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Top 5 Reproductive Failures in Beef Operations (and How to Avoid Them)

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Achieving high pregnancy rates is an important goal in every cow-calf operation. After every breeding season, we are either satisfied with the results or wondering why our pregnancy rates were so low and focusing on ways to improve them.

Traditional thinking trains us to be satisfied with our results when we have met the industry average, or are as good as, if not better than, our neighbor's pregnancy rates. Nontraditional thinking should redirect our focus more on the causes of some of these failures and on correcting or minimizing the problem. Reproductive failures can occur in any cow-calf operation and account for a significant chunk of the financial loss incurred from a poor calf crop. Let's take a look at the top 5 reproductive failures that I believe are often seen in a cow-calf operation, beginning with No. 5.

REPRODUCTIVE FAILURES CAN OCCUR IN ANY COW-CALF OPERATION AND LEAD TO A SIGNIFICANT CHUNK OF THE FINANCIAL LOSS INCURRED FROM THAT CALF CROP.

5 LEAVING THE BULLS IN TOO LONG
I can already tell that some of you are shaking your head "yes" in agreement with this statement. This is not scientific but rather common sense. The longer we leave the bulls in with the cows, the more likely we are to shift some of the herd to calve later in the season. This ultimately causes some of the cows to fall out of the herd because they come up open. We have trained some of those animals that it is OK to go through several attempts to get bred. Sometimes when those animals are stressed prior to or during the breeding season, it makes it that much easier for that animal to fall out of the breeding season. There are also other pitfalls to leaving your bulls in too long, including lack of uniformity in your weaning date, weaning weight and marketing of calves. Although fertility is lowly heritable, we can select for fertility within your management through a shorter breeding season. "Defined" is the key word in a defined calving season.

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4 INFECTIOUS CAUSES OF REPRODUCTIVE FAILURE

A good herd health program is invaluable. It helps prevent certain diseases such as blackleg, pink eye, and respiratory diseases, as well as some diseases that can cause reproductive failure at different stages of pregnancy. Infection by these pathogens (viruses, bacteria, and protozoa) can significantly reduce your calving rate through abortions and stillbirths. Bovine viral diarrhoea (BVD) virus can cause abortion if the cow is infected in the first three months of gestation and is transmitted through horizontal transmission (animal to animal) or vertical transmission (dam to fetus). Infectious bovine rhinotracheitis (IBR) virus can cause abortion from four months of gestation to term and is transmitted horizontally through direct contact or airborne. Brucellosis (Bang's disease) is a bacterial disease that causes abortion at any stage of pregnancy and is transmitted through direct contact of milk or via the aborted fetus, afterbirth or other reproductive tract discharges. Leptospirosis is a bacterial disease that causes abortion within one to three months after infection and is transmitted directly between animals or indirectly through the environment. Vibriosis is a bacterial venereal disease that causes abortion between four and seven months of gestation and is transmitted to the bull from breeding infected cows and then passing the bacteria back to naïve cows during the breeding season. Neosporosis is a protozoal disease that causes abortions during mid-gestation and is transmitted by other host such as canines. Trichomoniasis is a protozoal disease that causes abortion during the first three months of gestation and is transmitted to the bull from breeding infected cows and then passing the protozoa back to naïve cows during the breeding season. In order to reduce the incidence of infectious disease in your herd, maintain proper nutrition (including a good mineral program), minimize stress, maintain a good vaccination program, and properly control internal and external parasites.

3 POOR NUTRITION

Most people would say that nutrition is the most important factor contributing to poor fertility, and I agree to an extent. Cows need to be in good body condition at calving to speed up uterine involution (recovery process) and reduce the days to first estrus. If a cow starts off in a low body condition at calving, the increase in nutrient demands during and after calving can delay a cow's ability to recover from calving sooner and begin cycling again. Good management practices allow a producer to increase nutrient availability during the last month of gestation, depending on the nutritional status of the cow at that time, to ensure those cows are maintained at a body condition score of 5 to 6 at calving. Cattle that calve in a poor body condition can still conceive during a longer breeding season; however, those cattle will typically conceive later on in the breeding season, eventually falling out of the herd because she was open.



2 FORGETTING THE BULL

Bull management is overlooked most of the time and often comes second to cow management when it should be the other way around. Fertility issues with one cow only affect one calf. Fertility issues with one bull could affect up to 30 calves, or lack thereof. Breeding soundness exams are a cheap investment when compared to the alternative with a sub-fertile bull. A study conducted at Kansas State showed that pregnancy rates dropped more than 6% in cows serviced by bulls that did not have a breeding soundness exam conducted compared to bulls that passed a breeding soundness exam prior to the breeding season. Statistics show that 1 out of 5 bulls are sub-fertile across a random population. We are sometimes guilty of not paying attention to the bulls when they have their work clothes on, meaning when they are out with the cows. Problems with the bull during the breeding season are often not detected until after the breeding season or pregnancy diagnosis at weaning, and then it's too late. It is always a good practice to monitor each bull's behavior throughout the breeding season and to make sure he is breeding cows. There are multiple reasons why a bull may not be servicing cows, such as lameness, disease, other mature bulls, or a lack of libido. Libido is a measurable trait and measures how aggressive a bull is at servicing a cow, regardless of any management or environmental factors that may get in his way. While we spend a lot of time on managing our cows, we need to spend more

time managing and observing our bulls and how they perform during the breeding season.

