K-STATE Research and Extension | Meadowlark District

January 2, 2026

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Evaluating Biologicals

Two weeks ago, the challenge of defining and categorizing biologicals was our focus. This week, we'll look at how to evaluate products courtesy of some tips from University of Illinois Research Assistant Professor, Conner Sible.

Sible's first tip: Ensure the basics are covered! There's no replacement for good agronomy. Poor fertility isn't going to be compensated for by addition of a biological. If they perform as hoped, they *might* help with some nutrient use efficiencies, but biologicals alone aren't likely to overcome poor agronomic practices. Start with a good foundation.

Tip two: Know if your product is alive or dead. That starts with knowing what your product is made up of, whether it's alive or dead, and if alive, the requirements for keeping it there so it can do its job. Product efficacy could be compromised if the rules for keeping them viable aren't followed during the entirety of the process: delivery to application.

Next: Know what biological you are working with. Get specific, asking questions like how it differs from others, even within a similar biological category. For example, beneficial microbes are often considered 'living' organisms, but not all are the same. Some are bacteria Others are microbes or fungi. They don't all work the same and have to be treated accordingly.

Nitrogen is the focus of tip four: Today's N-Fixing inoculants are a third source of N, helping to supplement when the soil or the supplied N falls short. Having another opportunity to supply N to the crop is a good thing, but if too much dependence is placed on the biological and N rates are sacrificed in the process, there's a good chance yield will be hurt.

Phosphorous is the tip five focus: Biologicals that influence P availability need proper placement near the root. When P is released, there's a chance it could be bound back to soil. Putting the biological as close to the root system as possible helps increase the chance of uptake.

What about residue management products? It's the focus of tip six: Biologicals for residue management need time to work into the residues. University of Illinois work found that application of products on a cloudy day, or overnight with dew, gave microbes a better chance to absorb into residue or get into the soil. It's a little thing, but one that understanding could make the difference between a product working – or not.

Finally: Stress mitigating biostimulant applications need to be proactive, not reactive. Like tip one, tip seven also encourages planning ahead. According to Sible, the crop needs time to build defense to be able to tolerate stress when it does arrive, requiring sound agronomic knowledge and decision making to help biologicals work as effectively as possible.

Biologicals aren't likely to be a fix all – but they may be worth a small test to see if they can work for you. These tips can help you maximize the potential for a response to see if they really can be a larger part of your agronomic approach.

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A New Bull Resolution

As we enter another new year, it is the season for resolutions or promises for change in the fresh start of a new year. Another season of hopeful changes is coming soon, one of my favorites - spring bull buying season or arrival of new bull semen supplier catalogs in the mail. I enjoyed reading an article from Dr. Matt Spangler, UNL Professor and Beef Genetics Extension Specialist and have decided to share it today as we begin thinking about herd resolutions.

The question that all potential bull (and semen) buyers need to ask is, "What do I *need*?" The operative word is *need*, not to be confused with *want*. To objectively answer the question, producers need to know how their herd currently performs. This includes but is not limited to current rates of dystocia, pregnancy rates, age distribution of the cow herd, primary reason(s) for cows exiting the herd, weight of calves at the point of sale, post-weaning performance of calves, weight of mature cows and annual (variable) cow costs. Knowing the answers to the questions above helps identify the areas that require the most attention to improving profitability.

After a breeding objective has been formed and the answers to the questions above are in hand, bull selection can begin. The sometimes complex process of selecting bulls can be reduced to a few simple steps.

1. Choose vendors that sell the product you need and that you trust.
2. Choose bulls based on what is "under the hood". In other words, the goal of bull selection is to improve genetics so select bulls based on genetic potential using Expected Progeny Differences (EPDs).
3. Select for more than one trait given more than one trait impacts profitability. Utilize economic selection indexes to do so.
4. Value bulls (or semen) based on the potential to generate a return from the investment. In other words, if the "best" bull sells for more money than he could generate for your enterprise (based on genetic value and number of cows he would be exposed to, and cull value), then pass on him and buy a different bull that does have the potential for a positive return on investment.

Not everyone who raises cattle is profit-motivated, but for those who are, utilizing proven tools such as EPD and economic selection indexes seems logical. With that in mind, here are pitfalls to avoid.

1. Avoid over-emphasizing calving ease (direct). The emphasis on this trait should be in relation to the degree you experience dystocia problems now.
2. If you retain replacement females, keep an eye on mature cow weight EPD if available.
3. If you retain replacement females, do not ignore female fertility. Sustained cow fertility (stayability, functional longevity) EPD represents the ability to remain productive in a herd.
4. If you use economic selection indexes, use the ones that fit your breeding objective. Do not use terminal indexes if you intend to retain replacement females.
5. Know, or ask, what certain EPD/indexes mean and what breed average is. Do not buy a bull assuming he excels for a trait only to later discover that he ranks towards the bottom of the breed.

There are numerous articles on how to interpret and use genetic selection tools. For those wanting to learn more, I'd suggest visiting www.eBEEF.org and looking over the Sire Selection Manual.

