

HOW TO PREPARE YOUR SOIL FOR PLANTING

What you will need:

Spade Fork

Compost

Pulverized Egg Shells*

Manure*

Earth Worm Castings*

Straw or Mulch

Organic Fertilizer

*These are not “have-to adds” but if your soil has not been worked for some time, or you have not added any nutrients to the soil in some time, it may be good to add some of these, the primary one being earth worm castings.

ABOUT SOIL

Your soil is alive with organisms that feed your plants. When preparing your plots what you are doing is creating an environment where these micro-organisms and fungi can live and grow which in turn provides a rich environment where your plants will flourish.

There are a few things that plants need to grow well: Sun, water, and air. Sun and air are requirements for the production of energy and the process of respiration. These processes interact with the leaves and stems of a plant’s structure above ground, but air and water are required in the soil to maintain soil and plant health in the underground structure of the plant as well. Why are water and air in the soil required by our plants? Air is taken up not only by leaves but also by root hairs and water is used as a delivery mechanism for the plant to absorb required nutrients, and is also required for the beneficial soil organisms survival. Our first charge in preparing our garden bed is to de-compact the soil so that air and water can penetrate it. Over time, soil compacts so you need to get in there and open up the soil.

- 1) To open up the soil you will need a spade fork. Most people will use a shovel to turn over the soil. When you do that, you are breaking up the network of organisms that have grown and have populated your soil. Once their colony is disrupted, the organisms will have to re-grow the network,

which takes time and may setback the growth of your plants a bit. What the organisms do is to help feed your plants. By piercing and lifting, not turning the soil, we leave the soil as undisturbed as we can. If you haven't worked your soil in quite some time and your soil is basically dead – it's dirt. If your soil is dead (you will know your soil is still alive if you find earthworms in your soil) you will want to use a shovel, dig down about a foot to aerate the soil and turn in all the additives you are going to add to your soil, topping off with compost. After that, you are never to use a shovel in your garden soil again; this is called no-till gardening.

- 2) To prepare your soil, you will simply follow the next procedure:
 - a. To aerate and prepare your soil, take your spade fork and pierce the soil and lift up gently breaking the soil, not turning over the soil but loosening and letting it fall back in place. This action will open up the soil from the previous season where some compaction may have happened. Move across your plot piercing and gently lifting up slightly to allow air in. Continue across your entire row and move down your plot about 6" and do it again. Work moving backwards so the area you have been tilling will not be stepped on and will remain un-compacted as you move backwards. Once you are done with your plot, do not step into your plot again – ever. Compacting your plot is working against what you are trying to accomplish. When you compact the soil you are compressing the soil structure and removing air from the soil spaces. Compressed soil does not allow tender baby roots to grow into the soil nor water to move about freely. Roots need space to spread out to find food. The better your plants' root systems develop, the better and healthier your plants will be. Plus, keeping your soil nice and fluffy will aid in germination of your seeds.
- 3) Next we are going to add a few things in the soil to begin the process of feeding the soil to attract and feed beneficial organisms in your soil and replacing lost nutrients so your plants will flourish.
 - a. **Worm Castings** – they are the leavings of worms. They are so beneficial to your soil because they carry with them the bacteria found in the gut of worms. These gut organisms start working in your soil forming an

ecosystem that will break down the compost and other organic materials in your soil turning it into humus to feed your plants.

- b. **Egg shells** – used egg shells, dried and pulverized, adds calcium to the soil. The effectiveness of egg shells hasn't been proven yet, but in my opinion it doesn't hurt and at worst the egg shells will turn into compost in the soil. Worms will eat it and it will be excreted in a form that can be taken up by your plants.
- c. Composted horse **manure** (or any manure) carries with it many nutrients, but by far the most abundant is Nitrogen. This is not a high source of nitrogen but a good supply of it. It replaces what was lost from last season. Nitrogen is one of the key components that plants need to survive. Our clay soil is missing this vital nitrogen resource that fuels our plants so adding a source of nitrogen each season is very important. Adding manure also creates a food-rich environment for earthworms and attracts them. We know that worms help aerate the soil and excrete their castings in the soil so this a huge side benefit.
- d. **Fertilizer – organic fertilizer.** Use only OMRI certified organic fertilizer. OMRI stands for Organic Materials Review Institute. Anything you put in your garden should have this designation on the bag or box or bottle. This group certifies that the tagged product is safe for organic production. You should be using organics in your garden because everything you put in the soil will eventually wind up in the food you produce and as a result, in your body. You can find organic fertilizer at most stores. I use Kellogg's all- purpose (OMRI certified) Organic Plus fertilizer, only because it's readily available at Home Depot. It contains things like kelp meal, feather meal, alfalfa meal, Bone meal, humic acids, and other natural products to make a well-rounded organic fertilizer that is slow release. It won't burn your plants because it decomposes slowly. When applying your organic fertilizer follow the instructions on the bag. More is NOT better. The best way to get more crop yield is not thru adding more fertilizer, it is thru growing better, more fertile soil. There is an old garden saying: "Good gardeners grow vegetables, great gardeners grow soil". That is

- our job as gardeners, to grow great soil and what happens is the vegetables we put in that soil will flourish.
- e. **Compost** is added last as the top layer. We have clay soil here in Santa Clara. It contains all the nutrients our plants need (except for nitrogen). The addition of compost to the soil helps to lighten our natural clay soil and makes it easier for our plants' roots to penetrate the soil easier and spread out. Compost feeds the micro organisms and fungi in the soil which in turn feed our plants. I add compost as a top layer when I prepare my soil because I find it's just the right texture for seeding and transplanting.
 - f. The very last thing you will do if you are not going to plant into your soil immediately is to **mulch**. I use straw, but there are many other materials that can be use as a mulch: dry leaves, cut grass, small pieces of bark, all these things can be used as mulch. Soil wants to grow things. If you leave a plot of soil alone for a bit, you will come back and find things growing in it that you didn't plant, generally weeds. One of the benefits of mulch is to help suppress weeds. It helps suppress weeds by blocking out the sun so that weeds will run out of energy before they are able to find the sun to begin making their own energy source. When spread around your growing plants, mulch helps keep roots warm in the winter and keeps roots cool in the summer. For us who live in this Mediterranean climate where summers are warm and dry, mulch helps to keep much needed moisture in the soil from evaporating.

Your soil is now prepared for the season. You can directly transplant your starts into this prepared soil and you can direct seed into it if it's the right time of season to direct seed. Once you turn over the season you can add more compost, or if the plant was a very heavy feeder you can add a little manure or organic fertilizer like alfalfa pellets to keep it fresh.

Remember: Good gardeners grow vegetables, but great gardeners grow great soil.

NOTES
