

Water Wise

A Newsletter Promoting Fall River Watershed Improvement Strategies
A Publication of the Kansas Alliance for Wetlands & Streams (KAWS) www.kaws.org

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Saving Money & Time

This fall has been a good one so far, other than a shortage of rainfall for most of the watershed. It would be nice to get a good soaking rain before we get into winter, ensuring good water supplies. Fall and winter can be challenging times in terms of water quality. Feeding areas that are concentrated close to watering points can deteriorate streambanks and contaminate stream waters with e-coli bacteria. Do some “planning ahead” to minimize that problem this winter.

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Reduce Losses When Feeding Hay

Large round bales are the forage packaging system most widely used by beef producers in Kansas. When feeding large round bales, significant forage waste can occur if certain details are ignored. Hay losses during feeding can be expected with any feeding system with the amount of losses varying with the particular system used. Factors that

contribute to waste include forage subjected to trampling, leaf shatter, chemical and physical deterioration as well as urine and fecal contamination. The extent of these losses depends upon the feeding method, interval between feedings, amounts fed at one time, weather conditions and number of animals being fed. When feeding large round bales, consider the following:

1. Feed hay in smaller amounts or in a feeder to minimize waste. When fed smaller quantities at feeding time, cattle have less opportunity to trample forage. If a multiple day feed supply is provided, consider the use of a rack or hay ring to minimize waste.
2. Feed your forage in well-drained areas. Rotate your feeding areas among well-drained sites on a regular basis. This is the best way to protect water quality, as well as avoid pasture scarring and also reduce the amount of wasted/residual forage. Dr. Alberto Broce at K-State has recently demonstrated that wasted forage helps create ideal breeding areas for horn flies. So attention to this rather tedious management practice may pay off by reducing the number of flies the following summer. No matter what the hay package or feeding style you use, some hay will be lost or wasted.

Attention to proper feeding management will reduce these losses. When the weather is cooperative is a good time to rotate or move the feeding sites frequently. Snow or mud will limit your ability to feed at the back side of the pasture, so use the back side when conditions allow, usually, earlier in the feeding season.

Ionophore feeding will improve feed efficiency by 8 to 10%. Research has repeatedly shown ionophores to be economically beneficial- as long as cows are maintaining weight, either by body condition or fetal growth. Rumensin is the only ionophore cleared to feed to cows.

The Value of Crop Residue

As harvest season winds down, we should take a look at our fields and realize the value of the crop residue that is there. Residue plays an important role in making crop production successful. The most important function of plant residue is controlling soil erosion. Erosion is the source of sedimentation in lakes downstream in the watershed. Researchers around the world have shown that keeping the soil surface covered with residue or growing plants greatly reduces the severity of water erosion. Unprotected soils, or bare soils, have had measured annual soil losses of more than 30 tons per acre. No-till soil systems which maintain crop residues in place, can reduce annual soil losses to less than one ton per acre.

Water erosion starts with the impact of the first raindrop. If a raindrop can be intercepted by plant leaves or residues such as corn or sorghum stalks, the kinetic energy of the rain is expelled there. This prevents

that energy from reaching the soil surface and beginning erosion.

Similarly, residue can prevent wind erosion by slowing the air speed at the soil surface, reducing the energy level of the wind and keeping it from picking up dust particles.

Additional benefits of plant residue on a soil surface include less soil crusting, improved water infiltration and less evaporative loss.

Wind and Water

This is the time of year when we especially appreciate the benefits of a windbreak. Cattle also benefit from some form of windbreak shelter, whether it be a planted, designed windbreak, or a natural wooded area, or even a steep slope. Protection from wind can significantly improve animal performance and feed efficiency. Healthy cattle perform best when the temperature is between 23 and 77 degrees Fahrenheit. A wet hair coat will compound the negative affects of wind. However, if we consistently feed near windbreak shelters, there can be an excessive build-up of mud, manure and wasted feed.

Mud can actually be a greater detriment to production and feed efficiency than winds. Water quality concerns arise if these areas are located near streams, ponds, wells or natural waterways. Often times our naturally wooded areas are alongside streams. Feeding in areas used for shelter should be minimized – especially when located near water resources.

If an area does get “overused” during the winter, take the time in late winter to clean the area by removing or scattering manure and waste feed. Not only is it a source of

fecal coliform, nitrate, phosphorus and other contaminants, but it is also a breeding ground for stable flies.

Don't Guess, Soil Test

One of the major concerns of water quality is a high load of nutrients. Nutrients can come from several sources, but commercial fertilizer is one of the main culprits. Fertilizer that moves with run-off rain water into streams, ponds or lakes causes excessive algae and other water-weed growth. Plant growth in water is a case where some is good, but too much is a major problem.

Water quality experts refer to streamside buffer strips which absorb and filter most of the fertilizer nutrients that can leave a crop field during times of excess rain. But reducing the amount of nutrients that go into a stream begins with proper, economical fertilizer applications. Proper fertilizer application is not only important to crop fields, but also the lawns of Greenwood County communities. In fact, the average in-town homeowner lawn receives higher levels of fertilizer nutrients per acre than the average Greenwood County crop field. Greenwood County soils have a slow permeability rate. They simply don't take water very fast. A good, hard rain means that water is going to run off. A rain on a recently fertilized lawn can move nutrients into the storm drains, and right straight to the river. It's something to think about, and something that can be managed to reduce the problem.

A soil test will tell you the amount of nutrients that are in your soil currently, and from the test, recommendations are made as to the amount of each nutrient that should be

applied. This simple test, and adhering to the recommendations, will prevent the over-application of fertilizer, whether on a grain sorghum field or a fescue lawn.

