K-STATE Research and Extension | Meadowlark District

December 19, 2025

David Hallauer
District Extension Agent, Crops & Soils

What is a Biological?

When we hear the term biologicals in commodity crop production, the first question is typically: do they work? Unfortunately, the answer often isn't a simple yes or no, often in part because biologicals can refer to so many different things.

It's been said that soybean inoculum was the original biological, and we've used it for what seems like forever. It's not the same, however, as products *called* biologicals but that are much different than soybean inoculant. Humic and fulvic acids come from decomposing organic matter or mineral deposits. Hydrolysates are from plant and animal byproducts and alginates are as the name sounds: from seaweeds. The latter are often used in specialty crops whereas soybean inoculant is applied in a crop decidedly *not* specialty in nature.

To be fair, biologicals might not even be the right term. Biostimulants are what they are referred to by regulatory bodies and in scientific literature. Regulation – or lack thereof – is a confusing point as well. Some products aren't regulated at all while others that might be very different are lumped under the same set of regulations. It can cause a lot of confusion.

Unfortunately, where there's confusion there's an opportunity for unsubstantiated marketing. University of Illinois agronomist Dr. Fred Below said this in a June 2025 article (https://aces.illinois.edu/news/biologicals-vs-biostimulants-illinois-study-clarifies-crop-input-confusion): *Very often, marketing exceeds the actual research. Clearly, that's the case here.* He and fellow University of Illinois have researched a number of products, but face challenges in doing so because of inconsistent terminology used to describe products, not to mention the regulations surrounding them. With new products entering the market all the time, it can feel a little like the wild, wild west. That feeling has led Below and fellow researchers Dr. Connor Sible and Juliann Seebauer to look deeper into the definition and categorization of these products. They hope more streamlined terminology and maybe even regulations can help with product evaluations while keeping opportunities open for exploration of products with the hope of finding the ones that really live up to their marketing.

In the meantime, they've developed some tips to help growers evaluate products already on the market. In two weeks, I'll share their tips with hopes they'll help you find which products might be a fit for you – and which one are just marketing.

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Ross Mosteller
District Extension Agent, Livestock & Natural Resources

Feeding Cows in Cold Weather

As the weather so often is in Kansas, we've been on a rollercoaster of temperatures as winter officially begins. There was no doubt that cold weather was here this past weekend when single digits registered on the thermometer. In the past I've written about lower critical temperature (LCT) for livestock and the factors affecting this value. Today let's load up on feeding cows in the cold.

While it is tempting to meet the energy needs of cattle during cold stress by adding more feed, it's important not to make drastic changes to daily rations. Providing consistent, high-energy feed during extended cold spells is the best approach. Take a week or two prior to and through extreme cold to feed more of the same ration or supplement with higher-quality hay, grains like corn, or energy-rich feeds like distillers grains. Good quality forage/hay can also help, as the fermentation in the rumen adds internal heat to the animal.

When feeding lower quality hay, dormant range grazing or corn stalk grazing, additional feed will be needed. One option is to feed a higher quality hay source with higher total digestible nutrients (TDN), if available. Free choice high quality hay, containing 58 to 60% TDN, is adequate to temperatures of 34°F below the LCT of the cow (-15°F for cows in good condition with dry hair or 19°F with wet hair). If cows are grazing cornstalks or winter range, then supplementation with a high energy feed may be desirable. Often good quality alfalfa hay can fit the bill as a quality supplementary feed. While corn can be used to provide more energy, it comes with risk. Feeding more than 2 to 3 pounds per head can decrease forage digestion, especially if the forage is lower in protein. Feeding corn with some alfalfa on low protein forages can mitigate this issue. Other supplementation options include grains and by-products.

When corn supplementation is considered, 3 pounds of corn (82% TDN) provides 2.5 pounds of TDN, which can offset energy requirements for a moderate body condition score (BCS) 5 cow down to 5°F with a dry coat or 38°F with a wet coat. Distillers grains are another excellent choice due to the fact they are high in energy and protein. Another benefit of distillers grains is the reduction of the forage substitution effect. When compared to corn, the decision to feed distillers grains depends more on the cost than digestive restrictions.

When wind chill temperatures are extremely cold or the cow has a wet hair coat, there is a substantial increase in the demand for supplementation to meet energy requirements. For instance, if the wind chill was -10°F and the cows had a wet hair coat, then 8.9 pounds of dry distillers would be needed to account for the increased energy requirement. However, feeding these levels can be impractical. A better approach would be to provide a smaller amount of supplemental feed and to continue to feed extra after the weather has moderated to allow cows to regain condition lost.

It is also important to remember that lactating cows have a much greater energy requirement than pregnant cows. When this factor is added in combination with cold stress, BCS can rapidly decrease. For lactating cows, the energy demand is even greater, and cold stress can have a more immediate impact on their body condition. Ensuring that these cows have adequate nutrition before they start losing condition is key to preventing further problems, particularly during the harshest months of winter.

