

Dystocia—Difficult Calving, What It Costs and How to Avoid It

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Dystocia, more commonly known as difficult calving, is a problem most dairy producers encounter. Consequences range from the need for increased producer attention to the loss of the cow and calf. Dystocia is a leading cause of calf death at or shortly after birth and leads to uterine infections, more retained placentas, and longer calving intervals. The cost of calf mortality resulting from dystocia averages \$12 for every calving or \$600 per year for a 50-cow herd. The cost of labor, veterinary care and a longer calving interval probably triples that cost.

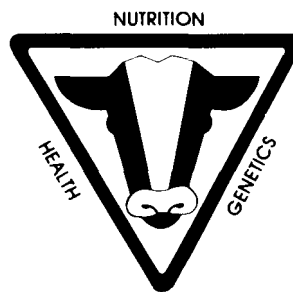
The most common cause of dystocia is a small cow trying to give birth to a large calf. First calf heifers experience problems twice as often as older cows since they usually are not full grown, however, even large heifers experience problems because they have never before given birth. Bull calves, being larger, cause more problems than heifers.

Cows calving in winter are more likely to experience dystocia than those calving in summer, probably because of lack of exercise. Multiple births and malpresentations of the calf both increase the likelihood of dystocia. There is also a genetic component controlling the incidence of dystocia. However, heritability estimates for dystocia, whether measured as a trait of the calf or a trait of the dam are low, ranging from 5 to 15%.

Goals

Strive for a live average sized calf from every cow each year with heifers freshened at 24 months of age. Following calving, all cows should be alive and healthy. Heifer calves, including those from first calf heifers, should be available as replacements and therefore be from high PD\$\$ sires.

Many dairy producers, in an effort to reduce the incidence of dystocia, resort to using beef bulls, especially on heifers, because the resulting calf is thought to be smaller. While this practice may



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reduce dystocia in the short run, it is costly in the long run. The rate of genetic improvement for other traits is reduced because the generation interval is lengthened and fewer heifer calves are available as replacements. Also, the beef breeds have increased in size and breadth, which diminishes their effectiveness in reducing dystocia.

Reducing dystocia is not a primary goal in a breeding plan for two reasons. First, heifer calves born with ease may have a difficult time giving birth later. If this is the case, then it is probably because of dystocia's relationship to size. Small calves are usually born with few problems but may become small cows which have trouble giving birth. For this reason, do not select service sires for heifers strictly on the size of their calves but on their record of dystocia as well.

Second, altering dystocia rates by breeding is a slow process because of the low heritability. A heritability of 5 to 15% means that, at most, 15% of the variation can be attributed to environmental or management factors. Consequently, the best method of reducing dystocia is through good management practices. The following paragraphs present guidelines for reducing calving problems.

Feed Properly

Feed cows and heifers to calve in good condition without being fat because fat cows tend to experience more calving problems. Keep heifers growing so they are large enough to breed at 15 months in order to calve at 24 months. If grown properly, heifers can deliver a calf sired by the same breed with little difficulty. See Table 1 for recommended ages and weights for breeding heifers.

Table 1. Recommended Ages and Weights to Breed Heifers

Breed	Weight (lbs)	Age (Mo.)
Holstein & Brown Swiss	750-850	15-18
Ayrshire	650-750	14-17
Guernsey	550-650	14-17
Jersey	550-650	14-17

Maternity Area

Do not overlook the importance of the maternity area to a successful calving. Provide a clean dry, well ventilated space for the maternity area to minimize the possibility of the calf becoming infected with disease organisms. Do not leave cows in a stanchion or tie stall to calve. Calves often drown under such conditions and the cow has only limited freedom of movement which may result in injury during calving. Use straw, not shavings, to bed the maternity area. Calves inhale sawdust which irritates the lungs increasing mortality. Pens or outdoor lots allow assistance to be given easily. Provide clean, visible pasture for ideal calving environment during the summer.

Observe Calving

Maintain easy accessibility to the maternity area and observe cows close to calving often. See Fig. 1 for mortality rates of newborn calves by the difficulty of the birth. Regardless of the parity (number of calvings) of the cow, mortality rates are lower for calves that are easy pulls than for unassisted births. One explanation is that many unassisted births are unobserved. Obviously someone observing an easy pull is there to take care of an emergency whether the calf needs assistance or not.

