



As the Spring issue of Beef Cattle Penning is being distributed, hopefully we are getting close to warmer weather and green-up. The eastern portion of Texas has received some winter moisture while the western half has received very little or still waiting on it. The calves have been hitting the ground and the cattle working will begin soon. We hope you enjoy this issue which will discuss Responsible Calf Management, Calving Management Tips, Fly Control for Beef Cattle, and the 54th Annual Texas A&M Beef Cattle Short Course.



Calving Management Tips



Dr. Joe Paschal
Professor & Livestock Specialist, Corpus Christi

About 80% of all calves lost at birth are normal with most deaths due to injuries resulting from difficult calving or delayed calving. The first step to a successful calving season is to recognize a normal calving. Most calves are normally presented and will be delivered without assistance. Only about 2% of cows require assistance so most attention should be directed towards first calf heifers which tend to be confused about what is happening and tire quickly. It is helpful to know when the heifers or cows were bred and to know how to look for signs of the cow preparing to calve.

Generally speaking, as calving gets close, especially in first calf heifers, the mucous plug in the cervix begins to break

down and is expelled from the vulva. At about the same time, the vulva begins to swell and sag (especially in *Bos indicus* and *Bos indicus* cross females) and the udder begins to fill. The closer to calving a cow gets, the more pronounced the swelling of the vulva and udder becomes. At this point the heifer or cow may also “wobble” as their pelvis is beginning to loosen to allow it to spread as the calf passes through the birth canal. If calving is done in a pasture, a cow will tend to drift away from the herd to calve. However, the heifer may not recognize what is happening to her and tend to stay with the herd. If you are monitoring your calving heifers, move them to an area where you can render assistance to them if needed with a minimum of danger to yourself or others and stress to her.

The stages of a normal delivery and the approximate normal times are:

Stage I: Preparatory (2-6 hours)

1. Calf rotates to an upright position
2. Uterine contractions begin
3. Water sac is expelled and breaks

Stage II: Delivery (1 hour or less)

1. Cow or heifer lies down
2. Calf enters birth canal
3. Front feet and head are visible first (in a normal presentation)
4. Calf is completely expelled and delivery is complete

Stage III: Cleaning (2-8 hours)

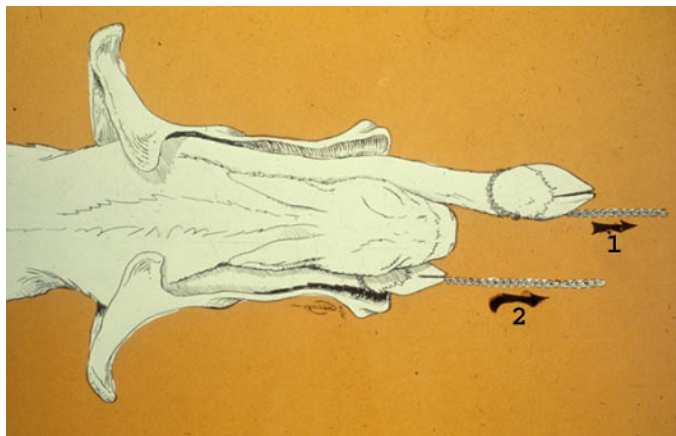
1. “Buttons” or attachments of placenta to uterus release
2. Uterine contractions expel placenta and cow may eat it



When should you assist? Generally if there is no progress after 30 minutes. If you assist, cleanliness is a must if possible to prevent uterine infections and delayed return to estrus and rebreeding. Wear long sleeved plastic gloves if you have them if not, wash your hands thoroughly. Also, use a good lubricant or if necessary a cooking or mineral oil or Vaseline, but not soap. Soap breaks down the natural lubricant of the cow.

The calf is enclosed in a large fluid filled sac called the “water sac”. Once the water sac has passed through the birth canal to the outside of the cow and has broken then fast progress needs to be made to ensure a live calf. In a normal presentation, the calf’s head should appear between the front feet, all at the same time. If only one foot appears with the head, a leg is back, or if two front feet appear but not head appears, the head is back. In both cases the calf has to be pushed back and the leg or head pulled forward.

In abnormal presentations the hind feet or tail may appear or the calf may be presented upside down or breech (sideways). If the presentation is abnormal, and you have no experience in this type of delivery, then you should call your veterinarian for emergency assistance. When you call your vet, make sure the heifer or cow is in an accessible area. Veterinarians don’t really like to rope cows at midnight in a large pasture and dally them to a fence post or tree. Been there, done that. If you anticipate needing your veterinarian, it is always better to call early rather than late.



