

Fact Sheet: Soil Amendments

Why and how to amend soil

Most landscapes in Colorado lack good garden soil. It can take years to make productive garden soil. That is why it is important to improve soil on an on-going basis.

If your soil is either sand or clay, the solution to improving both is the same - add organic matter. In a sandy soil, organic matter acts much like a sponge to hold moisture and nutrients. In clay, organic matter helps to aggregate the finer particles, thus allowing for larger pore spaces and improving aeration and drainage. Do not add sand to clay soil, or clay to sand. Organic matter, when mixed with water, clay, and sand makes adobe bricks, which is hardly ideal for growing plants.

Organic matter is best used as an amendment rather than a source of fertilizer. Since most organic matter is low in available nutrients, it would take large amounts to supply the proper nutrients for plant growth. Further, it is possible, especially in clay soils, to create soluble salt problems by adding too much organic matter to soil. The general rule is to incorporate no more than three cubic yards of organic matter per 1,000 square feet per year. This is equivalent to 1-1/4 inches of amendment on the soil surface before it is tilled in. All amendments should be thoroughly tilled into the soil, making it a uniform mixture.

Types of Amendments

The best organic amendments include relatively coarse, partially decomposed compost, aged barnyard manure, and coarse sphagnum peat moss.

Compost - Having a compost pile pays dividends when it comes time to amend the soil! Compost can also be purchased, but can be quite expensive.

Manure - The type of manure is not important, but it should be at least one year old, if planting is anticipated soon after amendments are added. Fresh manure usually is too high in ammonia, which injures plant roots. If the manure has a strong odor, avoid using it or let the amended ground lie fallow for several months before planting. Because of high salts, avoid repeated use of most feedlot manure unless the salts can be leached first.

Sphagnum Peat Moss - Coarse sphagnum peat is a good amendment, but it is expensive when compared with manure or compost. Avoid using the "native" sedge peats or mountain peats. Most are clay based and the fine texture can act as a "glue," this could either further complicating a tight soil situation or create the adobe brick problem discussed above.

For more information on soil amendments, contact your local Colorado State University Cooperative Extension office at 719-636-8920.