



# BEST PRACTICES



## Nutrients in Your Lawn: Too Much is NOT a Good Thing!

Contrary to popular belief, healthy lawns need only a small amount of nutrients. More importantly, they need healthy soils. Applying more fertilizer than what the label says will NOT make your grass healthier, but it will cost you more money and could result in excess nutrients washing down storm drains into streams, lakes, Puget Sound or even into our drinking water. Excess fertilizer can “burn” your lawn, lead to excess thatch build up and excess salts in your soil.

*Research shows that phosphorous is critical to root development and plays an important role when first establishing a lawn. Generally, our soils have enough phosphorus already. When planting a new lawn start by getting your soil tested. Soil testing is an important tool to evaluate nutrient levels in your soil, allowing you to make smart choices about what type and how much product you need to support a healthy lawn.*

For more information on soil testing, contact Thurston Conservation District.

### The best time to apply fertilizer

- The best time to feed your lawn in Western Washington is in the fall while soil temperatures are still fairly warm. If you choose to fertilize two times per year, the best times are late May and early fall.

### Adding lime to your lawn

- Healthy lawns grow on healthy soil that is pH balanced (pH range between 6.0 and 6.5). Most Pacific Northwest soils have low pH. A low pH reduces microbial activity and can cause nutrients to become “bound up” in the soil making them unavailable to your lawn.

### Remember to...

- Mulch mow to add free nutrients and to prevent thatch.
- Test your soil to determine the amount of fertilizer or lime needed.
- Follow the label instructions for the fertilizer application rate.
- Use a calibrated spreader to apply fertilizer to your lawn.
- Never apply more than 1 lb. of nitrogen to 1000 square feet of lawn per application.
- Sweep up any fertilizer that lands on hard surfaces, such as driveways and sidewalks.
- Avoid using products that combine pesticides with fertilizer such as weed and feed products.

Selecting a slow-release, natural organic fertilizer will help ensure you have a healthy lawn, and keep excess fertilizer nutrients out of our drinking water and surface waters.

*To prevent excess nutrient pollution from reaching your drinking water source, follow these suggestions.*

### What’s the problem with excess nutrients?

Excess nutrients can be carried into local streams, lakes, Puget Sound or even our drinking water. Too much phosphorous causes algae blooms, which can result in low dissolved oxygen levels and suffocation of fish and other aquatic organisms.

Washington State law restricts the sale of “turf” fertilizers that contain phosphorous, except when establishing new lawn/turf. For more information go to: <https://agr.wa.gov>

An excess of nitrates in drinking water can be harmful to people, especially infants. Rain or irrigation water can carry nitrates down through the soil into groundwater. Shallow drinking water wells are especially susceptible to nitrate contamination.

If you are on a private or community well, Thurston County Public Health and Social Services water quality lab can perform a nitrate analysis of your drinking water. For more information go to Thurston County Environmental Health Water Quality Lab: <https://tinyurl.com/TCWQlab>

If you receive drinking water from a municipal water supplier, they test for nitrates regularly. More information about the quality of your water can be found on your suppliers website.

### Quick-Release vs. Slow-Release Fertilizers

Quick-release fertilizers are generally made from synthetic materials and typically contain petroleum products. Quick-release fertilizers tend to have high levels of nitrogen, and they are highly soluble in water. The more water soluble a fertilizer is, the greater potential it has to contaminate groundwater (our largest source of drinking water), streams, lakes or Puget Sound.

By contrast, slow-release fertilizers release nutrients at a slower rate compared to quick-release fertilizers. Slow-release fertilizers allow for timely infiltration of nutrients and prevent excess nutrients from being washed into our waterways as runoff pollution. Thus, they are less likely to contaminate groundwater and surface waters. Slow-release fertilizers can be made from synthetic materials or organic materials. Natural organic fertilizers have the added benefit of improving overall soil health, since they stimulate beneficial fungal and bacterial activity in the soil.

### What if the Labels Don't Say "Slow-Release" or "Quick-Release"

Most fertilizer bags do not say whether they are quick-release or slow-release, so how do you determine whether it is quick or slow-release? Look for fertilizers that contain > 50% slow release nitrogen to reduce the risk of leaching to surface and ground waters.

#### 1. First, look for the N-P-K ratio on the bag.

Fertilizer bags will show three numbers that reflect the Nitrogen (N) – Phosphorous (P) – Potassium (K) ratio. In Western Washington, the optimal ratio of N-P-K is 3-0-2. In other words, 3 parts nitrogen to zero-parts phosphorous to 2 parts potassium.

#### 2. Are the N-P-K values low numbers or high numbers?

Slow-release fertilizers tend to have lower N-P-K values compared to quick-release fertilizers. For example, an N-P-K ratio of 9-0-6 is most likely a slow-release fertilizer and an N-P-K ratio of 32-0-4 is most likely a quick-release fertilizer.

#### 3. Is the fertilizer made of organic or synthetic ingredients?

Natural organic fertilizers are slow-release by nature. They require the microbes in the soil to help "activate" the nutrients for use by your lawn. Synthetic fertilizers can be quick-release, slow-release or a "controlled-release fertilizer" which combines quick and slow release ingredients into one fertilizer.

While a synthetic slow-release or controlled-release fertilizer is less likely to pollute surface waters or drinking water, it will not contribute organic matter to boost soil health.

Synthetic slow-release fertilizers often combine urea (a common form of nitrogen) with formaldehyde, and may be called "urea formaldehyde" or "methylene urea" fertilizers. Another similar product is IBDU (isobutylidene-diurea).

### Calculating % Slow-Release Nitrogen

**Q:** To calculate the percent of slow-release nitrogen, divide the total nitrogen listed on the bag by the percent water-insoluble nitrogen, and multiply by 100.

**A: Example A (from example to right)**

If you have a bag of 25-0-10 fertilizer, with the 3 numbers representing Nitrogen, Phosphorous and Potassium in order, and 17.5% of the nitrogen is in water-insoluble form, here is what you get:

$$17.5 \div 25 = .7 \times 100 = 70$$

This bag contains 70% slow release nitrogen.

**More Information:**

- **Common Sense Gardening Guide:**  
**Fertilizer:** <http://www.co.thurston.wa.us/health/ehcsg/pdf/FertilizerGuide.pdf>
- **Stream Team on the Web:**  
<http://www.streamteam.info/yard-care/>
- **TCEH Guide:**  
<http://www.co.thurston.wa.us/health/ehcsg/index.html>

Source: Stream Team News, Summer 2017

**What to Look for on Your Fertilizer Label**

— GUARANTEED ANALYSIS —

**FERTILIZER**

25  
NITROGEN  
(N)

0  
PHOSPHOROUS  
(P)

10  
POTASSIUM  
(K)

TOTAL NITROGEN (N) .....	25.0%
6.29% Ammoniacal Nitrogen	
18.71% Urea Nitrogen*	
SOLUBLE POTASH (K <sub>2</sub> O) .....	10.0%
IRON (Fe) .....	.5.0%

Derived From: Ammonium Sulfate, Urea, Muniate of Potash, Polymer Coated Urea and Iron Surate.

\*17.5% slow release nitrogen from polymer coated urea.