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Best Management Practices for Small Beef Cow-Calf Herds

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Introduction

Arkansas has approximately 920,000 beef cows on 26,000 farms, which means the average beef cow-calf operation has 36 cows. Eighty percent of the beef cow-calf farms have less than 50 cows, which is typical of the southeastern United States.

Results from the Arkansas Beef Audit indicated producers with small cow-calf herds placed a high value on the lifestyle, and it was clear from the findings that they managed their herds as much for heritage's sake – or family legacy – as for profitability. This group understood they make up the largest volume of beef producers in Arkansas and indicated the belief that the public had a positive impression of producers with small cattle herds.

Producers with cow-calf herds with less than 50 cows were concerned with rising production costs and a decreasing opportunity to buy land. Without the economy of scale needed to spread costs over a larger herd, the profitability of the small cow-calf herd becomes questionable, especially with increasing feed, fuel and fertilizer costs. Therefore, profitability and the rising cost of land were determined as future threats to their lifestyle.

Future opportunities for the small cow-calf industry deal with improved production efficiency. Improving genetics, adapting to change and continuing education were seen as ways to make improvements. Producers see a tremendous opportunity to improve, but economics alone does not impact their production management decisions. Often, management practice decisions are based on time limitations because many of these producers have a primary job either off or on the farm. Therefore, the time these producers can devote to the beef cow herd is limited.

The objective of this fact sheet is to introduce a number of management practices a producer with a small number of cows can implement that can improve time management and beef production efficiency and, hopefully, profitability.

Beef Production Practices

Managing a Short Calving Season

Managing the cow herd to calve in 75 days is one of the most important steps toward increasing efficiency and profitability. Time and labor are very important and expensive commodities for a cow-calf producer. A controlled calving season concentrates activities that save time and labor. Advantages of a controlled breeding season include:

- Reduces the number of times cattle are gathered for vaccinating, castration, pregnancy testing, parasite control, weaning, etc.
- Markets a uniform and heavier calf crop.
- Optimizes the feeding program. Since all cows are in the same stage of production (pregnant, lactation, etc.), supplemental feeding to improve cattle performance is more efficient.
- Uses forages. With a short breeding and calving season, calving and rebreeding can occur during times of peak forage quality and quantity.

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- Allows the use of cow herd performance records to select replacement heifers and identify poor performance cows for culling.
- Reduces calf mortality. Checking calving cows and heifers frequently can increase the number of live calves.

Demonstrations across Arkansas showed that reducing the breeding and calving season was the first step toward improving beef cattle management efficiency. Results from Arkansas Beef Improvement Program (ABIP) Breeding and Calving Season demonstrations showed that when calving season is reduced to 90 days, direct cost per animal unit decreased 32 percent, herd break-even decreased 38 percent and gross margin (gross income minus direct cost) improved by 75 percent. With a 90-day breeding and calving season, many cooperators reported more free time to pursue other interests or activities.

A short breeding and calving season is a key element to improving efficiency and profits.

Leasing a Bull Rather Than Owning a Bull

Bulls can cause problems for producers with a small cow-calf herd. Problems may include having inadequate paddocks to secure a bull; replacing fences, mineral feeders, feed bunks, waterers, etc., torn up by bulls; and replacing bulls to prevent inbreeding, if small cow-calf herd producers raise their own replacement heifers.

Bull leasing may be an option for producers with small cow-calf herds. A bull leasing program can improve genetics while reducing the capital investment and operating expenses needed for acquiring and keeping a breeding bull year-round. A leasing program may supply a greater selection of genetically superior bulls that otherwise may be more than a producer with a small cow-calf herd would be willing to pay to purchase the bull. When considering leasing as an option, compare the costs and returns from leasing a bull versus buying a bull.

It is also important to outline the responsibilities of all lease participants in detail to answer any questions that might arise if the bull gets sick, dies or is determined to be an unsatisfactory breeder. If any expenses are to be shared, then the contribution of each party should be decided up front. Responsibility for unexpected expenses should also be determined at the time the lease is signed. Deciding these questions ahead of time protects both the owner of the bull and the producer leasing the bull.

