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District Extension Agent, Crops & Soils

### **Using Plant Life Cycle to Our Advantage**

There's a chart at the front end of the weed and brush control section of the *2024 KSU Chemical Weed Control Guide* that provides an overview of various mechanical and chemical control methods available for selected weed species. For example: it notes that Eastern red cedar is an evergreen perennial with control options including foliar *and* soil herbicide treatments as well as mechanical removal options.

Sometimes that information doesn't mean much, but sometimes it can help direct a control program, particularly when it comes to enhancing chemical control. In the instance of annual plants that complete their lifecycle in one growing season vs. perennials (same plant comes back every year) or biennials that take two years to complete their life cycle, sometimes the control approach can – and should – be different.

In the case of annual weeds (ragweed, cocklebur, cheat, etc....), herbicide efficacy is greatest when weeds are in their small seedling stage. We need to catch them early.

Biannual (thistle) plants spend the first growing season in a vegetative stage and produce reproductive structures in the second. By the time they reach that second year, they're difficult to control, so control efforts should be focused on the first growing season, or at the very latest the early vegetative stages of the second growing season.

Perennial plants are even more complicated, with best results achieved when chemical applications can be timed to coincide with translocation of carbohydrates to the roots. Doing so can aid herbicide movement to the roots for a more effective kill of the perennial root system. This timing can be a challenge. Optimal translocation most often occurs when plants have 'fully leafed out' or produced a significant vegetative growth. For perennial weeds, when they reach 10 to 20" of growth, herbicide applications are often effective at killing the perennial root systems. For summer brush species this stage is typically reached in late-May or mid-June depending on the plant species, spring weather, and region of Kansas. Many brush species are best controlled in June, however buckbrush is best controlled in early-May, while blackberry and multiflora rose are best controlled after late-May.

While we're often after multiple species when we do an application, a little understanding of life cycle can help enhance control, or better explain why a particular product didn't perform as well as hoped. There are lots of great resources to help. The aforementioned KSU Chemical Weed Control Guide (available online at <https://bookstore.ksre.ksu.edu/pubs/chemweedguide.pdf> or upon request in any District Office) is a good one. Numerous online and print resources are also excellent as well. Drop me a line if you are interested in some of those.

Ross Mosteller  
District Extension Agent, Livestock & Natural Resources

### Safe Livestock Handling

My Great Grandmother used to say “*even a deadheaded old work plug can try to kill you on the wrong day*”. Most producers today aren’t working with that tried and true, loyal team of horses, but Grandma was right in the fact that you always have to be on guard while working around livestock. A healthy combination of understanding of animal behavior, patience and good facilities can go a long way in safety with livestock handling.

People working with farm animals can underestimate the strength and power that livestock have, fail to use common sense or livestock sense and expose themselves to injury. Studies have shown that about 20 percent of reported farm injury accidents involve livestock and there are many injuries that go unreported. Injuries many times occur when an animal is frightened.

The attitude and approach of the human can have major influence on the behavior of the animal. If you are frustrated or scared, animals can sense it and will act in response to your behavior. There is as much an art to working with livestock as there is science. Producers need to be able to ‘read’ animals and understand their behavior patterns and flight zones. Otherwise you might find yourself in a situation that you can’t get out of and could get hurt. If you stay calm, quiet and patient, then the livestock usually will too.

Today’s domesticated livestock evolved as prey animals and perceive humans as predators. When someone makes quick movements or loud noises, livestock may perceive the signals as a predatory strike. The last thing that a good handler wants to do is unknowingly send threatening signals to the animals. Handlers who can’t control their own temper, may deal with livestock tempers too! Understanding that their actions are most often a reaction to your behavior is paramount. I’ll save discussion of dogs for another day, but consider all handlers/observers who are around livestock.

