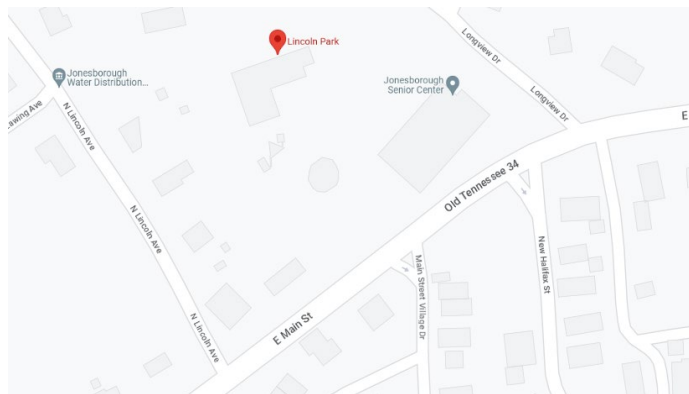


August 18th 10:00am
Garden Walk @ Lincoln Park
Vegetable Garden

Join Adam Watson for a stroll through the Lincoln Park vegetable garden where we'll talk about timely seasonal garden topics.

Lincoln Park is behind the Jonesborough Senior Center (307 East Main St) and can be accessed from either North Lincoln Ave or Longview Dr.



Registration <https://tiny.utk.edu/lincolnvegwalk> or call 753-1680

September 14th 6:00pm
Cover Crops for the Home Vegetable Garden

Are you looking for a way to improve the clay soils in your garden? Cover crops, or green manures, are great inexpensive ways to improve our soils in the home garden. Join Adam Watson and learn how to implement these in your garden. In-person location: Jonesborough Farm Bureau Basement Meeting room, 1103 Boones Creek Rd Jonesborough.

In-person Registration:
<https://tiny.utk.edu/inpersoncover> or
call 753-1680

Zoom Registration:
<https://tiny.utk.edu/gardencover>

Why are My Cucumbers
Shaped Weird?

Curved and misshaped cucumbers are the direct result of insufficient pollination. Keep in mind that the cucurbit family generally produces separate male and female flowers on the same plant (referred to as monoecious) and they rely on insect pollinators to move pollen from the male flowers to the female flowers.

Poor pollination can have many causes including plants lacking sufficient water and nutrients, cool rainy weather that is less conducive to pollinator



Photos by Adam Watson



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flights, extremely high temperatures that may reduce pollen viability, and even high humidity can make pollen stickier and less easily moved.

We also want to make our gardens as pollinator friendly as possible. Planting a diverse mix of flowering plants in and near the vegetable garden can provide resources to pollinators throughout the season. And while honey bees are often the primary pollinator, researchers in Indiana reported 28 different species of bees visiting cucumbers. Limiting the use of insecticides on flowering crops and [choosing those with the least toxicity to pollinators is a good start](#). Also applying insecticides at dusk, when many pollinators have ended their flights for the day, can prevent direct interaction with the insecticide particularly on cucurbits whose flowers open in the morning and are only open for one day.

Why I Like Organic Mulches in the Garden

If you have read this newsletter, or attended any of my classes, you'll know I'm a fan of using organic mulches in our gardens and landscape. What I've not always been able to do is take the time to explain why that is. In short, organic mulches improve our soils, reduce weed pressure, protect water quality; all of which enhances the potential for garden success. I hope this article will encourage you to give organic mulches a try in your garden or landscape.

Organic mulches can also include living mulches, whether in concert with garden plants or in lieu of. Cover crops or green manures provides similar benefits to the soil while growing by root exudates feeding soil microbiology. Once killed, they can be either mulched in place or incorporated into the soils.

