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WHAT'S YOUR pH?

Soil testing for better erosion and sediment control

A problem seen in many soil stabilization failures is that so few contractors perform soil testing, which is one of the easiest ways to improve stabilization success rates.

The pH is a measurement on a scale of zero to 14. The midpoint of 7 indicates a neutral reading. Readings below 7 are considered acid, and those above this reading are alkaline. As a general rule, grasses prosper in the 6 to 7 range, while ornamentals prosper in the 5 to 6 range. The most obvious path to success is adjusting to an optimum pH to enhance the rate of growth and establishment of any vegetation—be it grass, groundcover or shrubs—with a minimum of water and nutrient inputs.

So, what is an optimum pH, and what else will a soil test do? Most soil testing labs have a set profile of tests for vegetative establishment, with additional testing that may be added to the basic test. Always test for pH, nitrogen, potassium, phosphorus, organic matter and soluble salts. Most reputable labs will assist in interpreting the results for the crop or vegetation desired and the method of testing to a standard. When the pH is in the proper range, all elements essential to the optimum growth of vegetation become more available. This means that when the pH is out of range, potassium, manganese or other elements are “invisible” to the plant.

Most moist climates have naturally occurring acid soil, while dry climates have alkaline soil. However, one should never take this for granted. A soil test is a simple method to begin the process. It is easier to adjust the pH before the erosion control blanket or hydroseeding goes down. Major adjustments in pH will require applications of lime or aluminum sulphate, subsequent testing and perhaps additional applications.

The obvious reason for testing nitrogen, phosphorus and potassium is that this is how one applies fertilizer. It may be easier to buy what a local vendor is offering, but matching the fertilizer to the actual soil deficiencies is a better practice. Why pay to apply potassium if the soil is already high in potassium? Not only that, but the vegetation may suffer from this application. A full battery of tests will answer this question and allow a properly designed application of fertilizer.

Organic matter measurement will indicate the potential for nitrogen release and give a clue as to how much nitrogen will be available to the establishment of vegetation. Most vegetative areas prosper in a range of 1 to 2 percent organic matter. Too low a measurement means an application of organic matter is necessary for proper soil composition; too high means the nitrogen will be subverted to the soil, away from the plant. Soil composition may also be compromised, meaning heavier applications of water and nutrients will be necessary.

Soluble salts are not only a measurement of possible poor drainage, excessive compost application or excessive fertilization; high soluble salts affect the ability of vegetation to extract water from the soil. Even with proper watering, the plants will show signs of stress similar to those without adequate water.

Since many failures on vegetative establishment can be traced to soil conditions, it is vital for the contractor to test before any operations are initiated. While many contractors will carry a portable pH meter, there are more aspects to a comprehensive soil test. **SWS**

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