Leased bulls are on the farm during the breeding season, so bull maintenance costs are not incurred year-round. Feed costs alone for one bull may run close to $350 per year. Veterinary, medicine, labor and breeding soundness examination costs will add to the cash outlay associated with keeping a bull.

Cash leasing rates typically average $500 to $700 per bull for a single breeding season; however, this will vary depending on the cattle market and the quality of the bull.

Some ranches that lease bulls have a program where they buy the calves produced by the bull. This may provide a quick and easy way to market calves for the producer with small a cow-calf herd.

Although cash leases are more common, producers may also lease bulls on a share basis. This typically involves use of a bull in return for a share of the calf crop. Returns from calf sales and, on rare occasions, returns from cull bull sales are usually shared in the same proportion as each party contributes to costs. Because the value of calf production returns will vary with market fluctuations and herd productivity, the cost of a share lease is subject to these changes, unlike a cash lease. Share lease arrangements can be customized to individual situations. The proportions of input costs (land/pasture, labor, management, buildings, machinery/equipment, feed and other cash costs) and calf crop or cash receipts each lease participant is responsible for can be tailored to fit the level of risks each party is willing to assume. Share leases allow the bull owner and the producer leasing the bull to share risk. Participating in this type of lease may be a way to obtain the use of bulls under situations when cash or credit is limited.

Any bull changing ownership (including leased bulls) should have a negative official trichomoniasis test within 30 days prior to change of ownership with no exposure to females from 7 days to the test at the time of change of ownership.

Purchasing Replacement Heifers Rather Than Raising Replacement Heifers

A key decision facing producers with small cow-calf herds is whether to raise or purchase replacement heifers. Cow-calf producers should evaluate the replacement heifer enterprise separate from the rest of the cow-calf enterprise and identify its economic strengths and weaknesses. Raising replacements requires additional management, labor, facilities, feed, pastures and other resources. Often, producers do not have the time, facilities, extra pastures, etc., to justify raising their own replacement heifers.

The total cost of developing a replacement heifer can be quite high. Producers need to carefully weigh the advantages of home-raised heifers against their costs. When evaluating the cost of home-raised heifers, a number of items should be considered. These items include costs of production (feed, veterinary cost, mineral supplementation, utilities, labor, bull or AI cost, etc.), opportunity cost of operator's labor and owned feed resources, pregnancy rates from the first breeding, death loss, cull income (non-breeding culls, culled yearlings, etc.), initial weight and growth rate and heifer value at weaning.

Factors to consider when deciding whether to purchase or raise replacements:

- When bringing animals in from an outside herd or source, disease control and biosecurity are of extreme importance.
- Finding the quality and heifer type that fits the cow herd and the environment.

- Locating a consistent supply of heifers.
- Time required locating and purchasing heifers.
- Genetic control.
- Purchasing replacement heifers will open resources for alternative uses.
- Generally, by purchasing replacement heifers, the cow herd can be expanded or changed genetically in less time.

General Beef Cattle Management Practices

Herd Health – A herd health management plan is vital to profitable beef production. Many animal health problems can be controlled with good management, proper nutrition and vaccination against infectious diseases. Beef cattle vaccination programs vary, depending upon the type of beef cattle operation (commercial cow-calf, purebred, stocker, etc.) and the area of Arkansas. It is important to contact a local veterinarian to determine the correct herd health program for the herd. For cattle to reach their performance potential, they must be healthy.

Castration – Steer calves are preferred over bull calves. In 2010, the average selling price for bull and steer calves was $109.85 and $116.16 per cwt., respectively. Therefore, bull calves were discounted $6.31 per cwt. compared to steer calves. Bull calves should be castrated if not intended for breeding purposes. Castration is best done when the calf is young. Castrating older calves is more difficult, and they suffer a greater setback. Many producers castrate newborn calves at the same time they tag and/or tattoo them for identification. Surgical castration is the most positive method of castration and is preferred by many producers.

