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Weed Management Is Important for Maintaining Healthy Pastures

Dr. Dirk Philipp, Assistant Professor

Weed control in pastures is one of the most important aspects of forage management. Pastures with a high degree of weed infestation are not just unsightly, they also point to incorrect decisions related to soil fertilization and grazing management. Taking care of weeds as part of a continuous effort to improve pasture productivity will pay off in the long term with improved animal productivity.

Weed control does not necessarily mean maintaining forage monocultures. During certain years, some grass and broadleaf species find just the right conditions to thrive. In 2013, crabgrass was a problem in many pastures along with johnsongrass. Both species benefitted from droughty conditions during previous years. Both species are actually very palatable forage species by themselves, but depending on specific pasture management goals, these plants might be undesired in pastures managed primarily for perennial cool-season forage stands.

Research has shown that there is no such thing as a

100 percent fescue or bermudagrass stand. In fescue fields, for example, about 60 to 75 percent of the forage base may be fescue while the remainder could be comprised of other cool- and warm-season forages such as bermudagrass, orchardgrass, crabgrass or native grass species and broadleaf plants. In naturalized grasslands, which are basically the grasslands present in the eastern U.S., pushing pasture plant composition towards certain species and maintaining those long term can be a daunting task. This is because weeds are vastly more aggressive in their growth habit than specially bred and selected forage species, which only thrive within a relatively narrow window of soil fertility, pH and grazing management. To keep these factors as close to optimum as possible is the job of the farm manager.

The best defense against encroaching weeds is canopy cover throughout the year with forage species that fit the long-term grazing management plan. This will require maintaining proper soil pH and fertility. Both

can be checked for free by turning in soil samples to the Cooperative Extension Service on a regular basis. Among the many things that constitute good weed control, proper timing of grazing ensures good forage utilization and plant regrowth during rest periods, which will result in good canopy cover. Newly renovated pastures should be allowed to become established well before use while following the recommendations for first-year management.

Although some broadleaf weeds can have a high nutritive value early during their life cycle, effort should be made to limit their presence in pastures, as these weeds can become unmanageable if forage species are stressed above normal such as prolonged drought periods. It should also be noted that today's herbicides are so effective they can be used almost year-round. In Arkansas, a few warmer days can always be found during the colder months for herbicide application. Herbicides are cheap compared with other farm inputs.


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Spraying dormant pastures a few times is cost-effective in the long run.

Complete elimination of certain weed species may not be possible, but populations can be kept below a certain threshold to avoid infestation during drought years. Pigweed – one of the most persistent weeds – can hardly be controlled once it reaches a plant height of 4 to 5 inches or higher. At that

height, pigweed may not be visible among forage plants, so efforts should be made to scout it and control it early on. Always follow the recommendations on the herbicide label, and use the required application rates.

If clovers are present in pastures, herbicide options may be limited. In this case, it has to be evaluated whether or not the benefits of the

clovers outweigh the disadvantages of having the hands tied when it comes to weed control. The utilization of annual legumes in perennial grass pastures may be less challenging than trying to keep perennial legumes in pastures year-round. Weeds can get out of control quickly in complex grassland ecosystems, so staying ahead of the game is important.

Be Prepared for Calving Season

Dr. Tom Troxel, Professor

Calving is one of the most important times on the production calendar. Management decisions made prior to this period can influence success at calving and ultimately profitability of an operation. Calving difficulty (dystocia) is a very important economic problem in the U.S. beef cattle industry.

Nutrition

The last trimester of pregnancy is when the majority of fetal growth occurs. During this period, the nutrient requirements of the cow increase accordingly. In particular, the last 45 days prior to calving are a critical time. The best method to assess the nutritional status of the cow is to monitor body condition. Ideally, most cows should enter the calving season with a body condition score (BCS) of 5 to 6. However, early-calving cows (January and February) and young cows (two- and three-year-olds) should have a BCS closer to 5.5 or 6. Research has clearly demonstrated that body condition can have a dramatic impact on subsequent reproductive performance. If the cows are thinner than desired, it is advisable to alter the plane of nutrition to add body condition prior to calving. After calving, the nutrient demands associated with lactation make it difficult and expensive to add body condition.