1 UNCONTROLLED INFERTILITY

Probably the biggest contributor to reproductive failure is one we cannot control, and that is embryonic mortality during early pregnancy. Up until recent years, early detection of pregnancy was limited due to method of detection (ultrasonography and blood test vs. rectal palpation alone). In addition, survival rates early on during pregnancy were difficult to diagnose until recent findings. Recent work has reported that early embryonic survival in beef cattle at seven days after breeding is approximately 95%. That means almost all cattle conceive and have a live embryo within the first seven days of gestation. By day 28, embryonic survival has dropped to approximately 70%. There is a 25% loss in embryo survival from day 7 to day 28 of gestation. By day 42, embryonic survival is approximately 62%. Why there is such a drop in embryonic survival is still not understood. Is it management, environment or genetic?

These five contributors to reproductive failure should be evaluated every year. With this in mind, identifying what contributed to a failure is the first step to improving the results of an outcome. Once we accept that, we can react on that and reduce or eliminate the failure. 🐄

ECONOMICS

2019 Preconditioning and Stocker Outlook



by Jason Bradley, agricultural economics consultant | jwbradley@noble.org



They say time flies when you're having fun. I must be having a great time because it's hard to believe it's already time to start looking at how fall preconditioning and stocker cattle outlooks are

shaping up.

In the October 2018 *Noble News and Views* article "Gauging the Current Outlook for Preconditioning Cattle," available at www.noble.org/gauging-preconditioning-outlook, I discussed Value of Gain (VoG) and Cost of Gain (CoG) and how to calculate them. I won't go into much detail on how to calculate them in this article, but we will be using them to calculate this year's outlook.

PRECONDITIONING

This year's preconditioning outlook looks to have tighter margins than what we've seen in the past couple years. A couple of factors may be the cause of this. In the last year, the price of cattle has dropped close to \$10 per hundredweight. Combine that with corn prices that are around \$1 per bushel more, and cow-calf producers are seeing their profitability slowly dropping. As we move into fall, forage availability will become an issue as more

THIS YEAR'S PRECONDITIONING OUTLOOK LOOKS TO HAVE TIGHTER MARGINS THAN WHAT WE'VE SEEN IN THE PAST COUPLE YEARS.

of the area is starting to develop drought conditions.

That's not to say there aren't opportunities available.

By managing costs and keeping an eye on the markets, backgrounding cattle for more than 45 days in a preconditioning program looks to be profitable.

As of this writing (Aug. 5), a 500-pound steer at weaning in mid-September is estimated to bring a total of about \$750, based on the Oklahoma combined average. By preconditioning that steer for 60 days with an average daily gain (ADG) of 2.5 pounds, that steer should end weighing about 650 pounds. The estimated value of this animal is now close to \$950 per head. The increase of \$200 per head less an estimated cost of

preconditioning at \$90 per head leaves about \$110 per head to be made.

WINTER WHEAT

You should have some winter wheat available by now. Winter stocker cattle looks to be as profitable as backgrounding.

At an ADG of 2.5 pounds for 120 days, a steer starting at 650 pounds would finish at 950 pounds. This 950-pound animal in mid-March is now worth an estimated \$1,225. If we use the same value for the 650-pound steer as we did in the preconditioning estimate (\$950), the increase in value is \$275 per head. Dividing this by the 300 pounds the animal gained, the VoG is about 90 cents per pound. Last year, we saw an average CoG for winter stockers of 50 cents per pound. Using the same CoG as last year, every pound is looking to pay you about 40 cents. This would come out to a net of about \$120 per head.

SHOULD YOU PRECONDITION OR RUN STOCKER CATTLE?

The examples I just went through are based on averages and estimates. Every operation is unique and has its own set of challenges. If you decide you want to precondition your cattle or run stocker cattle, look at your production history and go through everything to make sure it's worth your time. If the margins are too slim for you, maybe you can pass on it this year and look at other opportunities. 🐮

FORAGE

The Ins and Outs of Making Stockpile Bermudagrass Work



by James Rogers, Ph.D., associate professor, forage systems | jkrogers@noble.org



For the past three years, our forage systems group has been working on a cow-calf study with the main objective to increase grazing days and reduce feed supplementation to the cow herd. One method

we use is stockpiling bermudagrass for deferred grazing after frost.

WHAT IS STOCKPILING?

Stockpiling refers to the practice of deferring a forage from grazing to allow it to accumulate forage mass for grazing during fall and winter. Almost any forage can be stockpiled but there are differences among them in the amount of mass they will accumulate, the forage

nutritive value and how well they will hold up to decay after frost.

