Make Plans Now for Fall and Winter Pastures

Dr. John Jennings, Professor

’Tis the season to start planning for fall and winter pastures. Really? Even though this is the middle of summer hay harvest, hay feeding season will arrive before you know it. Economically, the later hay feeding season begins, the better. Hay production costs are around $25 per bale (4x5 round bale). So when you are harvesting hay, make sure the forage quality of the hay is worthy of that expense. Every day of hay feeding costs about $1.20 to $1.50 per cow. Grazing stockpiled forage during fall and winter is much less expensive.

Arkansas producers using stockpiled forages saved an average of $20/animal unit compared to feeding hay in demonstrations including over 100 farms. Bermudagrass and bahiagrass can be stockpiled for grazing from October into December, and fescue can be stockpiled for grazing from December through February. Forage quality of stockpiled bermudagrass pasture can be 15 to 20 percent crude protein in October and November, even after frost. Stockpiled fescue can be over 20 percent crude protein in December.

At this point, you might be thinking, “This is summer, so why worry about fall and winter pastures now?” Well, the simple answer is that pasture plans need to be made the season before that grass will be growing, or maybe earlier. Plans need to be made by August 1 to get the pastures in the right condition and practices in place to help ensure good fall forage growth.

The steps for growing a good stockpiled pasture are simple but important. For stockpiling bermudagrass or bahiagrass, clip or graze the pasture to a 2- to 3-inch height in early August and then apply 50 to 60 pounds N per acre. Let the forage grow until mid- or late October before grazing. Waiting until September to apply fertilizer can reduce potential forage yield by 60 to 80 percent, so don’t delay fertilizer application.

For stockpiling fescue, clip or graze the pasture to a 3- to 4-inch height by September 1 and apply 50 to 60 pounds N per acre in early September. Let the forage grow until December before grazing. Waiting until October to fertilize for stockpiled fescue can dramatically reduce yield potential. In one trial, October-fertilized fescue produced the same yield as the unfertilized check treatment. Typical stockpiled forage yields average about 2,000 pounds dry matter per acre but ranges from 1,200 pounds to over 6,000 pounds and varies by the amount of rainfall.

Brushhogging pastures intended for stockpiling is okay if the grass is mowed short enough. Typically, the stubble after brushhogging is left 6 to 8 inches tall, and much of the old summer forage residue is left standing. New stockpiled growth comes up around this old stubble, but in many demonstrations, cattle refused the stockpiled forage below the top of the old forage. So if you brushhog a pasture to 6 inches, the cattle won’t graze closer than 6 inches when you turn them into the stockpiled pasture.

Fertilizer is key to making stockpiling work for two reasons. The primary reason is for forage yield. Unfertilized fields seldom produce good fall yield. The secondary reason is forage quality. We conducted a demonstration at the Livestock and Forestry Branch station at Batesville to compare fertilized vs. unfertilized stockpiled forage. One fescue field had abundant summer growth and was left as is. Another
fescue field was grazed off in late August then fertilized in September to encourage high-quality fall forage growth. In January, forage tests revealed that the unfertilized fescue was 7.9 percent CP and 56 percent TDN, while the fertilized fescue was 11 percent CP and 66 percent TDN. The lower-quality field would have been adequate for dry mature cows but not for the fall-calving cows we had in the demonstration project.

Applying fertilizer in hot weather is not as risky as many people believe. Ammonium nitrate fertilizer does not volatilize, so there are no losses when applied under most conditions of late summer. Urea fertilizer can volatilize when surface applied to summer pasture, but the total N loss is much less than you might expect. Many studies show virtually no difference between N sources for bermudagrass yield when the fertilizer was applied within a few days before rainfall. Even when losses are measured, the total yield difference is often less than 20% compared to ammonium nitrate.

So while you are sweating in the hay field this summer, think about how you can graze stockpiled pasture in the winter and feed less hay. If you need less hay, you can bale it earlier so it will be higher quality and cows will not need supplemental feed.

Use of Solar Energy: What Are Possibilities for Your Farm?

Dr. Dirk Philipp, Assistant Professor

For thousands of years, farmers have used solar energy to produce food. It turns out that solar energy can be put to work for other purposes as well, for example, generating electricity and supplying hot water for farm and home.

Generating electricity via photovoltaic panels and heating water with specially built components are probably the most feasible uses of solar power available to farmers today. Let’s first have a look at how water heating systems work. These systems commonly include storage tanks and solar collectors. The actual sun or heat collectors are weatherproof boxes in which water or other circulating liquids are heated via solar absorber plates.

Water heating systems are considered either active or passive; an active system consists of circulating pumps and controls, while passive systems don’t have these components. Active water heating systems can be again divided into direct or indirect circulation systems. Direct systems circulate tap water through heat collectors; these are suited for climates with rare freezes. For colder climates, engineers developed the indirect system which circulates a non-freezing transfer fluid through a heat exchanger.