A common misconception regarding pre-calving nutrition is that feeding cows too well results in increased calving difficulty. This is absolutely

incorrect! Actually, underfeeding cows prior to calving could increase calf scours and mortality and reduce calf survival. Along the same vein, overfeeding can be a problem as well. Cows that are over-conditioned actually deposit fat in the birth canal, which can lead to calving problems.

Some research suggests that calf vigor can be influenced by pre-calving plane of nutrition. Calves from cows on a maintenance or high plane of nutrition got up and nursed more quickly than calves from cows on a low plane of nutrition. Time to nurse is critical in getting an adequate amount of colostrum in calves prior to gut closure.

Vaccination

Providing immunity to the calf via colostrum is the focus of pre-calving vaccination programs. There are several diseases that can be vaccinated for at this time; however, to vaccinate for every possible disease is neither practical nor economically prudent. Consult with your veterinarian to develop the vaccination strategy that is appropriate to your operation.

Timing of Feeding

The Konefal Calving Method was developed by a beef producer in Manitoba, Canada. This method involves feeding cows twice daily at approximately 11:30 a.m. and 9:30 p.m. Using this regime, Gus Konefal was able to get 80 percent of his cows to calve between 7 a.m. and 7 p.m.

Research at Iowa State University produced similar results. Results of USDA research were not as dramatic, but still showed a 10 to 20 percent reduction in the number of cows calving between 10 p.m. and 6 a.m.

Calving Management

Preparing calving facilities prior to calving is wise. The calving area should be clean and dry and be in close proximity to shelter and facilities needed to assist cows with calving difficulty. Maternity pens with a headgate, crowding gate and nursing panel can also be quite helpful. Calf shelters and/or warming boxes should also be cleaned and checked (wiring in particular). Once the facilities are prepared, it is always wise to make a list of needed items and to make sure they are accessible. Some key items would include calving jack, OB chains or straps, iodine, tube feeder, rags or towels, light source, tags and/or tattoo equipment, and last but not least...your IRM red book.

Colostrum

Colostrum is critical to survival of the newborn calf. The immune system of newborn calves is not completely developed. Consequently, the antibodies and immunoglobulins in colostrum are a substantial component of the immune protection in newborn calves. Calves should receive 5 to 6 percent of their body weight as colostrum within 6 hours and again within the subsequent 6 hours.

If the calves are not able to nurse or the cow's production of colostrum is insufficient, colostrum from other cows or commercial colostrums supplements may be necessary. Ideally, colostrum should be collected from cows within 24 hours of calving and fed fresh. Colostrum can also be collected, frozen and used later. Johne's disease can be spread via colostrum, so caution should also be exercised when collecting colostrum from unknown animals.

Colostrum should only be used from cows known to be Johne's free.

When collecting colostrum, consider freezing it in "serving" sizes or one to two quarts per container. Once colostrum has been thawed, it should not be re-frozen. Correct thawing will also help prevent the antibodies and immunoglobulins from being damaged. Frozen colostrum should either be slowly warmed in

warm water to a final temperature of 105° to 110° F or in a microwave on medium power. In both cases, the colostrum should be stirred frequently.

Commercial colostrum supplements are available, and research suggests that calves fed colostrum supplements are healthier than calves that received no colostrum. However, the level of protection was lower than in calves fed frozen colostrum.

Managing Cold Stress in Cattle

Jeremy Powell, Professor and Veterinarian

Winter is here, and with it can come issues with cold stress in cattle. Wintertime conditions that can lead to cold stress include freezing temperatures, snow, ice, wind and a muddy environment. With a dry winter hair coat, a cow's critical temperature for cold stress will be around 20° to 30° F. However, a cow's low critical temperature will vary based on her hair coat thickness, moisture conditions, wind conditions and her body condition score. During periods of precipitation, when the hair coat is wet, the critical temperature is around 59° F because wet hair will lose its insulating quality, and the cow will chill quicker.

When cold stress occurs due to frigid temperatures, cows may exhibit muscle shivering, an increased heart rate, deeper breathing and an increased metabolism rate, resulting in an increase in the cow's requirement for nutrient and energy intake. In periods of cold weather, cows may also tend to stand around in a wind break or huddle in a group to stay warm instead of grazing, which exacerbates their nutrient needs. Appropriate nutritional supplementation is key to managing cold stress during this time.

