Herbicide Carryover in Compost or Manure

There is nothing more disappointing when you are gardening than to come out to the vegetable garden to find that your plants are exhibiting the curled, twisted or mis formed leaves characteristic of herbicide damage. While herbicide drift is a common issue, especially when it is windy and hot where herbicide can drift for well over a mile, there might be another cause for the damage rather than your neighbors. The answer might actually be in the soil, especially if you have added compost or composted manure to your gardens.

Most commonly, herbicide damage through contaminated organic material is caused grass clippings. Herbicides were applied to the lawn and then the lawn was mowed and those grass clippings were applied to the garden before the herbicide has had a chance to dissipate. It usually takes three times mowing the yard for the herbicide to be out of the grass clippings so I recommend not catching the clippings for the first month after application to allow the chemicals time to dissipate. If you are getting grass clippings from other people, be sure to ask if they have sprayed for chemicals recently and if so what they have sprayed. I would never recommend getting grass clippings from a city compost piles because you never know what has been sprayed and there has been too many times people have lost their garden for years due to chemical contamination.

The second way that herbicide can be introduced into the garden is through contaminated compost or composted manure. Composted grass clippings are a common way for compost to be contaminated however sometimes the pile itself is sprayed to kill weeds on the outside which can result in the contamination. Similar to contaminated grass clippings, composted manure can be contaminated by herbicides through the grass or hay the animals eat. The herbicides are safe for the animals to eat however they are not broken down by the animal’s digestive system nor are they broken down quickly through the composting process. There are several herbicides that can carryover in compost, grass clippings or in composted manure. The herbicides of concern are: aminopyralid, clopyralid, fluroxypyr, picloram and triclopyr are in a class of herbicides known as pyridine carboxylic acids. Before acquiring or using manure — fresh, aged or composted — ask what the animals were fed, the origin of the hay, and what, if any, herbicides were used on the hay or pasture. Some livestock owners can tell you this, but many might not know the products used or the origin of the hay they purchased. They may suggest the manure is “safe” because their animals have not been affected.

If your garden soil was contaminated by herbicide you don’t have to start completely over or replace the soil. These herbicides eventually break down through exposure to sunlight, soil microbes, heat and moisture. Depending on the situation, the herbicides can be deactivated in as few as 30 days, but some field reports indicate that breakdown can take as long as three to four years depending on weather conditions (dry weather slows down this process). There are a couple ways to help encourage the chemical to break down faster and they include: till the garden several times during the growing season, irrigate the area and plant it into a non-sensitive cover crop for a year or two to help the herbicides break down. Conduct a pot or field bioassay before planting any sensitive crops in the previously contaminated area. You can take some small pots of soil from the garden and plant peas or beans in the pots, then observe the growth on the plants to see if it’s normal, if not you have to wait to plant tomatoes in the garden. You can also plant bean or pea seeds in the garden itself and see how they grow. Peas and beans are especially sensitive to chemicals and will show symptoms very quickly.

If you are looking to add purchased compost or composted manure to your garden this fall be sure to ask some questions before you pick it up and till it in so hopefully you don’t have issues next growing season. Happy Growing.
Crotons (*Codiaeum variegatum*), the quintessential fall plant

*By Chris Stuhlsatz*

It's Fall, which means you’re going to start seeing these EVERYWHERE so here’s a little bit about them. Crotons have a reputation for being a little fussy. They’re evergreen shrubs native to Indonesia, Malaysia and Australia, which gives plenty of clues about their care. Crotons need plenty of bright light, a consistently warm spot and high humidity. They can take some direct sunshine but keep them away from direct midday sun.

**How to Care for Croton:**

- Place your croton in a sunny location. If your croton is getting too little light, its newer leaves will be less colorful.
- Keep the soil evenly moist, but let it dry out between watering.
- If humidity is low in your home, mist around the leaves with water once a week or keep a tray of wet gravel under or near the plant.
- Croton leaves are dust magnets. Gently wipe the leaves with a moist cloth twice a month to keep them clean and dust-free.
- Fertilize in spring and summer while the plant is actively growing. In fall and winter, fertilize more sparingly or refrain from fertilizing.

