K·STATE Research and Extension | Meadowlark District

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David Hallauer
District Extension Agent, Crops & Soils

Fungicides on Soybeans

As early soybeans begin pod set and fungicide applications are made to our corn crop, the next decision on the minds of soybean growers might be whether that crop is next to need a fungicide. While some of the same principles that apply to corn certainly apply to soybeans as well, the decision in soybeans is often a little more complex.

Disease pressure *is* an issue in soybeans, and they *can* result in significant losses. Estimates from the Crop Protection Network put the average over the last five years at approximately $27/A. However, that's across all diseases (seedling diseases/nematodes/fungal disease/viruses/etc…). The fungal complex of foliar diseases portion of the total is much smaller, making in-season foliar fungicide applications a little more complicated. Thorough scouting is important to make sure what we're treating is actually a disease we can do something about.

Efficacy of foliar fungicides for disease control is evaluated annually in trial by University Plant Pathologists (see the 2024 results on the Crop Protection Network site: https://cropprotectionnetwork.org/publications/fungicide-efficacy-for-control-of-soybean-foliar-diseases). We know from these trials which fungicides work best for controlling which disease.

What is more variable is how a fungicide will perform if applied in the *absence* of disease. An 18 treatment (including a non-treated check) Iowa State study showed inconsistent results with no significant yield response. A nine-treatment study conducted by Kansas State University showed similar results: some products performed very positively, while others were more neutral. Strip trials in Missouri from 2018-2023 suggested a slightly less than two bushel per acre response. Bottom line: foliar fungicide applications *can* result in good yields – but results will likely be more inconsistent without disease present.

It's important to consider disease resistance as well. Other states have confirmed QoI fungicide-resistant strains of Frogeye Leaf Spot and Septoria Brown Spot and Kansas is now no different. A 2022 study of fungicide resistance from Kansas soybean fields showed almost 80 percent of the samples were resistant to the QoI fungicide class. Caution should therefore be exercised when using fungicides to make sure multiple modes of action are used and that products are used in such a way – and combined with other integrated disease management tools - as to preserve future efficacy.

For more information on fungicide products or to request a copy of the fungicide efficacy chart referenced above, feel free to drop me a line at dhallaue@ksu.edu or contact me at any Meadowlark Extension District Office.

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Ross Mosteller
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Blue-Green Algae or Bacteria?

Summer is upon us and there are many signals that point to this. Longer days, increased heat and humidity, busy swimming pools and warning signs at public waterbodies warning of toxic Blue-Green algae blooms. Maybe the last point isn't something you would naturally think about, but for anyone using waterbodies for drinking water or recreation, this has become an increasingly problematic situation in summer and honestly throughout the year. Let's look at this issue and why it is important to heed warnings seriously.

When the temperature rises and sunlight hours/intensity peak, the risk of Blue-Green algae reaching toxic levels increases. Blue-Green algae are not algae, but rather cyanobacteria, or bacteria that live off the sunlight and nutrients in the water. These bacteria can be toxic to livestock, dogs and people. Cyanobacteria can build up in a waterbody and form into distinct blooms of bacteria, often looking like paint slime floating in the water. This paint-like texture of cyanobacteria is what differentiates it from non-harmful pond weeds. The harmful cyanobacteria can look green or dark green, but can turn more into a bluish tint, thus leading to its more common name as Blue-Green algae (BGA). It is not uncommon for the color to turn into an almost reddish brown or gray. All those color variations are possible, but the one consistent aspect is that the blooms look a lot like paint mixing with water floating around on the water's surface. As the cyanobacteria die, they release toxins and that is the problematic part of a Blue-Green algae bloom.

Cyanobacteria can release two types of toxins: neurotoxins, which affect an animals' nervous system; and hepatotoxins, which affect the liver function. Both toxins can cause death. Unfortunately, with livestock, animal death near a pond is often the first indication of an issue with Blue-Green algae in the water source. If a dangerous level of cyanobacteria is suspected, it's important to keep animals and people out of the area. Testing should be conducted to confirm if the toxic issue is present.

A simple and somewhat quick test that can be conducted is to collect a water sample into a jar or bottle, including the suspected Blue-Green algae, and let it sit in a refrigerator overnight. If there is a clear ring of separation with the suspected Blue-Green algae floating on the top, likely this is BGA. To further confirm, about 500 milliliters of water should be collected in a sealed container, sample be refrigerated, and shipping it with an ice pack to a testing facility. Care should be taken to not get direct expose of suspected BGA on your skin when collecting the sample. The K-State Veterinary Diagnostic Lab in Manhattan conducts reliable testing for cyanobacteria. The lab can be reached online at http://www.ksvdl.org or toll-free at 866-512-5650. Extension offices can help with this collection and identification process as well.