If assistance is to be given in a normal presentation, and more than a firm pull is needed, clean calving chains should be used. Calving chains should be double looped above and below the dew claw with the chains under the hooves. Double looping them helps prevent injury to the calf’s legs and feet when assisting its birth. “Walking” the calf out by pulling alternately on one chain and then the other will help ease the shoulders through the birth canal. Once the shoulders are out, the calf can be rotated 45 degrees to the right or left to allow more space in the birth canal for the hips to pass through and avoid a “hip lock”.

The best way to make sure your heifers and cows have live calves is to pay attention to the type of bulls they are bred to. Heavy birth weights are the principle cause of calving difficulty. Birth weights are caused primarily by differences between breeds and sires within those breeds. Difficult calving can also be caused by sex of calf (bulls are heavier than heifers)

and sometimes by nutrition of the cow. Thin cows can have as much calving difficulty as fat cows. Age of the cow also has an effect with first calf heifers of any age experiencing more calving difficulty than cows having had at least one calf.

In recent years the internal dimensions of the heifer's or cow's pelvis have been implicated. However, pelvic area is larger in larger framed cows (and heifers) but then they also have larger and heavier calves as well. The use of pelvic area in selection should be to cull very small and unusually narrow heifer pelvices but not to select for an increase in pelvic area. The best method to reduce calving problems in both heifers and cows is to select bulls with low birth weight and high calving ease EPDs.

Once the calf is delivered it is important to make sure the calf is breathing. This can be done by swinging the calf's head down to clear the nasal passages of mucous and dropping the calf (gently) to stimulate breathing. Sometimes you can push gently on the rib cage to stimulate breathing. In exceptional cases you may want to close the mouth and one nostril of the calf and blow into the open nostril gently until the calf breathes on its own. A vigorous rubbing and drying with clean cloth or paper towels will help stimulate the calf to breathe and stand to nurse. If you are calving at night in an open field, do not shine lights directly on the calf or the cow's udder nor untie or release the cow or heifer until some bonding has occurred (recognition of the cow of her calf or nursing occurs).

The best way to assist your cattle at calving is to make sure that calving difficulty is kept to a minimum through proper development of your heifers, good nutrition of your cows, and genetic selection to reduce or maintain birth weight and maintain or improve calving ease. You may still experience some calving difficulty, especially in heifers, so be prepared to recognize the signs and stages of calving and know when and how to assist.

Pictures used by permission of Colorado State University Integrated Livestock Management.

Responsible Calf Management



*Dr. Ron Gill
Professor & Livestock Specialist,
Stephenville*



*Dr. Rick Machen
Professor & Livestock Specialist,
Uvalde*

Cow owners bear significant responsibilities.

The mating decisions they make fix the genetic potential for growth, health, carcass merit and tenderness. Handling techniques early in the calf's life impact disposition for the remainder of the animal's life. Management practices implemented at an early age can reduce stress, improve immune function and health and enhance weaning weight. In this article, we'll discuss four management practices that every cow owner should consider.

Identify Your Cattle

Two reasons to identify your calves:

1. Establish ownership. In the event your cattle were to mix with the neighbor's, unless you know yours by name and can call them, some form of identification will facilitate separating the cattle and maintaining neighborly relations. Better yet, should someone steal some of your calves, if they have no identification, recovery will be very difficult. Numerous cattle thieves have confessed – identification deters theft!
2. You can't manage what you can't measure. Given the rapidly rising cost of production, it will become all the more imperative that we identify cows with lower productivity. If you know your cows by name or number, you can likely match each calf to their dam at weaning. Otherwise, identification of calves is necessary if productivity of the cows is to be accurately assessed.

Methods of identification include:

A. Branding, either hot iron or freeze. Hot iron branding is recognized as the most practical method of permanent identification. Freeze branding is also permanent, but is limited to cattle with darker hair coats.



B. Ear tags. Easy to apply, very practical and very economical, but not permanent. Ear tags can be lost or removed.

C. Ear marks/notches. Least cost and permanent, but potentially alterable. Ear marks work well to differentiate cattle from the neighbor's, but may be [unintentionally] duplicated by other cattle owners in the county. Ear marks can be difficult to see/read on cattle with a winter hair coat.

Vaccinate for the clostridial complex

The Clostridial complex is a genus of bacteria responsible for several diseases including but not limited to Blackleg, Enterotoxemia, Malignant edema, Red Water and others. These spore-forming bacteria can reside in the soil for long periods of time and are widespread. Sometime during their life, every calf will be challenged by the Clostridial complex.