The queen of stockpiled forage is tall fescue. Tall fescue, a cool-season perennial, grows well in the fall with cooler temperatures, responds well to fertilizer, produces high quality forage, and has a waxy cuticle coating on its leaves that helps it maintain its grazing value through the winter. Tall fescue is routinely stockpiled east of Interstate 35 and has saved producers countless dollars in feed cost over the years. Unfortunately, along the Interstate 35 corridor and west, continental-type tall fescue (summer-active tall fescue) does not persist well and is not an option. In the southern Plains region, where warm-season perennials dominate, we have to take advantage of what we have and work with it. Our cow-calf study is bermudagrass-based, so that is what we stockpile.

START WITH STOCKING RATE

To make any stockpile system work, you have to make it part of a total forage management plan that begins with stocking rate. Matching the amount of forage your land area can produce to animal demand is critical.

In our cow-calf system, we allocate 1 acre per cow for stockpiling. We also want to accumulate fresh forage growth so the nutritive value will be high. To accomplish this, we use the cow herd as a tool to graze down the area we want to stockpile to remove growth that accumulated in spring in order for fresh fall growth to occur.

Stocking rate comes into play at this point. You will need enough available pasture for the cow herd to graze until the stockpile becomes available sometime after frost. If the land area is overstocked,

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available forage may not be in substantial quantities to bridge this gap and nothing will have been gained. In our studies, we sometimes have enough residual pasture that we do not have to turn cattle out onto our stockpile until December.

IMPROVE FORAGE QUALITY THROUGH VARIETY SELECTION, FERTILIZATION

Another part of our bermudagrass stockpile system is forage quality.

In our study, we stockpile a hybrid variety of bermudagrass called Midland. Hybrid bermudagrass varieties tend to work better in stockpile because of their higher yield potential compared to common bermudagrass. A recent stockpile study from Mississippi showed no difference in bermudagrass yield in two out of three years between a named seeded bermudagrass and common bermudagrass (Rushing et al., 2019).

For forage mass accumulation and to obtain good nutritive value, we apply 50 pounds of nitrogen (N) per acre in late August or early September. You can see the nutritive values of stockpile bermudagrass in our cow-calf study in a previous Noble News and Views article, "Offsetting Winter Supplementation With Pasture," available at www.noble.org/winter-pasture-offset.

The Mississippi study by Rushing et al. evaluated stockpile quality of two bermudagrass varieties (common and Cheyenne II) and two varieties of bahiagrass (Pensacola and Argentine) under four nitrogen treatments (0, 25, 50 and 75 pounds N per acre). Nutritive value differed by year and species, but bermudagrass crude protein values ranged from 12.8%-9.2%, depending on year. This is very similar to what we have seen in our study. Surprisingly, crude protein of Pensacola bahiagrass ranged from 15.2%-8.0% compared to Argentine bahiagrass, which ranged from 13.9%-6.8%. While bahiagrass is not prevalent along Interstate 35, it has been encroaching into sandy soils in East Texas, western Arkansas and eastern Oklahoma. Bahiagrass, where it is available, can be used as a stockpile forage.

MANAGE WEATHER WITH TIMING

Weather, something we cannot control, is a critical factor in the success of our stockpile system.

Rainfall and favorable growing conditions allow forage mass to accumulate. With the nitrogen rates that we apply (50 pounds N per acre), we are targeting a dry matter accumulation of 1 ton per acre. We hit that target some years on some pastures, and other years we don't. Even if we don't and have carryover N in those paddocks, the carryover tends to aid our cool-season annual forage production and helps kick off our spring bermudagrass growth.

A management strategy that can help the weather variation is time focused. Manage so that you give yourself as much time and growing days as possible for stockpile growth to occur. Planning to begin stockpiling in October will not work when the first frost occurs in mid-November.



MANAGE GRAZING ON STOCKPILED FORAGE

The most common question I'm asked is, "How do you get your cows to eat stockpiled forage?" The answer: We really don't do anything special to get our cows to graze the bermudagrass stockpile. We simply open the gate and let them eat.

However, there are several things that help us be successful and can help you, too:

- First, have quality standing, leafy forage that is not matted to the ground. The cow herd can come in and start grazing from the top and work their way down through the canopy.
- Second, have adequate stocking rate to meet the cow herd's forage demand. We do not have to feed anything prior to going onto the stockpile, so cows are used to grazing.
- Third, have well drained stockpile pastures that won't damage from grazing in wet conditions.

We also watch forage availability and test the quality of stockpile as we go through the fall and winter grazing periods.

When will feel that our forage quantity and quality has been depleted, we pull the cows off the stockpile and move to supplementation or another forage source such as interseeded cool-season annuals, if available.

Strip grazing is another method of utilizing stockpile forage. In this method, an area of forage allocation is sectioned off using temporary fencing, which is moved across the pasture to new grazing areas as needed. Strip grazing will improve utilization and distribution of urine and feces, but it increases labor and water source planning.