Implanting – Growth-promoting implants are compressed pellets or slow-release devices placed under the skin of the ear. They have been used throughout the U.S. cattle industry for more than a quarter of a century to improve rate of gain and feed efficiency. Research trials have shown that proper use of implants returns at least $10 for each $1 invested.

Implants improve both rate and efficiency of weight gain (Table 1). The response is greater in animals that have genetic potential and proper management to gain weight rapidly. Therefore, implants complement good management (genetics and feeding) but do not compensate for poor management because of limited responses under poor management conditions.

Table 1. Estimated Response to Implants

Class of Cattle	Expected Improvement	
	Gain	Feed Efficiency
Suckling calves	4%-8%	
Growing cattle	10%-20%	6%-8%
Finishing cattle	15%	8%-10%

Internal and External Parasite Control – The need to control internal parasites will exist as long as cattle are grazing pastures. However, parasite levels are not the same on all pastures or in all cattle. Heavily stocked pastures generally have a higher parasite burden than lightly stocked pastures. Cattle in a drylot are less likely to have heavy worm infections than those on pasture.

Young cattle will typically have more internal parasites and are more affected by internal parasites than older cattle. Therefore, the methods of controlling internal parasites should be developed to fit individual production situations. Strategic deworming starts with understanding the life cycle of problem parasites, identifying seasonal changes in parasite burdens and implementing cost-effective control. A successful deworming program, along with good overall herd management, will increase milk production in cows and thereby increase weaning weights of calves.

Arthropod pests of beef cattle consist of various species of ticks, blood-feeding flies, filth flies, mosquitoes, black flies, lice, grubs, bots and fleas. All of these arthropods can negatively affect production and profits. Problems with pests vary with location, season, host, production system and other factors. Economically viable options are available to control most of these pest species. A number of management practices (fly tags, dust bags, sprays, oral, etc.) can control these pests.

Mineral Supplementation – Cattle require the proper balance of water, energy, protein, vitamins and minerals to achieve optimal levels of production. Cattle usually require some form of mineral supplementation during all times of the year. The required minerals are divided into major (macro) and trace (micro) minerals. Major minerals are reported as a percentage of the diet and include sodium, chlorine, potassium, calcium, phosphorus, magnesium and sulfur. Trace minerals are required at much lower levels than the major minerals but are just as essential. Trace minerals are commonly reported as parts per million (ppm). Required trace minerals include zinc, copper, selenium, manganese, iron, nickel, cobalt, molybdenum and iodine.

Pregnancy Testing – Pregnancy testing by palpation is done by inserting the arm into the rectum and feeling the reproductive tract for pregnancy status. Short-term pregnancies are difficult to detect, so it is best to wait at least 45 days after bulls are removed to pregnancy test. Palpation is an art and a skill. Most veterinarians, artificial insemination technicians and experienced cattle producers can make accurate pregnancy determinations. The cost for pregnancy checking is minimal when the expense of carrying an open cow for a year is considered. Pregnancy testing can also be accomplished by a blood test as early as 30 days post breeding.

Body Condition Scoring – Proper body condition of cows prior to calving plays an important role in continued successful reproduction in a herd. Scoring cows for body condition when calves are weaned

provides a basis for determining nutritional needs prior to the upcoming calving. The plane of nutrition provided during lactation is the most important of several factors affecting the condition of brood cows. Differences observed in body condition within the herd may be due to age, soundness of teeth, milk production, general health or genetic variability. Extremely thin or fat cows may need to be fed separately or culled from the herd.

Variation in the condition of beef cows has a number of practical implications. The condition of cows at calving is associated with length of postpartum interval, subsequent lactation performance, health and vigor of the newborn calf and the incidence of calving difficulties in extremely fat heifers. Condition is often overrated as a cause of dystocia in older cows. The condition of cows at breeding affects their reproductive performance in terms of services per conception, calving interval and the percentage of open cows.

