

Beef CHAMPS

Beef Cattle Health and Management Production Strategies

February 2010

United States Department of Agriculture, University of Arkansas, and County Governments Cooperating

Assisting With Calving Difficulty

JEREMY POWELL

Jeremy Powell, DVM
Associate Professor
and Veterinarian

Brett Barham, Ph.D.
Assistant Professor -
Breeding and Genetics

Calving difficulty (dystocia) is an important economic problem in the U.S. beef cattle industry. According to the USDA, the economic impact of calving difficulty is \$350 million each year, and approximately 3 percent of all beef calves born in the U.S. will be lost due to calving difficulty. Several factors can play a role in causing calving difficulty, including heavy birth weights, abnormal fetal position, limited pelvic area and the female's age. In order to recognize dystocia and know when assistance is required, it is important to be familiar with the different stages of labor.

- **Stage 1:** Uterine contractions and cervical dilation begin. The cow will exhibit behavioral changes such as moving away from the herd, restlessness and her tail may be raised. This stage typically lasts between two to six hours and ends when you see the presentation of the water bag.
- **Stage 2:** This stage is considered "hard labor." Powerful uterine contractions are occurring, and the cow will usually be lying down and pushing. This stage ends with the birth of the calf and typically lasts between 30 minutes to two hours.
- **Stage 3:** This is the stage when the cow will "clean." The after-birth and placenta will be expelled from the cow, usually within eight hours after the calf was born.

A normal delivery should be completed during Stage 2 and within

one to two hours after the water bag appears. It is important to observe a cow in labor and to leave her alone if the calving is proceeding normally. However, if the cow is in Stage 2 and **no progress** is observed after one hour, then assistance may be required.



Figure 1. Cow exhibiting a water bag.

When a prolonged calving period is observed (longer than the typical duration noted above), a pelvic examination should be performed. Proper measures should be taken to disinfect yourself and the cow before attempting a pelvic exam. Always wear an OB sleeve while performing this exam.

The first thing to determine upon examination of the birth canal is if the calf is in the normal delivery position (see Figure 2). If the calf is positioned correctly in the birth canal and the cow requires assistance to complete the delivery, OB chains can be applied to the front legs. Carefully secure the two loops of the OB chains, one above the ankle joints onto the cannon bones of the front legs and one loop below the ankle joint. The chains should be adjusted so they pull from the bottom side of the legs to help prevent a leg fracture.

*Arkansas Is
Our Campus*

Visit our web site at:
<http://www.uaex.edu>

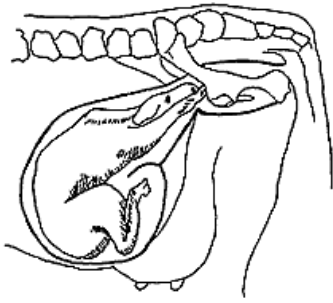


Figure 2. Normal position for delivery.

OB handles should then be attached to the chains and traction applied to the calf to aid the cow in delivery. After the calf's head and shoulders are exposed, the calf should be pulled downward at a 45-degree angle parallel with the cow's back legs. In some situations, a calf jack may be needed for delivery. If using a calf jack, always bear in mind that significant pressure can be applied with this instrument. The force during a calf pull when using a calf jack is approximately equal to the same force as seven men pulling on the animal. It is very easy to place excessive force. Be very aware not to traumatize or

injure the cow and/or calf when using a calf jack. After the calf has been delivered up to the last rib, rotate the calf one-half (1/2) turn to avoid hip lock, and the rest of the calf's body should deliver on its own.

There are a few things to avoid while assisting a cow during calving. Never use soap as a lubricant because it removes the cow's natural lubricants in the birth canal. Several good commercial lubricants are available for obstetrical use. Try to avoid pulling on the calf until the cow is also pushing, and maintain tension when she rests to keep the calf from slipping back into the uterus. Also, be as sanitary as possible. Clean the cow, and sanitize the equipment and your hands before you begin.