Feeding our Soils

Organic mulches are simply referring to products that are made from products that were once alive or were derived from something once alive. Leaves, straw, wood chips, bark products, manures, are all examples of organic mulches. The great thing about organic mulches is that, as they decompose, they are cycling the nutrients contained in them back into the soil, including carbon that they removed from the air, and feeding soil microbial life directly and plants indirectly. Their decomposition directly increases the soil organic matter leading to greater capacity to retain both water and nutrients. In short, organic mulches keep our soil's biological community healthy and productive which improves the soil for our plants.

Protecting our Soils

We can view mulches as an armor for our soils. Erosion, or the loss of soil particles can happen any time we have soil disturbance, or do not have an intact plant community. When striking bare soil precipitation actually dislodges soil particles and moves these particles, as it runs across the surface of the ground, into surface waters. Erosion and runoff are directly mitigated by using mulches.

Weed Suppression

One of the best features of mulches for gardeners is their ability to suppress or prevent weeds. The mulch accomplishes this by first preventing sunlight from reaching the weed seeds at the surface of the soil and thus preventing germination. The mulches also encourage soil microbial life at the mulch soil interface which can prevent nitrogen from being freely available for germinating weed seeds; this does not negatively affect plants whose roots are deeper in the soil. This suppression does not mean no weeds will grow, but generally the number of weeds is dramatically reduced.

Soil Temperatures and Water

Organic mulches have a moderating effect on soil temperatures. They slow the warming of the soil in the spring and likewise retain warmth in the fall which can help cool and warm season crops respectively. This insulative effect also can reduce the freeze and thaw action of soils, that in extreme cases, can uproot plants. In preventing

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the heating of the soil, mulches also slow the surface evaporation of water from the soil preserving plant available water.

Mulches also increase the amount of water entering soil. The mulch slows the movement across the soil surface-particularly in our topography- allowing more time for water infiltration. Mulches likewise prevent the crusting of soils which can lead to runoff. The reduction of runoff into surface waters protects water quality for aquatic species. The positive effects of increasing the soil retained in water is best seen during hot dry weather when well mulched plants have more water available to them and bear the conditions better.

Soils touch each of our lives everyday through food, fiber, wood, and even energy products that we use. Enthusiastic gardeners aside, most people not engaged in agriculture as a profession likely don't think of soils too frequently despite our reliance on them. If we can protect or even improve our soils, it not only will ensure a supply of our needs, but will also enhance the environment for other species.

Tips for Organic Mulches in Vegetable Gardens

1. Mulching to a depth of 3-4 inches is sufficient to confer weed suppression and soil temperature effects.
2. Make sure "straw" doesn't contain grain i.e. seeds. Grain heads should be threshed and contain no seed.
3. Organic materials with a high carbon to nitrogen ratio {straw, bark, wood chips, etc.} should not be incorporated into the soil as their abundant carbon will feed the microbiological community who will utilize most, if not all, available nitrogen and thus temporarily reducing availability for our plants. Used as a surface mulch, these high carbon materials don't pose that problem with one exception. Carbon rich materials with a fine particle size, such as sawdust (C:N ratio 400+:1), can still limit nitrogen due to their increased surface area. Save sawdust for use in a compost pile rather than a garden mulch, unless you compensate by providing additional nitrogen fertilizer.
4. Organic mulches can be allowed to break down in place; they are not required to be tilled into the garden at seasons end or any other time. If you wish to plant into mulches, they can be moved with a rake to expose the planting ground. Avoiding tillage is never a bad plan. Tilling a soil increases the loss of organic matter, breaks up soil aggregates, brings to the surface weed seeds from the soil seed bank, and disturbs the microbiological community all of which are not helping reach the end goal of a healthy productive soil.
5. Fall leaves are excellent as an over winter mulch on vegetable gardens. Remove spent crops from the garden and then cover with the leaves. The leaves will decompose during fall and winter adding organic matter and nutrients to the soil and act as a physical mulch on the soil surface.

For questions about your home and garden please feel free to contact me, Adam Watson, Agriculture Extension Agent watson@utk.edu or by cell 423-430-6711. Emailing or texting pictures is a great way to get questions to me.

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