**Mealy Bug Destroyer**

I always stress to make sure that you know what insect you are dealing with before you treat and that is very important with the insect to the left. At first glance you might think that the insect is a mealy bug however this is actually a different insect called a Mealy Bug Destroyer that is a beneficial insect. This insect is a type of ladybug and both lifecycles feed on mealybug eggs, young nymphs. Older larvae will feed on any age of mealybug and they will also feed on scale insects and aphids. Adults are dome shaped with a blackish to dark green abdomen and a dark brown to orange head. They are approximately 1/8-1/6-inch-long with short clubbed antennae. Larvae look like mealy bugs however they are faster moving and at maturity are twice the size of an adult mealy bug. The photo above shows both an adult and a larvae mealy bug destroyer feeding on mealy bugs. Each larvae can consume more than 250 mealy bug nymphs or over 1,000 mealy bug eggs during that life stage. This insect is native to Australia and does not tolerate cold temperatures. This insect is reared commercially and can be purchased as an organic method of control for mealy bugs in greenhouses or for small infestations in the house if you so desire. If you want to purchase these for inside a greenhouse plan for a population of several beetles per square foot of growing area with the initial release. This insect is just a reminder to make sure you correctly identify the insect you are seeing before trying to control it in your home or yard.

**Leaf Arrangement**

Over the next few weeks I want to share some tips on how to identify plants. One of the first characteristics that I look at when trying to identify a plant is how the leaves are arranged on stem. Leaf arrangement can help you narrow down the family that the plant might be part of which makes it easier to identify the plant. While there are several different leaf arrangements there are three that you are the most common. The first leaf arrangement is alternate arrangement where the leaves alternate down the stem so only one leaf is attached at every node. This leaf arrangement is the most common in the plant world. The second most common is the opposite leaf arrangement where the leaves are in pairs along the stem similar to rungs on a ladder. There are far fewer plants that have an opposite leaf arrangement. The third most common leaf arrangement is the whorled leaf arrangement where three or more leaves are grouped at each node all around the stem. While there are some rare plants that can have multiple leaf arrangements on the same plant most plants will only have one. *(Node- Area of the stem where buds are located, an area where growth appears at the base of a leaf)*
Reminders-
- Add organic matter to vegetable garden this fall.
- Bring houseplants in if you haven’t already.
- Dig sweet potatoes

**Spaghetti Squash Burrito Boats**

**INGREDIENTS**
- 2 medium spaghetti squash
- 1 tablespoon extra-virgin olive oil
- ½ onion, chopped
- 2 cloves of garlic, minced
- 1 pound ground turkey
- 1 tablespoon taco seasoning
- ½ teaspoon cayenne pepper (optional)
- 1 (15 ounce) can low sodium black beans, drained and rinsed
- 1 (15 ounce) can fire roasted diced tomatoes with juices
- 1 (15 ounce) can unsweetened canned corn, drained
- 1 cup shredded cheddar cheese
- 2 tablespoons fresh cilantro
- Salt and pepper to taste

**DIRECTIONS**
- Cook spaghetti squash using one of the following methods. Cook times are approximate and will depend on size of squash.
  - **Microwave:** Pierce squash with fork several times. Place in microwave-safe dish with one cup water. Microwave on high for 5 minutes. Carefully rotate squash and microwave again for 5 minutes. Continue cooking in 5 minute intervals until squash is soft; about 20 minutes.
  - **Oven:** Pierce squash with fork several times. Place in oven-safe dish with one cup water. Cook at 350 F for 60 to 90 minutes or until squash is soft.
  - **Pressure Cooker:** Pierce squash with fork several times. Place in pot on trivet insert. Add 1 cup water to bottom. Set pressure cooker for 15 minutes on high pressure. You may need to cook squash one at a time depending on the size of your squash and the size of your pressure cooker.
- While the squash is cooking, prepare the filling. In a large pan heat the olive oil over medium heat and add the onions and cook until soft, about 5 minutes. Stir in garlic and cook until fragrant, about 1 minute. Add ground turkey and cook until golden in color. Stir in taco seasoning and cayenne pepper. Add black beans, tomatoes, and corn. Stir together so flavors meld.
- Let squash cool slightly before handling. Slice squash in half lengthwise and scoop out seeds. Using a fork, break up the squash strands. Evenly distribute turkey mixture among squash and top with cheese. Place in oven for about 5 minutes or until cheese is melted. Garnish with fresh cilantro. (Source: [https://www.ndsu.edu/agriculture/extension/recipes/spaghetti-squash-burrito-boats](https://www.ndsu.edu/agriculture/extension/recipes/spaghetti-squash-burrito-boats))

**Video of the week: Transforming Leaves from Trash to Treasure**
Each fall, nature rewards us with a bounty of leaves. Wondering what to do with all those leaves? Turn the trash into treasure by adding them to your garden, spreading them as mulch, or by making a compost pile. Watch the video here: [https://kansashealthyyards.org/all-videos/video/transforming-leaves-from-trash-to-treasure](https://kansashealthyyards.org/all-videos/video/transforming-leaves-from-trash-to-treasure)
Upcoming Events

- **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/)