Cover Crops in the Vegetable Garden

Soil structure, fertility and covering the soil are some often overlooked aspects of the vegetable garden that can play a big role in the success of your gardening season. You might be wondering why should we care about the soil structure and soil cover? Why is it important? Soil structure impacts how well the plants grow as it impacts how water moves into or through the soil along with how much oxygen is available for your vegetables to use. If the soil is uncovered you are likely to have weeds that take advantage of that open ground to grow. One way that we can improve the soil in your vegetable garden is by utilizing cover crops through late summer and into the fall or winter.

So why should we spend the time and energy to plant another crop in your garden? In a short answer, cover crops planted in fall are an inexpensive way to build better soil for your spring garden and improve your soil fertility. Cover crops serve as a living mulch cover the soil and preventing weeds from germinating in the garden. They consist of grains, grasses, brassicas, or legumes that will grow during fall and winter and that you can mow, spade, or till under in the spring. During their growth, cover crops help reduce soil compaction, capture excess nutrients, and prevent erosion. Their roots penetrate and help loosen heavy-textured soils, allowing better air and water penetration. Legume cover crops add nitrogen to the soil. When you turn cover crops under, they add organic matter, building better soil structure and fertility or you can cut them off and use them as a mulch to keep the soil covered for the growing season.

There are three different types of cover crop plants that can be planted. The first are the legume or pea family. These plants help to facilitate the fixing of nitrogen in conjunction with some soil borne bacteria through nodules in the legumes roots. When these roots break down the nitrogen is released into the soil to be used by plants the next growing season. Some examples of this family include clovers, field pea, hairy vetch and sun hemp. The second group include the non-legume broadleaves. These group is the most diverse and are used to help add nutrients to the soil or in the case of radish to improve soil structure. Some examples of these plants include radish, turnips, kale, mustards and canola. Be sure to keep these from going to seed to prevent them from becoming a weedy mess. The final group of cover crops is the grass group. These cover crops are the best for building organic material and cover for the soil because of their abundant root system and the amount of leaf growth above the ground. They include annual or winter rye, wheat or oats.

How do you get started? One of the easiest ways to get started with cover crops is to scatter leftover cool season crop seeds such as radish, kale and carrots in a section of the garden. If this is your first season I recommend using plants that will winter kill in our area for the first year trying. If possible, over time, move to a mix of cover crops that includes legumes, grasses and other broadleaves depending on your goals and how much money you want to spend on your garden. Most of our cover crops should be planted by mid-October but some plants such as winter rye, wheat, or kale will continue to grow till the soil freezes in the fall. Ultimately what species you use will depend on what your goals are. If you have compacted soil consider using turnips or radishes to help improve the soil structure, if you have weed issues consider using winter rye to suppress weeds. Cover crops are a useful tool in the toolbox to help improve your soil. Depending on your needs you can make your mix as simple or complicated as you want. I will say the more diverse the mix, usually the better. For more information check out this publication: https://www.extension.purdue.edu/extmedia/HO/HO-324-W.pdf
Preserving Pumpkins
Pumpkins are everywhere during this fall season. One of our neighbors carved their pumpkins several weeks ago and with the heat those poor jack-o-lanterns collapsed pretty quickly. Carving pumpkins into jack-o’-lanterns is an art form that comes in all shapes, sizes and levels of difficulty. The final product (usually) makes the pumpkin carvers proud and anxious to display their work. However, often just a few days later, the pumpkin creation may start to wither and rot, and eventually, mold will take over. Why does this happen? When we carve the pumpkin it exposes the insides to air flow and other environmental factors. Molds are a fungal micro-organism that have the potential to live everywhere. These fungi release tiny, lightweight spores that allow them to travel through the air. They can then infect and cause carved pumpkins to shrivel, soften and start to grow fuzzy, grey mold. Some factors to help keep your jack-o-lanterns for a longer period:

1. Thoroughly wash your pumpkin before cutting into it.
2. Sterilize spoons, knives or other carving tools before use, especially between pumpkin carving.
3. Remove all the pumpkin’s insides to reduce the surface area where potential fungi can grow.
4. To prevent mold and help keep the pumpkin fresh you can either:
   a. Dip, wash or spray your finished carving with a 10 percent bleach solution
   b. Spray the inside with lemon juice
5. Rub the cut areas with petroleum jelly or vegetable oil, which helps lock in the moisture.
6. Consider using an electric light or glow stick instead of a candle. This will prevent the gourd from “cooking”.

Fungus Gnats in Houseplants
Something has been bugging us in the office lately and it might not be what you think. Over the last few months we have had a small infestation of Fungus Gnats that have made our offices their home. Fungus gnats are small insects (1/8 to 1/10-inch-long) that are common in high-organic-matter houseplant soils that are kept moist. Typically, we don’t consider them a major problem, rather a minor pest however, in they can be a major pest in the green house. Adults cause minimal plant damage, but females lay eggs that hatch into larvae that damage plants by root feeding. Larval feeding directly damages developing root systems and interferes with the ability of plants to absorb water and nutrients, resulting in stunted growth. This makes fungus gnats unique in that the damaging life stage is located in the soil itself. Both adults and larvae may also spread plant pathogens.