A soil test begins with a soil sample. The sample should be collected from several locations in the lawn or field. The use of a soil probe is recommended, especially for lawns. The samples should be taken to about a four inch depth, combined together and brought to the County Extension Office in the courthouse. The actual test will be done at Kansas State University, with the recommendations made right here in our office. The test will cost about eight dollars, and you could easily save that much in fertilizer expense – and be doing something “water-wise” as well. Don't guess, soil test, and apply the correct amount of fertilizer for your lawn, your crop, and our water.

What are Conservation Buffers?

Conservation buffers are narrow strips of land maintained in permanent vegetation, designed to intercept pollutants, reduce erosion, and provide other environmental benefits, including increase wildlife habitat. In 1997, the U.S. Department of Agriculture launched the National Conservation Buffer Initiative to encourage the use of conservation buffers by agricultural producers and other landowners. The theme of the initiative is “Buffers: Common-sense Conservation”.

Producers and conservation planners can work together to develop a conservation farming system that meets producer objectives while providing environmental benefits. By providing incentives and cost-share, the National Conservation Buffer Initiative encourages landowners to

understand the economic and environmental benefits of buffer strips and implement these practices through various USDA conservation programs.

Benefits of Buffers

Conservation buffers enhance water quality and aquatic habitat quality by slowing velocity of nutrient laden water running off of agricultural fields. This results in sediment, bacteria, nutrients, plant material, and pesticides dropping out and being captured by filtering effects of buffer vegetation. By reducing sediment inputs, buffers improve light penetration and productivity of aquatic systems.

Buffers that include both trees and grass offer the greatest multiple environmental benefits, however, substantial gains in water quality can be accomplished with grass filter strips. Research has shown that grass filter strips can reduce herbicide runoff by up to 75%. The benefits in herbicide retention increase with strip width. Grass strips as wide as 12 feet can reduce the amount of herbicide leaving fields by 66-95%. Different grass species used in filter strips vary in their herbicide retention, but all grass species reduced herbicide runoff by more than two-thirds in comparison to no filter strip. Thus, species selection can be based on producer needs and objectives.

Conservation buffers are indeed common-sense conservation. The group of buffer practices available and the numerous USDA programs through which they can be implemented provide landowners and producers with tremendous flexibility and incentive to develop a conservation cropping system that meets production objectives, improves environmental quality, enhances

wildlife habitat, and helps farmers be good stewards of our natural resources.

Conservation buffers can be implemented through several programs including the continuous Conservation Reserve Program, the Environmental Quality Incentives Program, Wildlife Habitat Incentives Program, Wetlands Reserve Program, and Emergency Watershed Protection Program.

For more information on these and other programs, contact **Bernie Obermeyer at the Greenwood County Conservation District; phone 620-583-6461.**

Place Round Bale Feeders to Avoid Fecal Bacteria Concentrations

A study conducted by Kansas State University researchers reported valuable information about fecal bacteria concentrations around big bale feeders. The study's results will help producers maintain their herds' health and performance, as well as protect nearby rivers, streams and ponds.

The seven-month study indicates that after 60 days, fecal bacteria tend to concentrate in a 10-foot area around stationary round bale feeders. That's good news because it means that the buildup of fecal bacteria is confined to an area small enough to make cleanup practical for producers.

This study shows that bacteria buildup around hay feeders is not a permanent problem. During winter feeding, bacteria is found within 100 feet of the feeder. But over time, 60 days after we quit feeding cows, the concentration of bacteria goes way down.

Where fecal bacteria is found, there often are other bacteria that cause disease. That's

not just a health risk to cattle, but also a risk to the nearby environment, especially to rivers or streams that may border pastures.

But two months after removing cattle from feeding areas, researchers could not culture any fecal bacteria at 100 feet from the feeder and three months after feeding, bacteria could not be found at 40 feet. The bacteria die over time.

The often muddy, 10-foot circle around the feeder is where fecal bacteria survive well after three months.

The important thing about these findings is that there was no increase in the levels further away from the feeder. It leads us to believe that runoff is not a significant contributor to bacteria at winter feeding sites.

The findings indicate that producers should move feeders throughout a field, if possible. Moving the feeder means bacteria doesn't form in large concentrations, and most of the bacteria die within 60 days.

If feeders can't be moved, producers still can focus cleanup and disposal efforts to the 10-foot circle around the feeder.

These findings are encouraging because we now know how simple it may be to move the potential threat of fecal bacteria concentrations away from the streams and tributaries in Greenwood County. Take time to consider where the safest place may be for your big round bale feeders, feed bunks, or where you'll unroll the next bale. Stay at least 100 feet not only from the creek, but also from the draw that runs into the creek.

An Extra Ounce of Grass

An ounce of grass is roughly the amount a cow can wrap its tongue around in a single bite. If you could improve range condition by just ONE ounce of grass per square yard, you could add 302.5 pounds of forage to each acre of rangeland. That is at least a third of an AUM. You gain that extra ounce by cutting a tree in the pasture, improving grazing distribution and preventing erosion of valuable topsoil. That extra ounce of grass translates to extra ounces of dollars in your pocket. How can you grow an extra ounce of grass next year?

Should You Care About Water Quality?

City and state agencies have done an excellent job of providing safe drinking water. They have developed a number of treatment and monitoring systems to guarantee the safety of our drinking water supply. But these systems aren't free. Since about 1990, Kansas cities have spent over \$550 million on water pollution control systems. The cleaner the natural water, the cheaper it is to treat it to allow for human consumption. When you help reduce water pollution, you're helping direct our tax dollars toward other community projects, rather than allocating it to water treatment.

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