

## Year Round Gardening

# **Now is the Time to Prepare Your Vegetable Garden for Spring Planting**

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Fall is the best time of year to improve the soil in your vegetable garden beds. Preparation now gets your gardens into a "planting ready" state, so you can begin a new gardening season whenever spring temperatures are favorable. Adding soil amendments in fall also takes advantage of winter's repeated freezing and thawing of the soil, to gradually mix and incorporate them.

As it is estimated that 80% of all gardening problems are the result of poor soil, it is important to gain a basic understanding of the composition of good soil. Well-managed western soil should have around 50% empty space (comprised of equal amounts of air and water) and 50% of solid materials (comprised of organic matter and mineral solids such as decomposed rocks or sediments). Also, your soil is a living ecosystem containing living organisms in the organic matter. Although many of these are not visible to the naked eye, they are continually making nutrients available to plants and improving soil tilth - the suitability of the soil to support plant growth.



*Photo courtesy of Freddie Bogardus*

The goal of annual soil amendment is to improve the environment for your plants so that they produce healthy and abundant produce next year. Amending your soil now will:

1. Improve the soil's physical properties, such as water retention, permeability, water infiltration/drainage, aeration and structure
2. Increase the activity and number of the soil organisms
3. replenish nutrients important for plant growth

A soil amendment is any material added to a soil. To do its work, the amendment must be thoroughly mixed into the soil. If it is merely buried, its effectiveness is reduced and it will interfere with water and air movement and root growth. In selecting soil amendments, you must first consider the type of soil and your desired results.

To improve the water and nutrient-holding capacity on sandy, gravelly, and decomposed granite soils, select well-decomposed materials like finished compost, aged manure and peat. To improve aeration and infiltration and improve structure on clayey soils, select fibrous materials like sphagnum peat or straw.

To improve soil tilth using organic amendments, consider using sphagnum peat, grass clippings, straw, compost, or manure. Vermiculite, perlite, tire chunks, pea gravel and sand are inorganic options for this purpose. These amendments are the most significant amendments for enhancing the photosynthesis process of your vegetables:

- Nitrogen – This stimulates vegetative growth or top growth and should not be used in high concentrations where root or fruit production is important. Leafy crops such as lettuce and spinach require more nitrogen than root crops. Blood meal or fish emulsion are excellent organic sources of nitrogen.
- Phosphorous – This produces flower buds, fruit, and root development. Root crops and crops that produce fruit such as carrots, tomatoes and peppers perform better with adequate phosphorus which can be achieved with organic bone meal. However, most Pikes Peak soils contain plenty of phosphorus and since it does not readily leach from the soil, care should be taken to not over use this nutrient.
- Potassium - Potassium contributes to root development, drought tolerance and overall plant vigor. Kelp is an excellent source of potassium. Colorado soils generally contain adequate potassium.

Mulching on top of the soil surface after the soil amendment will help regulate fluctuating soil temperatures throughout the winter months, minimize soil compaction forces of winter storms, and prevent evaporation of winter moisture. After application, secure the mulch from blowing away with netting or wire fencing. Organic mulches such as straw, grass clippings or dried leaves may be incorporated into the soil as amendments next year after they have decomposed to the point that they no longer serve their purpose as mulch.

Soil improvement is a continual process but making fall amendment an annual practice is a way to achieve optimal garden soil in a measured and gradual way. And you will see the results of your efforts in next summer's harvest.

Learn more about soil amendments from CSU Fact Sheet No. 7.235 *Choosing a Soil Amendment* available online at <http://extension.colostate.edu/topic-areas/yard-garden/choosing-a-soil-amendment/>

*When you have questions, Colorado State University Extension has research-based answers. Get answers to your horticulture questions by visiting [ask.extension.org](http://ask.extension.org) any time day or night. Follow the El Paso County Master Gardeners on [www.facebook.com/ColoradoMasterGardeners.EPC/](http://www.facebook.com/ColoradoMasterGardeners.EPC/)*

## **Soil Terminology**

Amendment - Any material mixed into soil to improve tilth (typically derived from carbon based sources)

Tilth – The physical condition of the soil especially in relation to its suitability for planting or growing a crop

Mulch - Material placed on the soil surface

Permeability - Property of a soil which permits the flow of water

Retention – A measure of how much water a particular type of soil or grow medium can retain

Aeration – The process by which air is circulated through and mixed with the soil