An annual "Blackleg" booster administered to the cow herd within 45 days of calving will boost the clostridial antibodies included in colostrums and bolster protection of young calves. Those same maternal given to young (2 months of age or less) calves. However, vaccination of young calves 'primes' the immune system and facilitates an effective immune response when the second vaccination is received.



Beef Quality Assurance best management practices require that all injections be given in the neck. If afforded a choice, choose a subcutaneous (under the skin) route of administration over intramuscular. *Beef producers should consult with their veterinarian in the design and implementation of a preventative herd health program*

that may include the use of additional vaccines.

Vaccine handling, syringe management and needle selection

Implementation of a vaccination program is fairly easy but should be done in a manner to make sure the program is successful. When handling vaccine, make sure that it is not left exposed to heat, freezing temperature or sunlight for an extended period of time.

Sunlight (UV light) is detrimental to vaccine, particularly modified live virus (MLV) vaccines, but will also reduce effectiveness of killed (K) vaccines as well. Most exposure to UV light occurs during processing of cattle. Efforts should be made to shield syringes and vaccines from sources of UV lights at all times.

Heat has long been a concern of producers when handling of vaccine. Although exposure to prolonged heat will lead to deterioration of vaccine, brief exposure to room temperatures will not inactivate vaccine. If it would, injecting it into an animal that is 101° F would also inactivate it.

Freezing vaccine (particularly Killed products) is more detrimental to efficacy than brief exposure to elevated temperatures. Freezing ruptures the killed cells in the vaccine releasing endotoxins that can in fact be lethal to cattle. Although the risk of freezing occurs in transportation of vaccines, most freezing occurs in the old refrigerator in the barn used to store vaccines. Always monitor the high and low temperature in these refrigerators with a thermometer that records both the high and low temperature range. Most barn refrigerators were moved to the barn because they did not work well in the house.

Syringe management is important to the success of a vaccination program. Never use chemical disinfectants to clean syringes if there is a possibility of a residue remaining in the barrel of the syringe. To sterilize syringes between processing simply boil the barrel and other components that might come in contact with vaccine.

Do not lubricate the O-ring or plunger with anything that is not sterile. All lubricants on the market will reduce the efficacy of vaccine. It is best to use the first draw of vaccine to lubricate the syringe barrel.

Use sterile 18 or 16 gauge needles that are 5/8 to 1 inch in length for most processing needs. Change a needle whenever it gets dirty, dull or experiences a burr. As a minimum, change needles every 10 head.

All vaccinations should be given in the neck region and subcutaneous (sub-Q) if it is an approved route of administration (read the product label). Sub-Q injections can be given under the skin on the side of the neck or in the dewlap of a calf. All intramuscular injections should be given in the muscle in the center of the neck.

Castrate bull calves

It is the responsibility of the cow/calf operator to castrate commercial bull calves – period. Sooner or later, all bull calves headed for a stocker grazing program or the feedyard will be castrated - and the sooner the better. Castrating bull calves before they reach 200 pounds is a best management practice for beef producers. Castrating at a young age is less stressful on both the calf and the people working the calves. Furthermore, castration at a young age will significantly reduce the incidence of pregnant heifers (bred by half brothers prior to weaning) in the feedyard.

The industry preferred method of castration is knife cut, where the lower third to half of the scrotum is removed and the testicles are removed one at a time. Proper restraint is critical for the safety of both the castrator and the calf. Calf cradles or chutes are handy, but experienced handlers can also properly restrain calves on the ground or while standing in a chute.

If bull calves are castrated, consider using a growth promoting implant to safely and cost-effectively add 10-25 lb of weaning weight to the steer calves.



Deworm (spring-born) calves preweaning

A summary of twelve trials conducted by Dr. Steve Wikse (CVM-TAMU) and others concludes that de-worming spring-born calves resulted in heavier weaning weights (range was 8 to 46 lbs.) in 11 of the 12 trials. Calves were treated May to early July and weighed 200-350 lbs. when treated. The largest weaning weight response was observed in calves nursing young (2-3 years old) cows.

After considering these management suggestions, the most frequent question posed by *cattle owners* is “Why should I do it?”

Beef producers will recognize them as the ‘right thing to do’.