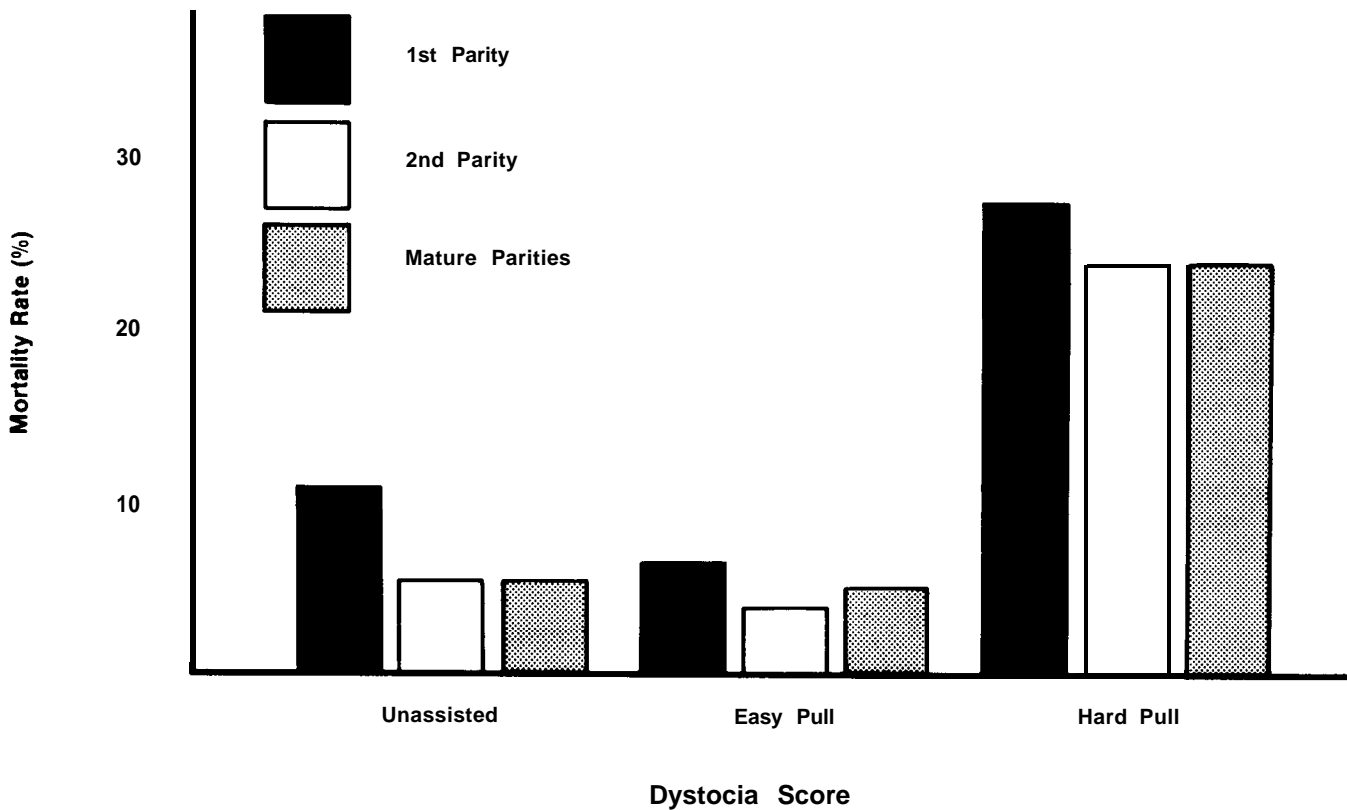


Fig. 1. Average mortality rates of calves 24 hours postpartum for different dystocia scores by parity.

Source: Ontario Calving Ease Survey, ODHC

Table 2. Average Calving Period

Age	Labor (hrs)	Delivery (hrs)
Heifer	2-4	1-2
Cow	1-3	½ -1

Allow the Cow to Calve

A common error, especially by inexperienced personnel, is to get anxious and pull a calf too soon. If the cervix has not had sufficient time to dilate, forcing the calf can seriously injure the cow and cause undue stress to the calf. Heifers spend more time in labor and more time giving birth than mature cows. Labor commences with the onset of uterine contractions and dilation of the cervix. Contractions initially occur approximately every 15 minutes. As labor continues, contractions become stronger and more frequent and the cervix expands to the point that the uterus and vagina form a continuous canal.