Body condition or changes in body condition, rather than live weight or shifts in weight, are a more reliable guide for evaluating the nutritional status of a cow. Live weight is sometimes mistakenly used as an indication of body condition and fat reserves, but gut fill and the products of pregnancy prevent weight from being an accurate indicator of condition. Live weight does not accurately reflect changes in nutritional status.

In commercial practice, body condition scoring can be carried out regularly and satisfactorily in circumstances where weighing may be impractical. The technique is easy to learn and is useful when practiced by the same person in the same herd over several years.

Proper Working Facilities Pay for Themselves

Good working facilities are very important for the producer with a small cow-calf herd. Frequently, labor to help work cattle is limited, and the producer finds himself/herself working cattle alone or with limited help. Facilities and equipment for working cattle are required for the proper management and care of the cattle. No one should enter into a cattle operation without the proper facilities and equipment to care for and manage the herd.

Well-planned working facilities and well-designed equipment will immediately start to pay for themselves in the following ways: (1) fewer injuries to cattle and people, (2) less stress on cattle and people, (3) an ease of working that will prevent cattle working from becoming a dreaded job and (4) a total cattle management program that can be easily carried out on the herd. Points to consider for working facilities are location and design of pens, gates, chutes, alleys and restraint equipment.

Working facilities do not have to be expensive and elaborate. Working facilities drawings are available from a number of different sources. Visiting existing working facilities is recommended to see how they are designed and how well cattle flow through the facility. With just about every facility, the cattle producer knows of little adjustments that would enhance cattle movement – learning from that experience may be very important. If at all possible, the working chute area should be covered (roof) and have electricity.

Forage Testing and Supplementation Improves Performance and Profitability

Buying the right kind and feeding the right amount of supplemental feed is very important for cow performance and overall profitability. If a producer with a small cow-calf herd invests time and resources to supplementing cows, then knowing the correct type and amounts of supplement to feed is important. A forage or hay test is the first step in determining the correct supplement.

A forage test reveals the nutrient content of hay. Knowing the nutrient composition of hay allows comparisons between hay nutrient levels and the nutrient requirements of the cattle being fed. If the animals' needs are greater than what is provided in the hay, a least-cost feed supplement can be developed.

Least-cost supplemental feeding generally involves grouping animals based on their nutritional requirements, forage testing and identifying the costs of feed grains. To minimize feed costs, cattle with different nutritional requirements should be grouped separately and supplemented accordingly. Commingling cattle with different requirements (for example, non-lactating cows wintered in the same field as lactating cows) can cause either overfeeding and waste of costly supplements or underfeeding and poor cattle performance. A short (75-day) breeding and calving season ensures all cows are in the same state of production, thus having similar nutrient requirements. Knowing the nutrient composition of the forage allows feeding lower-quality hay to cattle with lower nutrient requirements and feeding higher-quality hay to cattle with greater requirements.

Least-cost supplemental feeding based on a forage analysis helped reduce supplemental feed cost on ABIP farms from $43 per 1,000-pound cow in year 1 to $31 in year 5. Supplemental feed cost ranged from $30 to $40 per 1,000-pound cow each year. However, some ABIP participants have chosen to improve hay quality by cutting earlier, thus eliminating the need for costly supplements.

Proper supplementation helped improve ABIP herd reproductive performance. Calf crop percentage increased from 85 percent in the first year of the program to 93 percent in the fifth year. Changes in the winter feeding program alone did not cause this increase, but it did play an important role.

Forage Management Practices

Purchasing Hay Rather Than Growing and Harvesting Hay

The decision to purchase hay rather than growing and harvesting hay is an important one for the producer with a small cow-calf herd. With time being a critical factor, this producer may not be able to cut

hay at the optimal time for hay quality, equipment repairs can be costly in terms of money and time and weather sometimes doesn't cooperate. The goal is to get the hay quantity and quality needed for his/her herd in the barn.

