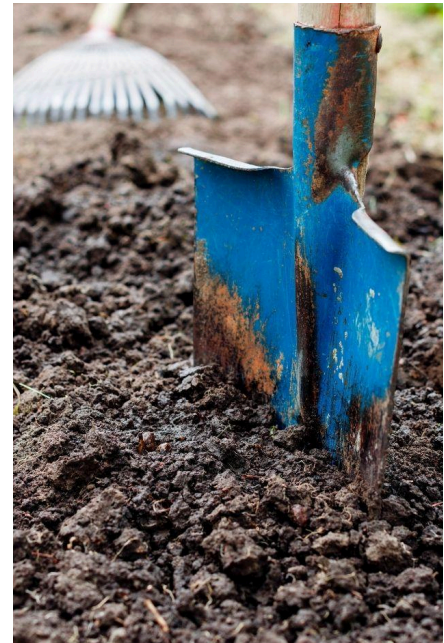


Fresh Food Connect January 2022

The January to do list for the garden is like that of December. By now you likely have your full collection of seed catalogues so you can settle yourself down to select favorite seed varieties (black cocoa beans, dragon's egg cucumbers, and green arrow peas are top of my list every year!). You can spend warm winter days out tidying up leftover garden debris. You can plan your garden space temporarily using a garden planning website, program, a notebook, or your preferred method. Planning your garden provides you the ability to think through the season, consider spacing and appropriate succession planting needs.

If your soil has not frozen, you can do a soil test and send it off to be ready for necessary amendment come March. Soil testing is a vitally important part of managing a successful vegetable garden. While it's tempting to just add some compost and fertilizer every year, working in Extension has proven to me that the concept of "if a little is good, more is better" is very much not true in the garden setting.

Taking a sample: When taking a sample you want to ensure that you're getting soil that is managed in the same way. This means your vegetable garden beds can often be considered one sample, your lawn another, ornamental beds another. To take the best possible sample ideally you would want a soil probe. However, the average homeowner (myself included!) can't justify the \$80-100 expense of a really good soil probe, so your best bet is a shovel. You want to select 5+ sites throughout your soil landscape, you'll take a small amount from each location and mix them together for a more homogenous sample. The exception here, of course, is if you have an area that isn't growing like the others, that sample may be worth taking separately. Dig your shovel down 6-8" down and take the soil sample from the bottom. Avoid including large particles, organic (bark) or inorganic (rock) if possible.



Sending in a sample: Find the lab you want to work with, most Extension services have a lab but there are also private labs which may have a quicker turnaround time. CSU's lab is moving to the Denver SPUR campus in January 2022, and there are plenty of other labs in Colorado and beyond that provide good service. Generally, most labs will perform the work in advance and send you a bill, and soil testing will typically cost between \$20-45. You'll often get results in 2-4 weeks.

Reading your results: Your soil test will come back, often with a lot of numbers that may seem hard to understand. The big things to look out for on a soil test are: nutrient levels, organic material, pH, and soil texture. Let's look at what these all mean.

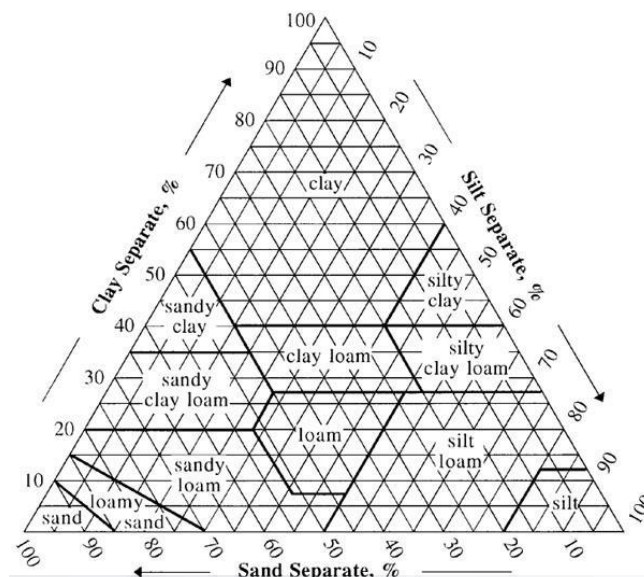
Nutrients: The big three macronutrients we're often interested in are Nitrogen (N), Phosphorous (P), and Potassium (K). These are considered macronutrients because they are in highest demand for good plant health. P and K will bind in the soil and remain available for a long time, but Nitrogen is mobile, or water soluble, which means it will leach down through the soil profile and out of the reach of roots over time. Soil tests for what was available in the soil at the time the sample was taken, so if it's been a very wet season N levels may have dropped. P and K numbers over 40 and 220 for P and K respectively are adequate for good plant growth. With organic amendment P and K are often sufficient or even high.

Other nutrients may show up on your soil test, these are considered micronutrients, and unless they are completely absent, or at levels considered toxic we don't have time to get into them in this article.

Organic Material: the percentage of organic, formerly alive, material in the soil. Ideally this should range from 3-5%. Higher levels of OM tend to bind up nutrients such as Nitrogen and cause deficiencies in plants. This is where astute gardeners such as yourselves should consider applying OM (such as compost) only when a soil test warrants it necessary.

pH: The acidity of the soil is measured by the pH. This is a scale that runs from 0-14, but we usually see numbers in the middle. A soil that is 6.6 or lower is considered acidic, 6.7-7.3 is neutral, over 7.3 is basic. While there are amendments that can increase the pH of the soil, basic soils can be difficult or impossible to change in a short period (can happen over decades or centuries, slightly).

Soil texture/type: This is most helpful in determining how your soil reacts to inputs. Soil has three main size components: sand (largest), silt, and clay (smallest). The proportion of the three sizes leads to the texture of the soil and cannot be changed. Clay has the strongest properties, and even 25% clay can have the properties of a clay soil over a sandy or loamy soil. Ideal soils are about an equal proportion of sand, silt, and clay. If you have a clay soil you'll need to water less frequently, for longer and sometimes intermittently to allow absorption of the water. Sandy soils may need less water, more often as the water will drain out quickly.



Recommendations: Most soil tests will provide fertilizer recommendations based on the soil test. These are a good guideline to follow for what your garden may need.

Happy gardening! If you have questions about your soil tests reach out to your local Extension office as staff and Master Gardeners are happy to help interpret results! You can also check out the Grow & Give video on soils: <https://youtu.be/oNiLUtwEezg>