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Watering in the Winter

When plants are dormant, it is easy to assume they do not need water to survive. While dormant plants may look dead, as they usually drop their leaves, they are still alive, just not actively growing. As with all creatures, being alive means water is essential.

One of the most important reasons that plants need water in the winter is for their roots. Dormant plants look as if nothing is happening, but their roots underground are still working on maintaining energy and resource stores for the spring. While they are not taking up nearly as much water as they do during the growing seasons, the freeze thaw cycles of our winters, and the dry winds that come with it, can draw water out of roots and soil.

Drought stress in early winter can prevent the plant from undergoing the physiological changes necessary to ensure it can withstand the cold, making it more prone to frost damage. Plants that lose too much water during the winter will have a harder time maintaining and accessing their stored resources and energy to leaf out in the spring. Plants that receive no moisture during the winter are much more likely to be stunted and small in the following growing season.

The risk of winter drought stress is higher in perennials that were planted in the last 2-3 years, as they lack a robust root system and have fewer stored resources. Evergreen trees, like eastern redcedars, are also at a higher risk of winter drought compared to trees that lose their leaves, as dry winds will draw moisture from their needles, exacerbating their drought stress.

To prevent damage to your perennials, you may need to water during the winter, especially if you are not receiving any precipitation. Watering deeply and slowly will allow moisture to reach more of the root systems compared to a light sprinkle. A deep watering once a month should be sufficient for your plants during dry winter weather. If you are unsure whether or not your perennials need water, homeowners can use a metal or wooden rod to push into soil. Dry soil is harder to push into than moist. The father down the rod goes, the more moisture in your soil. If the ground is frozen, this test will not work.

For tree and shrubs planted within the last year, drill a small hole in a five-gallon bucket near the bottom, then fill the bucket and let the water dribble out slowly next to the tree. Refill the bucket once so that you apply 10 gallons. Trees planted 2-3 years prior may require more water.

In terms of your older trees and shrubs, we recommend using a soaker hose. For large trees, place the soaker hose in a circle the trunk one-half the distance to the dripline, or the outermost reach of branches. On smaller trees, you may need to circle the tree several times so that only soil, which as tree roots, will be watered.

For newly established perennial garden bed or foundation plantings, you can hook the beginning and end of a soaker hose to a Y-adapter to equalize pressure, which encourages more uniform watering.

If you have a fall planted or overseeded lawn, an overhead sprinkler will be most effective. Watering to a depth of 12 inches is more difficult with a sprinkler but try to reach at least six inches deep.

Lastly, do not forget that mulching around your plants will help insulate their roots and retain soil moisture longer. If you have questions about keeping your plants hydrated during the winter, reach out to our office for more guidance.

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Teresa Hatfield
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Succeeding with Your New Year's Resolution in 2026

The start of a new year brings fresh opportunities—and for many, the tradition of making New Year's resolutions. Common goals include exercising more, eating healthier, losing weight, and reducing alcohol intake. While these intentions are admirable, research shows that only about 12% of people stick with their resolutions for the entire year.

So, how can you make this year different? Here are some strategies to help you succeed:

- **Start Small and Achievable -** If your goal is 150 minutes of exercise per week but you haven't exercised in years, begin with small steps. Instead of jumping into 30-minute walks, start with 10 minutes and gradually increase. Setting goals too high at the start can lead to frustration and quitting.
- **Write Down Your Goals -** Commit your goals to paper and sign your name. Make them **SMART**:
  - **Specific** – What exactly will you do?
  - **Measurable** – How will you track progress?
  - **Achievable** – Is it realistic?
  - **Relevant** – Does it align with your overall objective?
  - **Time-bound** – When will you accomplish it?

  For example:
  "I will walk for 10 minutes on Monday, Wednesday, Friday, and Saturday at noon this week for a total of 40 minutes. I will record my efforts on my calendar."
- **Track Your Progress -** Use a journal, app, or calendar to record your efforts. Seeing your progress over time is motivating and reinforces your commitment
- **Plan for Setbacks -** Life happens. If you miss a week of exercise or indulge in an unhealthy meal, don't let it derail your progress. Remind yourself that the healthier you are striving for is worth the effort. New habits take time to form. Setbacks are normal and expected—they're part of being human. If you slip up, don't give up. Simply start again.
- **Celebrate Success -** Reward yourself when you reach milestones. A new pair of walking shoes or cozy socks can boost morale and keep you motivated.
- **Upcoming Classes to Support Your Goals -** The Meadowlark Extension District is offering two programs to help you start strong:
- **Dining with Diabetes** – Begins in February in Holton. This four-class series includes learning, demonstrations, physical activity, and tasting healthy foods. The focus is on strategies to reduce the health risks of diabetes.
- **Walk with Ease** – Starts in Seneca in March. This six-week program helps participants, especially those with arthritis, begin and maintain a safe, effective walking routine.

For more information or to register, contact the Kansas State University Extension – Meadowlark District at 785-364-4125.

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No news article this week.