The question of buying or making hay for beef cows is best answered by applying some simple economic principles of distributing fixed and operating costs over a variable amount of acres or cows. When owning equipment and buildings required to make hay, a certain amount of the original investment is spent every year in fuel and oil, repairs, housing, interest and depreciation (ownership costs).

As expected, as more investments are required to own haymaking equipment, additional cows or tons are required to pay for this investment. Also, weather, disease or pest conditions leading to reduced yields increase the total number of cows required to break-even with ownership costs.

Advantages and Disadvantages of Buying Hay – As in many production decisions livestock operators face, each alternative presents unique advantages and disadvantages and must be evaluated within an individual farm's or farm operator's context. The most applicable advantages and disadvantages of buying versus making hay are listed in Table 2.

Owning the Least Possible Amount of Equipment

With the exception of land and buildings, farm equipment can be the most significant financial expenditure for beef producers. Your choice for acquiring farm machinery will depend on your answers to the following questions:

- How much will it cost to own and operate an item of machinery?
- What other ways are available for you to acquire the machine's services? What are the expected costs?
- How much capital will you need if you purchase the machine? Can you afford that much of an investment? Can capital be used more profitably in other areas of your farm business?
- What are the income tax advantages of each method? What is your tax situation?
- Do you have the ability, tools and labor to operate the machine and maintain it?
- Are current technological developments likely to make the machine obsolete in the near future?
- Are you likely to change production practices or farm size in the near future and no longer need the machine?

Ownership (new or used) is the most popular method of acquiring long-term control of farm machinery. By owning a machine, you control its use and the quality of its performance, provide the labor to operate it and assume responsibility for repairs and maintenance, liquidation and obsolescence. Investment capital is tied up for a long period of time when machinery is owned.

Joint ownership of machinery allows you to share the responsibility for investment, repairs and labor and reduces ownership costs. It may generate enough use to make ownership justifiable when it would not be profitable for either party to own the machine alone. However, cooperation is absolutely essential. The parties must approve of each other's work habits and care of the machine, develop a system for scheduling use of the machine and agree on responsibility for labor and repairs. Most importantly, a written agreement should be developed with details of how the co-ownership will be dissolved in case of disagreement, termination of farming or death of one party and include a method for determining the machine's value at the time of dissolution.

Exchanging work with a neighbor is another convenient way to acquire the use of farm machinery. Two or more farmers working together to share labor and equipment can reduce individual investments in machinery and still have access to a complete system.

Custom hiring is a popular method of gaining short-term control of farm machinery, particularly for harvesting and applying fertilizer and pesticides. Custom services may be available from a neighbor, a local dealer or a business specializing in custom farming that performs all types of field operations. A rental agreement secures the use of a machine for a short period of time. Charges are usually made per acre, hour, day, week, month or season with a minimum charge, even if actual use is less than that specified in the contract.

Long-term leasing (three to five years) of farm machinery is becoming more popular. Like ownership, leasing gives you complete control of the machine for the period of the lease. You are responsible for labor,

Table 2. Advantages and Disadvantages of Buying Hay

Advantages	Disadvantages
No need to invest in haymaking equipment	Dependent on custom operators or hay buyers
Opportunity to select from a variety of sources	Dependent on market fluctuations
Can focus on the production unit (cows)	Cannot control certain production factors
Local weather is not a major concern	Indirectly affected by weather
Can specify a certain quality trait	Dependent on tons required
Opportunity to use alternative forage source	Dependent on regional options and volume
More acres are available to graze	

repair costs and other operating expenses. At the end of the lease period, you have the options of turning the machine in for a new leased machine, purchasing it or returning it to the lessor. Farm machinery leases are typically available from commercial leasing organizations, farm lenders and machinery dealers.

