

In our last article we discussed soil testing and how soil tests can be used to help make managerial decisions concerning your pastures. Although soil tests are important, they are but just one resource available to use when evaluating the quality of your pastures. To understand how to best monitor and manage soil quality, it is important to examine the factors that affect it. This week we will continue our discussion on soil health and talk about things you can look for in your pastures to help determine if the soil is healthy.

Soil health can be evaluated by using three different types of indicators- chemical, physical, and biological. The most popular used by producers is the chemical indicator, such as a soil test. Like we discussed last time, the soil test is helpful because it reveals which nutrients are present in the soil. Basic soil tests primarily reveal soil pH, salinity, and the phosphorus, potassium and nitrate contents of the soil. However, some tests reveal more information about other nutrients contained in the soil. Though soil tests are the most common form of analyzing soil health, the other two indicators should be taken into consideration as well to reveal the physical and biological quality of the soil.

The second indicator, physical, is most dependent upon the management of the land. For example, how compacted is the soil in your pastures? This may also be referred to as “subsoil compaction” and can lead to decreased yields of forages. What is the soil tilth in your pastures? This determines the soil’s ability to support plant growth. Soil tilth is influenced greatly by soil particles, moisture content, level of aeration, and drainage. These things are great indicators of whether or not the physical quality of the soil is where it should be.

The final indicator is also fairly well used by cattle producers because it may seem quite obvious to them. Some of the most common biological indicators of healthy soil are identified in the form of living organisms or inhabitants of the soil. The most easily identifiable biological indicators are earthworms and dung beetles. Earthworms are helpful because they aerate the subsoil and create topsoil in the pastures. This reduces soil compaction, and therefore promotes healthy root growth in the plants. Beetles also serve a great purpose by working to incorporate manure piles back into the soil. This reduces the need for a fertilizer spreader and greatly improves soil health.

Truly knowing the quality of your soil requires much more than simply having a soil sample tested. Although we highly recommend that you test your chemical soil quality, it is equally important to evaluate the soil quality on a physical and biological level. When used together, these three types of indicators help a producer know if his/her soil is lacking in nutrients, or if soil quality is sufficient. Knowing the difference can help prevent unnecessary fertilizer and/or lime costs. For information about interpreting soil tests, or for help with determining if your soil quality is where it should be chemically, physically, and biologically, please contact us.

Thanks,
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