



Creating Healthy Soil

Healthy soil is the foundation of every successful garden. It is not dirt – it is a living ecosystem. Before planting anything, understanding and improving your soil is the single most impactful investment you can make.

What is Soil?

Soil is a mixture of four components. The ideal balance for growing plants is:

- **45% Minerals** – decomposed rock particles that provide the physical structure of soil.
- **25% Water** – held in pore spaces; delivers dissolved nutrients to plant roots.
- **25% Air** – also held in pore spaces; plant roots and soil organisms need oxygen to function.
- **5% Organic Matter** – decomposed plant and animal material; this small fraction drives soil biology, fertility, and structure.

This balance supports a thriving community of worms, bacteria, fungi, protozoa, nematodes, and micro-arthropods that cycle nutrients and make them available to plants. If you take care of the soil, the soil will take care of the plants.

Understanding Soil Types

- **Sandy soil** – large particles, drains quickly, warms fast in spring. Nutrients leach out easily. Amend with compost to improve water and nutrient retention.
- **Clay soil** (predominate in Ventura County) – small particles, holds water and nutrients well, but drains poorly and compacts easily. Amend with compost and avoid working when wet. For very compacted clay, a single incorporation of 3–4 inches of compost into the top 6–8 inches can make a dramatic difference.
- **Silt** – medium-sized particles; good water retention and fertility, but prone to compaction and crusting.
- **Loam** – a balanced mixture of sand, silt, and clay with 5–10% organic matter. This is the ideal soil for most home gardens – the goal to work toward.

Soil pH

- pH measures how acidic or alkaline your soil is, on a scale of 0 to 14 (7 is neutral).
- Most vegetables prefer a **slightly acidic to neutral pH of 6.0–7.0**. At this range, nutrients are most available to plant roots.
- Ventura County soils tend to be neutral to slightly alkaline – adding organic matter and compost gradually lowers pH over time.
- Inexpensive soil test kits are available at garden centers; UC Cooperative Extension also offers soil testing resources – check with the VCMG Help Desk for additional information.

Soil Preparation – Before You Plant

- **Amend with Compost** – spread a 2–3-inch layer of compost over the planting area and mix it into the top 6–8 inches of soil. Compost improves structure, drainage, fertility, and water retention in all soil types.



- **Avoid Excessive Digging or Tilling** – tilling disrupts soil structure and kills beneficial organisms. If you must till (e.g., to break up severely compacted clay), do it once and then transition to a no-dig approach. Let worms and soil organisms do the mixing over time.
- **Fertilize Just Before Planting** – use a balanced fertilizer (10-10-10). Compost alone may not provide enough of a nutrient boost for a new bed in its first season.
- **Level the Area** – create a smooth, even planting surface to ensure uniform water distribution and prevent puddling.
- **Mulch the Surface** – after planting, apply 3–4 inches of organic mulch. This is one of the highest-return tasks in the garden.

Raised Beds and Containers

- Raised beds give you complete control over soil quality, drainage, and depth – ideal for Ventura County’s variable native soils.
- Fill with a **high-quality potting soil** or a blend of compost, topsoil, and perlite or vermiculite. Do not use native soil alone in raised beds – it compacts and drains poorly.
- A good starting mix: 60% quality topsoil, 30% compost, 10% perlite or vermiculite.
- Containers require potting soil (not garden soil); enrich with 20–25% compost by volume for vegetables and heavy feeders.
- Top up raised beds with ½ inch of fresh compost each season – the soil level drops as organic matter breaks down.

The Role of Compost in Soil Health

Compost is the most powerful soil amendment available to the home gardener. Even a small amount transforms soil biology. For full detail on making your own, see the companion handout on Composting.

- **What compost does for soil:** improves structure and tilth (crumbly texture), increases water-holding capacity, feeds beneficial microorganisms, slowly releases nutrients, and buffers soil pH.
- **How much to use:** for a new bed, add 2–4 inches of compost and incorporate into the top 6–8 inches. For established beds, top dress with ½–1 inch each season.
- **Growing in 100% compost is not recommended** – it lacks physical density for root support, can have imbalanced nutrients, and may retain excessive moisture. Always blend compost with other materials.
- **Compost Tea** – soak finished compost in water for 24–48 hours, strain, and apply as a liquid fertilizer. A useful boost mid-season for container plants and heavy feeders.

Mulch – The Finishing Layer

After preparing your soil and planting, mulch is the last step and one of the most important. It is not decorative – it is functional.

- Apply **3–4 inches of organic mulch** to all bare soil: wood chips, shredded leaves, straw, grass clippings, pine needles, or shredded paper.
- Extend mulch to the drip line of trees and shrubs – the area under the canopy where roots actively grow.



- Keep mulch **away from plant stems and tree trunks** to prevent rot, crown disease, and rodent habitat.
- Benefits: conserves soil moisture (reduces watering frequency), suppresses weed germination, moderates soil temperature, feeds soil organisms, and improves soil structure as it decomposes.
- Refresh mulch annually – organic mulch breaks down and that breakdown is part of what feeds your soil.

Sustainable Soil Practices for Ventura County

- Minimize bare soil – bare soil loses moisture rapidly, erodes, and loses organic matter. Keep it covered with mulch or a cover crop.
- Practice crop rotation in vegetable beds – rotating plant families prevents nutrient depletion and reduces pest and disease buildup.
- Add organic matter every season – through compost, mulch, or cover crops. Soil organic matter breaks down continuously and must be replenished.
- Avoid compaction – never walk on planting beds. Use defined paths, stepping stones, or boards to distribute weight.
- Water deeply and infrequently – this trains roots to grow deep and builds drought resilience. Shallow frequent watering keeps roots near the surface.

Learn more about the Ventura County Master Gardener using this QR to visit the website.