Proper Stocking Rate

Stocking rate is the most important grazing management decision a beef cattle producer makes. Stocking rate is the amount of land allotted to each animal for the entire grazeable portion of the year. If a ranch is stocked to the maximum, then the slightest deviation (negatively) from the normal rainfall pattern will place the pastures and cattle in jeopardy. When rainfall is below normal levels, the ranch that is stocked to the maximum will suffer cattle weight loss and pasture damage faster and more severely than a ranch that is conservatively stocked. The risk associated with a conservatively stocked ranch is much less. Therefore, a conservatively stocked ranch fits the management style of most producers with small cow-calf herds.

A number of factors must be considered when establishing a stocking rate – animal species, size and physiological stage, size of the pasture or ranch, number of grazeable acres and management risk level. Ranches differ in annual rainfall, forage production, forage species, brush cover, topography, water distribution and kind of livestock. All of these factors affect stocking rates. When establishing a stocking rate for cattle, very brushy areas, steep areas and areas too far from water must be excluded to determine the number of grazeable acres.

Over the short term, a heavy stocking rate may lower forage quality by removing green foliage and forcing animals to consume more plant stems and dead standing forage. Over the long term, a heavy stocking rate removes almost all edible forage so that only immature plants remain. While this immature forage is high quality, there isn't enough of it. Long-term overgrazing puts grazing pressure on immature plants, which will lead to the weakening of the plants and loss of grass stands. In grazing, both forage quality and forage quantity are important, and both affect livestock productivity and net profits.

Stocking the ranch to ensure ideal animal performance and maintaining pasture productivity becomes a skill as well as an art a producer learns over time.

Soil Tests

Hay meadows are fertilized each year to improve yield and forage quality. Fertilizing without a soil analysis can be expensive and wasteful. A soil test analysis report provides an estimate of available nutrients in the soil along with a fertilization recommendation. The fertilization recommendation is based on soil test levels, the forage species being established or maintained and desired production level.

Knowing the specific rate of fertilizer to apply is an important part of soil management. Fertilizer application should match the forage needs of the cow herd. Extra fertilization is not cost effective unless it is for producing hay to sell or additional grazing to lease. A soil test analysis is a service available through the local county Extension office and generally involves taking 25 to 35 core samples (4 inches deep) for each 20 acres of pasture.

Stockpiled Forages

Stockpiling bermudagrass and fescue for winter grazing has become a popular forage management practice in Arkansas. Stockpiling can reduce winter feeding costs by minimizing the amount of hay required to winter cattle.

Bermudagrass – Stockpiling bermudagrass refers to the practice of growing forage during late summer into early fall for grazing from October to December. Initiation of the stockpiling phase must begin in August to produce acceptable forage growth. Old summer forage residue must be removed by close grazing or clipping to a 2- to 4-inch stubble by early to mid-August. Apply 50-60 lb/acre nitrogen fertilizer by mid-August, and allow forage growth to accumulate until late October to early November.

The optimum temperature range for the growth of bermudagrass is 85º to 95º F. Getting the stockpiling process started in early to mid-August takes advantage of warm temperatures and allows time for growth accumulation before cool autumn night temperatures slow grass growth. Forage production can be variable due to sporadic late summer rainfall. An early start date also maximizes chances of getting rain on fertilized fields.

Extension conducted 13 stockpiled bermudagrass demonstrations across the state as part of the 300 Day Grazing Program. To determine the value of stockpiling, comparisons were calculated based on the value and quality of hay and animal performance on each demonstration farm. Cost of fertilizer for the stockpiled forage was compared to the cost of hay and supplement that would have been required to replace the stockpiled bermudagrass during the time the stockpiled forage was grazed. Other costs, such as labor, feeding equipment or hay storage, were not included in cost savings estimates. Savings were calculated on an animal unit (AU) basis to allow comparison across farms.

