



The WEST·HARTFORD·GARDEN·CLUB

West Hartford Garden Club

in collaboration with

West Hartford Public Library

Improving Garden Soil with Organic Matter

A thriving, productive garden begins with healthy soil. Healthy soil is a combination of minerals (sand, silt, and clay), rock, water, air, and organic matter (plant and animal residue), as well as an abundance of diverse microorganisms (bacteria, fungi, algae, worms, and arthropods). These organisms sustain an intricate, subterranean “food web,” recycling nutrients that provide a natural, steady, and reliable source of sustenance for growing plants. Because organic matter fuels and sustains this nutrient-recycling process, you’ll want to ensure your garden soil is fertile and has enough of the organic matter it needs.

Organic Matter Sources

A garden soil that contains five to 10 percent organic matter is ideal. Compost is the most familiar and popular soil-improvement amendment, but there are plenty of other materials that can provide soil with the organic matter it needs, including composted animal manure, cover crops, and mulch (such as shredded bark, straw, and leaf debris).

Compost Application Rates

The amount of compost a garden needs depends upon many factors, beginning with the amount of organic matter it naturally contains and including the use of cover crops, mulch, and decaying plant material from the previous season. The recommended compost-application rate for a new garden or when restoring garden soil is four to six inches of organic matter per square foot. (Be sure to incorporate the compost deeply into your soil, up to 24 inches.) For existing garden maintenance, use two to three inches of compost per foot, being sure to incorporate the material into the top eight to 10 inches of your soil.

Additional Benefits

Organic matter does much more than sustain the subterranean “food web.” A short list of its myriad virtues in the garden includes:

- Improving drainage of heavy, poorly drained clay soils and conversely increasing the water-holding capacity of light, sandy soils
- Reducing compaction and erosion
- Improving soil structure and tilth (or workability)
- Preventing plant-available nutrients from leaching out of the root zone
- Reducing the incidence of pests and disease and suppressing weeds

Beyond Organic Matter

While there's really no overstating the importance of ensuring your soil contains enough organic matter, it's just one of several actions you can take to keep (or make) your soil healthy and help your garden thrive. Other best practices include:

- Avoiding soil compaction, which can lead to soil erosion and decrease garden productivity.
- Avoiding synthetic fertilizers and pesticides.
- Practicing crop rotation (or avoiding planting crops from the same family in the same place year after year); crop rotation helps reduce soil disease because some diseases can remain in soil for several years after being introduced.
- Avoiding, reducing, or minimizing tillage.

Obtaining a soil test if you suspect your soil is deficient in essential nutrients; [contact your local extension office](#), which can send a sample of your soil to a soil-testing lab for analysis (**Retrieved from <https://www.seedsavers.org/improve-garden-soil>**).



Additional Resources

The [University of Minnesota Extension](#) (<https://extension.umn.edu/agriculture/soils/soil-properties/soil-management-series/introduction-to-soil-management/>), the [USDA](#) (<https://www.nrcs.usda.gov/conservation-basics/natural-resource-concerns/soils/soil-health>), and [Sustainable Agriculture Research and Education](#) (<https://www.sare.org/resources/building-soils-for-better-crops/>) all offer detailed resources on cultivating healthy soil.