Arkansas 4-H Members Place Well in Mid-America Grassland Evaluation Contest

Dr. John Jennings, Professor

Evaluating a grazing system, wildlife habitat, soils, and identifying plants are some of the things that Arkansas 4-H members had to learn to compete in the 14th annual Mid-America Grassland Evaluation Contest held June 5 in Springfield, Mo. Arkansas 4-H teams from Cleburne, Fulton, Randolph, Madison and Van Buren counties competed in a field of 25 teams from Missouri, West Virginia, Ohio and Indiana. To qualify for the Mid-America Grassland Contest, each team had to place in the top five of the Arkansas Grassland Evaluation Contest. The students have to complete four sections in the contest including grassland condition, wildlife, soils and plant ID.

For the grassland condition section, the students must assess current grazing conditions in the field, determine fertilizer and weed control recommendations, calculate how much forage is needed in spring, summer, fall and winter for an example herd and make recommendations for improvement – all in 25 minutes.

For the wildlife section, students must evaluate the field habitat value for quail and rabbits, make recommendations to improve the habitat and answer 20 questions on wildlife management.

In the soils section, students must locate the contest site on a soil map, determine the correct soil, answer questions evaluating the soil, guess the slope of the field and determine suitability of 10 forages for that site.

In the plant ID section, the students must correctly identify 25 pasture plants from a list of 75 possible species. An extra twist is to receive points for a correct plant ID, each plant’s life cycle has to be answered correctly as well.

At first glance, the contest appears overwhelming, but after some study, students and agents learn the flow and logic to the material. Many county agents and vo-ag teachers from several states have commented that it is probably the most real-life contest available.

Arkansas 4-H teams competed very well in the 2013 Mid-America Grassland Evaluation Contest, taking second, third, fourth and fifth place individual honors and second and third place teams in the 4-H Division.

Cleburne County took second place team and was coached by Cleburne County staff chair Michelle Mobley. Mobley’s teams have won the Arkansas contest and placed second in the Mid-America contest each of the past three years. Team members were Matthew Hipp, Aaron Wilson, Rachel Wilson and Isaac Feil. Aaron Wilson and Matthew Hipp tied for fourth place individual. It took two tie-breakers, according to contest protocol, to separate the tie, with Wilson taking fourth and Hipp taking fifth place.

Fulton County took third place team and was coached by county agriculture agent Brad Runsick. This was Runsick’s third year to qualify a team for the Mid-America contest. Team members included Perri Huett, Leah Wasson and Luke Huett. Perri Huett took second high individual and Leah Wasson followed closely, taking third high individual.

The Randolph County team was coached by Randolph County staff chair Mike Andrews. Andrews has...
Anaplasmosis is an infectious disease in cattle that infects red blood cells. It is transmitted from animal to animal by biting flies (horsefly, stable fly), 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 that are 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, excitement, 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).

Prevention

Prevention of this disease can incorporate many factors. Insect control can be difficult, but pesticide applications to the herd may limit the number of potential vectors. Feeding chlor-tetracycline at the rate of 0.5 mg per pound of cow body weight during the vector season will help prevent transmission of anaplasmosis. CTC may be included in medicated feed, mineral mix or feed blocks.

It also is important to be mindful of contaminated needles or instruments. When performing herd work, change needles often, and keep castration knives, dehorners or tattoo instruments in disinfectant between uses. Vaccines are also available to help with the control and prevention of anaplasmosis. Contact your veterinarian for additional prevention or treatment protocols.

Management of Old World Bluestems

Producers have increasingly asked questions about a group of grasses that is collectively known as old world bluestems. These warm-season perennial forage grasses have been introduced to the U.S. from Europe and Asia during the past century. Most of the selections and variety improvements were done in Oklahoma during the past 40 years, predominantly at the USDA-ARS station in Woodward; therefore, many varieties carry the prefix ‘WW.’ In the Great Plains, old world bluestems have been used successfully based on their good nutritive value and growth on eroded crop and pasture land. Although primarily adapted to the southern Great Plains, old world bluestems, such as Caucasian bluestem, are popular in some eastern states as well. Producers in Arkansas are interested in receiving information related to these grasses too, partly in the hope of having a forage species that might be able to cope with future droughts.

