

SOIL AMENDMENTS

SOIL AMENDMENT refers to any material mixed into a soil. Legally an amendment cannot make claims about nutrient content or effects (helpful or harmful) on soils or plant growth.

TWO CATEGORIES:

Organic - materials derived from something that is or was alive.

Includes: sphagnum peat, compost, animal manure, biosolids, straw, sawdust, grass clippings, wood chips, shredded dry leaves, worm castings (excrement).

- Improves soil tilth (texture, structure, soil organism function)
- Provides low levels of nutrients but is legally not a fertilizer.
- Goal is to achieve/maintain 4-5% organic content in veggie garden soils.
- Add gradually overtime to achieve goal. Takes 3-5 years in new gardens.
- Do not use wood chips/bark to amend veggie gardens. Material is too coarse for seed bed and takes too long to decompose.

Inorganic - mined or man-made materials

Includes: vermiculite (heat expanded mica), perlite (heat expanded volcanic rock), sand, pea gravel, tire chunks.

- Improves soil texture, structure, water and nutrient-holding capacity.
- Does not affect fertility or function of soil organisms.

COMPOST (an organic amendment) is the product created by the breakdown of organic waste under human-manipulated conditions. It can be homemade or commercially produced.

- Gold standard for adding organic matter to garden soils.
- Improves soil tilth.
- Unregulated in Colorado - can be anything at any stage of decomposition.
- Finished compost is dark and crumbly, smells earthy, does not resemble original contents. Ammonia smell indicates material is not ready to use.
- Plant-based composts are free of salt problems.
- Animal-based composts (manures) and biosolids are often high in salts. Use with caution. Never use fresh manure.

Compost Application

- Cultivate into top 6-8 inches of the soil, total depth in a raised bed.
- Mix thoroughly - do not leave chunks.
- Reduce amount applied annually (after 3-5 years) as soil organic content builds.

Compost Amounts:

- First 3 years: 2-3 inches (0.25 of a foot) plant-based compost
1 inch (0.08 of a foot) animal-based compost
- Fourth Year +: 1-2 inches (0.17 of a foot) plant-based compost
1 inch (0.08 of a foot) animal-based compost

To Determine Quantity of Compost Needed:

1. Multiply bed width x length to get area (square feet):
Example: $4 \times 12 = 48$ square feet
2. Multiply area by the depth (portion of a foot) to get cubic feet.
Example: 48 square feet $\times 0.25$ (for 2-3 inches deep) = 12 cubic feet.
 48 square feet $\times 0.08$ (for 1 inch) = 3.8 cubic feet
3. Divide cubic feet by 27 to get cubic yards (if buying in bulk)
Example: 12 divided by $27 = 0.44$ cubic yards
4. Bagged commercial compost is typically 1, 1.5 or 2 cubic feet per bag.

If using a blended compost - plant and animal-based - reduce number of bags by $\frac{1}{2}$ for a 2-3 inch deep application or increase number of bags by 2 for a 1-inch deep application.