

Sarah Denkler
Horticulture Specialist
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The Perfect Soil

It is true that the soil around us is often taken for granted. The environment contained in the soil supports the flowers we enjoy looking at and the food we grow and eat. If this soil is well maintained, it will feed the plants we desire. Think about what can be done to help maintain a healthy soil capable of growing lush plants.

The soil contains micro-organisms such as fungi and bacteria, macro-organisms such as beetles and worms and organic material from decomposed plants and organisms. The microorganisms feed off of minerals and nutrients that are in the soil or added. The fertilizer we apply each year feeds these soil organisms. Some fertilizer goes directly to the plant but the majority of it is consumed by organisms. As organisms consume nutrients they convert them to forms which plants are able to use as energy. In some instances microorganisms, such as mycorrhizal fungi, attach themselves to plant roots establishing a symbiotic relationship that helps both the organism and the plant.

When applying fertilizer it is important to know what is already present so that you are able to determine what needs to be applied. A soil test will provide levels of phosphorus, potassium, magnesium and calcium. Nitrogen is usually not measured as it is always in a state of flux in the soil environment, ever changing. Iron and sulfur are two nutrients that are important to the health of soil and plants but which are not often included on a standard soil test. These must be added if the level is unknown.

It is very important to know what the pH of the soil is and the level of organic matter. The soil pH needs to be between 6.0 and 6.5 while the percent organic matter is best at 5%. Lime is used to raise any pH below 6.0 but should only be added when the pH is low. If organic matter is lower than 5% then add materials such as compost, finely chopped leaves, straw, rice hulls, or old manure to raise the level. In southeast Missouri it is not uncommon for the organic matter to be around 1.5%. Organic matter is something that can be added every year to raise or maintain the level at 5%. Adding organic matter will also add primary nutrients such as nitrogen, phosphorus and potassium.

By maintaining a soil with the proper pH, organic matter and nutrients the organisms within will thrive. These organisms will continue to convert the nutrients contained in the soil providing food for desired plants. By maintaining a balanced soil environment, plant growth is sustainable for future needs.

The Extension office is open Monday - Friday, located in Kennett, Missouri at 233 North Main Street. For horticulture questions contact the horticulture specialist at 573-686-8064. MU is an equal opportunity/ADA institution.