After the calf is delivered, remove all mucus and birthing tissues from the calf's airway and mouth. The calf should be tagged for identification and its birth weight recorded. Bull calves can be castrated at this time. The navel can

be disinfected with iodine to reduce the possibility of infection.

Cows and heifers that are due to calve should be moved a couple of weeks before the calving season to a smaller pasture where they can be easily observed. Always try to avoid moving the animal long distances after labor has begun. Because a cow or heifer will stop to examine new surroundings, moving the animal will slow down the labor process. It is a good idea to always have proper facilities and equipment close at hand and in working order for use during the calving season.

Calving difficulty can be somewhat manageable, and remember that good nutrition and proper sire selection can go a long way to help improve the percent calf crop. It is important to learn more about the proper use of calving ease EPDs when selecting a sire for your herd.

For more information about beef cattle management, contact your county Extension office.

Managing to Avoid Calving Difficulty

BRETT BARHAM

Many people find the time leading up to calving season filled with excitement to see what the next calf crop will look like. I am sure that some also dread some parts of calving season as well, and I bet that part involves using a calf puller! There is not much joy to be found in losing a calf or heifer due to dystocia. The good news is that through good management, several causes of dystocia can be avoided.

There are two main causes of dystocia, excessive calf birth weight in relation to the dam's pelvic area and abnormal calf presentation. There are three major factors affecting the birth weight of a calf. The first is the sex of the calf; bull calves weigh more than heifers. Obviously, we cannot control this efficiently. The second is nutrition. This can be controlled by monitoring the feed intake of heifers and

their body condition. The third is the genetic influence of the bull on birth weight. This can be controlled through proper sire selection.

There are two main causes of dystocia, excessive calf birth weight in relation to the dam's pelvic area and abnormal calf presentation.

One common problem to avoid is improper selection and feeding of your replacement heifers. Small, underdeveloped heifers have more problems with dystocia than larger, properly developed heifers. The reason for this is their pelvic area. The larger heifers usually have a

larger pelvic area. Heifers should be fed to weigh approximately 75 percent of their mature weight before breeding (usually around 14 months). They should be fed to a body condition score of 5 or 6 but should never be overfed to cause excessive fat buildup. This can also contribute to dystocia as well as decreased milk production, due to excessive fat in the udder.

Structural traits in cattle tend to be highly heritable, and pelvic area is no exception. This means there is a large genetic influence on pelvic area, which results in rapid response to selection. However, pelvic area is genetically correlated with many other traits, so selection for increased pelvic area alone can result in other traits changing for the worse. For example, selecting for increased pelvic area can result in increased birth weight and

mature weight. Pelvic measurements should be taken prior to the first breeding season and combined with a reproductive tract examination. The best use of pelvic measurements is to identify abnormally small or abnormally shaped pelvises and cull those animals. These situations left unidentified are often associated with extreme dystocia, resulting in cesarean delivery and even death of the calf or cow.

Proper sire selection can solve many problems associated with excessive birth weights. Beef producers have at their disposal excellent tools in the form of Calving Ease and Birth Weight EPDs to assist in the management of calving difficulty. While these two EPDs are highly related and are under the influence of many of the same genes, they describe different traits associated with management of calving difficulty. Consider the following example for two bulls:

	Calving Ease EPD	Birth Weight EPD
Bull A	+7	+1.5
Bull B	-2	+4.0

Calving Ease EPDs predict the ease with which a sire's calves will be born when he is bred to first-calf heifers. Calving Ease EPDs are expressed as a percentage of unassisted births. Using the example above, if we mated both bulls to 100 first calf heifers, we would expect nine more heifers to calve unassisted due to the difference in CE EPD of 9 percent between the two bulls. Higher CE EPDs reflect more calving ease. The Birth Weight EPDs for the two bulls suggest that Bull A's calves would weigh 2.5 pounds less on average at birth compared to calves sired by Bull B, but we really don't know if this extra 2.5 pounds will likely lead to any calving problems.