This just illustrates that there is more than one way to successfully utilize bermudagrass stockpile. The main point is to keep those cows grazing. Also keep in mind that several other forages — including native grasses, bahiagrass, tall fescue and crabgrass — can also be successfully stockpiled. However, they are not all equal in the amount of forage mass they will accumulate, the quality of the forage they stockpile and how well it will maintain quality following frost. 🐮

WILDLIFE

How to Manage Fields for Attracting Mourning Dove



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A well-managed dove field provides the satisfaction of seeing dozens or hundreds of dove.

Mourning dove primarily eat seeds and are attracted to fields where their preferred seeds are abundantly available. Some of their preferred crop seeds include corn, foxtail millet, hemp, Japanese millet, peanut, sorghum and wheat. Some of their preferred native and naturalized seeds include barnyard grasses, bristle grasses, bull paspalum, common sunflower, common ragweed, crotons, euphorbias (spurges), panic grasses, pigweeds and prickly poppies. The white-winged dove, Eurasian collared dove and several other bird species also feed on these seeds.

PREPARATIONS PRIOR TO GROWING DOVE FOOD PLANTS

Before managing a field for dove, soils should be sampled and analyzed to determine whether nutrient or pH limitations should be addressed to obtain desired seed production of target plants. To reduce competition and minimize thatch problems, sites with established perennial grasses or forbs should be treated with a glyphosate herbicide at least 14 days prior to tilling, mowing or planting a field.

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OPTIMIZING YOUR FIELDS FOR MOURNING DOVE

The following characteristics seem to optimize mourning dove use of a field:

- Abundant preferred seeds lying on bare soil with minimal thatch or vegetation
- Field size of at least 10 acres
- Some trees, snags or utility lines in or adjacent to the field
- Pond or water source with shallow edges and a bare shoreline adjacent to, in or near the field
- Upland site

While dove definitely use sites lacking one or more of these characteristics, having these characteristics can increase the likelihood and abundance of dove using a site.



FIELD MANAGEMENT AFTER SEED IS PRODUCED

After plants in a field produce adequate seed, management practices such as fire, livestock grazing, crop harvest, haying or mowing can be used to place seed on the ground and reduce standing vegetation and thatch. I prefer to manipulate only 60-90% of a field with these techniques during early to mid-August, leaving some standing vegetation to provide hunter cover and retain seed that can be made available for dove later in the fall.

MANY MOURNING DOVE ARE MIGRATORY, AND MANAGERS SHOULD REALIZE THAT FACTORS SUCH AS A NORTHERLY WIND, DECREASING DAYLIGHT, COOLING TEMPERATURE OR EXCESSIVE HUNTING PRESSURE MAY MOVE DOVE OUT OF OR INTO AN AREA.

Dove hunting is legal in most states when fields are managed with these techniques, but waterfowl cannot be hunted in a dove field where a crop has been mowed. Both dove and waterfowl cannot be hunted legally where seeds that are purchased, harvested or obtained elsewhere are scattered on the ground.

HUNTING MANAGEMENT OF DOVE FIELDS

Hunting management on dove fields can be tricky. Many mourning dove are migratory, and managers should realize that factors such as a northerly wind, decreasing daylight, cooling temperature or excessive hunting pressure may move dove out of or into an area.

When possible, I prefer to have two or more fields located at least 1/2 mile apart rather than one larger field with equivalent acreage. Multiple fields provide more hunting opportunities, and keeping adequate distance between fields prevents the hunting activities at one field disturbing dove at other fields. 🐮

THREE EXAMPLES OF DOVE FIELD MANAGEMENT ARE PROVIDED BELOW:

1. COMMON SUNFLOWER



If common sunflower is absent or scarce in a field's soil seed bank, plant about 8 pounds of common sunflower seed per acre during mid-April to mid-May mixed with seed of an annual crop such as approximately 5 pounds of black oil sunflower, 8 pounds of sorghum or 20 pounds of millet per acre.

Manage the field for the annual crop during the current growing season, and then manage the field for common sunflower during future years.

The vast majority of common sunflower seed will not germinate until a year or two after planting because its seed requires cold stratification to break seed dormancy. However, once common sunflower becomes established, the field can be managed for common sunflower for many years without replanting by using the following procedures:

- When common sunflower is present in the soil seed bank, shallowly but thoroughly disk a field during January or the first half of February to encourage sunflower growth. Sandy soils may not require tillage – short mowing prior to March 1 might provide adequate disturbance to encourage sunflower growth.
- During early April, examine a field managed for common sunflower. If common sunflower plants are less abundant than one plant per 2 square yards, which is a moderately thin stand, an annual crop can be planted in the field during mid-April to mid-May to increase seed production.



2. WHEAT

Plant about 90 pounds of wheat seed per acre during September or October.