The end of labor and the beginning of delivery (expulsion of the fetus) is marked by the release of the allantoic fluid from the vulva. See Table 2 for average labor and delivery times for a normal birth. Mature cows may need as long as 4 hours and heifers 6 hours to deliver a calf once labor commences.

A normal delivery (Fig. 2) starts with the front feet presented first, followed by the head, shoulders, hips and hind legs. The calf should be oriented with its back up at all times.

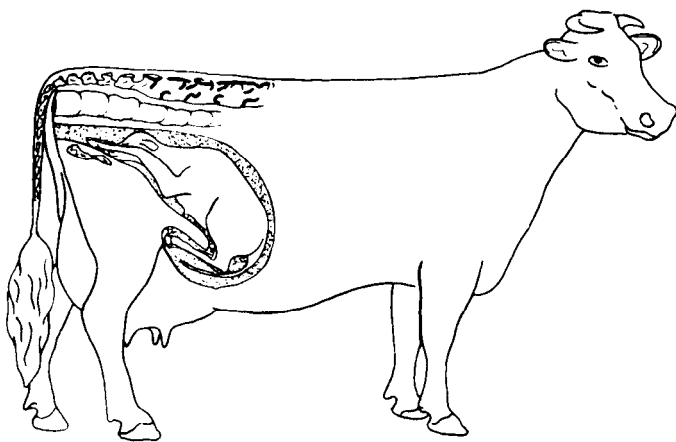


Fig. 2. Position of the calf in the uterus after it has been oriented for normal delivery. (Redrawn from *Physiology of Reproduction and Artificial Insemination of Cattle*, 2nd edition by Salisbury, VanDemark and Lodge. W.H. Freeman and Company. Copyright © 1978)

When Problems Develop

Two symptoms of dystocia are extended calving periods (over 8 hours) and evidence that the fetus is not oriented properly for a normal birth. If the cow has not delivered in the specified time or the calf is malpresented, veterinary assistance is often indicated. If there is reason to suspect a problem, the individual examining the cow should observe strict sanitation practices. These include tying up the tail, thoroughly cleaning the cow's vulva and anal area and the examiner's hands and arms with clean warm water, soap and an antiseptic. A sterile plastic sleeve also should be worn to avoid contamination of the reproductive tract.

Malpresentation may be indicated by an extended labor (over 6 hours) or if the calf is not presented in the manner previously described. Any other presentation is abnormal. See Fig. 3 for various malpresentations. Malpresentations occur randomly in about 2% of all births for both cows and heifers with 95% requiring some type of assistance. This can range from a simple pull for a rear legs first presentation (similar to K in Fig. 3) to surgery. Some malpresentations can be resolved by pushing the fetus back in and reorienting it. Only an experienced herdsman or veterinarian, using sterile techniques, should attempt this. If there is any doubt about being able to correct the malpresentation, call a veterinarian immediately.

If the calf is pulled, it should be pulled in rhythm with the cow's contractions and should be pulled out and down to avoid injury to the cow. A common error is to think that a little pulling is all that is needed and this goes on until the cow wears herself out. If pulling is to no avail, then mechanical pullers may be used conservatively. Call a veterinarian as soon as a problem is detected and before the cow is exhausted and the calf is dead.