There is a strong genetic correlation between calving ease and birth weight, suggesting that sires with favorable CE EPDs also tend to have lower BW EPDs. However, this relationship is not perfect. Calving Ease EPDs reflect multiple factors that contribute to calving ease genetics, including birth weight. Birth weight EPDs, on the other hand, only predict differences in genetics for birth weight. While both EPDs provide

opportunities for managing calving difficulty in heifers, Calving Ease EPDs directly estimate the trait of economic consequence - calving ease, as reflected in the number of heifers that are expected to calve without assistance. Therefore, Calving Ease EPDs should be utilized as a primary tool in selecting heifer bulls, in conjunction with other EPDs of economic importance.

Proper sire selection can solve many problems associated with excessive birth weights. Beef producers have at their disposal excellent tools in the form of Calving Ease and Birth Weight EPDs to assist in the management of calving difficulty.

Here are some selection guidelines for selecting a calving ease bull. For more information concerning minimizing calving difficulty, contact your local county Extension office.

Breed	Calving Ease EPD	Birth Weight EPD	Growth	
			Weaning Weight EPD – Not Below	Yearling Weight EPD – Not Below
Angus	7		25	49
Beefmaster		-.09	-5	-7
Brangus		-1.2	11	18
Braunvieh	2.4		-12	-18
Charolais	12.3		7	13
Gelbvieh	112		30	55
Hereford	2.1		26	43
Limousin	12.3		26	51
Maine-Anjou		-0.1	29	63
Red Angus	7		18	32
Santa Gertrudis		-1.3	-5	-6
Shorthorn	3.7		4	5
Simmental	12.1		23	39

River Valley Beef Conference Set for February 16

JEREMY POWELL

An exciting agenda has been set for the 2010 River Valley Beef Cattle Conference. The meeting will take place at the I-40 Livestock Auction in Ozark on February 16 with registration at the door beginning at 9:30 a.m.

This year's conference, which is sponsored by the University of Arkansas Cooperative Extension Service and Farm Credit Services of Western Arkansas, will cover many interesting topics that are important for profitability in today's market. Speakers and topics for the program include:

- **Tom Troxel**, professor and associate department head - Animal Science for the University of Arkansas Division of Agriculture, will

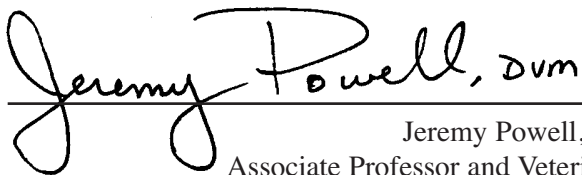
discuss the many different government programs related to animal identification. Many producers may be confused about the terms COOL, QSA and NAIS. This presentation will give producers an opportunity to better understand these programs.

- **Bill Roser**, a feedlot manager, and **Dianne Hardgrave**, a livestock market reporter for the U of A Division of Agriculture, will use sets of live calves to discuss the factors that influence the initial market value for the calf and how they, in turn, would perform in the feedlot. The audience will have an opportunity to

evaluate the calves and compare their results to the experts.

- **Jim Robb**, the director and agricultural economist at the Livestock Marketing Information Center, Denver, will address beef cattle supply and demand. He will also give an overall market outlook. Robb has written many publications concerning livestock marketing topics and is a widely traveled speaker.

Registration for the program is \$20 at the door. Lunch will be provided at noon, and the program will conclude around 1 p.m. For more information, contact your county Extension office.



Jeremy Powell, DVM
Associate Professor and Veterinarian



Brett Barham, Ph.D.
Assistant Professor - Breeding and Genetics

The information given herein is for educational purposes only. Reference to commercial products or trade names is made with the understanding that no discrimination is intended and no endorsement by the Arkansas Cooperative Extension Service is implied.