



Wisconsin Association of Lakes

A nonprofit group of citizens, organizations, and businesses working for clean, safe, healthy lakes for everyone.

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Facts about phosphorus and phosphorus free lawn fertilizer

What is phosphorus?

Phosphorus is an essential nutrient plants need to grow, and is a common ingredient in many fertilizers. Plants don't absorb more phosphorus than they can use. Extra phosphorus from lawns can wash into our lakes and streams, causing algae blooms, water quality decline, as well as negatively impact recreational use and lakeshore property values.

How can too much phosphorus negatively affect lakes?

Phosphorus provides the fuel algae need to transform lakes into a thick, smelly green soup. Where it takes 20 parts per million of soil phosphorus to grow healthy turf, 25 parts per billion (a quantity 1,000 times smaller) can promote excessive algae growth in lakes. One pound of phosphorus can support 500 pounds of algae.

Algae clouds water and blocks sunlight from reaching aquatic plants potentially changing the lake's ecosystem; it also lowers the oxygen levels in the water, which can cause fish kills. Nutrient rich waters are preferred by invasive species such as Eurasian water milfoil, curly leaf pondweed, and carp.

How much phosphorus do healthy lawns need?

Although the amount of phosphorus in Wisconsin soils can vary, many residential lawns already have more than enough phosphorus to support a healthy lawn. Because plants do not absorb more fertilizer than they can use, your lawn does not benefit from phosphorus fertilizer if there is already a sufficient amount of phosphorus in the soil. Healthy lawns can be maintained with phosphorus free fertilizers.

A healthy lawn needs 20 parts per million (ppm) of phosphorus. The UW Soils lab data finds agricultural soils in every Wisconsin county are above 20 (average 53 ppm); some counties have significantly higher phosphorus levels in their soil. Recent data estimates phosphorus levels on residential Wisconsin lawns have, on average, twice the amount of phosphorus (105 ppm) than the average farm field; five times more than necessary for healthy lawns.

How do I know if my lawn needs fertilizer?

A simple, inexpensive soil test tells property owners if their lawn already has enough phosphorus. (see below).

Phosphorus free fertilizers are available at a comparable cost to phosphorus fertilizers.

How can I tell if a fertilizer is phosphorus free?

The amount of Nitrogen, Phosphorus, and Potash in a bag of fertilizer is shown by a series of three numbers on the package. The middle number indicates the amount of phosphorus the fertilizer contains. Look for the middle number of "0" to be sure you are buying phosphorus free fertilizer.

What if I don't live near a lake, stream, or wetland?

No matter where you live, using phosphorus-free lawn fertilizer is one easy way everyone can contribute to better water quality. Even if you do not live close to water, runoff from your lawn flows into the storm sewer system which directly empties into many lakes, streams, and wetlands.

Getting your soil tested

The University of Wisconsin recommends testing your lawn and garden soil every three to five years to learn how much fertilizer you need to apply.

The UW Soil & Plant Analysis Lab (<http://uwlab.soils.wisc.edu/>) can measure the level of phosphorus in your lawn's soil. Use a small garden trowel to collect soil from 10 locations around your lawn. For established lawns, dig down around 4 inches to collect your sample (for gardens and new lawns, dig down 6 inches). Combine samples in a clean plastic bag. You need around 2 cups for the test.