

Good gardens and landscapes begin with good soil

By Kelli Belden  
Research associate and director  
University of Wyoming Soil Testing Laboratory  
And Scott Hininger  
University of Wyoming  
Cooperative Extension Service  
Sheridan County

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Many gardeners have told me their gardens did not perform very well this year. The cool wet spring and hot summer really did not help. However good soil is the foundation of a good garden or landscape, but many soils in Wyoming are less than perfect. Whether a gardener or a landscaper plans to grow conventionally or organically, the organic matter content is one of the most important factors for improving soil quality.

Organic matter slowly decays to provide plant nutrients. It will improve water-holding capacity if the soil is too sandy, and it can improve porosity, infiltration and drainage if the soil is too heavy, such as those containing high percentages of clay.

Because we have a short growing season, cool temperatures and limited moisture, its soils rarely contain as much organic matter as the richer soils in the Midwest. Fortunately, organic matter can easily be added in most situations.

For annual beds or new perennial beds, incorporate a one-inch layer of organic material into the top 8 to 12 inches of soil. For new lawns, till 1 to 3 inches of organic material into the top 6

to 8 inches of soil. For established perennial beds, a light layer of mulch that is allowed to decay will help maintain organic matter levels.

For established trees and shrubs, 3 to 6 inches of organic mulch can be spread starting about two to three inches from the trunk and out to 6 inches beyond the "drip line" (the end of the branches).

There are many organic matter choices (tree leaves, manures, composts, wood residues, grass clippings, straw and peat), and each has advantages and disadvantages.

Manures are high in nutrients but can also contain salts and weed seeds. Only aged (6 months to a year) or composted manures should be used. Because manures can contain pesticides and harmful pathogens, they should not be used on vegetable or fruit beds unless you know the source really well, and they may contain weed seeds.

Composted vegetable waste from kitchens is another excellent source of organic matter for garden soils, but it degrades rapidly. Wood residues, including sawdust, and lawn clippings (no herbicides added to the lawn -weed killers) can be added to the compost pile.

When incorporated into the soil, wood residues (fresh bark, chips or sawdust) used alone are long lasting but will tie up nitrogen. Straw also ties up nitrogen. One pound of nitrogen

fertilizer should be added to the soil for every 100 pounds of straw or woody material that is incorporated.

Sphagnum peat is acidic and may temporarily lower the soil pH, which can be of benefit in alkaline soils. Peat needs to be incorporated into the soil thoroughly, and it can be expensive.

No matter what organic material is used, it should be added every year to maintain the benefits.

Soil testing is an easy way to detect many problems before money is invested in gardening or landscaping projects, and the College of Agriculture provides this service.

Soil testing information sheets can be obtained from the UW CES county office or online at [http://www.uwyo.edu/renewableresources/soil/soil\\_lab.htm](http://www.uwyo.edu/renewableresources/soil/soil_lab.htm). There are private labs, which can also analyze soil. Whichever lab you use the results from a soil test will show the major characteristics of the soil (ph, salts, nitrogen, phosphorous, texture) and indicate if there are any major corrections needed. A soil test will not tell about environmental factors but it is a good first start to determine a gardens health.

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