Old world bluestems were selected for persistence under grazing and for nutritive value and palatability. Some of the common cultivars are ‘Plains,’ ‘WW-Spar,’ ‘Granada’ and ‘WW-Iron Master.’ ‘Caucasian’ has been grown successfully too but may be difficult to control in other crops. ‘WW-B. Dahl’ is a cultivar that has been used widely in Texas, but little data so far is available regarding the suitability for Arkansas beef farms, although some farmers have started to experiment with it. All of these cultivars are relatively drought and cold tolerant. Caucasian has been consistently shown to be the most productive one in tests conducted in Booneville, Ark.,
followed by Plains and WW-Spar. At the Fayetteville, Ark. location, Plains yielded more than Caucasian and Iron Master. Yields across four years ranged from 5-7 tons/acre for these species.

Old world bluestems respond readily to N fertilizer. Studies have shown that 20-50 lbs of additional forage/acre will be produced for each pound of actual nitrogen added. Researchers from Oklahoma indicated that a single application of 60 lbs N/acre in April is more effective than a split application of the same amount. Average crude protein concentrations can be increased by 2 to 5 percentage points with N fertilization. Nitrogen should not be applied in early fall as this may lead to increased winter kill due to excessive growth prior to a sudden killing frost. Higher rates of nitrogen (90-120 lbs per acre) are possible under irrigation. Research conducted at Texas Tech University (Philipp et al., 2007) showed that irrigation of old world bluestems is most effective during spring, and high irrigation rates during fall do not necessarily lead to increased biomass production.

Most of the forage production of old world bluestems occurs by June and July. In addition, these grasses are more responsive to late-summer precipitation than native grasses, so substantial regrowth can be expected later in the season if precipitation is sufficient. A limited number of hay studies indicated that 10 to 16 percent crude protein (dry matter-based) can be achieved. Caucasian, WW-Spar and Plains bluestems have produced 3-4 tons of hay/acre with an in-vitro dry matter digestibility between 57 and 60 percent. For WW-Spar, gains of 1.4 lbs/day were achieved on hay. Reported stocker gains ranged between 0.5 in winter and 1.7 lbs/head/day during summer. Stocker gains can be higher (>2 lbs/day) in June when nutritive value is highest, but gains will be reduced towards the end of the season. Animals have to be supplemented with protein during the winter months, however.

Studies from Oklahoma reported stocking rates of about 1 steer/acre in eastern Oklahoma. Grazing should begin once the canopy reaches 12-18 inches; a stubble height 3-4 inches should remain after animals have been removed. When using the rotational stocking method, cycles of four to six weeks should be maintained. Longer intervals will likely result in increased maturity and thus decreased quality of the standing forage. Although old world bluestems have been widely used on CRP land, these grasses have relatively little value as food and cover for wildlife species. When left ungrazed, however, old world bluestems can provide escape cover for small game and bird species.

Managing Cattle with Reduced Stress
Bryan Kutz, Instructor

Stress is a big factor contributing to beef product merit and many diseases which affect cattle. The stress related to extreme weather conditions must often cannot be avoided. However, the process by which we handle cattle, either when processing, vaccinating or even clipping cattle in preparation for show, can cause undue stress which can lead to illness and decreased meat quality. Therefore, proper handling, shelter and transportation are very important to the safety and welfare of beef production. Facility design, preparation and the right attitude are big steps towards proper cattle handling.

Facility Design

A good facility has been described as being horse high, bull strong and hog tight. You need to keep this in mind as you begin plans and material preparation for constructing or modifying working facilities.

The facility needs to be designed so that cattle can be easily driven into it. Design alleys and working pens so animals can be sorted easily before and after they are processed. The corral chutes with rubber or plastic stoppers. Barking dogs or screaming humans will excite and stress animals and simply need to be controlled. Maintain the facility; make sure hinges, latches and other mechanisms are in good repair and properly lubricated.

Working Environment

When everyone does their job efficiently in a calm, controlled manner, the task will be completed in a satisfactory time frame. Working with a good attitude positively affects other workers and can be transferred to the cattle being processed. And remember that livestock are herd animals. Understanding the importance of lead animals can help cattle flow in crowding alleys more efficiently.

