

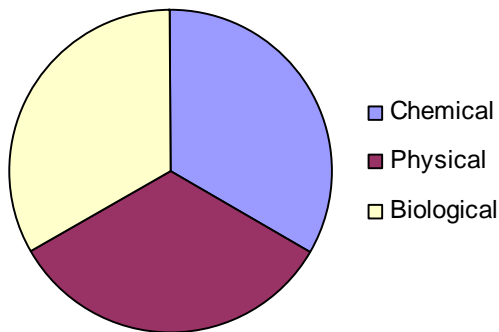


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## IT ALL BEGINS IN THE SOIL!

Whatever you do on the farm, it all begins with the soil. Soil is the foundation of every farming operation. Obviously then, to get the best from your farm, you need to get the best from your soil.

“What is soil?” and “What does it do?” Can you give clear and concise answers to such questions? Of course, there is no one “right” answer but it is helpful to keep the big picture in mind when thinking about the soil. I like to consider soil as three interrelated spheres: chemical, physical and biological.



The chemical sphere includes properties such as pH, Olsen P, sulphate, cations etc. Most farmers are familiar with these because they form the basis of most basic soil tests. The latter give basic information about the supply of nutrients and, depending on the test, they may also tell something about the cycling and storage of nutrients as well.

The physical sphere encompasses a different set of properties which give information on how the soil components are arranged together. These include properties such as structure, texture, porosity, water holding capacity and organic matter. Though these

properties are not generally tested, they are just as important to the overall functioning and performance of the soil as the chemical properties.

The biological sphere is the realm of living and dead soil organisms. Every soil comprises significant populations of living animals, microbes, fungi, plant roots etc as well as the residue of these different species after they die. These in combination with dead roots, stems, leaves and animal dung etc generate the soil organic matter, which is perhaps the key component in the overall functioning of any soil.

The chemical, physical and biological spheres do not function in isolation. They are mutually independent and interact with each other i.e. the biological sphere stores many of the essential chemical plant nutrients. Yet plant access to these nutrients depends on good physical properties and a healthy population of microbes in the plant root zone.

Because most common soil tests are generally limited to a handful of chemical parameters alone, it is easy to completely overlook the physical and biological soil spheres. This is often the reason farmers struggle to understand why they are not generating better production even though the soil test shows good results. If there is a problem in either the physical or biological spheres you would have no way of knowing because a basic soil test does not measure these properties.

The better ones ability to appreciate the interrelationship between the three soil spheres, the better ones understanding of how soil functions, and also how to get the best from the soil and from the farm.