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For A ‘Green’ Lawn, Focus On Mowing, Not Early Fertilizing

ITHACA, N.Y. – As the grass greens up across the Northeast, lawn owners who want an eco-friendly yard should focus more on mowing – and less on fertilizing.

“The first step to minimize the environmental impact of your home lawn is to raise the mower’s blade to a height of 3 to 4 inches – usually the highest setting on your mower – and leave the grass clippings on the lawn,” says Marty Petrovic, a turf specialist in the Department of Horticulture at Cornell University.

Taller grass competes better with weeds, and sinks roots deeper into the soil to better withstand mid-summer heat and drought, explains Petrovic. The result: A thicker turf with fewer weeds and less watering. He also suggests keeping your mower’s blades sharp for a clean cut that reduces stress on the grass.

“And leaving the clippings recycles nutrients so you’ll need less fertilizer,” adds Petrovic, whose research shows that it’s likely most lawns in New York don’t need any additional phosphorus fertilizer, especially if you leave the clippings.

Prevent phosphorus pollution

Petrovic has been studying the fate of phosphorus fertilizer applied to lawns. When too much phosphorus washes into lakes and streams, it can cause algae blooms, eutrophication and a reduction in water quality.

Fortunately, phosphorus is a relatively insoluble, immobile nutrient. Most of the phosphorus from yards that ends up in surface waters gets there when water runoff physically carries away eroded soil or plant material (like leaves or grass clippings).

An important first step to prevent phosphorus pollution is to make sure your turf is thick enough to keep soil from washing away, and to be careful with clippings and leaves, says Petrovic. Don’t rake or blow them into roads, ditches or storm water drains where it’s just a short trip to the nearest waterway.

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Phosphorus can leach out of plant material on hard surfaces, so clean them up quickly. And, whether you use organic or chemical sources, don't spread fertilizer on hard surfaces, and promptly clean up any spills. Also avoid applying fertilizer to areas where the soil is always wet because these spots are more prone to runoff.

When Petrovic analyzed the results of soil tests sent to the Cornell Nutrient Analysis Laboratory for lawn fertilizer recommendations, he found that about 80 percent had enough phosphorus already. "And that was a conservative estimate," he adds, noting that his research may lead to lowering the phosphorus soil test level considered to be adequate for lawns.

For those who already have enough phosphorus, Petrovic recommends not applying more. "Why put down more if you don't need it?" he asks. Even if you remove the clippings, it might take five to ten years to draw down phosphorus levels in the soil to the point where you need to start adding more. "Meantime, you should look for zero-phosphorus fertilizers, and if your local retailer doesn't carry any you should encourage them to do so," suggests Petrovic.

Too much of a good thing

Where Petrovic starts to see pollution problems is with soils that test extremely high in phosphorus – perhaps eight to ten times what's generally considered high. At that point, phosphorus runoff from lawns increases dramatically.

To reach soil test levels that are that high takes many years of applying typical chemical lawn fertilizer blends, because they contain relatively little phosphorus at standard application rates.

What concerns Petrovic is that some lawn owners who want to embrace eco-friendly lawn practices will over-apply organic products – especially those made from composted animal manures, most of which are relatively high in phosphorus.

"A quarter- to half-inch application of a typical composted manure product may have 8,000 times more phosphorus than a year's worth of a commercial product's season-long weed and feed program," says Petrovic. "That's a century's worth of phosphorus in a single application."

No doubt, the organic matter in such applications may be good for soils low in organic matter. But the tradeoff comes in excessively high levels of phosphorus in the soil with the potential for pollution. "It used to be we tested soil to make sure that we had **enough** of certain nutrients," observes Petrovic. "But more and more, we need to test to make sure we don't have **too much** phosphorus."

If you want the benefits of organic matter but are concerned about phosphorus, consider yard waste composts, suggests Petrovic. While variable, they are generally lower in phosphorus than most manure-based products.

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Still need nitrogen

Even if you have enough phosphorus and return your clippings to the soil, grass still needs some nitrogen to form the kind of dense turf that prevents runoff. If you don't want to use zero-phosphorus chemical fertilizers, Petrovic suggests an organic nitrogen source such as corn gluten. Or, you can include in your lawn mix a legume such as clover that will remove nitrogen from the atmosphere and fix it in the soil.

Fall and late spring— not early spring — is the best time to apply nitrogen. “It may be human nature, but it's not a good practice to go out on the first nice weekend and spread fertilizer,” says Petrovic.

Other eco-friendly practices Petrovic suggests are to fine-tune watering practices and to skip trying to grow grass where it doesn't want to grow. Plant shade-loving plants where there's too little light, rain gardens where drainage is poor, and hardscape high-traffic areas.

“There are some places you just don't want to grow lawn. I'm a turf researcher, but even I can heartily recommend that,” quips Petrovic.

For more lawn care information, including the online publication “Lawn Care Without Pesticides,” visit www.gardening.cornell.edu/lawn.

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