Getting Ready for Breeding Season



*Dr. Bruce Carpenter
Assistant Professor & Livestock Specialist, Fort Stockton*

Opportunities to manage cattle for breeding success pretty much begin at weaning (or even before) and are pretty much over with by the end of calving season. That is, by the time breeding season commences, it is usually too late to do anything to improve success. Supplemental feeding programs, forage programs, heifer and bull development programs, vaccination programs, etc. all take time in order to work.

Supplemental feeding is only a cost-effective means of managing herd nutrition when there is an adequate supply of standing or harvested forage available. Benefits of a well managed hay program last summer will be reaped during this spring’s breeding season. It is important to harvest quality hay and have it tested for nutritional quality; then store and feed it properly. Similarly, on native pastures, a critical time to do a forage inventory is in the fall - at the end of the growing season. Adjust stocking rates accordingly because in cooler, drier regions of Texas, this is typically all of the forage that will be grown (or available) during the critical winter supplementation period. In some areas of Texas, the opportunity to provide high quality cool season improved forage exists (ryegrass, clover, wheat, etc.). Plan and implement those programs in the fall.

Use body condition scores (BCS) to evaluate cow nutrition **BEFORE** calving, so that at calving, cows are in a BCS of 5 or better (no ribs showing). If using only increased supplement, it will take about 2 months to move body condition up one

score. Therefore, managers need to monitor their cows well before calving begins. That way, marginal or thin cows will have time to respond to increased supplement. It usually pays to sort the thinner animals into separate pastures for increased feeding. Remember: it is much easier to improve condition on a dry cow vs. one that has nutrient requirements that have peaked with calving. As seen below, protein requirements almost double and energy requirements increase by about 13% at calving. Sometimes pasture conditions dictate that supplemental feeding continue through the end of the calving season, but it is still most cost-effective to begin those programs before calving begins.

Nutrient Requirements

Nutrient Requirements	Dry Matter Intake	Crude Protein	Energy (TDN)
1200 lb Dry pregnant Cow last trimester	19 lb	1.2 lb	10.7 lb.
1200 lb cow, early lactation, average milking ability	23.1 lb	2.1 lb	12.3 lb.



BCS 3



BCS 4



BCS 5

BCS 3 cows have lost fat as well as some muscle. The hook and pin bones are visible and prominent, as is the spine. They do not come into heat and do not breed. BCS 4 cows are marginal. They have lost some fat but not much, if any, muscle yet. Ribs are visible. They will either 1) fail to come into heat and breed, or 2) come into heat late. The latter means that they will be late calvers. This places them at a much higher risk for re-breeding failure in later years. BCS 5 is the minimum for good reproductive performance. Note that no ribs are visible and she has a smooth overall appearance. She is not yet fat. Having cows at higher BCS than 5 does not adversely affect fertility, but supplementing them beyond a BCS 6 is uneconomical and unnecessary.

If you are hand-feeding a high protein (30% or higher) supplement like cotton seed cake, significant savings in time, labor and “wear-and-tear” can often be achieved by feeding those supplements less frequently. Research from several universities indicates that animals perform just as well when they are fed their weekly allotment of high protein supplement once per week vs. 3 times per week. The “once-a-week” program is not recommended for high energy type supplements. When higher energy supplements are needed, they should be fed more frequently: every day or every-other-day. Added benefits of a once-a-week program, especially in larger pastures, are that animals do not become habituated to the “feed wagon”. They spend more time grazing and will range over more of the pasture. Grazing efficiency can further be improved by feeding during the mid-day when animals are not normally up and grazing anyway. No matter the frequency, feeding early or late in a day tends to disrupt normal grazing.

As mentioned, cool season improved forages may be an effective way to provide high quality nutrition and save on supplement. However, if animals are kept on such pastures transitioning into the calving season, they will be at higher risk for grass tetany. Provide a high magnesium mineral and watch them closely. Providing access to dry pasture or hay and/or limiting grazing to half-days or less, is one way to stretch supplies of winter pasture and mitigate possible excess protein in the diet. Some research has shown that excessive levels of protein during the last trimester of pregnancy may increase birth weights slightly. High excesses of protein do not always occur on cool season forage, but it is a possibility. It is important to know that both protein and energy requirements are being met for both cows and heifers. Undernourished animals are weak and at much higher risk of having calving difficulty which in turn has been shown to significantly lower re-breeding ability, as well as adversely affect the health and vigor of the calf. The adage that: “you can’t starve a light birth weight,” is certainly true.

