

## Questions from Garden Soils Workshop

Our gardening expert Kate Frey (Thank You Kate!) was generous enough to review questions asked during the webinar and provide some additional comments (in red italics).

### **Compost and Fertilizers**

I use horse manure to put my beds to rest each year. The (raised) bed soil is very tight. What can I add to loosen it? Lots of worms, very dark soil, but extremely tight.

*Kate Frey - You may want to find some good topsoil free of weeds and add this to your beds. It sounds like some loam soil would be beneficial.*

i had a soil test done and have amended my gardening soil per the recommendation. In subsequent years, do I need to continue adding amendments at the same initial rate? How can I know what is needed without having to have a lab-run soil test each year?

Is there a go-to lab to get your soil tested for N-P-K-pH or is there a recommended soil testing kit?

Can you use too much compost on your soil?

*Kate Frey - Yes- you will want to tailor each year's compost application to what the soil's needs are. The condition of the soil is a point on a continuum, not a given state. The condition of soil and organic matter levels change from year to year- for better or worse depending on its state and how you treat it. You don't want to use the same soil practices continually. Adjust them as needed as soil conditions change. How do you tell? If the soil is hard packed or heavy- it needs 2-3 inches of compost applied each year plus gypsum as an amendment for calcium and to help soil aggregate per recommended application amounts. As soil becomes more friable and easier to dig or plant into, back off the amount of compost used per year or season. You may start with 3-4 inches a year and end up with 1-2 inches per year to maintain organic matter levels and soil fertility.*

*There is such a thing as overdoing compost applications. Over-loading the soil with compost year after year and tilling can create conditions favorable for soil symphylans- a soil dwelling insect that feeds on plant roots. As soil conditions improve- organic matter levels and friability improve, consider using no-till soil practices. No-till soil practices make gardening easy and are positive for soil biology. Simply apply fertilizer to soil and top with 1 inch of compost each planting season. It's easy.*

If you don't want to use compost with animal products, do you have any recommendations?

*Kate Frey - There are numerous fertilizers available. Most are formulations of various products. Some are meat based- blood or bone meal, others are seafood based- fish meal, shrimp and*

*crab shells and seaweed, others are feather meal based-ground chicken feathers, a byproduct of the chicken industry, some have soybean meal, cottonseed meal or alfalfa pellets. It is a personal choice about what is appropriate. All should be used in conjunction with compost. The most important thing is to note is how the plants grow. Are they weak with poor growth, or strong with robust foliage and high productivity? Adjust compost application rates, types of fertilizer and amounts as needed.*

How much feather meal should we add, if we are using composted manure also?

Is it ok to used well-composted goat manure (with straw in it) instead of vegetable compost for top mulch?

if using composted horse manure mixed with clipping/green waste, how do I figure out what minerals, etc are missing or too high?

Would you use different compost for flowers vs. vegetables?

*Kate Frey - Many annual flowers enjoy the same amount of soil fertility and friability that vegetables do. Perennial flowers usually grow well on soil with lesser amounts of organic matter and fertility than vegetables and annual flowers. Usually an annual application of compost used as a mulch about 2-inches deep is enough to sustain them. No fertilizer necessary. Woodchips are not appropriate as in the process of decomposition, nutrients like nitrogen is removed from the soil. Fall or early spring before plant growth gets underway is a good time to apply this.*

Fertilizer— what are you recommending? Compost is enough?

*Kate Frey - There are many types of fertilizer, and many mixtures available in hardware stores, nurseries, big box stores and farm supplies. If Harmony Farm Supply (or another farm supply) in Sebastopol is near enough to you, they have an excellent selection and knowledgeable staff. The website lists and describes everything and can be used as a reference. They also ship. Stores that cater to marijuana growers usually also have a wide array of fertilizers.*

how do you know what bulk compost is good? There are many places that offer from the waste district to organic farms. Are they all good? Compost should carry a state certification or OMNI certification.

Is it ok to used well-composted goat manure (with straw in it) instead of vegetable compost for top mulch?

Can eucalyptus leaves be used for mulch.

*Kate Frey - Not recommended.*

what is your opinion on using straw as a mulch?

*Kate Frey - Straw works well as a mulch for crops like potatoes and strawberries. It acts to cover the soil, prevent weeds growing, potato tubers from greening from exposure to sunlight, and to keep strawberries off of the soil. It does not add soil nutrients.*

My raised beds are growing well but soil the disappears each year and 6" need to be added each year. The soil is very light. Is it possible to have too much compost?

*Kate Frey - I would add more soil each year AND compost to maintain the soil/compost level in the beds.*

Are pine/redwood needles ok to use to acidify the soil?

*Kate Frey - Pine needles are often recommended for blueberry plants. Redwood needles just seem to benefit redwoods- not other plants.*

Are there other fertilizers you can recommend that don't contain feathers or other animal products?