Maintaining facilities is an important factor in injury prevention. Just like a person needs to understand animal behavior, they also need to understand how to properly utilize the facilities and equipment. Good facilities should be laid out to take advantage of animal behavior and sensory patterns, have solid sides to minimize distractions and be regularly maintained. They should have non-slip floors and be free of anything that can hurt animals such as nails, protruding bolts or wire. Sometimes working facilities that are not operating properly, are ill-designed, or are not maintained can cause handlers to lose their patience, livestock to balk, or create loud noises that frighten the animals.

Facilities not designed to allow animals to turn around and not go forward, create stress on the animals and handlers. Animals tend to be afraid of shadows on the ground or areas that go from light to dark, such as working facility entrances. If livestock aren’t moving properly, paddles and flags can be used to guide them in the right direction. Electric prods can be used as a last resort, but need to be used appropriately at the rear of the animal and only for a moment, then released.

Adequate working facilities are an essential component in a livestock operation. A study at Oklahoma State University found many injuries that occur while working cattle go unreported or unnoticed, unless a trip to the emergency room is necessary. Elements such as light, visibility of humans or animal movement, noise, etc may affect the ease at which livestock move through the working facility. The underlining objective of the handling facility is to move animals through the chutes in a safe, efficient manner with minimum stress on the animal and the handler.

For more information about animal handling and working facilities, interested person can reference the K-State Publication [MF2656 Livestock Safety](#) or call their local county or district K-State Research and Extension office.

Laura Phillips  
District Extension Agent, Horticulture

### Spring Lawn Fertilization

As our lawns turn green and start growing, many people wonder when to fertilize their turf grass and what fertilizer to use. Properly timed fertilizers can go a long way in improving your lawn, but incorrectly applied fertilizer is a waste of money and can cause problems for your grass.

There are three main nutrients we add to our lawns: nitrogen, phosphorus, and potassium. Our turfgrass uses up nitrogen but does not add nitrogen back into the soil. While most Kansas turfgrass species can survive on relatively low amounts of nitrogen, they will benefit from a yearly addition of nitrogen. Grass will use phosphorus and potassium, but at much slower rates. You should only add phosphorus and potassium to your lawn when a soil test shows the levels are below optimal.

How much nitrogen you need in a year will depend on the type of grass you have and what quality of lawn you want. For example, zoysia grass needs around 2 pounds of nitrogen per 1,000 square feet for a high-quality lawn, whereas tall fescue will need between 3 and 4 pounds of nitrogen per 1,000 square feet. Usually, you apply only 1 pound per 1,000 square feet at a time. Too much nitrogen at once can cause chemical burn on your grass. A slow-release nitrogen fertilizer is much less likely to burn your lawn.

It is important to note that 1 pound of nitrogen does not equate to 1 pound of fertilizer. Fertilizer bags have a label with three numbers separated by dashes. This tells you what percent of that bag is nitrogen, phosphorus, and potassium respectively. So, a fertilizer with 24-4-6 contains 24% nitrogen, 4% phosphate, and 6% potassium. It would take 4.2 pounds of a 24-4-6 fertilizer to get 1 pound of nitrogen. The back of the package should have instructions on how much fertilizer to use, but you can also find online fertilizer calculators to help you determine application rates.

For nitrogen fertilizer to work, it needs to be properly timed. The rule of thumb is to fertilize when the grass is actively growing. For warm season grasses, like zoysia or Bermuda, can be fertilized anytime past May 15<sup>th</sup> and before August 15<sup>th</sup>. If you fertilize too early, you will mainly be helping the cool-season weeds take over. If you fertilize too late in the season, it will encourage new growth that will be susceptible to damage from colder fall temperatures.

For a cool-season lawn, the timing is nearly opposite. Cool-season lawns can benefit from up to three, spaced-out nitrogen applications. If you are going to do any fertilizing, the most important time to apply nitrogen for a cool-season lawn is in September. This will help promote a healthy root system and encourage a thicker stand of grass. You can fertilize again in November to help the grass build up food reserves for the winter.