A good rule of thumb for supplementation during cold weather is that for every one degree drop below the cow's critical temperature, a cow's energy requirement (TDN) increases 1 percent. An example of this would be for a non-lactating 1,200 pound pregnant beef cow, normal intake is around

12.2 pounds of TDN per day. If the temperature drops 20 degrees below her critical temperature, she needs 20 percent more energy, equaling nearly 2.5 more pounds of TDN each day. To supply that increased need, you can feed her an extra 5 pounds of hay (containing 50 percent TDN) each day. This means that when the temperature drops below their critical temperature, the cattle need to be fed better. It is also ideal to use your higher-quality hay at these critical times to provide for the increased needs.

Some spring-calving herds will begin having a few calves in late winter when weather conditions can still be extreme. These newborns can be especially at risk for hypothermia in cold weather conditions. Studies have shown that adjusting the time of day you feed the pregnant cow will affect the time of day when she will have her calf. Evening feeding (5 p.m. or later) has proven to increase the percent of cows that give birth during daylight hours compared to nighttime hours, lessening the risk of hypothermia since daylight hours are generally warmer.

During the winter, because of poor pasture conditions and prolonged hay feeding, cows can also suffer with problems related to protein and energy malnutrition. As discussed, many cows deal with increased nutritional requirements due to colder temperatures, heavy gestation and heavy lactation for those that begin calving. All of these factors may lead to a problem with the

cow's energy demand exceeding her daily intake. Even though a cow may appear to have a good appetite and exhibit rumen fill, she may be in negative energy balance. This scenario generally occurs in cows exhibiting poor body condition, and heavy, pregnant heifers are particularly susceptible. Cows that have a negative energy balance may act weak and may eventually get down and become unable to get up. This situation would more likely occur in combination with a cold snap. Preventing this issue with adequate nutrition is the best approach. To prevent potential problems, producers should take an inventory of body condition scores on the cows in their herd during late fall. Sort cows based on body condition, and supplement the animals that need of better nutrition.

When calculating and planning for winter supplementation, it is important to first have a nutritional analysis performed on your hay. Producers can utilize their county Extension agent to assist them with developing a winter supplementation plan. It is much easier to increase body condition in cows before rather than after they have a calf. High nutrition after calving is directed first toward milk production and feeding cows to gain condition after calving and has little effect on increasing body condition. An ideal body condition score for cows prior to calving is a 5 to 6.

If not dealt with, problems observed in the winter can frequently

carry over into the spring of the year. Cows that will calve in below normal body condition could exhibit poor colostrum quality leading to decreased calf immunity and calf health problems. Also, thin cows could have fertility issues during the following

breeding season, resulting in lower pregnancy rates.

Winter is rarely easy, so plan early to minimize potential problems with cold stress through improved nutritional supplementation this winter.

For more information about good management practices for your cattle operation, contact your county Extension agent or visit our web site at www.uaex.edu.

University of Arkansas Livestock Judging Team

Bryan Kutz, Instructor

The American Royal Livestock Judging Contest in Kansas City proved to be a good outing for the Animal Science Livestock Judging Team. The team finished fifth overall in a field of 31 teams, and several team members placed individually.

Two team members finished in the top ten of the overall individual rankings, Lindsay Bowman ranked fourth and Olivia Foster ranked tenth. Both students, along with Brittany Smith, placed in the top 20 in several of the divisions throughout the competition. This year's Livestock Judging team includes Matt Meredith, Olivia Foster, Brittany Smith, Lindsay Bowman, Jimmie Hollenback, Caleb Russell, Morgan Watts and their coach Bryan Kutz

Held in early November, The American Royal Livestock Judging Contest is considered to be one of the top four major intercollegiate livestock judging competitions in the country. The mission of American Royal is to promote and celebrate the excellence in agricultural progress and develop future generations of leaders through agrarian values, disciplines and expressions of skills.

