency Commissioners, 2014.
- <sup>4</sup> UNH Cooperative Extension Fact Sheet, [Calculating Lawn Fertilizer Rates](#), 2018.
- <sup>5</sup> [Shoreland Water Quality Protection Act](#), RSA 483-B, 2008.
- <sup>6</sup> [UNH Extension Soil Testing Services](#), 2018.

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