Water and sanitation are both vital for controlling fungus gnats in houseplants. Fungus gnat larvae need damp conditions in order to thrive so if you can allow your house plants to dry out more than normal you will help reduce the population. The “dry” surface is apparently less attractive to females, and even if eggs are deposited, they fail to hatch. Another cultural strategy is to incorporate abrasive materials such as diatomaceous earth into growing media or apply it to the surface. Diatomaceous earth is composed of sharp skeletons of hard-shelled algae that form fossil deposits, which remove the cuticular waxes, absorb oils and waxes in the outer cuticle, or rupture the cuticle, causing dehydration. Scouting or monitoring is an essential component of pest management programs used in detecting the presence of fungus gnats early; before populations’ build-up to damaging levels. Yellow sticky cards, placed near the growing medium surface, are typically used for monitoring fungus gnat adults.

If fungus gnat populations have gotten high the use of an insecticide is probably going to be necessary. The most effective treatments are those that are persistent; killing adults for up to three days. A number of pyrethroid-based insecticides, with extended persistence, are available for use on houseplants including those containing the following active ingredients: bifenthrin, cyfluthrin, and permethrin. Short-persisting contact insecticides such as those containing pyrethrins, soaps, oils, and neem, do not provide sufficient long-term control of fungus gnat adults and require repeat applications at short intervals (couple of days) to exhibit effects. Since the larvae are the life stage that directly causes plant damage, most insecticides are applied as a drench to the growing medium. Systemic insecticides are effective at killing the larvae along with products that contain the microbial insecticide Bacillus thuringiensis subsp. israelensis (Bti) such as Mosquito bits when applied as a drench to the growing medium.
Reminders-
- Buy spring flowering bulbs while the selection is still good
- Harvest winter squash when the rind is hard enough it isn’t easily punctured by a fingernail
- Add organic matter to vegetable garden this fall.
- Bring houseplants in if you haven’t already.
- Dig sweet potatoes

Apple Crisp
INGREDIENTS
- 4 to 5 medium apples*
- ¼ cup quick cooking oatmeal
- ¼ cup flour
- ½ cup brown sugar
- 1 tablespoon cinnamon
- ¼ cup butter or margarine**

*You can substitute cherries, pears, peaches or plums for apples.
**Many types of margarine contain soy.

DIRECTIONS
- Preheat the oven to 350 F.
- Grease the bottom and side of an 8- or 9-inch square pan.
- Rinse the apples, then remove the cores. Slice the apples. Spread the sliced apples on the bottom of the pan.
- Cut the margarine or butter into small pieces and put in a medium-sized bowl.
- Add the oatmeal, flour, brown sugar and cinnamon. Using two knives, cut the margarine or butter into the mixture until the mixture looks like small crumbs.
- Sprinkle the mixture over the top of the apples.
- Bake for about 40-50 minutes until fork tender.

(Source: https://www.ndsu.edu/agriculture/extension/recipes/apple-crisp)
**Video of the week: Lawn Mower Maintenance**
To keep your lawnmower running at peak performance, you'll need to tune it up several times a year. Learn how to safely drain the oil, change the filter, and replace the spark plug to keep your lawnmower running for many years ahead. Watch the video here: [https://kansashealthyyards.org/all-videos/video/lawnmower-maintenance](https://kansashealthyyards.org/all-videos/video/lawnmower-maintenance)

**Upcoming Events**

- **October 15th from Noon to 4 pm - Houseplant and Perennial Plant Swap**
  Have your houseplants grown like crazy this year and need a trim or did you divide some perennials and have extras? Bring your plants to the Plant Swap hosted by the Butler County Master Gardeners. The rules are simple: 1) Bring at least one plant, cutting or seeds to trade or sell, 2) All swaps must be labeled with plant name, 3) All plants must be pest and disease free. This event is free to attend, just bring your favorite plants to share with plant lovers in your community!!! Register so we can have enough tables: [https://forms.gle/ddB6As2f53C19PZa9](https://forms.gle/ddB6As2f53C19PZa9)

- **November 1st at Noon - Plants Gone Wild! Controlling Invasive Plants**
  Given the opportunity, certain plants can take over your landscape, woodlands, and pastures. Join Lynn Loughary, Wyandotte County Extension Horticulture Agent, as she helps you to recognize which plants you need to keep a close eye on. Learn about a few of our most invasive plants, and management strategies for their control. Discover which weeds are also regulated by law, through Kansas’s noxious weeds program. This class is offered online via Zoom. For more information on the Garden Hour series or to register visit here: [https://hnr.k-state.edu/extension/consumer-horticulture/garden-hour/](https://hnr.k-state.edu/extension/consumer-horticulture/garden-hour/)

- **December 6th at Noon - Beekeeping Basics: How to Start Your own Colony**
  Beekeeping is both popular and important for many reasons. Whether it’s to produce your own local honey, supplement pollination of nearby plants, promote conservation, or even personal entertainment, there are many reasons to become a beekeeper. Join Ryan Engel, Golden Prairie District Horticulture Extension Agent, as he covers the equipment you will need, how to source your bees, and what it takes to establish a new colony. This class is offered online via Zoom. For more information on the Garden Hour series or to register visit here: [https://hnr.k-state.edu/extension/consumer-horticulture/garden-hour/](https://hnr.k-state.edu/extension/consumer-horticulture/garden-hour/)

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