The University of Arkansas Judging Program finished up their



Top Left to right: Caleb Russell and Coach Bryan Kutz
Bottom left to right: Matt Meredith, Olivia Foster, Brittany Smith, Lindsay Bowman and Jimmie Hollenback

2013 season in Louisville, Kentucky, at the North American International Livestock Exposition. The team finished ninth out of 31 teams representing 146 contestants. Several individual accomplishments were highlights of this year's competition. As a result, the team finished in the top ten in every contest and among the top five in 8 of 13. The team ended the year ranked seventh nationally, according to livestockjudging.com power rankings.

On behalf of myself and the livestock judging team members, we sincerely appreciate the continued support from Dr. Mike Looper, Dr. Tom Troxel, our faculty, University of Arkansas and judging team alumni and our Arkansas livestock producers. I know you feel as I do that livestock judging is a very important activity and greatly adds to each student's college experience. We are grateful for your help in making this educational opportunity possible.

Good Stockmanship Has Benefits

Steven M. Jones, Associate Professor

The ultimate goal of stockmen is to produce a safe, wholesome product to sell for a profit. To achieve this goal, stockmen must provide adequate nutrition, a safe environment for the animals to live, a planned health

program and properly designed handling facilities to administer the health program for the safety of the livestock and the stockman. All of these elements require the movement of the animals. *Stockmanship* is the

term we use to define the action of moving animals from one point to another. *Low stress stockmanship* is a new term being used for a common sense approach that has always had success. Success defined here means

safety and welfare of the animals and humans that care for them. The secret to low stress livestock handling is understanding innate animal behavior – why they react the way they do – and then using that knowledge to ask, not force, them to comply with the handler. One problem of improper livestock handling is bruising. Bruising is caused by a physical blow and the escape of blood from damaged blood vessels into the surrounding muscle tissue. Bruising can happen at any time during handling or transportation and can vary greatly in size. It is, therefore, clear that to obtain a high meat quality, it is necessary for animals to be stress and injury free during handling and transportation up to and during slaughter.

Stressed animals also incur a higher level of sickness. A stressed animal has a lowered immune system, leaving the animal highly susceptible to disease. The cost of pharmaceuticals used on livestock to combat stress-related effects can have a drastic effect on a producer's already narrow profit margins. The major contributing factors to this stress are handling and transportation.

These huge financial losses are one of the main reasons that low stress livestock handling is becoming increasingly popular in the animal industry today. But yet another reason, financial profit aside, is that low stress handling is safer, not only for the animal, but for the handler. Animal handlers are often injured or even killed when frightened, agitated animals run over them. The expense of paying hospital bills and workmen's compensation claims or of replacing employees costs the meat industry thousands of dollars every year.

A common misconception is that "low stress" must mean "no pressure." That is absolutely false. Cattle, horses,

sheep, goats and swine all respond to appropriate application and release of pressure. There are times when significant pressure must be applied to get the animals to move how and when you need. Pressure, used appropriately, does not cause long-term, harmful stress. The correct handling of cattle is a vital component of quality food production and good animal welfare. Handling cannot improve the basic product, but good handling will minimize product quality loss and lessen stress on animals.

The use of sorting sticks can extend the distance of control over livestock as it effectively increases the length of the stockman's arm. Holding a sorting stick in front of an animal's head will cause it to either stop or turn. Hitting an animal, though, is unnecessary and ineffective in moving animals in the desired direction. Poking an animal that is already moving in the correct direction is also unnecessary and dangerous, as this can cause cattle and horses to kick and sheep and goats to panic and jump.

Electric prods, however, are a useful aid if used correctly. A prod should not be used on an animal that has nowhere to go or is already moving in the correct direction, such as animals at the back of the herd.

Attributes of a Good Stockman

Good stockmen should be:

1. **Observant** — They will notice slight differences in animal behavior or appearance, such as in one animal away from the rest of the herd or body posturing that suggests an illness or injury.
2. **Confident** — They will always react with firm, sure movements and will always be "the boss" while avoiding getting overexcited.
3. **Competent** — They will have the ability to control animals and know where to stand in a corral in relation to the animals being moved and understand animal behavior principles.
4. **Patient** — They will always give the animals time to assess the situation before expecting a reaction.
5. **Positive in attitude towards the care of the animals** — They will also develop a good relationship with the stock and avoid unnecessary force and yelling.
6. **Respectful** — They will respect each animal's ability for speed and power to do injury.

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