Allow the wheat crop to stand until August. During March through July, the field should not be grazed, mowed, hayed, burned or harvested.

The field can serve as food for deer and turkey during fall through spring, and can be grazed by cattle until the appearance of the first hollow stem, which usually occurs during mid-February to early March. Livestock grazing beyond the appearance of the first hollow stem decreases grain production.

In consecutive years of wheat management, the field should be planted during October.



3. SORGHUM OR MILLET

Plant about 8 pounds of sorghum seed that matures in less than 100 days, or 20 pounds of millet seed, per acre during late April to early May.



LIVESTOCK

Junior Beef Excellence Program Rewards Young Cattlemen and Women

by Caitlin Hebbert, livestock consultant | cshebbert@noble.org



of fitting and travel ensues. Generally, a show concludes in one of two ways.

Members of 4-H and FFA members dedicate months of time, money, effort and heart to their show steers in preparation for stock show season. Upon the arrival of shows, a flurry

Either the steer makes the county sale, or he doesn't. In which case, the student and their family can either harvest the animal for their own use or find an avenue of sale, which is rarely profitable. Either way, the relationship between the individual and the animal, after such intensity and dedication, seems to come to a dull end. What if there was a way for those students to be profitable, informed and rewarded in the absence of a show sale?

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FOR MORE INFORMATION

For more information about the Noble Research Institute Junior Beef Excellence Program, please visit www.noble.org/education/junior-beef or email program director Caitlin Hebbert at cshebbert@noble.org.



ABOUT THE JUNIOR BEEF EXCELLENCE PROGRAM

The Junior Beef Excellence Program has existed in southern Oklahoma, in some format, since 1968 with the intent to reward junior cattlemen and women for the carcass merit of their show steers. The Noble Research Institute began sponsoring the program in 1988, and the current, expanded program structure has existed since 1996.

Since then, the program has remained fluid to necessary changes as the industry transforms and advances, but it has maintained the goal of rewarding young stockmen and women in the show industry for proper management and above-average genetic selection of livestock. Participants get paid for how their steer grades on the rail. They also receive all carcass information (provided by the harvest facility) for their steers. Additional prize checks (totaling \$9,650) are awarded to the 10 students with steers whose carcasses were most valuable to the supply chain.

PROGRAM CHANGES

We've recently made some changes to the program, including the addition of counties. Oklahoma residents of Atoka, Bryan, Carter, Coal, Garvin, Grady, Jefferson, Johnston, Love, Marshall, McClain, Murray, Pontotoc and Stephens counties are now eligible to participate in the program.

Additionally, the record-keeping portion of the program used to be an optional addition but will now be required. Participants must submit adequate records for their steer(s) and participate in the interview process in order to receive a carcass merit check. Records may be documented using the Junior Beef Excellence Program web application, a Word or Excel document, or other easily decipherable and accessible methods. This requirement is intended to better prepare young cattlemen and women to be intentional and thoughtful in their methods and management as they navigate not only the beef industry but their future careers.

SUPPORTING THE FUTURE OF THE BEEF INDUSTRY

The intent of the Junior Beef Excellence Program has always been, and remains, to educate and reward young students for their involvement in, and responsibility to, the beef industry they serve. It is important for these participants to understand the impacts of their management and stewardship, not only in the show ring but also down the line at the consumer's family table. As program director, I am looking forward to another year of participation and interaction with these young cattlemen and women as I watch them represent us all so well. 🐮

ECONOMICS

You Can Retain, Feed and Rebreed Open Cows Profitably — Sometimes

by Steve Lira, economics associate | smlira@noble.org and Jon T. Biermacher, Ph.D., associate professor, applied economic research | jtbiermacher@noble.org



When it comes to retaining, feeding and rebreeding open cull cows, there are several aspects to consider and decisions to make. To help us understand the economic potential of different ways of managing such an operation, Noble Research Institute conducted a three-year study (2015/16, 2016/17, 2017/18) on its Oswalt Ranch.

STUDY METHODOLOGY

During the study, we used a total of 244 open cows. At weaning each year in the fall, all cows were weighed, pregnancy tested as open via ultrasound, and assigned an initial body condition score (BCS) by certified beef quality assurance (BQA) research technicians.

Using body condition scores, the cows were sorted into two management groups: a "thin" group (BCS less than 5.5) and a "moderate" group (BCS greater than or equal to 5.5). Each month through the end of the retaining period, cows in both groups were weighed and given a BCS. At weaning time and at the end of the retaining period, the USDA cow

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grader, Tina Colby, traveled to the study site and placed a dressing percentage and USDA grade (lo-lean, lean, boning utility, breaker) on every cow.

FEED RATIONS

Feed rations were developed for both groups to improve the condition of all cows to a target BCS of 6. The ration for the thin group included a mixture of ground hay (60% alfalfa and 40% grass) fed at rate of 20 pounds per head per day, plus 9.5 pounds of corn per head per day, and fed seven days a week. The ration for the moderate cows included the same mixture of ground hay, plus 1.5 pounds per head per day of 32% protein cubes, and fed three days per week.