Passive systems are not as efficient as active ones, but passive systems are usually less expensive, more reliable and may last longer due to their simpler construction. These systems come in two basic configurations called integral collector-storage passive systems and thermosiphon systems. Integrated collector-storage designs work well for households with large daytime hot water needs but are not well suited for areas with prolonged cold freezes. In thermosiphon systems, the sun collectors are installed below the storage tank and are placed on or beneath the roof to protect it from freezing.

Besides heating water, generating electricity is another good opportunity to take advantage of solar power. The Arkansas Energy Office provides rebates for small-scale photovoltaic systems placed exclusively on residential rooftops that might be of special interest for people living in remote areas. However, photovoltaic solar power can be used for farm applications as well, most importantly to pump water for providing cattle with water from streams, ponds or wells.

A solar-powered water pumping system is made up of two components, the photovoltaic panel and a direct current (DC) pump. The panels are made of solar cells; the smallest units consist of semiconductor material that produces DC electricity. From there, the current is directly supplied to the pump or stored in batteries. The amount of current depends on sunlight intensity, but voltage generated depends on the specifications of the panels, which can be wired together either in parallel or series to achieve the desired voltage or current outputs. The water pumps are specifically designed to use the relatively low power provided by solar panels. Therefore, pumps for livestock applications are low-volume with yields of about 2 to 4 gallons of water per minute. Low pumping volumes keep system costs down by efficiently using available daylight periods to charge batteries. Positive displacement pumps are used often where water has to be lifted, while centrifugal pumps are used for higher-volume systems that do not require extended lifts.

When setting up a configuration, producers have the choice between battery- and direct-coupled pumping systems. As the terms indicate, the latter don’t require batteries, but this configuration has to be sized carefully. Holding tanks used with this system need to store extra water to offset increased pumping during sunny days. Several days of storage may be required, but smaller watering tanks can be fed by a larger storage tank. However, evaporation losses can occur and water may freeze in tanks.

A solar-powered watering system is not cheap, but costs depend on many factors including system configuration, cattle water requirements, pump design and pumping elevation, among others. If you plan to either heat water or generate electricity with solar power on your property, do as much research and information gathering as possible, compare prices and reputation of supplier companies or manufacturers and contact your local extension office for further help.
Anaplasmosis
Dr. Tom Troxel, Professor

Anaplasmosis is an infectious disease in cattle that infects red blood cells. It is transmitted from animal to animal by biting flies (horseflies, stable flies), ticks and contaminated needles or surgical instruments (dehorners, castration instruments, tattoo instruments).

This disease is typically age related. Calves less than one year of age usually show no symptoms of this disease and are considered mild. Cattle 12 to 24 months of age can show acute signs of the disease, but it is rarely fatal. However, animals two years and older will show acute signs of the disease, and mortality rates may be as great as 50 percent if animals are left untreated. Some cattle that do survive without treatment may become carrier animals for this disease. They will serve as a reservoir and be an underlying source of infection for other susceptible cattle in the herd. Animals in the carrier phase usually show no clinical signs and rarely become ill a second time with the disease.

Outbreaks generally occur in late summer and early fall. The incubation period is from 21 to 45 days, with an average length of 30 days. Once the red blood cells initially become infected, the organism replicates itself in order to infect more red blood cells. During this period, the infected animal shows little or no signs of illness. At some point, the infected animal’s immune system begins to respond and attempts to attack the invader. When this occurs, the immune system destroys the pathogen but also destroys the infected red blood cells. As a result, the signs of clinical anemia will appear.

Early clinical signs include a rectal temperature of 104°F to 107°F, a decrease in appetite, pale mucous membranes, lethargy, a decrease in milk production and weakness. As the disease progresses, other signs may be noted such as weight loss, yellowed mucous membranes, constipation, excitation, abortion and death. Death is due to a large number of red blood cells being lost. This inhibits the animal’s ability to provide adequate oxygen to the tissues, and death occurs due to anoxia (suffocation).

Diagnosis

Diagnosis for anaplasmosis can be made from consistent clinical signs as well as blood staining techniques. When blood from an infected animal is stained and viewed under the microscope, one can often find the parasite in the red blood cells. However, blood from a carrier animal will usually not have a high enough concentration of the parasite to make staining a good identification technique.

Treatment

Tetracyclines are the favored antibiotic treatment for outbreaks of anaplasmosis in cattle. Antibiotic protocols include oxytetracycline (100 mg/ml) given at 11 mg/kg of body weight daily for 5 days, or long-acting oxytetracycline (200 mg/ml) dosed at 20 mg/kg of body weight every 3 days for two treatments.

It is important to consider the amount of stress placed on an animal with anaplasmosis. Because of their reduced ability for sufficient oxygenation, when treatment is administered, try to keep handling, transport and stress to a minimum. Over-handling may result in death. Carrier animals can be treated with long-acting oxytetracycline (200 mg/ml) given at 20 mg/kg of body weight every 3 days for four successive treatments. If there are any questions about anaplasmosis treatment, contact your veterinarian.

