

## **Soil Testing**

By Adam Watson, Agriculture Agent, UT Extension Washington County

Soil testing is an under-utilized tool for home gardeners and lawn keepers. A soil test literally reports the levels for various plant essential nutrients as well as the pH of the soil which affects their availability. This information is critical to know what, if any, fertilizers or soil amendments need to be added to soils for plant success.

A good soil test will be representative of the area you are intending to grow in. It is composed of multiple small samples taken from across the area in question. If there is a dramatic change in soil type or characteristics, it can be helpful to have more than one sample tested. If using a soil probe, which can be borrowed from the Jonesborough UT/TSU Extension Washington County office, simply take soil cores 6 inches in depth; this is where most plant roots will be located. If using a spade or shovel, remove an area of soil 6 inches in depth. Be sure to exclude surface debris and plant material and place the samples in a clean (non-galvanized) bucket or container for mixing. Ten or more of these sub-samples should be thoroughly mixed together. The final sample comes from the aggregated samples. A quart sized plastic zipper bag is a sufficient quantity for your final sample and many labs will supply a bag or box in which you will submit the sample.

Testing prevents us from unknowingly overapplying a nutrient which is not only a waste of time and money but can cause problems later. Over-applying a phosphorous, for instance, can create issues with iron or zinc uptake for the plant and phosphorous is also the primary nutrient of concern for protecting freshwater bodies from algal blooms. Likewise, lime should never be applied without a soil test result to tell us how much we need to apply, because an over-application of lime will result in alkaline soil conditions which will be unsuitable for many plants.

There are many labs that can test your sample including the Soil, Plant and Plant Center at the University of Tennessee through UT Extension Washington County. For a cost of \$25 for one sample it is well worth it to ensure you treat your soil correctly for best plant growth. Regardless of the lab chosen, the results report will give you a snapshot of the current nutrient status of your soil and recommendations on what should be added for the specific plants you intend to grow. These recommendations are specific to the crop and both pH adjustments and fertilizer rates can change depending on the crop. Keep in mind there is more than one school of thought on suggested fertilizer application rates and some labs may suggest larger quantities of fertilizer than others.

Soil testing is an easy method to ensure your soil is healthy and ready to support your plants. And it can save you money by eliminating unnecessary fertilizing. Contact your local extension office to obtain detailed information on how to take a soil sample and get the proper container for sending the sample to the testing lab.

## **Resources**

“The Tennessee Vegetable Garden – Managing Plant Nutrition,” <https://uthort.tennessee.edu/wp-content/uploads/sites/228/2023/11/W346-C.pdf>

“Soil Testing,” <https://uthort.tennessee.edu/wp-content/uploads/sites/228/2023/11/PB1061.pdf>

For more information about gardening, visit UTHORT’s YouTube site for helpful videos:

<https://www.youtube.com/channel/UCjS3d1IkIH1OZ1Z2qPvhgfQ>

**How do I ask a question?**

If you have a question for the Master Gardeners, submit them to us on our website at [www.netmga.net](http://www.netmga.net).

Click the link at the top of the page, “ASK A MASTER GARDENER” to send in your question.

Questions that are not answered in this column will receive a response from a Master Gardener to the contact information you provide.

*The Master Gardener Program is offered by the University of Tennessee Extension. The purpose of the Master Gardener program is to train people as horticultural-educated volunteers. These volunteers work in partnership with the local Extension office in their counties to expand educational outreach, providing home gardeners with researched-based information.*