From a livestock perspective, fencing off ponds, providing alternative water sources and/or pulling water from the center of ponds with suspected BGA issues can all be considered to manage the drinking water situation. These blooms pop up quickly and monitoring water sources is critical during these hot summer months. It is best to let this situation run its course versus treatment to kill the bacteria. The toxins will increase rapidly with rapid bacterial death, creating a more dangerous situation. To learn more visit the K-State Bookstore and review *"Identification and Management of Blue-Green Algae in Farm Ponds – MF3065"*.

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Laura Phillips
District Extension Agent, Horticulture

Brown Spots in Your Lawn

As the summer heats up, many homeowners notice brown spots on their lawns. While there are many causes of discoloration in turf grasses, one common reason is a disease called Brown Patch. Brown Patch will affect all cool season turf grasses, making it one of the most widespread turf diseases.

Brown Patch causes roughly circular patches of - you guessed it - brown grass that can appear seemingly overnight. It can also cause tan lesions with black outlines on the individual blades of grass. Brown Patch is caused by a fungus known as Rhizoctonia solani. Our Kansas summers provide favorable conditions for Brown Patch, as it thrives in hot, humid weather.

Proper lawn care can prevent the appearance of Brown Patch or reduce its severity. When applying fertilizer, use only what the lawn needs, as excessive nitrogen from fertilizer will promote Brown Patch. Never fertilize when a Brown Patch is active. Avoid watering your lawn in the late afternoon or evening, as the water will not get a chance to evaporate before the sun goes down, allowing for moisture to stay on your grass longer. If the Brown Patch is severe, some home fungicides can fight Brown Patch. If your lawn has Brown Patch, start by practicing good lawn care, and reach out to our extension office for more care tips and fungicides available in your area.

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Teresa Hatfield
District Extension Agent, Family and Community Wellness

Hydration: Water-Rich Foods Make a Difference

As the summer heat builds, it is essential to keep hydrated. And, while most of us know that we should drink eight glasses of water daily, how we get our fluids doesn't have to be all from plain water. Fruits and vegetables can also protect against dehydration.

Our bodies need water to support body functions. For digestion, water is in our saliva to moisten food, in our stomach juices to digest food, in our blood to transport nutrients and oxygen, and to help carry waste out of our body. Water also allows us to regulate body temperature, improve energy, and brain function. Mild dehydration can cause fatigue, headaches, decreased physical endurance, and cognitive performance.

To keep from getting dehydrated, you need to drink 6 to 8 cups of liquid each day. Depending on your activity level, you may need to drink more. Older people may be less sensitive to thirst, meaning that they may not feel thirsty, which can cause them not to drink enough water.

Getting that liquid from fruits, vegetables, and liquids other than water can contribute to your total fluid intake. Select foods that are more than 80%. Check the list below to see the percentage of water in some of your favorite fruits and vegetables.

Cucumbers: 96%
Celery: 95%
Lettuce: 95%
Tomatoes: 94%
Zucchini and summer squash: 94%
Bell peppers: 92-94%
Watermelon: 92%
Broccoli: 91%
Grapefruit: 91%

Incorporating more fruits and vegetables into your diet can also improve overall health. To snack smart, keep cut-up fruits like watermelon, cucumbers, or citrus in the refrigerator for a quick bite. Use fruit and leafy green vegetables in smoothies for a hydrating breakfast—jazz up your water with slices of fruit like lemon, limes, or berries to enhance flavor.

Keeping yourself hydrated is an easy way to stay healthy; it doesn't all have to come from plain water. Eating more fruit and vegetables will improve your health and keep you hydrated during the hot summer months.

Citrus Berry Mint Infused Water

Ingredients (for 1 large pitcher, about 6–8 cups):

- 1/2 orange, thinly sliced
- 1/2 lemon, thinly sliced
- 1/2 cup strawberries, hulled and halved
- A few fresh mint leaves (5–7)
- 6–8 cups cold water
- Ice (optional)

Instructions:

1. **Prep the ingredients:** Rinse the fruits and mint well. Thinly slice the orange and lemon and halve the strawberries.
2. **Combine in a pitcher:** Add all the fruit and mint leaves to a large pitcher.
3. **Add water:** Pour in the cold water. Stir gently to mix.
4. **Infuse:** Let the water sit in the refrigerator for at least 1–2 hours to allow the flavors to infuse. For a stronger flavor, leave it overnight.
5. **Serve:** Pour over ice if desired. Add a few pieces of fruit or mint to each glass for presentation.

Tips:

- Try muddling (gently crushing) the mint leaves or berries for a bolder taste.
- Use sparkling water instead of still water for a fizzy twist.
- You can refill the pitcher once or twice with more water using the same fruit (within 24 hours).

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Cindy Williams
District Extension Agent, Food, Nutrition, Health and Safety

No news article this week.