Edible Gardening Series with Sarah Bostick and Carol Wyatt-Evens
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Resources from Session 4: Mulch

Mulch!! There are endless avenues of conversation related to mulch that we could have, but I am going to do my best to distill down this week's list to resources that are good starting points for learning about mulching techniques:

1. **Lasagna gardening** – also called sheet mulching, sheet composting, and layered mulching. This is basically a technique of layering different types of organic matter (straw, leaves, manure, compost, newspaper, cardboard,etc) in an intentional layering system that mimics natural systems. It is fun and effective!
    - **a.** This is a UF website that explains lasagna gardening in Florida.
    - **b.** Many libraries have books about lasagna gardening and sheet mulching.
    - **c.** Doing an internet search for "lasagna gardening book" brings up lots of options.
    - **d.** In-depth written instructions on creating "the ultimate bomb-proof sheet mulch" by one of my favorite gardening authors: https://tobyhemenway.com/resources/how-to-the-ultimate-bomb-proof-sheet- mulch/
2. **Types of mulch and how thick to lay it down**
    - **a.** This is a link to a UF document that covers the benefits and drawbacks of different types of mulchesused for ornamental gardens in Florida. Much of this info is relevant to edible gardens too. It also explains appropriate mulching techniques for trees: https://ffl.ifas.ufl.edu/handbook/Mulch_vSept09.pdf
    - **b.** Really handy chart created by University of Connecticut that compares different types of plant-based mulches and non-plant based mulches: http://www.ladybug.uconn.edu/FactSheets/mulch-basics.php
    - **c.** This is one of the best introductions to mulching for edible gardens I've come across – formatting of thewebpage is clunky but the info is great. It is on the website of the USDA's Natural Resources Conservation Services website: https://www.nrcs.usda.gov/wps/portal/nrcs/detail/?cid=nrcs143_023585
3. **"Chop and drop", living mulches, ground cover, cover crops, and green manure -** Each of these terms refers tosomething slightly different but are sometimes used interchangeably. At their cores, each of these three methods are a way to create your own mulch right where you are going to use it. There are piles of books and resources online about each of them. Most of the plants that fit into these categories are very place-specific, sorather than share links to lists of plants that will only grow well for some of you, I'm going to explain the terms and leave it at that.
    - **a.** **"Chop and drop"** plants are plants that you grow with the intention of occasionally chopping almost to the ground, dropping the chopped plant matter on the ground as a mulch, and then letting the choppedplant grow back again.
    - **b.** **Living mulches (also called ground cover)** are plants that naturally have a growth habit that hugs the ground. Another way to put it: ground cover is a plant that literally covers bare ground. We don't typically think of grass as a ground cover, but at its most basic definition, it is. In Florida, two commonlyused ground covers are perennial peanut and sunshine mimosa.
    - **c.** **Green manure (also called cover crops) –** this category of plant is typically grown for the purpose of covering the soil while alive and then tilling it in to add its nutrients back into the soil. More and morefolks are choosing not to till their soil and instead are simply cutting or mowing down their green manure crop and letting it break down naturally on the surface of the soil.

Answers to a few of the questions asked during Q&A

Question: I've heard never to exceed 4 inches of mulch because water can't penetrate well and plants roots become tooshallow. Is that accurate? Does recommended thickness vary by mulch type?

Answer: The general rule of thumb is to use 2-3 inches of mulch on top of bare soil. If your mulch is too thick, it can indeed become difficult for sufficient water to make it down to the plant's roots. Do remember, however, that in hot, humid, sandy regions of the country, mulch will break down VERY fast, so you may need to add mulch multiple times ayear to keep it thick enough. This website gives guidance on how thick of a layer you should use for different mulches.[Sidenote: If you are using doing sheet mulching, the process is a bit different and you are actually planting into the layers of mulch rather than into the soil.]

Question: Is it ok to mulch citrus trees? What about other types of fruit trees?

Answer: Citrus is an exception when it comes to mulching. Citrus trees are very prone to root rot when too much moisture is held in the soil. One of the benefits for most plants of mulch is that mulch helps to maintain a good level ofmoisture in the soil – but for citrus, this is not ideal. Other than citrus, keeping fruit trees mulched will benefit your trees.

Question: Are oak trees, oak leaves, and oak wood chips allelopathic?

Answer: First things first: let's define allelopathic. A plant that is allelopathic is a plant that produces a chemical that suppresses the germination of other plants' seeds or the growth of other plants in general. This is a really neat evolutionary adaptation that helps some plants compete with other plants. It is a trait that is most commonly found in slow-growing trees – this is their way of making sure that their slow growing little seedlings have the time and space to get established without fast growing weeds overtaking them. Most plants do not produce allelopathic chemicals and notall allelopathic chemicals affect all plants. Some plants may be affected by some types of allelopathic chemicals and not others.

Some types of oak trees release a mild allelopathic chemical and other types do not. If you know what type of oak tree isgrowing in your yard, you can do an internet search for plants that are impacted by that type of oak. The allelopathic chemicals in oaks break down fairly quickly. If you are worried, let your oak wood chips sit in a pile for a few months before using as mulch.

Question: How close to a plant is it safe to mulch?

Answer: Great question! It depends on a few factors but it mostly boils down to size and type of plant. Very small plantscan get buried in mulch on a windy day if the mulch you are using is prone to blowing around. For veggies that you plantdirectly in the garden from seed, it is a good idea to keep the mulch two or three inches away from where you are seeding until the plants are big enough to not get buried on a windy day. Once the plants are a few inches tall, most garden veggies do quite well with mulch touching them. Shrubs and trees, on the other hand, do best when mulch doesnot directly touch their bark. Mounding mulch up around the base of a tree is one of the worst things that you can do for a tree. The heap of mulch touching the tree holds far too much moisture against the bark of the tree and the bark will begin to rot, which opens the tree up to fungus, bacteria, and viruses.

Question: If we use wood chip type mulch could we turn it under after growing season and cover ground during thesummer, would it break down enough to eliminate nitrogen issues?

Answer: It is generally best to not till wood chips into the soil. Depending on the type and size of wood chip, rainfall, temperature, general health of your soil, and a few more factors, it can take many years for wood chips to finish breaking down. In Florida, this is usually a process that takes no more than a couple of years (and sometimes quicker). All of the good nutrients stored in those wood chips will slowly release (just like they would on a forest floor) over

time,working their way down into the soil at a rate that matches how quickly plants can absorb the nutrients. In addition to slow-release of nutrients, wood chips that are allowed to stay on the surface of the soil will eventually be inhabited by beneficial fungi that helps to break the wood chip down and moderate the release of nutrients.

Question: How long does Roundup stay in the soil?

Answer: According to the National Pesticide Information Center (NPIC), glyphosate binds tightly to the soil, so it canpersist in soil for up to 6 months. Total breakdown time varies somewhat based on climate and the organic matter content of the soil. Glyphosate is broken down by microbial action in the soil.

NPIC is a cooperative agreement between Oregon State University and the U.S. Environmental Protection Agency. Theymaintain a good website that is easy to navigate for consumers and all science based. Here is their website: http://npic.orst.edu/ . If you would like to navigate directly to an extremely detailed multi-page factsheet about glyphosates on NPIC's website, click here.

Feel free to reach out with questions any time!

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