

NUTRIENT MANAGEMENT



What is Nutrient Management?

Nutrient management is only applying the nutrients that plants can use. Plants require 20 nutrients, some in large amounts (macronutrients) and some in small amounts (micronutrients). Nitrogen, phosphorus, and potassium are the 3 nutrients applied at home most often. While a nutrient deficiency can severely damage a plant, over-applying nutrients can be equally harmful. Over-application of nutrients can also lead to contaminated groundwater through leaching or runoff. Surface water can be affected in the same way, leading to increased algae growth in detention ponds, lakes, and reservoirs. Knowing the characteristics of your soil and only applying those nutrients plants need is key to good nutrient management in your backyard.

Soil testing is the best way to determine what nutrients your plants need. Soil test kits for pH, phosphorus, and potassium are available from most garden centers. Testing your soil initially is a good start to managing your plants, but you should continue to test your soil every few years, since applying fertilizers and other chemicals can change the characteristics of your soil over time.

How to Take a Soil Sample:

1. Sample when the soil is moist but not wet.
2. Plan to take 10-15 samples per acre, especially in areas with different uses (such as your garden and your lawn).
3. Clear away surface litter or grass.
4. Dig a small amount of soil to a depth of 6 inches.
5. Place the soil in a clean container. If you are using a private firm or university to analyze your sample, they may provide the container.
6. Repeat steps 3-5 until the appropriate number of samples have been obtained.
7. Mix the samples together thoroughly.
8. From this mixture, take one sample that will be sent for analysis.
9. Send immediately to a lab for analysis. Do not dry before sending.

These Labs Will Analyze Your Soil Samples For You:

- A&L Great Lakes Lab, Inc.
3505 Conestoga Dr.
Fort Wayne, IN 46808
(260) 483-4759
- Brookside Farms Lab
308 S. Main St.
New Knoxville, OH 45877
(419) 753-2448
- Mowers Soil Testing Plus, Inc.
Box 158, 117 E. Main St.
Toulon, IL 61483
(309) 286-2761

(This is not a complete list and Hamilton County SWCD does not recommend any one laboratory over another.)



Photo courtesy of: USDA NRCS

What Will the Soil Test Tell Me?

- The pH of your soil can drastically affect nutrient uptake by plants, so correcting a pH problem could also correct a nutrient problem. A pH of 7.0 is considered neutral. A pH less than 7.0 is acidic and a pH above 7.0 is alkaline.
- Phosphorus and potassium are routinely tested. Once you know the quantities of each nutrient your plants need, you can look for a fertilizer that matches those quantities. Many soils already have sufficient phosphorus levels for growing grass, eliminating the need for applying this specific nutrient.
- Soil organic matter is often part of a soil test. Organic matter is very beneficial, improving aeration, water movement, water retention, microbial activity, and root growth.
- Unless a specific problem is suspected, soil tests do not analyze micronutrients.

If your soil test reveals adequate nutrient and pH levels, you will not need to do anything. You may consider adding organic matter (compost) to the soil, which will slowly supply additional nutrients, increase aeration, and provide better water-holding capabilities. If your soil needs additions, see the recommendations below:

pH:

- If you need to lower the pH, apply aluminum sulfate.
- If the pH needs to be raised, add lime.
- Both should be mixed well into the soil before planting.

Organic Fertilizers:

- Manure - Manure should be composted before applying. Work composted product into the soil to a depth of 8-12 inches or spread carefully around plants.
- Green manures - These are crops that are grown (often planted in the fall) and then tilled into the soil (usually in spring before planting). They may also help reduce soil erosion.

Commercial Fertilizers:

- Know how to read a fertilizer label. The first number is the percentage of nitrogen, the second number is phosphorus, and the third number is potassium.
- If using the granular form, be careful not to spill on sidewalks or other surfaces where it can mix with runoff. Granular fertilizers are a type of salt, so if applied too heavily, they may burn the plant.
- Commercial fertilizers may also be mixed with water and applied directly to or around the base of the plant.
- Apply nutrients when plants really need them. Fertilizer will be wasted if the plant is not actively growing due to season or temperature.

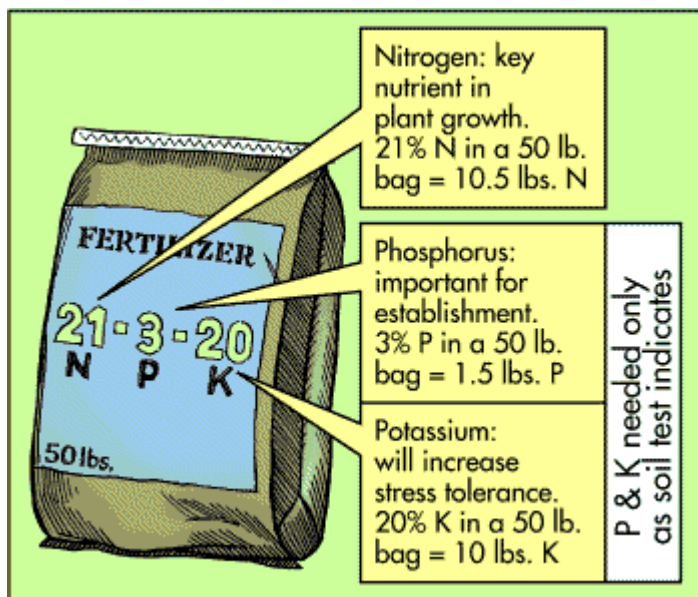


Image courtesy of: Cornell University Extension

Always read
the labels
and follow
the directions!