

Fertilize Appropriately

All plants need nutrients to grow and thrive. However, it's not always necessary to fertilize them. Your lawn obtains the nutrients it needs from soil minerals, organic matter, fertilizer, and even the atmosphere to a lesser extent. A plant's nutrient needs depend on a number of factors, including species, age, and location in the landscape. Too much fertilizer can weaken a plant, promote disease, and invite pests, in addition to wasting money and harming the environment. It also means more pruning and mowing. So, consider your plants' needs carefully before applying any fertilizer.

In 2011, Illinois instituted a law (the Agriculture Fertilizer Act) prohibiting commercial landscape care industry applicators from applying fertilizer containing phosphorus unless a soil test shows the soil is phosphorus-deficient. Establishment of seed and sod is exempted from the law. While the law does not apply to property owners, it does make property owners more attentive to the products they choose and give them the opportunity to be more careful with their phosphorus applications.

The following tips can help you make the right choices for a sustainable landscape.

Soil Testing

While it may seem trivial, soil testing is perhaps one of the most valuable tips provided in this guidebook for maintaining a sustainable landscape while also protecting the health of our lakes and streams. Fertilizing lawns for many of us is done on autopilot — twice a year, an application in spring and another in fall. However, many soils in Indiana and Illinois already contain enough phosphorus to support a healthy lawn. One way to find out for sure is to do a soil test. Soil tests can help you understand what nutrients (ex. phosphorus) are present in the soil and if additional nutrients need to be applied for the particular area in your landscape. Check with your University County Extension Office to see where testing services are available.

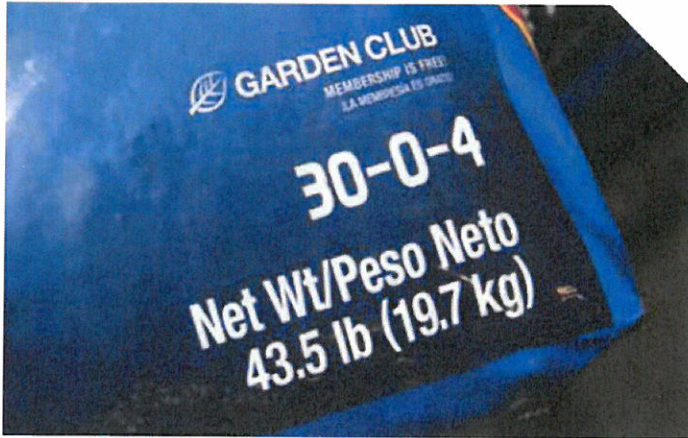


Image courtesy of Irene Miles.

Read the Label

If your soil test comes back saying that your lawn has a nutrient deficiency, make sure that you purchase the correct fertilizer to address that deficiency. All bags of fertilizers will have a label showing the nutrient analysis. It will have three numbers, such as 22-0-15, which correspond to Nitrogen-Phosphorus-Potassium or N-P-K. Nitrogen (N) is important in overall plant health. Phosphorus (P) is integral in root formation. Potassium (K) regulates water movement. Remember, most established lawns in our region do not require phosphorus. You can make sure by doing a soil test. If this is the case, look for a fertilizer with a zero value in the middle of the nutrient analysis (N-P-K), which means it is phosphorus free.

Another important consideration is release rate. Quality nitrogen fertilizers should contain controlled-release nitrogen. You can find out by checking the guaranteed analysis section on the back of the bag. Key terms to look for include controlled-release, slow-release, slowly-available, or water-insoluble nitrogen. Slow release fertilizers reduce the likelihood of nutrients running off into nearby lakes and streams. However, controlled release fertilizers won't have that immediate "greening up" effect.

Follow the Label

Make sure to follow the directions on the label. The label will provide information on calculating how much fertilizer will need to be applied based upon the square footage or your lawn and your soil test results. The label will also provide you with information about the release rate. Over-applying fertilizer can burn your lawn or run off when it rains. The label will also contain some general safety and disposal information. If you need to dispose of any of your lawn chemicals, check with the county solid waste district to see if they have a Hazardous House Hold Waste Disposal Day coming up in your area. There's no charge to dispose of these materials at these events.