Weaned replacement heifers should be grown in programs that produce enough weight gain that animals reach 65% of expected mature weight by the time they are 12 to 15 months-of-age, depending on breed. They should be pastured and fed separately from the rest of the herd. Weigh heifers individually at weaning and know the date of first breeding. Then calculate the number of days from weaning to breeding. Finally, calculate needed average daily gain (usually 1 to 1.5 lbs / day). It is important to check-weigh animals along the way so that you know if the program is working. While uniform weight gain (weaning to breeding) is a common strategy, research has shown that some nutrient restriction early in the program does not hurt breeding performance, so long as heifers are “pushed” in the final months in order to make-up for it. Either way, the ultimate goal is the same: all heifers achieve their target weight by first breeding.

Work with your veterinarian to attend to vaccinations and herd health. Make sure that vaccines for reproductive diseases (those that can cause abortion or breeding failure: leptospirosis, vibriosis, BVD, etc.) are given at least 4 to 6 weeks ahead of the breeding season. That allows time to elicit immune responses in the months when it is most important. Heifers will need two vaccinations their first year. Annual boosters must be given to all animals. Trichomoniasis (Trich) is another reproductive disease that has surfaced in many regions of Texas. It is venereal, so it spreads with breeding activity. There is a vaccine, but realize that it has limitations. It is critical to work with a veterinarian if a vaccination program becomes necessary. Prevention of the disease is the best strategy, so use virgin bulls. If buying older bulls, get them from a known origin and have them quarantined and tested before using them. Good fences cannot be overemphasized as a prevention tool. If you purchase non-virgin females: quarantine them, and any bulls used on them for at least 2 years, or until your veterinarian can determine if they are free from trich (breeding patterns, culture, etc.).

Speaking of bulls, don't forget to plan annual breeding soundness exams for all bulls. Fertility can change in bulls due to factors like injury, disease, or age so it is important to get them done every year. Exams should be done 2 to 3 months before breeding, so that if a bull does turn up with a problem you will have time to find a replacement for him - and get the appropriate tests done (see above).

Remember, herd fertility is the number one factor affecting income from a cow-calf enterprise. It is influenced by a host of factors, but the major ones are nutrition and herd health.

Fly Control for Beef Cattle



Dr. Jason Banta
Assistant Professor & Beef Cattle Specialist, Overton

External parasites are a major issue that must be addressed in beef cattle production to ensure efficient performance of cow-calf, stocker, and feedlot operations. Cattle are affected by numerous external parasites including: horn flies, stable flies, mosquitoes, house flies, cattle grubs, lice, ticks, and mites just to name a few. All of these parasites have the potential to reduce performance and ultimately the economic bottom line if they are not controlled when economic thresholds are reached.



In the interest of time and space this article will focus on three primary fly pests of cattle in Texas, which include: horn flies, stable flies, and house flies. These species are unique in where and how they attack cattle and thus the strategies needed to control them. Control methods include: biological, cultural, and chemical. Biological control utilizes parasitic wasps and other insects to suppress fly populations where as cultural control involves the reduction or elimination of potential breeding sites. Although we are still a few months away from warm weather and fly season for most of the state, it is important to go ahead and develop a fly control plan for your operation. A good plan includes: determining what types of control will be utilized, when treatments will be implemented for each fly species, what insecticides will be applied, and what methods of application will be used to apply

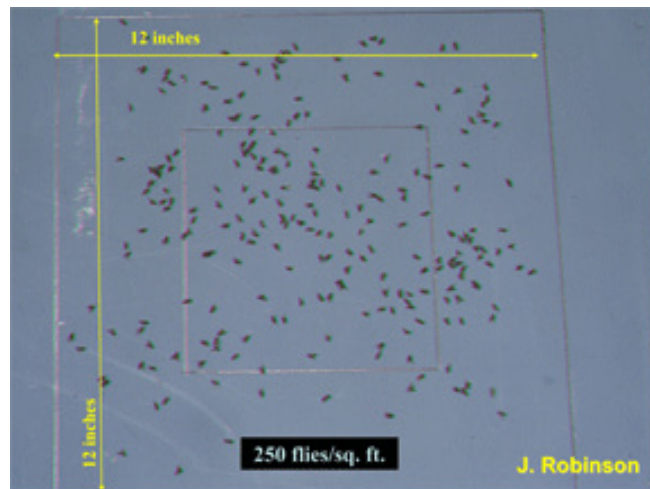
the appropriate product. In order to effectively control flies, it is critical to properly identify the species causing the problem and understand their life cycle and feeding habits. Feeding habits will vary among these fly species; however, all have the same basic life cycle which includes: egg, larval, pupae and adult stages.

