

NORTHWOODS YARD & GARDEN

Weekly Column

March 25, 2024

Understanding Soil Key to Garden Success

Understanding soil essentials will help in growing any plant in your garden or landscape. Good soil conditions help assure healthy roots, which in turn leads to healthy plants.

Soil consists of both a solid portion and open pore space. The solid portion includes a mineral component, which is a combination of sand, silt, clay, and organic matter. Pore space is often overlooked but is critical, as it holds both water and air. Plants obtain water from soil and roots need oxygen to grow, so ideally pore space has adequate amounts of both.

Good soil for plant growth allows water to pass through, meaning they have good drainage, but also hold some water for plants to use, along with nutrients. These soils have an optimal mixture of large, medium, and small particles (sand, silt, and clay, respectively) and organic matter. This ideal combination of particle sizes is classified as loam or silt loam soil; often referred to as “good topsoil.” Prime agricultural land throughout the Midwest is typically loam or silt loam.

For garden soil with too much sand or clay, organic matter can be added to improve them for plants to grow.

Compost, rotted manure, and peat are examples of amendments to consider. In sandy soil pore space is large, water moves thorough fast, and little remains behind. Adding organic matter helps hold water for root uptake. In clay soils, water is slow to move because clay particles are exceedingly small and have very tight pores between them. Organic matter binds small clay particles into larger aggregates, which in turn make larger pores for improved drainage.

Another key soil characteristic is soil pH, which influences how soil nutrients are available to plants to use. Soil pH values below 7 are acidic (sour) and above 7 are alkaline (basic). Most plant nutrients are widely available to plants in soil with slightly acidic pH values, ideally in the 6.2 to 6.8 pH range.

Materials such as sulfur can be used to lower the pH, making it more acidic. Limestone will raise the pH, making soil more alkaline. Do not add either one without knowing the starting soil pH value. A soil test will tell you the pH of your soil, along with major nutrient levels. Soil samples may be submitted for testing through the Iron County UW Extension Office; call our office for details and fees.

Next week I will discuss the major soil nutrients and how we supplement them with fertilizers.



Interested in learning more about Horticulture in Iron County?
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