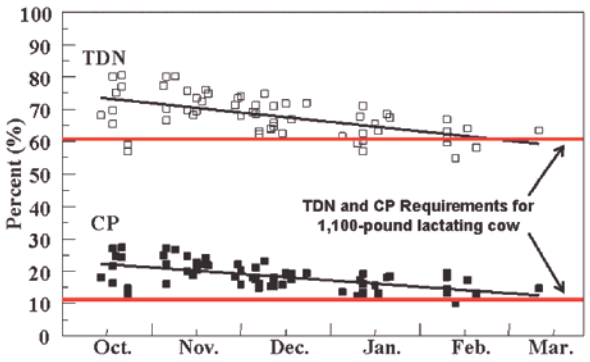
Estimated savings compared to the cost of hay ranged from $10 to over $84 per animal unit. The average savings per animal unit for stockpiled bermudagrass were $11.75 (2008-2009), $42 (2009-2010), $51.94 (2010-2011) and $67.20 (2011-2012), respectively. Stockpiled bermudagrass was an economical practice in all demonstrations even during years with poor fall growing conditions. It should be restated that estimates do not include additional costs associated with feeding hay. Savings estimates would have likely been greater with inclusion of those costs.

Fescue – Tall fescue pasture has both advantages and disadvantages. One of the primary advantages of tall fescue over other cool-season forages is the amount of forage produced during the fall that can be stockpiled and grazed during winter. Fescue managed for fall growth outyields sod-seeded annual ryegrass or small grains during the same period. Up to one-third of the annual yield of fescue is produced during the fall, and the leaves withstand damage from cold weather much better than many other types of forage. Leaves remain green after early winter freezes and retain forage quality well.

Stockpiled fescue can significantly reduce winter hay and feed costs. Through stockpiled fescue demonstrations in the 300 Day Grazing Program, winter costs were reduced an average of $47.25 per animal unit. The greatest savings documented was $83.50/AU, which came from a farm that strip-grazed stockpiled fescue/white clover and did not have to apply N fertilizer. The average savings per animal unit for stockpiled fescue were $42.32 (2008-2009), $54.82 (2009-2010), $45.43 (2010-2011) and $46.36 (2011-2012), respectively.

Samples of stockpiled fescue showed a range in quality between October and March from 9.7% to 34.6% CP and 51.9% to 84.9% TDN (Figure 1).

Figure 1. Arkansas Reducing Winter Feed Cost Demonstrations (2002-2006)



Management for stockpiling fescue is simple. At least 30 to 40 percent of the field should be fescue. General recommendations for stockpiling fescue are clean off old spring and summer fescue growth by late August, soil test to determine fertilizer need, apply 50 to 60 lb N per acre around mid-September (before fall rains) and defer grazing until December.

Strip Grazing – Proper grazing practices can extend the grazing period for stockpiled forages. Strip grazing is often used for stockpiled forages and can offer the highest utilization of the pasture. A single electric wire can be placed across the field to allow a strip of pasture large enough for a two- to three-day allotment of forage for the herd. As cattle graze down the first strip of forage, the wire can be advanced across the field providing fresh strips of forage as needed. Some producers have found that two wires work well for strip grazing. One wire holds the cattle in the strip being grazed, and the other wire is placed one strip ahead to prevent the cattle from moving across the field each time a new strip is offered. Only one wire needs to be moved each time in a "leap-frog" fashion to provide a fresh strip of forage. The field should be grazed starting at the livestock's water source. This reduces trampling damage to the remaining forage, because the cattle travel back across the grazed area for water. A back wire is not needed when grazing dormant stockpiled forages. In Arkansas demonstrations, strip grazing management doubled the number of AU grazing days per acre compared to continuous grazing of the entire stockpiled pasture.

Rotational or strip grazing can allow limit grazing of winter annuals. Forage quality of winter annuals often exceeds requirements of cows. Limit grazing makes use of the high-quality forage as a supplemental feed and stretches short hay supplies during late winter.

Rotational/Controlled Grazing

Rotational or controlled grazing can potentially increase forage availability over a continuous grazing system by 10 to 35 percent. Because of the increase in forage availability, several management options to potentially increase profitability become available. These options include increasing the number of cattle on the farm, grazing flexibility, harvesting excess forage as hay, reduced input costs and time savings.

