

Till Speed Ahead!

By Gil Medeiros, Fairfax Master Gardener Intern

Some gardeners would have you believe that your backyard garden will take on the consistency of a concrete parking lot if you till it regularly. I say, not true. Instead of thinking about tilling as an all-or-nothing proposition, I believe you should make an informed decision about whether to till the soil in any given bed, based on several considerations.

Tilling

From my experience, there are three common-sense variables to consider before you decide whether or not to till.

- Soil
- Slope of the ground
- Intended plants

Soil

If your soil is composed of fine, compacted clay and very little organic matter, this situation must be corrected to grow practically anything well. Yes, I know that some plants grow in poor soil, but most plants I want to grow do not. With few exceptions, the plant suppliers attach the words “well drained soil” to their catalogue descriptions of plants I want to grow.

Most of the ancient clay soils in this area have a pH that is too low (acidic) for many of the plants we gardeners want to grow. Have your soil tested, and pay the few extra bucks to determine how much organic matter is in the soil. If the organic matter measures less than 3 percent, you will want to add significant amounts of compost or peat moss to the soil. Pay close attention to the soil pH and any recommendation to add lime. If you till in both the lime and the compost before you plant, you will dramatically change the quality of your soil fast.

Likewise, if your soil is very sandy, it will drain well, but it will not hold enough water and nutrients to keep the plants happy. The soil will need organic matter to build its water- and nutrient-holding ability. Again, tilling in the amendments makes the necessary improvement quickly.

Tilling aerates the soil. Roots need oxygen to grow. New plantings will luxuriate in the soft, airy soil that results from tilling. The plants will get a good start as their roots spread rapidly.

Of course, you could just add the organic matter and lime to the surface, but if you want to make the improvement quickly, tilling in the amendments is the best way. And the addition of air to the soil has immediate benefits.

If your soil test shows your soil is in good shape, consider the next two questions before you make a decision on tilling.

Slope of the ground

If you have a garden bed that is sloped, even as little as a 10 percent grade, you should be careful about creating a condition for soil erosion. Erosion can wash away the nutrients in the soil, the soil itself, and, in extreme cases, plants that do not have well developed roots. If you can't make the bed level by regrading it or adding terraces, then don't till it. Tilling pulverizes the heavier soil aggregates into fine particles. The



photo: San Luis Obispo County Master Gardeners

“fines” are vulnerable to erosion. If you have a sloped planting area, you are probably better off adding your soil amendments to the surface and growing perennials that will form spreading roots. The fewer disturbances to the soil the better.

I have beds that I never till but mulch annually. We grow perennial shrubs and annual flowers in them. The soil is beautiful, black and crumbly with many worms. Most any plant would love it, but this soil should be good; it has been treated to an annual cloak of mulch for 37 years!

In the last five years, I have established some new beds, again for flowering annuals and perennials. But I am now too old to wait 37 years to achieve good soil. In these cases, after soil testing, I tilled in compost and lime once. These beds, too, receive a cover of mulch each year. The plants are doing quite well.

The plants I grow in my vegetable garden for fruit—tomatoes, peppers, squash, cucumbers, and eggplants—are in a different category. They are little sugar factories. They need plenty of sunlight, water and soil nutrients. If you want good yields of nutritious, good-tasting fruits, you must add fertilizer, either organic or inorganic, to the soil. That is in addition to regular supplements of compost or other organic matter. This is known as the “law of returns.” What you take out of the soil in crops, you must return as fertilizer and organic matter. All successful gardeners know this.

The spread of tree roots

If this fertile soil is within 50 feet of the dripline of a major tree with no obstructions, it is axiomatic that the tree’s roots will eventually discover your little Garden of Eden. That adds a new, unexpected, and unwelcome deep feeder to your garden. Your little sugar factories will not appreciate the competition from woody, hungry and thirsty tree roots. You could remove the tree, but that is not acceptable to most people. The better alternative is to cut back the tree roots in your vegetable garden. You do this by tilling the soil in spring.

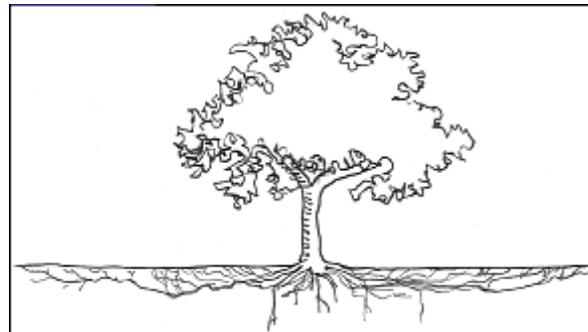


photo: University of Minnesota
Extension

And because the aforementioned sugar factories contain sugar-rich fluids within their stems, leaves and fruit, they attract some voracious insect pests. Some of these pests, such as cucumber beetles, tomato hornworms and cabbage worms overwinter in the ground in your garden. Cleaning up plant debris and tilling the soil in the fall removes them and their winter habitats.

Cover crops are a good thing for the vegetable garden. Also known as green manure, cover crops out-compete the weeds and add nitrogen, other nutrients, and organic matter to the soil. When winter and early spring rains inundate the garden, the nutrients are held fast by the cover crop. After adding compost, I plant winter rye, an annual, as a cover crop in my vegetable garden. I plant it in mid to late fall, after I remove tomato and pepper plants. It stays green all winter and grows dense roots deep into the soil. To return the nutrients to the soil before planting, I till the rye into the soil in spring. This is a real chore: I dig the soil first with a shovel and then use the rototiller a few weeks later after the soil is dried out. But the results have been splendid. Since adopting this approach, I use much less fertilizer to produce excellent crop yields.

The deep roots of the rye and the digging with the shovel also break through the hardpan that is caused by the rototiller. My soil drains very well and my crops develop deep roots.

I got started in gardening as a kid by digging my father’s garden each spring. To this day, I find it satisfying to work the soil. I till the soil, but not all of it. and not all the time. I am guided by basic Fairfax County Master Gardeners Association, Inc. | © 2015

principles in this and all garden tasks. For successful gardening, your best tool is not a shovel or a rototiller; it is your brain. Use it, and you will not be easily fooled by fads and slogans. Think first. Then till your garden if it needs it.

References

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