*Kate Frey - Check on the Harmony Farm Supply website for fertilizers. Ingredients are lists. There are ocean-origin-type options, and alfalfa- besides others. Consider too manures from horses, llamas and other pet or well cared for or rescue animals.*

Is feather meal avail at all garden stores? I've never heard of it before!

*Kate Frey - Check the ingredient lists in available fertilizers. It may well be in them.*

Are there other fertilizers you can recommend that don't contain feathers or other animal products?

can I bury feathers from my chickens as a feather meal?

Is it dangerous to use bat guano with vegetables?

*Kate Frey - There are many other options in terms of fertilizers. There can be pathogens in bat guano.*

## **Cover Crops**

How do you know which cover crop to use?

*Kate Frey - Many farm supply stores sell a covercrop mix- often called something like plowdown mix. It is composed of a mix of grasses like Cayouse oats and legumes like peas, vetch and clovers. This is planted in the fall as soon as the summer crops are finished. Water it in if rains are not regular. It should be cut about 6 weeks to 1 month before the area is needed for planting in the spring.*

what is a recommended cover crop for veggie beds?

what is a recommended cover crop seed for veggies beds?

can you share the flowers you mixed with your winter vegetables?

## Clay

Is it better/more producing to remove the deep layer of clays and put new soil into the emptied cavity/space created or try to amend, insert a layer of fertilizer and compost and then put back the active layer soil?

*Kate Frey - Clay soil is generally a fertile soil type. It just needs to develop better structure to increase the soil organic matter and percolation or water and infiltration of air. Incorporate gypsum and about 4-6 inches of compost year 1, and then declining rates of compost of about 1 inch per year for the next 3-5 years. At the end of this time it should be transformed.*

What is the current thinking on rototilling, is it bad for the soil, especially clay soils? Is there such a thing as rototilling too much?

For the first 1-4 years, rototilling may be a good option to incorporate organic matter in the form of compost to your soil and bring soil organic matter levels up. Some people prefer to shift to no-till practices at this point. No-till is best for the soil structure and soil life, but some people like to rototill the soil.

lowers(dahlia) our soil is compact and feels like clay

what is the best amendment to add to the soil for flowers our soil is compact and feels like clay

*Kate Frey - Compost and gypsum*

## Bermuda grass

What would you recommend for eradicating Bermuda grass from a landscaped area, where the grass is taking over and choking out the plants?

Black plastic will kill Bermuda grass if left on the soil over a year.

2 layers of cardboard topped by 6 inches of compost will kill it in 1.5 years.

*Kate Frey - In warm summer climates clear plastic will kill Bermuda grass when applied in May or June when weather is hot and left for about 12 weeks. This process is called solarization. It does not work in the shade or cool climates.*

*Check out a good description of the process at the: UC Davis IPM Soil Sterilization for Gardens and Landscapes*

<http://ipm.ucanr.edu/PMG/PESTNOTES/pn74145.html>

Kate, would you be able to share a link to a resource that explains the process of killing Bermuda grass with black plastic? What kind of plastic is it, and where might a person buy it? Thank you very much.

### **Misc**

How to keep surrounding redwood tree and bull pines from taking all the nutrients in area garden space?

*Kate Frey - This is a difficult situation. It may best to grow plants in large containers instead like galvanized livestock watering troughs, full wine barrels or similar. Make sure these are raised above the ground so tree roots cannot enter. Make sure to have plenty of drain holes.*

Are wine barrels good for raised beds? Do they leach any harmful wine residuals?

*Kate Frey - Yes, but make sure they have plenty of drain holes and fill them with a good quality topsoil mix with compost and fertilizer added each season.*

I've heard that using cedar chips in your veggie beds doesn't leach nitrogen and helps with pest control. Is that true?

*Kate Frey - All wood chips will leach/take nutrients.*

I'm kind of new to the area, where/how can one obtain oak barrels?

I found soil grubs in my raised beds and have been removing them by hand, but I'm disturbing the soil down to about 12 inches. I'm assuming it's better to get them out than worry about the no-till method?

how deep should raised beds be

I have fusarium in my planter boxes where I plant tomatoes. The tomatoes show signs of fusarium wilt throughout the growing season. Besides moving the tomatoes to another location, is there something that I can do to fix this?

*Kate Frey - Crop rotation is really important. Rotate tomatoes to a different bed each year. Some varieties of tomatoes are resistant.*

please speak about worm casting

*Kate Frey - Earthworm castings are excellent as a soil amendment. They can be very expensive unless you live near a worm farm. Many people like to have worm boxes.*

### Comments

You can put oak barrels on wheels - so handy!

I am growing a lot of vegetables in oak barrels. Living in an oak woodland, I find that the oak roots will find and grow into an oak barrel within 1-2 years and suck up all the water and nutrients in that barrel. So one needs to check after a year or so and move the barrel to a different spot.

*Kate Frey - Elevate barrels about the ground to keep tree roots out.*

mulched eucalyptus was used for our pathways in my community garden where I lived previously - but not IN our gardens.

Standard soil test doesn't give you biological content—would your money be better spent getting a bio test