

I did a soil sample...but what do the results mean?

By Heather Bryant, Extension Educator, Agricultural Resources

Fall is a good time to test your soil because having the results now gives you time to plan for next spring. But, sending in the sample is only the first step, next you will need to make sense of the results that come back.

When you receive your results, the first thing to look at is the pH of your soil. pH measures acidity and the number seven represents neutral. Anything below a 7 means your soil is acidic; anything above a 7 means your soil is alkaline. Plants generally prefer slightly acidic soils with pH values between 6 and 6.5. Of course there are some notable exceptions such as blueberries which thrive at pH levels between 4.5 and 5.

If your soil pH is out of line with what you want to grow, you can add lime to increase the pH or sulfur to decrease it. The recommendations section of your soil test result sheet will tell you what and how much you need. Early fall is a good time to apply lime because lime acts slowly and next year's garden will benefit from the additional time. If you have missed the fall application window, simply apply lime after the ground thaws in the spring.

Next you want to look at the nutrients. Three of the most important plant nutrients are nitrogen, phosphorus, and potassium.

Nitrogen levels change quickly in the soil and are therefore not easy to test accurately. UNH doesn't test nitrogen, instead, we make recommendations on how much nitrogen fertilizer to add based on what your crop needs.

Organic matter contains nitrogen, so if you have historically added a lot of organic matter to your soil in the form of mulches, compost or manure, or your garden is near water, you may want to check the box for "organic gardening" on your soil test form even if you don't follow organic practices. This test will tell you the percentage of organic matter you have in your soil and will "credit" you a certain amount of nitrogen for it. This will minimize the risk of applying excess nitrogen which might then wash out of your soil and into surrounding water ways.

Phosphorus levels in the soil tend to be high here in New Hampshire, particularly if your garden has received a lot of compost or manure in the past. This is because when you supply the right amount of compost and manure to meet the crops nitrogen needs you also put on more phosphorus than you need. If the level in your soil is excessive you will likely get a recommendation to limit or even stop your use of manures and composts until the levels start to come back down.

High levels of phosphorus in the soil are a concern primarily because the phosphorus could wash into waterways causing excess algae growth. If your phosphorus levels are too high the best thing you can do is to keep plants growing in that spot to use up the phosphorus and minimize the risk of erosion.

Potassium helps your plants resist drought and may be low in your soil depending on how you have historically used the land. If that is the case, the recommendations will tell you how much potassium to add and give you some examples of products that contain it.

Calcium and magnesium are also considered major plant nutrients. Magnesium helps your plants photosynthesize and calcium is important for plant growth. Lime products contain calcium and in some cases magnesium. Other products may also be used if you need calcium or magnesium but do not need to adjust your pH. In fact, if your grandparents used Epsom salts in their garden, they were most likely trying to increase the amount of magnesium in their soils.

Finally, your soil test will also give you a value for the amount of lead in your soil and tell you whether or not that level is potentially harmful. Old landfill or factory sites and gardens near older homes with lead paint on the siding are the most likely places to find high levels of lead.

If you have any questions or concerns about your soil test results please call me at 787-6944 or the Family, Home, and Garden Education Center, recently renamed the Education Center and Info Line at 1-877-398-4769.

Look for next week's column on Christmas trees by County Forester David Falkenham.

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