Controlled grazing management systems emphasize providing adequate forage availability and forage quality to meet the nutritional needs of beef cattle, promoting forage stand persistence and species diversity. With controlled grazing management systems, the producer decides when a pasture has been grazed close enough without negatively affecting animal performance. At this point, cattle can be moved to a new pasture that will provide increased forage availability. With this system of grazing a pasture for a period of time and then resting it while cattle are grazing other pastures, forage regrowth can occur.

Each farm differs in soil type, availability of water, forage species, pasture condition, availability of labor, slope of land, type of livestock enterprise, etc. The most important factor in ensuring grazing management success is the ability and interest of the producer. No single grazing management system is right for every producer.

Some have the perception that rotational grazing is only for producers with large cow-calf herds grazing large paddocks or pastures. This is not true. Producers with small cow-calf herds grazing small paddocks or pastures can experience every advantage offered by rotational grazing. Improving grazing management demonstrations were conducted on large farms (600 acres), moving calves daily, as well as small farms (50 acres), moving cows two times a month. Once cows are trained to a grazing management system, moving cattle from one paddock to another is quite simple and requires a minimal amount of time. For producers with a small cow-calf herd, rotational grazing can provide quality forages,

the best nutrition available for the cow herd, improved cattle performance and time savings.

Electric Fences

Fencing technology has drastically improved over the last 25 years. There are no "right" fence styles or types for all operations or situations; it is a matter of preference. Economics must be considered when building, replacing or mending fences. Many producers shy away from electric fences in favor of the five-strand barbed-wire or woven-wire fence with metal T-posts. Today, high-tensile electric fences are generally more economical because they tend to be less expensive and are easier to install and maintain.

The cost of materials for one mile of high-tensile fence is site specific. Factors to consider are corner posts, terrain and the type of animals to keep in or fence out. In Arkansas demonstrations, cost of installation of electric fence has averaged $0.32 per foot. Cost includes an energizer, ground rods, posts, wire and insulators.

The cost of a five-strand barbed-wire fence (fence and metal T-posts) is approximately two to three times more per mile than a high-tensile fence, and the cost of a woven-wire fence with two strands of barbed wire on top is two to four times more per mile than a high-tensile fence. These estimates do not include corner posts, braces or labor.

Whether building permanent fences with high-tensile steel wire or temporary electric fences with polywire, an electric fence is not finished until animals have been trained to respect it. The training area should be a small paddock. Keeping the area small will reduce the time it takes animals to learn about the fence. It will also minimize the time needed to gather and return animals that get out during training and reduce the time required to build and mend the training fence.

Temporary electric fences are a great tool to subdivide pastures. Pasture subdivisions for rotational grazing can extend the grazing period for stockpiled forages, rest/rotate those hard-hit areas, change livestock distribution to graze previously ungrazeable areas and stop animals from overgrazing or spot-grazing.

Advantages to electric fences are:

- **Low cost** – An electric fence can perform the same task as a conventional fence using much less material.
- **Easy to build** – Less wire strain and generally lighter construction make much quicker and easier construction, especially in difficult terrain.
- **Extended life** – Unlike barbed wire or woven wire, electric fence is a psychological barrier and is, therefore, expected to have a greatly extended service life. The life of old fences can be considerably extended using electric fencing.
- **Universal application** – Electric fencing will contain all types of animals. Educated stock develops greater respect for electric fencing than for any other type of fence.
- **Flexibility** – There is no quicker or easier way to effectively subdivide a paddock for controlled grazing than with an electric fence.
- **Low maintenance** – Once the fence is properly installed and the stock are trained, the maintenance requirements of electric fences are less compared to conventional fences.
- **Less stock damage** – The shock from electric fence causes no physical damage. If livestock are forced through the fence by bushfires or dogs, they are at less risk to injury than with a conventional fence.

Electric fences can be a very useful tool for livestock producers. Subdividing pastures, ease of maintenance, reduced building and maintenance costs, fewer beef cattle fencing injuries and time savings are just a few rewards for using electric fences.

For more information on the management practices listed above, contact your local county Extension agent.

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