

Starting A New Garden? Prep the Soil from Scratch

Leimone Waite, Master Gardener, April 3, 2020

Q: I am starting a garden and have several questions. Should I have my garden tested for toxins if I don't know the history of pesticide use on the site? Should I test for nutrients and pH level? What should I do to prepare my clay soil for a garden? It's just weedy spot in my backyard right now.

A: I'm glad you are considering starting a garden. Not only can it provide food for you later in the summer, it's a great way to stay active and sane while sheltering at home.

I don't think it's necessary to test your soil for toxins unless you suspect that it was used as a junkyard or an old apple orchard. These sites may have inorganic chemicals that break down slowly, however most pesticides and herbicides sold in California have a very short half-life — one to two weeks — in the soil, and will break down into carbon dioxide and water within a couple of months.

According to the National Pesticide Information Center “In general, a pesticide will break down to 50% of the original amount after a single half-life. After two half-lives, 25% will remain. About 12% will remain after three half-lives. This continues until the amount remaining is nearly zero.” So if a pesticide has a half-life of seven days in the soil, after two months there would be less than one percent of it remaining in the soil.



A good composting program at home will eventually help improve your soil with vital nutrients. (Photo: Texas A&M AgriLife Extension Service)

A soil test for soil pH can be helpful for a new garden site, but it's not necessary if you have healthy looking weeds growing on the site. If you do want your soil tested, the tests run from around \$50 to \$125. Some labs that test soils are Basic Laboratory in Redding, Fruit Growers Lab in Chico, A and L Western Labs in Modesto and Peaceful Valley Farm Supply in Grass Valley. Each lab has information on its website

explain how to take a sample, where to send it for testing and if their lab is currently running tests.

To prepare your site for the garden, use a spade to dig and turn the soil, at least six-inches deep into the ground. You then want to break up any clods so that all of your soil particles look like big cookie crumbs. Don't do this when the soil is wet; especially if the soil is mostly clay, as it will compact the soil and turn it into giant clumps that will be hard to break up later and limit plant growth. Make sure the soil is moist.

Wait one week before planting. This will allow any weed seed to germinate, allowing you to remove them before you plant your seeds or starts.

If you have a clay or sandy soil, it will benefit from the addition of organic matter. This can be peat moss, leaves, rice hulls, shredded bark, straw or well-aged manure. Add the same volume of organic matter equal to the volume of soil; so if you dug a six-inch deep soil bed, add six inches of organic matter to the soil and dig it in.

Because these organic materials are low in nitrogen and tend to tie up soil nitrogen as they break down, University of California horticulture advisor Gary Hickmen recommends adding five pounds of ammonium sulfate, or equivalent, for every 100 pounds of organic material you mix into the soil. Once you have prepared your garden beds in this way, it's best to wait four to six weeks before planting so the organic material has time to break down. If you want to plant right away, use compost at the rate of 500 pounds per 1,000 square feet without adding the additional fertilizer.

To determine your soil texture use the jar test explained on Clemson University's website at <https://bit.ly/39vx3nm>.

The Shasta Master Gardeners Program can be reached by phone at 242-2219 or email mastergardener@shastacollege.edu. The gardener office is staffed by volunteers trained by the University of California to answer gardeners' questions using information based on scientific research.