REBREEDING ATTEMPTS

In addition to feeding the two groups of retained open cows, two rested breeding bulls were assigned to each group of cows each year for a 60-day breeding season in an attempt to rebreed the open cows. Each year, bulls were given a soundness exam prior to turnout on Dec. 1. At the end of each trial in each year, all cows were pregnancy tested via ultrasound. All cows that tested open were subjected to a secondary blood test to confirm that they were open.

MARKETING SCENARIOS

Economic information was generated from two alternative marketing scenarios.

First, we used slaughter cow prices from published USDA-AMS market reports from five sale barns in Oklahoma (OKC West, OKC National, Tulsa, Woodward and Durant) to place initial and ending values on all cows with the assumption they are open. Information from this marketing approach will be useful for producers who do not have access to rested breeding bulls and would only retain and feed open cows. In our second scenario, we used actual sale prices received for all of our open and bred cows that we sold each year of the study. In year 1, we sold all bred cows younger than 6 years of age in a special cow-replacement video auction. All other cattle (open and bred) were sold at Oklahoma City National Stockyards each year at the end of each trial. Marketing bred cows through video auction or live auction in our region was not an option for years 2 and 3. However, marketing scenario 2 does provide information to producers who have access to truckload lots of open cows and rested breeding bulls that can be used to rebreed open cows.

RESULTS

Table 1 reports descriptive statistics for number of cows, beginning (weaning) and ending dates, cow weights, and BCS by management group. On average over the three-year study, cows were retained past weaning for 165 days, and 85% of the open cows were rebred successfully in each year. The results suggest the feeding rations for both groups were effective in moving the open cows in poor condition to the desired BCS of 6 prior to marketing. The average BCS among all cows, years and management groups moved

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The average BCS among all cows, years and management groups moved from 5.53 to 5.93, and 85% of open cows were rebred successfully each year.

Table 1. Descriptive Statistics for Thin and Moderate Management Groups of Cows by Year

Production/Economic Variable:	2015/2016		2016/2017		2017/2018	
	Thin	Moderate	Thin	Moderate	Thin	Moderate
Open cows	20	68	44	46	26	40
Beginning date	14-Oct	14-Oct	10-Oct	10-Oct	17-Oct	17-Oct
Ending date	7-Apr	7-Apr	4-Apr	4-Apr	8-Mar	8-Mar
Avg. beginning weight (lbs/hd)	963	1157	1182	1207	1045	1212
Avg. final weight (lbs/hd)	1159	1179	1236	1210	1132	1276
Avg. beginning body conditioning score	5.35	5.72	5.31	5.74	5.18	5.86
Avg. final body conditioning score	6.36	6.25	5.64	5.97	5.47	5.88
Avg. cow age	4.7	5.9	10.1	5.2	4.7	5.9
Final number of open cows <= 6 years old	1	5	2	6	2	4
Final number of open cows > 6 years old	3	3	3	2	0	0
Final number of bred cows <= 6 years old	15	48	13	34	21	28
Final number of bred cows > 6 years old	1	12	26	4	3	8

from 5.53 to 5.93. The real question, though, is whether or not the final value of the animals outweighed the expenses associated with keeping them through the winter.

Table 2 reports the economics by year, management group and marketing scenario. For the first market scenario, we found that retaining, feeding and marketing open cows in both management groups would not have earned a positive net return compared to selling them at weaning in any of the three years. This was expected because the cost of the feed rations outweighed the price effect from retaining them until the spring.

Results from market scenario 2 show that the actual net returns from selling our bred and open cows varied between systems and years. In the first year, we generated net returns that averaged \$500 per head for 63 bred cows (Moderate = 47; Thin = 16) less than 6 years of age in the special bred cow video auction. In year 2, the thin group had 26 older bred cows that were discounted compared to the younger cows in the moderate group, pulling down the net returns for that group. In addition, bred cow and slaughter cattle prices for year 2 and 3 were significantly lower than for year 1, which also had a negative effect on our bottom line for cows in both groups. It's noteworthy to point out that slaughter-cow and bred-cow prices were declining compared to the record cattle prices of 2014, so much of the loss in year 2 and 3 was due to the effect from the declines in these prices.

CONCLUSIONS

Results from this study suggest a number of key factors associated with making a profit from retaining, feeding and breeding open cows.

- First is the producer's ability to place a score on the animal's condition and to sort open cows into thin and non-thin groups.
- Second is to allocate resources (low-cost feed and hay, labor, rested bulls) on those animals that are thinner and in poor condition.
- Third, it is also more economical to have enough open cows to make up truckload lots in order to help keep transportation costs per animal at a minimum.
- Fourth, we found that the returns from selling younger, bred cows are greater than selling older open or older bred cows, which is similar to previously published findings.