The University of Nebraska has an excellent publication addressing the comparison of beef cattle supplementation for winter weather. Check out NebGuide G2268 "Supplementation Needs for Gestating and Lactating Beef Cows and Comparing the Prices of Supplement Sources"

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Laura Phillips
District Extension Agent, Horticulture

Caring for House Plants in the Winter

If you have a house plant, or are overwintering outdoor plants inside your home, you may be wondering how to best care for your plants during the winter. While the exact care instructions will vary depending on the type of plant you have, there are several things you want to consider.

The first is light. Winter months not only bring cold temperatures but reduced daylight hours. This can sometimes cause trouble for houseplants that are not getting enough sunlight to properly photosynthesize. Plants with insufficient lighting are not able to efficiently produce chlorophyll. Consequently, they may lose their green coloring turning to a paler shade of green or even white. As the plants attempt to grow toward the light source, the stems can become elongated or "leggy." Leaves may drop prematurely and flower buds may not develop. Plants that should be variegated (have different colors or patterns on the leaves) may become solid in color.

You can also have too much light. Indoors, too much light is typically a concern for plants kept in a south or southwest facing window. Artificial lights that are kept too close to plants or left on for too long can also cause stress. Similar to how we get sunburns, plants can get injuries on their leaves from excess light. If your plants are beginning to display spots on the leaves that are pale or faded this could be symptoms of excessive light.

If low light is a problem for your indoor growing, consider getting fluorescent or LED light fixtures. Lights that are marketed for plants should come with instructions that tell you how far away the light needs to be from the plant. Reading about the light requirements for your specific plant can also help you determine how long to leave the lights on. You may want to consider getting an outlet timer for your lamps.
Your plants should tell you if the light is not properly adjusted. If the plant leaves burn, move the lamp further away or shorten how long you leave the lamp on. If the stems stretch, move the lamp closer or leave it on longer.

Another important factor is temperature. Most houseplants prefer temperatures above 50 degrees F, but some require the temperature to be over 60- or 65-degrees F. While your house may be warm enough, if you have your plants on a windowsill, they may experience cold drafts that can harm them. Plants that are too cold may appear stunted, and foliage may be discolored or even turn mushy. Similarly, if a plant is placed near a heater or vent, dry hot air can dehydrate the plant and cause wilting or browning of leaves.
Lastly, consider humidity. Some plants prefer high humidity, and our dry winter air can be hard on them. For plants that need high humidity, consider setting up a humidifier or placing a shallow tray of water near the plant so that water will evaporate near it.

If you have questions on how to care for your particular house plant, reach out to our office more guidance.

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Teresa Hatfield
District Extension Agent, Family and Community Wellness

What Does Medicare Cover in a Nursing Home?

There appears to be a misperception about what Medicare specifically covers during a nursing home stay. Many people are surprised to learn that Medicare will not cover custodial care in a long-term care facility. Medicare will cover care that is needed for skilled nursing or skilled therapy to treat, manage, observe, and evaluate your condition. Medicare does **not** cover any long-term care of any kind. This includes such things as assistance with activities of daily living (eating, bathing, dressing, toileting, or getting into and out of bed).
To qualify for skilled nursing, Medicare beneficiaries must have a qualifying hospital stay as an inpatient. A prior medically necessary inpatient hospital stay of at least 3 days in a row (starting the day you were admitted as an inpatient but not including the day you leave the hospital). This does not include any time you spent at the hospital under observation or in the emergency room before you were admitted.

You are required to meet all of the following conditions.

- You have Part A and have days left in your benefit period to use
- You have a qualifying inpatient hospital stay.
- You enter the skilled nursing facility (SNF) within a short time of leaving the hospital (30 days).
- Your doctor or other healthcare provider determines that you require skilled care.
- You get skilled services at a Medicare-certified SNF.
- You need services for an ongoing condition that was treated during your hospital stay.
- You need skilled nursing care or therapy to improve or maintain your current condition, or to prevent or delay it from getting worse.

In 2026, you or your supplement insurance will have to pay the Part A deductible for your benefit period and any applicable co-pays.

Medicare does not cover long-term care in a nursing home, including assisted living or custodial care. These types of stays in long-term care facilities are generally only covered by private pay, a long-term care insurance policy, or Medicaid.

For more information about what Medicare covers, please contact Teresa Hatfield at the Meadowlark Extension District at thatfield@ksu.edu or 785-364-4125.

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

Ring in the New Year with Black-Eyed Peas

Southern peas, field peas, cowpeas, pink eye peas, purple hull peas, cream peas, or crowder peas. They are all names for the black-eyed pea. They are a very nutritious food that Southerners love. As a member of the legume family, they are actually a bean. They can be eaten fresh, at the green stage, or allowed to dry on the vine.

Black-eyed peas came from Jamaica in 1675 through slave traders in Africa. They are a protein-packed source of food in India and Africa. Black-eyed peas are a symbol of good luck and are traditionally served as the first meal of the New Year. One popular dish with black-eyed peas is Hoppin' John. It is said that children must hop around the table first before eating Hoppin' John for luck. The peas are combined with rice, onions, bell peppers and smoked turkey or ham hocks. Some add cayenne pepper for a kick!