K-STATE Research and Extension | Meadowlark District

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Prepare your soil for spring

As fall creeps closer, it is a perfect time to evaluate and improve your soil health. Your garden will thank you in the spring! The first step in evaluating your soil health is to do a soil test, especially if you have not done one in the past two years. Performing the standard gardener soil test through K-State can tell you about your soils' pH, organic matter, phosphorus, potassium, and nitrates. With this information you can make adjustments that optimize your soil for plant growth.

When evaluating soil health, one of the first things to look at is the pH. Soil that is too acidic or too basic can wreak havoc on your garden. Even if you have sufficient nutrients, an extreme pH level will essentially lock those nutrients in place, making them inaccessible to plants. While not all plants require the same PH range to thrive most, vegetables and ornamentals will grow well with a pH somewhere between 6.0 and 7.0. If your soil test indicates that your pH is too high, you can incorporate sulfur to lower it. If your soil pH is too low, you can incorporate lime to raise it. In Northeast Kansas, many gardeners have slightly basic soils (a pH just above 7.0) and need to incorporate sulfur into their garden.

Adding lime or sulfur to your soil, however, will not alter the pH overnight. In fact, it can take over a year for these amendments to fully react with your soil and alter your pH. Rather than waiting until spring to mess with your soil pH, make those changes now so that the amendments have time to react with the soil before your next spring planting.

Next you want to look at your organic matter content. Organic matter refers to decaying plant materials or animal waste, which can offer numerous benefits. Beyond providing nutrients, it can improve the soil structure, increase water infiltration and retention, and increase the amount of nutrients available to your plants. If you have low organic matter content, consider applying a thin layer of organic matter to your garden in the fall. This will allow it to break down and incorporate into your soil over the winter. It is important to note that not all compost is equal. Depending on the source of the decomposing matter, it can alter your pH or have high amounts of nutrients your soil already contains. Make sure you are adding organic matter that is suited for your soil.

Once you have added any pH amendments and organic matter, cover your soil for the winter. You can do this either with mulch or cover crops. Bare soil is prone to erosion, nutrient leeching, and damages the soil structure. Additionally, both cover crops and mulch will provide additional organic matter to your soil.

Lastly, you want to look at your soil's nutrient values. You can compare your soil nutrient results to our K-State *Fertilizing Gardens in Kansas* to determine how much phosphorus, potassium, and nitrogen your specific plants will need. You can apply these fertilizers in the spring either before planting or as you plant, and make sure to water them into the soil.

If you have any questions about working with your soil, or need to get a soil test done, reach out to one of our offices for more information.

Teresa Hatfield