RECOMMENDATIONS

In most cases, especially cases where rested breeding bulls are not available, we encourage producers to go ahead and sell heavy, older open cows at weaning, and provide very low-cost pasture or hay to improve condition and weight on cattle that are thinner, in poorer condition. It is also important to keep an eye on slaughter cow prices. When the market price for slaughter cattle seems to be significantly lower than the average price, you will have better odds to make a profit by retaining lighter, poor-conditioned cattle.

If rested bulls are available and you can conduct pregnancy tests, you might find it



For market scenario 1, we found that retaining, feeding and marketing open cows in both management groups would not have earned a positive net return compared to selling them at weaning in any of the three years. Results from market scenario 2 show that the actual net returns from selling our bred and open cows varied between systems and years. (Note for market scenario 2: Video auction was a marketing option only in year 1.)

Marketing Scenario

Economic variable:	2015/2016		2016/2017		2017/2018	
	Thin	Moderate	Thin	Moderate	Thin	Moderate
Market Scenario 1: Sell all cows using slaughter cow prices from USDA AMS Market Reports						
Average cow value at weaning (\$/hd)	719.56	886.85	632.98	691.09	691.18	844.34
Feed costs (\$/hd)	296.93	214.19	245.47	184.50	202.81	176.17
Labor cost (\$/hd)	57.40	24.89	48.76	48.76	41.67	41.67
Operating Capital at 5.5% APR (\$/hd)	3.94	2.84	3.25	2.45	1.91	1.66
Total cost (\$/hd)	358.27	241.92	297.48	235.71	246.39	219.50
Sale value in spring (\$/hd)	918.51	919.78	825.47	832.34	770.61	781.40
Net return (\$/hd)	-159.32	-208.99	-104.99	-94.46	-166.96	-282.44
Market Scenario 2: Sell Yr. 1 bred cattle < 6 yrs of age via video auction, sell all other bred and open cows at Oklahoma City National Stockyards						
Average cow value at weaning (\$/hd)	719.56	886.85	632.98	691.09	691.18	844.34
Feed costs (\$/hd)	296.93	214.19	245.47	184.50	202.81	176.17
Labor cost (\$/hd)	57.40	24.89	48.76	48.76	41.67	41.67
Breeding bull cost (\$/hd)	28.27	10.80	13.28	11.70	25.99	15.99
Pregnancy test (\$/hd)	6.00	6.00	6.92	6.92	6.73	6.73
Operating Capital at 5.5% APR (\$/hd)	4.39	3.07	3.58	2.75	2.22	1.87
Total cost (\$/hd)	392.99	258.95	318.01	254.63	279.42	242.43
Sale value in spring (\$/hd)	1509.92	1433.76	861.90	971.13	940.16	909.55
Net return (\$/hd)	397.37	287.96	-89.09	25.41	-30.44	-177.22

advantageous to sell bred cows in periods when the nation's producers are increasing their herd sizes and bred cow prices are moving up. It can also be good to rebreed open cows if you have access to special bred-cow sales and as long as the urge to keep a bred cow back in the herd is not

overwhelming. For smaller operations that have limited labor and financial resources and only a handful of open cows, we encourage keeping those cows on low-cost pasture or hay for a short period after weaning; market them after they have regained some condition. 🐮

LIVESTOCK

This Is What Your Feed Tag Is Telling You



by Robert Wells, Ph.D., livestock consultant | rswells@noble.org

When purchasing feed, it is essential to take time to read the feed tag that, by law, is attached to every bag of feed or mineral sold. This will help you determine if the feed is legal and safe for the animal species you will feed it to and that it will satisfy the animal's nutritional needs. The following sections will typically be on most feed tags.

PRODUCT NAME

The feed name and brand will be listed at the top. If it is medicated, the word "medicated" must be at the end of the name.

1 GUARANTEED ANALYSIS

This section defines the nutritional composition of the feed or mineral. If the product is intended as a feed or feed supplement, the following must be listed as a minimum: crude protein, crude fat and crude fiber. For mineral products, minimum and maximum guaranteed levels of calcium and salt are required. Minimum guaranteed levels must be listed for phosphorus, magnesium, magnesium, potassium, zinc, copper, selenium and vitamin A. If a nutrient is listed on the label, it is subject to testing by government agencies to ensure proper inclusion of the nutrient. Unless otherwise indicated with a maximum level, the product may contain higher levels of the nutrient than listed.

CAUTIONARY STATEMENTS

This section describes potential hazards for other classes of animals and species. Also, if you should adhere to a withdrawal period, it will be indicated here. If there are special mixing or handling considerations, it will also be listed in this section.

2 FEED INGREDIENTS

This section lists the feed ingredients, typically in order of highest to lowest inclusion rate. Note that many manufacturers will use general descriptive terms like grain products, plant protein products or forage products. The use of generalized terms allows the manufacturer the latitude to least-cost formulate the feed without having to reprint labels for each modified ration.

4 PURPOSE/PRODUCT STATEMENT

This statement indicates the species of animal and stage of production that the feed can be used for (for example, mineral for beef mature cows on pasture).