Organic Fertilizers

A general "rule of thumb" for assessing organic fertilizer from synthetic is: if any of the three nutrient analysis numbers (N-P-K) is higher than 8, or if all three numbers add up to more than 15, there is a good chance you are dealing with a synthetic source of fertilizer. There are some organic sources that have about 10-12 percent nitrogen.⁴⁴ One of the advantages of organic sources of nitrogen (N) is the low chance of burning grass. Some synthetic fast-release sources have high salt levels that increase the chances of burning.⁴⁵ Many organic fertilizers come from animal sources but can also include plant and mineral sources. If you can't find it at your local nursery or homecare center, ask them to stock it. Otherwise, there are many options available via mail order or online.

Table 4. Nutrient composition of some organic materials used as fertilizer

MATERIAL	N	P	K	RELATIVE AvAILABILITY
Alfalfa pellets	3	0.5	3	Slow
Blood meal	13	2	0.5	Medium/rapid
Bone meal	0.5-6	15-34	0	Slow
Compost	1-3	0.5-1	1-2	Slow
Fish emulsion	3-5	1-2	1-2	Rapid
Soybean meal	6-7	1-2	2	Slow/medium
Rock phosphate	0	20-32 (2% avail.)	0	Slow

Source: Adapted from Purdue University Extension Service: Organic Vegetable Production www.ces.purdue.edu/extmedia/ID/ID_316.pdf.

44 University of Illinois Extension: Ask Extension. web.extension.illinois.edu/askextension/thisQuestion.cfm?ThreadID=17605&catID=154&AskSiteID=34.

45 University of Illinois Extension: Lawn FAQs. urbanext.illinois.edu/lawnfaqs/fertilize.html.

Calculating Pounds of Fertilizer to Apply

Time to Apply

If you need to apply fertilizer based on soil testing results, September and November are the two best times to fertilize your lawn. An application of nitrogen fertilizer in the fall promotes good root development, enhances your lawn's energy reserves, and extends color retention. The benefits will be seen in the spring with earlier green-up, better turf density, and improved tolerance of turf diseases.

For the September application, pick a product that contains some quick and slow-release nitrogen. The timing of the September application is anytime of the month after the daytime high temperatures are no longer in the 90s °F. The target application rate for this fertilization should be 1.0 lb. N/1000 square feet.

The November application timing should be near or after the last mowing of the year, but while the lawn is still green. Typically, there may be a month or more between your last mowing and the time the grass turns brown or goes under snow cover. Generally, the first few weeks of November are when to apply. Research suggests that the nitrogen must be taken-up by the plant before winter to be most effective. Therefore, a quick-release (or soluble) nitrogen source such as urea, ammonium nitrate, calcium nitrate, or ammonium sulfate is most effective. The target application rate should be 0.5 to 1.0 lbs. N/1000 square feet.⁴⁶

General Considerations

Never apply fertilizer if moderate or heavy rain is forecasted for your area within the next 24-48 hours. Heavy rains can quickly carry fertilizers in runoff to nearby storm drains or waterbodies. If you live next to a lake or stream, do not fertilize within 25 feet of the water's edge. Make sure to sweep up any fertilizer that gets spread onto the sidewalk or street curb.

Desired rate (lbs. N/1000 ft²) / % nutrient = Total fertilizer need (lbs. /1000 ft²)

Total fertilizer needed (lbs. /1000 ft²) x Area to be treated (ft²) = lbs. fertilizer needed

For example, how much fertilizer do you need to apply a 22-0-15 fertilizer at 1 lbs. N/1000 ft² to a 5000 ft² lawn?

1 lbs. N/1000 ft² / .22 = 4.5 lbs. /1000 ft² of 22-0-15 fertilizer

4.5 lbs. /1000 ft² * 5000 ft² = 22.5 lbs. of 22-0-15 fertilizer would be needed for a 5000 ft² lawn.



Image courtesy of Lake Champlain Sea Grant program



⁴⁶ Turf Tips: Fall Fertilization, Purdue University. gurdueurf tips.blogspot.com/2011/09/fall-fertilization.html.