You can fertilize a cool-season lawn a third time in Spring, but not until early May. When cool-season grass experiences its first flush of growth in the spring, adding nitrogen can cause it to grow too fast and exhaust its food reserves - which it will need to survive our hot summers. It is best to use a slow-release fertilizer for a May application to provide more controlled growth as summer approaches. If you have any questions on fertilizing your lawn, you can contact me for more guidance. You can also find K-State's publication "Fertilizing Lawns in Kansas" online for free.

Teresa Hatfield  
District Extension Agent, Family and Community Wellness

### **Foods that Boost Brain Power**

As we get older, we may notice that our memory is not as sharp as it used to be. We may start to attribute this to something scary like Alzheimer's disease. This may not necessarily be the case. Humans all have memory lapses no matter what our age. Have you ever walked into a room and can't remember what you came in there for? Or, if you are constantly misplacing your keys, it could be a bad habit and not related to memory loss. Many things affect our brain health, and good nutrition is one of them. What we eat plays a significant role in how well our brain functions.

Scientific studies from John Hopkins University School of Medicine and Harvard Medical School confirmed that people between the ages of 70 and 80 who performed in the top third of the population for this age group had a couple of things in common: They were more physically and mentally active. They were also more likely to contribute to their families and their communities. What we eat can help improve physical and mental activity. You need to feed your brain right to stay on top of things.

You may have heard of Antioxidants, but what do they do? Antioxidants help protect against free radicals, which are known to damage your body's cells. Antioxidants can help improve communication between the neurons in your brain and make the brain less vulnerable to amyloid plaque ( an abnormal cluster of dead or dying nerve cells). Foods rich in antioxidants include purple, blue, and red fruits, such as blueberries, strawberries, raspberries, cherries, red apples, and cranberries. Vegetables high in antioxidants include avocados, kale, spinach, Brussels sprouts, beets, broccoli, red bell peppers, and onions.

Try to avoid eating saturated fats and trans fats. Foods that are good for your heart are usually good for your brain as well. Reducing saturated fat and cholesterol can protect the arteries from atherosclerosis and may help to protect brain cells.

Omega-3 fatty acids are good for brain health and can help with cognitive function and memory. Omega-3 is in cold-water fatty fish such as salmon, trout, herring, sardines, mackerel, and light tuna. Eating these types twice weekly is an excellent way to get your Omega-3 fatty acids. Before taking an Omega-3 supplement, you should check with your healthcare provider.

B vitamins are also crucial for brain health; these include niacin and folic acid. Foods that provide B vitamins include lean meats, fish, legumes, nuts and seeds, dairy products, grains, and green leafy vegetables. Use whole grains, which are high in complex carbohydrates, for your grain intake. Whole-grain foods include quinoa, oats, brown rice, and whole wheat. B vitamins could help control inflammation and help with developing new healthy brain cells.

Feeding your brain right will give it the nutrients to keep you active and healthy. Check with your healthcare provider any time you are considering changing your diet. You may have a health condition that precludes you from eating all or some of these foods.

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

### **Improving Chicken Meat Quality**

Have you had a piece of chicken breast meat that was tough and chewy? This is a disorder called wooden breast syndrome that occurs in broiler chickens. The pectoral muscles, or breast meat, becomes tough and chewy. This syndrome can cause an economic toll on poultry producers.

When you look at a piece of chicken breast meat, you cannot see the problem. But, once the meat is cooked, the defect is noticeable. Researchers at the University of Delaware have possibly discovered the reason and a solution to reduce the problem.

In broilers, if they abnormally metabolize fat in the pectoral muscles, the syndrome develops. Ideally, the broilers should be metabolizing glucose instead of lipids. Therefore, the broiler has a higher number of free radicals that damage pectoral muscles. By testing their blood for the enzyme lipoprotein lipase, they can identify the problem early for better management.

This is a step forward in solving a difficult issue for poultry producers.