MEDICATED USE STATEMENT

If the feed contains any medication (Bovatec, Rumensin, Chlortetracycline, etc.), the active ingredient and quantity must be listed.

3 FEEDING DIRECTIONS

This is a set of instructions for how the feed or mineral should be fed to the animal, including how much to feed daily and, if needed, how to mix the mineral or feed with additional product to achieve the recommended intake rate. If the product contains medication, this section will typically indicate the concentration of the medication as well as the concentration of the medication to be delivered to the animal on a daily basis.

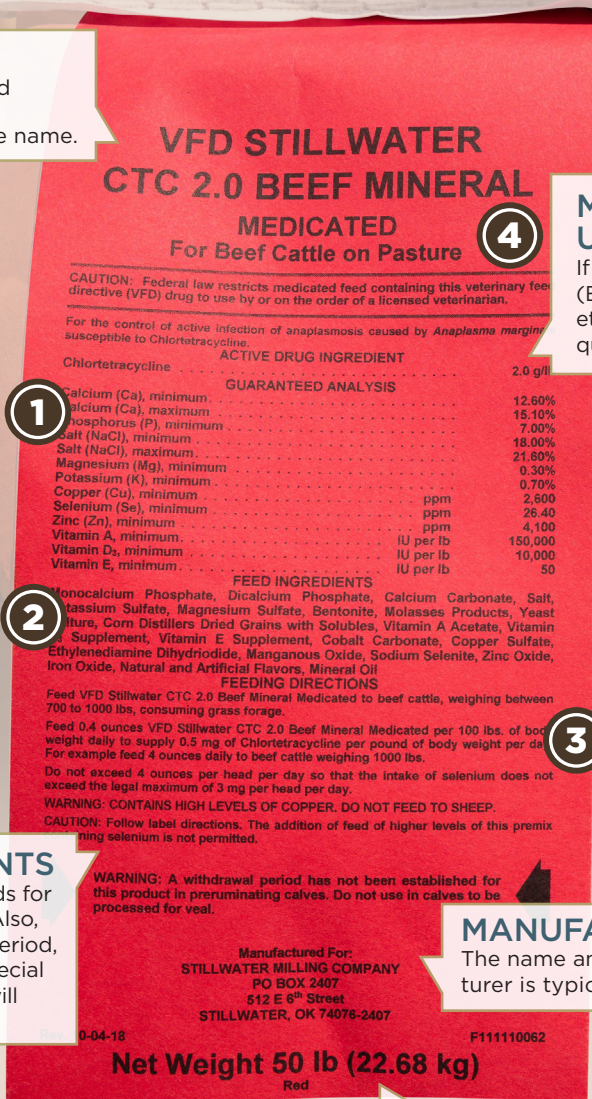
MANUFACTURER

The name and location of the feed manufacturer is typically included in this section.

NET WEIGHT

This is the total weight of the packaged product.

Note: You cannot determine the amount of net energy or total digestible nutrients (TDN) contained in the feed product from most labels. It is wise to have this discussion with your feed dealer since supplying adequate energy to the animal is as important as meeting protein, minerals and vitamin requirements. 🐮



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OCT. 29

Using Grazing to Manage Wildlife Habitat

9 a.m. - 4 p.m.

Cross Timbers Wildlife Management Area
7761 Stockton Road
Burneyville, OK 73430
No Registration Fee

Most people think cattle and wildlife are incompatible. This is not the case. When managed correctly, native rangelands can produce optimal wildlife habitat and forage production for cattle. When native rangelands are not utilized or are over-utilized, both cattle and wildlife suffer. Come find out how you can use cattle, fire and mechanical means to make productive rangelands that will benefit your cattle and wildlife.

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UPCOMING EVENTS

Preregistration is required. Registration closes five business days before the event.

For more information or to register, visit www.noble.org/events or call 580-223-5810.

For other agricultural questions, please call our Ag Helpline at 580-224-6500.



Debunking Deer Myths

PART 2
SEPT. 12

Noble Research Institute and Bass Pro Shops has teamed up to bring land managers, hunters and deer enthusiasts a two-part series that provides a comprehensive understanding of deer management principles. Wildlife biologists will lead the discussions and answer your questions on deer management.

4-7 p.m.
Bass Pro Shops in Grapevine
2501 Bass Pro Drive
Grapevine, TX 76051
No Registration Fee



SEPTEMBER | 10

Introduction to Integrity Beef

4-7 p.m.
Pavilion
No Registration Fee



SEPTEMBER | 17

Demonstrating Pecan Orchard Floor Management

1-4 p.m.
McMillan Farm
No Registration Fee



OCT. | 1

Managing Weather-Related Risk for Specialty Crops

6:30-8:30 p.m.
Kruse Auditorium, Entry 5
No Registration Fee



OCT. | 15

Introduction to Land Stewardship

8:30 a.m.-noon
Coffey Ranch
No Registration Fee