



Soil is a mass of mineral particles mixed with air, water, living, and dead organic matter. The texture and structure of the particles influence the soil's water and nutrient holding capacity, aeration and workability.

Understanding your soil is probably the most important aspect of gardening. Knowing your soil type will influence watering practices.

Three particles make up the different components of soil. *Clay* particles are the smallest, *sand* particles are the largest, and *silt* represents the intermediate size. Clay and sand particles give their names to two common soil types. A combination of the three sizes, plus organic matter, forms the basis for the soil we refer to as good garden *loam*.

Here in Contra Costa County, clay soil is most common; also referred to as adobe, gumbo or just "heavy" soil. Clay soil is made up of microscopically small mineral particles and has a tight structure. These particles are flattened and fit closely together with pore spaces between the particles for air and water. Because small clay particles offer the greatest surface area per volume of all the soil types, clay can also contain the greatest volume of nutrients. Clay soil will take 3-4 times as much water as a sandy soil to become saturated. However, it holds moisture much longer and thus, plants in clay soil require less frequent watering.

Soil Amendments

Vital to all soils, and particularly needed in clay soil are amendments. Soil amendments improve aeration and drainage of clay soils by acting as wedges between the particles. As the amend-

ments decompose they release nutrients to the soil, adding to the soil's fertility.

Types of Soil Amendments

Because all organic materials are constantly being decomposed by soil organisms, even the best soil will benefit from frequent applications of organic amendments. Among these soil amendments are: ground bark, peat moss, leaf



Don't be afraid to hold and work your soil by hand. You can learn about its needs this way.

mold, wood shavings, manure, even compost made from decomposed garden and kitchen scraps. Mineral amendments include perlite, pumice, and vermiculite. They are used to aerate potting soils. Mineral amendments such as lime and gypsum are sold as fine powder or granules and are used to adjust soil pH or to change soil chemistry. Soil amendments should be worked deeply into the soil, where they will benefit the plants' root systems.

When properly used, organic soil amendments can permanently improve water penetration and holding capacity, thus expanding choices of plants for your garden.

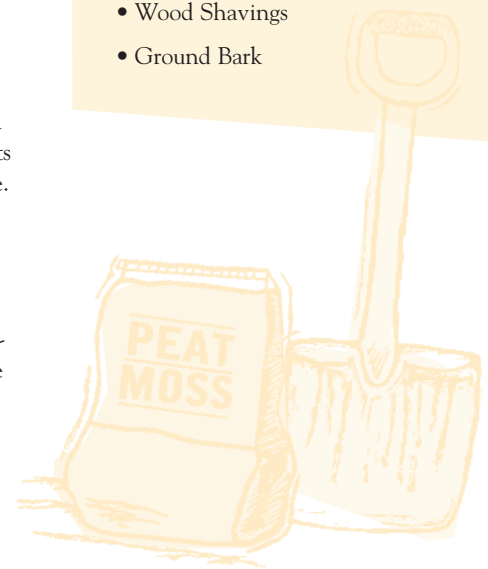
quick facts....

IMPORTANT SOIL FACTS

- Clay soils take longer to saturate and require less frequent watering.
- Sandy soils drain quicker and need to be watered more often.

Common Soil Amendments

- Peatmoss, or Sphagnum Moss
- Composted Kitchen Scraps
- Composted Garden Waste
- Composted Manure (chicken or cow)
- Leaf Mold
- Wood Shavings
- Ground Bark



Mulching

Conserves Water-Improves Soil

Mulch is simply a cover over the soil surface, usually spread over roots underneath plants, it works like magic in your garden. It can be a biodegradable plant material, such as shredded leaves, pine needles, bark chunks, manure, and newspaper or long-lasting inorganic materials such as gravel or perforated landscape fabric. Organic mulches are usually preferred over inorganic mulches because they add organic matter to the soil as they breakdown.

Benefits From Mulching

- Blocks light, inhibiting the growth of weed seeds and seedlings.
- Slows water evaporation.
- Breaks the impact of watering/rain, preventing soil from washing away or splashing onto plants.
- Keeps soil cool in the heat of summer; allowing less stress on the plants.
- Makes a garden look better, giving a more tidy, well-kept appearance.
- Nourishes the soil. Organic mulch improves soil structure and nutrient content as it slowly degrades. Organic mulch also encourages earthworms, which aerate the soil.

Choosing A Mulch

There are many mulching materials from which to choose. The type of mulch you choose depends upon which area of the garden you're mulching and which natural materials are available in your region. Organic mulch choices can be shredded bark, pine needles, wood grindings, or an economical mix of lawn clippings and leaves. In all non-lawn areas, we recommend the use of organic mulch to reduce evaporation and water needs, help moderate soil temperature and add nutrients to the soil.

How Much and When

How Much Mulch

A 2 to 4 inch layer of mulch usually does the job. Using less allows weeds to grow through; using more prevents plant roots from getting enough oxygen. It is important to keep the mulch away from the base of trunks. This will keep them dry and pest free.

When To Mulch

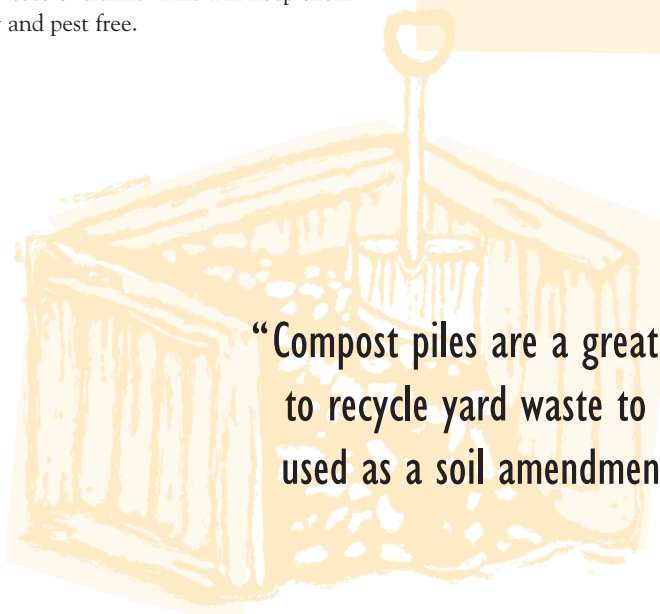
Mulch in winter to protect roots from temperature fluctuations and reduce weeds. Mulch in summer to reduce water evaporation from the soil and reduce weeds. Potential savings are greatest in hot, dry climates.

quick facts....

TYPES OF MULCH

Organic Mulches:

- Shredded Bark
- Wood Grindings
- Leaves
- Grass Clippings (also great for weed control in vegetable gardens)
- Straw



“Compost piles are a great way to recycle yard waste to be used as a soil amendment.”