As you move into the flight zone of an animal, it will move away from you. If a handler moves too deeply into the animal’s flight zone, it will either bolt and run away or turn back and run past the person. Working in proper position will minimize the stress on the animal and injury to the handler.
Isolated animals will often panic and become very difficult to control. If an animal gets isolated from the group and is out of control, move some quiet animals in with it and give them some time to settle down. All too often, handlers will shock or prod the animal in the back of the crowding alley and wonder why the animal in the front does not move forward. When facilities are well designed and handling techniques are based on an understanding of animal behavior, it is not necessary to stress or bruise the animals as they move through the working facilities. Use a flag on the end of a prod to sort cattle. This technique is more effective and less stressful.

Many handlers make the mistake of packing too many animals in a crowding pen at a time. As a result, the animals are not able to turn to line up and move forward. Work the animals in smaller groups of six to eight to allow for more room. This will also help alleviate stress during processing.

Avoid working cattle in stressful weather. On hot days, early morning hours are best. Cattle can also be stressed by cold spells, particularly when they have a wet hair coat.

Working cattle in dusty conditions is an invitation to respiratory illness. Sudden changes in the ration or keeping cattle off of feed for extended periods may need to have a conversation with the handler. A feed that is consistent with the nutritional needs of the animal is important in order to maintain feed consumption and performance. Also, make sure that a set daily feeding schedule is maintained and make any changes to the diet gradually over several days to avoid digestive problems. Be sure to monitor average daily gain and adjust the diet as necessary to meet the desired ending weight and fat cover for market animals.

Successful Youth Livestock Projects Is in the Details

Steven M. Jones, Associate Professor

There are no magic feeds or rations that make champions. It is the total feeding program, including the feeding schedule, the exercise program and the careful observation during the growing and finishing stages, that makes a champion. The five basic nutrients are water, protein, carbohydrates and fats (energy), minerals and vitamins. The amount of work that is put into a project is a direct reflection of the success. Daily care is just as important as nutrition, selection and health. Paying attention to the details is vital.

Nutritional deficiencies often lead to failure with the project. Common mistakes include choosing the wrong ration, changing rations too often, not feeding the correct amount and getting the ration out of balance by changing ingredients or adding supplements. A feed that is consistent from bag to bag and fresh is very important. It is critical for short-term projects such as market swine and sheep. Every time you change feeds, the digestive system of the animal has to adjust, which can lead to lost gain or digestive upsets. A feed, whether mixed or commercial, should be selected before the project is purchased. Do your homework to know that the product will be available when you need it (supply). You may need to have a conversation with the future buyer.

Conclusion

Beef cattle are produced in a variety of production settings, from pasture and range to dry lot and confinement facilities. Cattle are adaptable to a wide range of natural conditions and artificial environments. When behavioral and physiological characteristics of cattle are matched to local conditions and proper facilities and handling techniques are incorporated, undue stress causing illness or reduced beef quality can be avoided.
feed store and communicate when and how much feed you will need through the duration of the project. The worst thing that can happen is running out of feed and purchasing a different type to get by until you can get resupplied. This means your animal’s digestive system has to readjust twice before it can get back on track!

Another common nutritional mistake is not feeding the correct amount. Often this occurs as a result of not accounting for animal gain and starting to short them in volume. Animals should be fed by percent body weight. Therefore, as the animal’s weight goes up, feed volume (pounds) must go up. Otherwise, you will only be maintaining weight and not increasing it. Eventually, if not corrected, the animals can lose weight.

Finally, water is often overlooked as a nutrient – the MOST important nutrient. Water is required for proper digestion, metabolic function and as a cooling mechanism. Water should be fresh and cool. Water containers should be cleaned regularly for sanitation, as well as encouragement for the animals to drink. Make sure the water source is in the shade. Sunlight can heat the water up like a water heater in your home. Hot water discourages consumption, thus reducing feed intake.

The amount of work that is put into a project is a direct reflection of the success of the project. Daily care of the animals is just as important as nutrition, selection and health. Paying attention to the details is vital.