K-STATE Research and Extension | Meadowlark District

May 6, 2022

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***Cold Weather Crown Stress in Corn***

If a corn seed had its choice for optimal planting conditions, it would often look outside of northeast Kansas to find them. Planting in early April can expose us to imbibitional chilling injury when we see lower than optimal soil temperatures during the first 24-72 hours after planting. Once we get through that stage, we often hit a period of wet soils and cooler soil temperatures that can result in cold weather crown stress or cold weather corn rot.

The two-inch soil temperature at the Corning Kansas Mesonet Station just over a week ago was above 70 degrees F. Over a span of four days, we added over two and a half inches of rain and dropped two-inch soil temperature back to 52, holding steady at that level through this writing (May fifth). The conditions weren't quite as drastic at the Oskaloosa Kansas Mesonet Station with only an inch sixty for rain and temperatures dropping only seven degrees to the mid-50's. Still, it's not the upward trend of warming soil temperatures a young corn plant would prefer. While there's no guarantee we'll see issues (its variable to begin with and often dependent on how long soils stay cool/damp), it's good to be aware of potential problems.

What might it look like if we *do* happen to see issues? Plants are typically stunted and might show nutrient deficiency symptoms (potassium the most common). Root development will likely be normal, but the crown will tend to exhibit dark brown or black discoloration in the crown area when stems are split. According to Iowa State University work, Fusarium or a fungus that causes anthracnose can *sometimes* be isolated from affected plants, but not always. Sometimes the plants grow out of it as they develop. In the most extreme instances, when decay results in a 'disconnect' between leaves and roots, plants may wilt and even die.

Other stresses can make plants more susceptible to crown issues *and* cause problems later. Compaction, fertility deficiencies, or herbicide injury can enhance the potential for crown damage. Stress (drought/heat) conditions later on tend to result in further problems, with late season stresses on these plants potentially leading to stalk rots and lodging.

As sun returns and temperatures rise, be on the lookout for patches of uneven plant growth. Some of it can be attributed to our typical 'ugly duckling' stage as plants start to grow rapidly, but watch for areas of potential crown damage as well.

***Why Didn't My Garden Produce?***

A recent news release from K-State Research & Extension outlined management of storm damage in the garden. It reminded me of multiple conversations over the past winter with gardeners not happy with their production. Over the next few weeks, we'll address some of those in this space, starting this season's seemingly excessive wind events.

Sometimes, we can be *too* nice to our plants. Trying to help them recover from wind damage certainly falls in this category. Excess wind and saturated soils can both cause plants to lean. Instead of rushing out to bend them back – and potentially causing breakage in the process –let them be. In most cases, they'll start to straighten on their own in a few days.

Did you try to 'help' plants along too much last year? Often, or well meaning 'grooming' can cause unintended injury we might not even think about – especially after the growing season has already concluded.

Next week: the effects of rainfall.

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**Gardening with Kids**

It is not always easy preparing healthy meals that your entire family will eat without complaining. If you have picky eaters, it makes that job even more difficult. One tool to help children establish life-long healthy habits is growing a garden.

There have been many studies that show children who help garden are more likely to consume what they planted. This equates to more fruits and vegetables. They are also more likely to help choose more fresh produce at the grocery store. This makes it a little easier to prepare meals if you can find a couple of vegetables to offer that they will eat. So, increased nutritional status is a plus.

Another positive that comes from gardening with your children is the benefits that come with physical activity. Teaching them to work the soil, and plant, weed and water are all great things. They also require movement, and utilizing muscles you may not use all the time. Bending, squatting, hoeing---these all use large muscle groups and are great for everyone!! Hauling soil, harvesting tomatoes and picking beans----these are also like skills that will stay with your children the rest of their lives. Teaching them where their food comes from and the work that is put into growing it is important. They will appreciate their food a little more. At least, they won't answer "the grocery store" when asked where their food comes from!

Finally---spending time with your children outside in the sun away from video games and the television is fun. You are building memories. You are working together to provide food for your family, while playing with dirt and annoying caterpillars. Can it be any better than that?

If you don't have a big spot for a small garden---plant a tomato plant in a pot. You will get the same outcomes!