



## **The Novice Gardener's Guide to Bagged Garden Soils and Soil Amendments**

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Perhaps nothing is more frustrating or bewildering for the novice gardener than their first trip to their local garden store to buy soil or soil amendments for their garden. Multiple brands of soil, soil amendments, lists of special ingredients, and a staggering array of price points, all advertising why their product is best for your garden. The descriptions do little to assist a gardener in choosing what to buy. Labeling of garden soils can be misleading and can create unrealistic expectations of the benefits or proper use of the product. Information on the package can often blur the differences between soils, leaving the novice gardener somewhat confused as to what exactly they purchased. Furthermore, not knowing what you are buying or why you should purchase a particular product can add cost without doing anything to improve the yield or health of your garden. So, for the novice gardener, here is an explanation of the basics of garden soils and amendments.

Topsoil describes the soil that sits on top; it is usually a combination of sand, clay and silt. It does not contain any organic materials but can contain other inorganic materials. Technically there is no legal definition of topsoil and, despite what the package may say, it is not intended to be used as a garden soil. Topsoil is best used for lawns, to level depressions or to fill in holes in the ground. It is usually very coarse and dense, easily becomes water logged, and will compact over time, cutting off oxygen to the roots of your plants.

Garden soil is usually topsoil with added peat moss and other biological matter. Garden soils can sometimes contain small amounts of manures or other fertilizers. The primary organic material added is usually chipped wood. In low quality, non-organic mixtures, wood chips can include construction debris, wood pallets or other decomposed wood products. Garden soil should be added directly to your flower or vegetable garden bed. However, if not mixed into the soil already in the bed, garden soil can prevent water from passing through to deeper levels of soil. Garden soil is prone to compaction and becoming water logged if not mixed properly with the existing ground soil. Garden soil should never be used in place of potting soil.

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Raised bed soil is basically a cross between potting soil and garden soil. It contains more peat moss, organic matter such as wood chips, wood bark or shavings, and may contain some amounts of fertilizer, biosolids, worm castings, added nutrients and sometimes mycorrhizae. Mycorrhizae are fungal organisms that allow a plant to take up water and nutrients. Mycorrhizae are naturally found in all soils that contain plants, as they have evolved a symbiotic relationship with plants. Biosolids are the remains of sewage from your local sewage treatment plant. They are a rich source of nitrogen and other essential nutrients. Improperly treated biosolids can also contain pharmaceuticals, heavy metals, industrial solvents and anything else that has been flushed down the drain or toilet. Raised bed soil is lighter than garden soil and less prone to compaction or becoming water logged.

Potting soil is actually not soil at all. It is sold in many different formulations depending on what type of plant you want to grow in a container. It is usually made from a combination of peat moss, pine bark, perlite or vermiculite. Low quality brands will sometimes add shredded Styrofoam in place of perlite or vermiculite. Higher quality brands can contain mycorrhizae, coconut coir, worm castings, sea shells, rice hulls, biosolids and compost to enhance the growth medium for your container plant. Coconut coir is used as a substitute for peat moss as it is cheaper but has been shown to have good water retention, reliable drainage and aeration of the soil, allowing for healthy root development. Potting soil is excellent medium for growing vegetables or flowers in a container.

Soil amendments can be a variety of materials, such as manures, composted plant or food scraps, peat moss, coconut coir, biosolids, wood chips, wood bark, pine bark, or worm castings. The price of manures such as bat guano, chicken manure or steer manure depends on the benefit it brings to the soil, bat guano being the most expensive and steer manure the cheapest. One caution about chicken or steer manure is that they can contain residual antibiotics fed to the flock or herd. Research has shown that small amounts of antibiotics could be picked up in the flesh of your vegetables. Compost is also of concern because sometimes the materials in the bag are still decomposing and thus can actually deplete the nitrogen in your soil, thus harming your plants. It is best to add compost a week or more prior to planting anything in your garden beds, and compost should not be added to container plants.

Finally, be aware of how your soils or soil amendments are stored at your garden center. Solar heating can quickly destroy any beneficial organisms in bagged soil if it is allowed to sit cooking in the sunlight.

For more information on the UCCE Master Gardeners of El Dorado County, see our website at <http://mgeldorado.ucanr.edu>. Master Gardeners are available to answer home gardening questions Tuesday through Friday, 9:00 a.m. to noon, by calling (530) 621-5512, or send us an email using the Ask a Master Gardener option on our website. Walk-ins are welcome at our office, located at 311 Fair Lane in Placerville. We also encourage you to visit us at the Sherwood Demonstration Garden, located at 6699 Campus Drive in Placerville, behind Folsom Lake College, El Dorado Center. See [http://mgeldorado.ucanr.edu/Demonstration\\_Garden](http://mgeldorado.ucanr.edu/Demonstration_Garden) for more information and days and hours of operation, or call us to schedule a tour. To sign up for notices and newsletters, see [http://ucanr.edu/master\\_gardener\\_e-news](http://ucanr.edu/master_gardener_e-news). Master Gardeners are also on Facebook and Instagram; we hope you enjoy our postings and will share them with your friends.