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How to select the right soil for garden growth

By SONOMA COUNTY MASTER GARDENERS
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When you select a soil product, first consider where you plan to use it, the existing soil conditions and your planting goals. Andrew Kasuku/Associated Press

Have you ever stood in front of the bagged soil products displayed at your local nursery supply store and wondered, “Which one should I buy?”

You might see bags labeled potting soil, planting mix, soil conditioner and compost. How do you select the best one for your needs?

When you select a soil product, first consider where you plan to use it, the existing soil conditions and your planting goals. In general, bagged soil products are amendments, formulated to promote plant growth by helping build healthy soil.

Healthy soil is a mixture of minerals, decomposing organic matter, air and water that is teeming with organisms — visible and microscopic living creatures. Soil organisms

circulate nutrients, making them available for roots to nourish plants and help build healthy soil structure.

Good soil provides a place for plant roots to anchor and explore. Soil with good structure means there is enough space between soil particles to hold air and water. Soil with good structure acts like a moist sponge, allowing roots to easily grow without getting waterlogged when watered.

Potting soil mix is formulated for use in an enclosed container, like a pot or raised bed. Potting soils typically contain a high percentage of bulky organic materials such as bark, wood chips, peat or coconut coir, compost and various types of animal excrement such as manure, castings or guano. These organic materials improve soil structure, provide carbon and, as they decompose, slowly release key nutrients such as nitrogen that plants and soil organisms can use.

You may be surprised to learn that the common mineral components of soil — clay, silt, sand — are not present in potting soil mix. It usually includes pumice, perlite and vermiculite — materials that work together to retain water while also improving aeration, making it lighter than soil from the ground. Potting soil mix often contains mycorrhizae and other beneficial microbes to improve the availability and transfer of nutrients to plant roots. Some mixes contain a wetting agent to support moisture retention and a starter fertilizer that is used up quickly as plants grow.

Always moisten potting soil with warm water before using it. When plants are potted in dry soil and then watered, their root zones may have insufficient or inconsistent moisture levels. As a result, they take longer to get established. After a year or two, as plants consume soil nutrients, it's a good idea to rejuvenate the soil by adding more potting mix or a layer of compost to the container.

Planting mix usually contains topsoil (sand, silt, clay, organic matter), compost and other organic materials that provide a nutrient-rich base. Add planting mix to ground soil to improve moisture retention, soil fertility and structure when planting trees or vegetables.

Soil conditioner is rich in organic matter that improves soil structure and enhances air exchange, water movement and root growth. Mycorrhizae may be added to improve nutrient absorption. You can use it to improve drainage in compacted outdoor soil or clay soil. It is generally too fine to support plants grown in pots.

Compost is made of decomposing organic matter, such as food scraps, yard waste, manure, coffee grounds and microorganisms. It acts like a soil conditioner by improving soil structure and providing nutrients. You can add compost to any type of soil (clay or sandy.) to help improve fertility, water infiltration and retention and air circulation.

Instead of using petrochemical fertilizers, add a layer of compost to your veggie garden bed in the fall and again in the spring about two weeks before planting. You can also use compost as a side dressing by adding it around the sides of growing plants to encourage healthy growth.

In general, when you increase the amount of organic matter in soil, you increase soil productivity. You can add organic matter to soil by adding compost, chopped up leaves, grass clippings and organic mulches, or by planting cover crops.

For more information:

Using Compost in the Garden: <https://bit.ly/4iQrnJz>

Building Healthy Soil: <https://bit.ly/3DAM3oL>

About Soils and Fertilizer in the Garden: <https://bit.ly/41MbuxG>

Contributors to this week's column were Karen Felker, Lisa Howard and Robert Williams. The UC Master Gardener Program of Sonoma County sonomamg.ucanr.edu/ provides environmentally sustainable, science-based horticultural information to Sonoma County home gardeners. Send your gardening questions to scmgpd@gmail.com. You will receive answers to your questions either in this newspaper or from our Information Desk. You can contact the Information Desk directly at 707-565-2608 or mgsonoma@ucanr.edu.