The horn fly is the most damaging insect pest of cattle in Texas. Horn flies are bloodsucking flies that feed mainly on the back, shoulders, and sides of cattle; during the heat of the day they can be found on the belly and sides. Adult horn flies live for about three weeks and feed approximately 20 to 30 times per day. They remain on cattle at all times except when females leave for brief periods to deposit their eggs in fresh manure droppings. In most years, populations will peak in

the spring, decline in the heat of the summer and peak again in late summer and fall. Topical chemical treatments such as pour-ons, sprays, insecticide ear tags, dust bags, and rubs should be employed when populations reach approximately 250 flies per animal. To prevent horn fly resistance, the chemical class, not just the brand name, of insecticide used for treatment should be rotated from one year to the next. Additionally, combination products that contain more than one chemical class as well as the use of multiple chemical classes within the same year should be avoided. Chemical classes of topical insecticides include: pyrethroids, organophosphates, chlorinated hydrocarbons, and spinosyn. Effectiveness of topical treatments can also be improved by working with your neighbors to ensure that everyone is using products from one chemical class this year and that everyone switches to another chemical class next year; this strategy will help reduce potential resistance problems. In addition to topical insecticides, feed additives and boluses are available which contain insecticides that pass through the digestive tract and prevent larval development in cattle manure. The effectiveness of these products can be reduced if intake is not consistent or adequate among all animals in the herd or if neighboring herds are not treated with a similar product.

Stable flies are larger than horn flies and primarily attack the legs of cattle. In contrast to horn flies, stable flies are only observed on cattle when the flies are feeding, consequently, economic thresholds are only 2 to 4 flies per leg. Because stable flies choose to rest on barn walls, feed bins, and other hard surfaces, treatment should focus on the application of residual wall sprays where flies commonly rest as well as the reduction of preferred breeding sites. As opposed to horn flies, stable flies prefer to lay their eggs in decomposing vegetation which is commonly mixed with urine and feces; round bale feeding sites can make excellent locations for stable fly reproduction.

Unlike horn and stable flies, house flies do not feed on blood. Instead they feed on secretions around the eyes and nostrils of cattle as well as manure and livestock feed. House flies are more of a problem for cattle maintained in confinement as compared to those grazing pastures. Production losses result from annoyance and the transmission of diseases such as mastitis and pinkeye. Treatment involves sanitation as well as the use of insecticides in sprays and baits.



A combination of biological, cultural, and chemical control should provide the greatest reduction in fly populations. When using chemical control, remember to choose the appropriate insecticide and product to control the desired pest. Always read and follow label directions to ensure the safe and effective use of each and every product.

For more information on the identification and control of horn and stable flies please see the following Extension publications.

[Protecting Cattle from Horn Flies E-208](#)

[Suppression of Stable Flies on Cattle E-212](#)

54th Annual Texas A&M Beef Cattle Short Course



Dr. Jason Cleere

Assistant Professor and Beef Cattle Specialist, College Station

Each year in August more than 1,300 beef cattle producers from across the U.S. and other countries converge on the campus of Texas A&M University to attend the Texas A&M Beef Cattle Short Course. The Short Course, in its 53 year history, has become the largest beef producer educational event of its kind in the U.S. The 2 ½ day educational event is known for being one of the most comprehensive beef cattle adult educational programs available. More than 50 different university faculty and industry leaders from across Texas and the U.S. help form a very diverse and cutting edge educational program. The most popular part of the Short Course each year is the Cattlemen's College which is a group of workshops that are devoted to specific topics. Soil fertility, forage quality, nutrition, genetics, reproduction, cattle health and cattle handling are just a few of the topics covered in 19 different sessions. This format allows participants to choose the specific workshops that they are interested in. The Beef Cattle Short Course trade show is also a popular part of the conference with more than 100 different exhibitors on hand to discuss their products and services. The following are just a few comments taken from surveys completed by the beef producers attending the 2007 Beef Cattle Short Course:



“Great programs and excellent instructors. The material presented was very up to date and easy to understand.”

“Course content was excellent and applicable to implementing in the herd/farm immediately.”

“After this first ‘college,’ I would consider it a must for next year.”

Planning is well underway for this year's Beef Cattle Short Course to be held August 4-6, 2008. For more information, visit <http://animalscience.tamu.edu/ansc/BCSC/index.html>.

FOR MORE INFORMATION CONTACT:

**BEEF CATTLE EXTENSION
2471 TAMU COLLEGE STATION, TX 77843-2471
extansc@ag.tamu.edu - 979.845.6931
<http://beef.tamu.edu>**