Prevention

Prevention can incorporate many factors. Insect control can be difficult, but pesticide applications to the herd may limit the number of potential vectors. Feeding chlortetracycline year round or during the vector season in medicated feed, mineral mix or feed blocks can also be effective in preventing outbreaks.

It also is important to be mindful of contaminated needles or instruments. When performing herd work, change needles often (every 10 to 12 head), and keep castration knives, dehorners or tattoo instruments in disinfectant between uses. Vaccines are also available on the market to help with the control and prevention of this disease.

Proper Summer Care for Youth Livestock Projects: Water
Steven M. Jones, Associate Professor

As summer begins with its many activities such as camps, vacations and summer sports leagues, we find ourselves quite busy. As the temperatures continue to rise, water becomes very critical for all our animals and pets. Water for 4-H project animals is extremely important. If they are unable to get a good cool drink during certain periods on hot days, they will not grow to their potential. The result will be underweight animals at show time. Periodically, we all need to look at our own situation and evaluate the need for change in the way we care for our projects.

If you are watering in a trough, pigs often will lie in the trough to cool off and will splash most of the water out. Other times they may play with the water trough and tip it over and spill it. The best solution for this is to have a water trough that pigs cannot lie in or tip over. These can be made from one half of a barrel by putting a wide-based leg system under it so it is difficult to turn over. Place rods across the top so pigs cannot get in the trough but are still able to get their snouts in to drink. A trough made in this manner and placed in an area that will be shady all day keeps clean, relatively cool water available at all times.
Quite often we use nipple waterers to water pigs. It is imperative to check the water flow to make sure water is flowing at the proper rate. Nipple waterers can be used with large diameter PVC pipe as a reservoir to be filled once or twice a day. In this situation, gravity may not provide enough pressure for adequate flow of water. You can correct this problem by opening the back of the nipple and drilling a small hole in the plastic control to allow for more water flow.

Other water problems often occur in open stock tanks for sheep, goats or cattle. Too often we forget to look at the water where you only need to water once every few days. Try to use a small water tank and add fresh water every day. Also, remember to clean the tank frequently to prevent growth of algae and bacteria, which may be hazardous to your animals. Keep the area around the tank dry and easily accessible to the livestock. Location of the stock tank is very important. Tanks that are exposed to sunlight will heat the water to a temperature that reduces or stops water consumption by the animals. Stock tanks should always be placed in the shade. Look around at your pens and see that your animals have easy access to clean fresh water 24 hours a day.

Water is a basic nutrient to provide proper digestion, basal metabolism and cooling during the summer. Related to water and cooling is proper protection from the elements. Your animals need to be able to get out of the sun and get somewhere cool and shady. Good ventilation is needed for prevention of respiratory diseases as well as for cooling. Many times your pen prevents them from finding that nice comfortable, shady and ventilated spot, so you may need to build a shelter that provides those elements.

The next time you go to your pen to feed and water your animals, take a few minutes to look around and see if you may be overlooking something that might be detrimental to your animal’s welfare. Think about living in your animal’s pen and any situation that may present problems for your animal. As your animal’s caretaker, it is your responsibility to provide the best care possible.

**Getting the Word Out**

Dr. Brett Barham, Associate Professor

The MBA program is a six-course online “degree” that will educate producers on the issues we face and how to handle them. It will also train producers on how to “get the word out” on all the things we do right.

I would also encourage all producers to study the opposition to beef production. Go visit some web sites and see the ideas that organizations such as the Humane Society of the United States (HSUS) have about modern beef production. For people on FaceBook or Twitter, there are excellent places to plug into to learn what people think of our industry and provide some input on your experiences. Some good FaceBook pages include HumaneWatch (www.facebook.com/humanewatch) and AgChat (www.facebook.com/agchat). You may also find some in-state FaceBook pages helpful, such as our 300-Day Grazing page (www.facebook.com/300daysofgrazing), Arkansas Farm Bureau (www.facebook.com/arkansasfarmbureau) and the Arkansas Beef Council. Twitter users can plug into various chats, such as #agchat, #meatcamp or #steak, or follow topics like #bigag or #factoryfarms to watch and see what others are talking about. Social media is becoming a very powerful tool; just ask YellowTail wines and Pilot Travel Centers. Once it was revealed that both YellowTail and Pilot Travel Centers were donating money to the HSUS, FaceBook and Twitter were lit up with producers explaining to the business that HSUS is against animal agriculture and that they would not support their company until they stopped supporting HSUS. It did not take long for the point to be made.

It is important to know that agriculture has not always been proactive in addressing challenges from critics, but in the age of the internet, it is very important that people tell (and show) what you do to produce beef. Consumers want to trust their food and are very willing to trust farmers and ranchers, but we have to show them that the footage of the cow being pushed by the forklift is not how the majority of beef cattle are treated. If all the consumers see is one side, they assume it must be correct and take it as fact. Don’t be afraid to sign up for the MBA program and learn the effective way to tell your story. If you don’t feel comfortable speaking out, that’s fine. Just work on producing beef in a way that you would not be ashamed if someone was videotaping you while working cows, because someone might be!