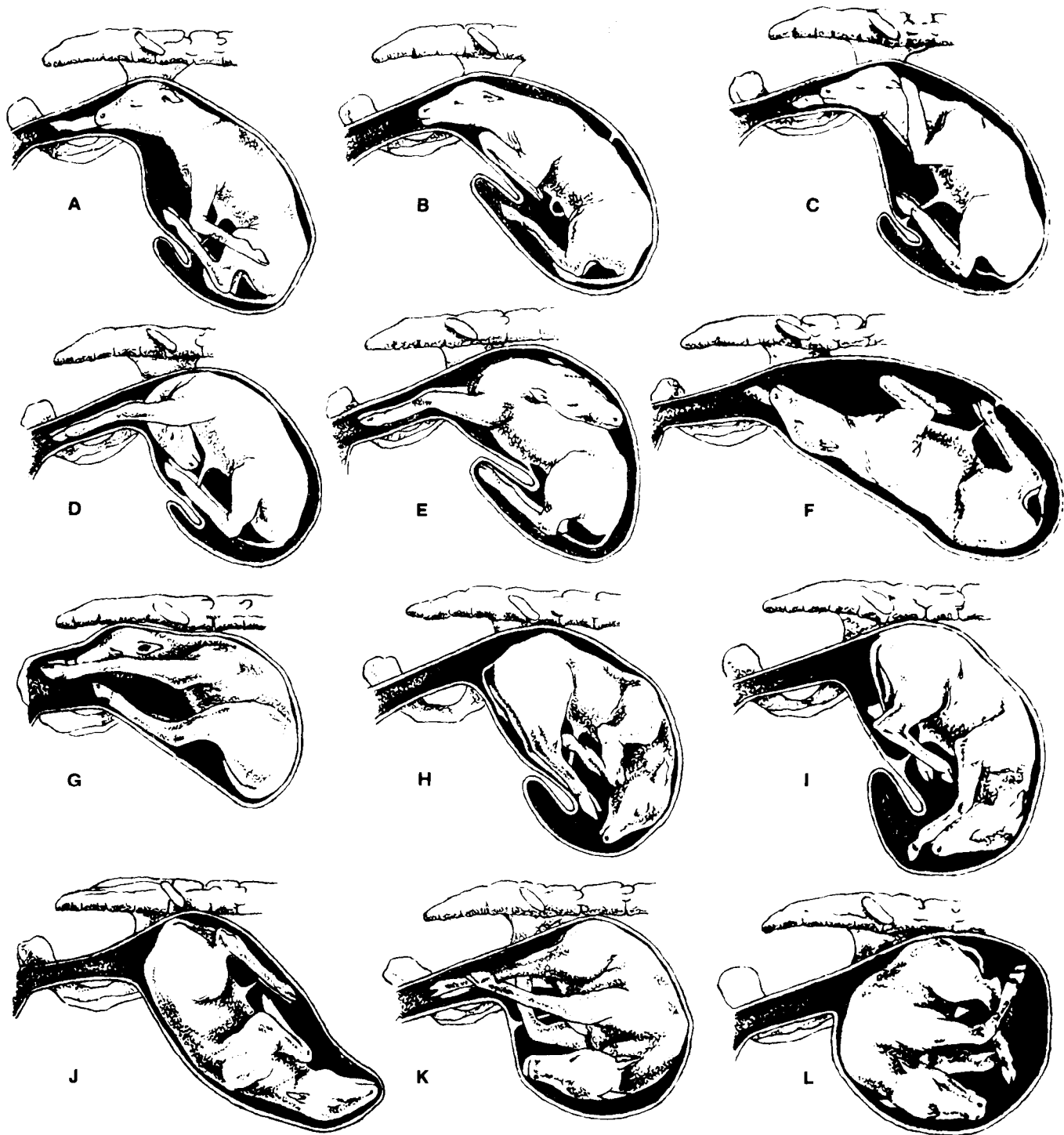


Fig. 3. Abnormal presentations of the calf for delivery. A. Anterior presentation—one foreleg retained. B. Anterior presentation—forelegs bent at knee. C. Anterior presentation—forelegs crossed over neck. D. Anterior presentation—downward deviation of head. E. Anterior presentation—upward deviation of head. F. Anterior presentation—with back down. G. Anterior presentation—with hind feet in pelvis. H. Croup and thigh presentation. I. Croup and hock presentation. J. Posterior presentation—the fetus on its back. K. All feet presented. L. Dorsolumbar presentation. (From *Diseases of Cattle*, USDA Special Report, 1942.)

Provide Good Neonatal Calf Care

Following birth, clear the calf's mouth and nostrils of mucus and be sure it is breathing properly.

Often a finger inserted into one nostril and rotated is enough to initiate breathing. If not, the lungs may have to be cleared of fluid by hanging the calf by the hind legs and letting the lungs drain.

Dip the navel in iodine to prevent infection.

Feed colostrum as soon as possible, and definitely within the first three hours after birth, to provide immunity against infection. A calf should receive approximately 4½-5% of its body weight in colostrum during the first 24 hours following birth.

Select Service Sires for Heifers

Approximately 10% of the variation in dystocia scores is genetics related, thus some reduction of dystocia problems is possible by selecting service sires with low dystocia evaluations, especially for matings to first calf heifers. The National Association of Animal Breeders (NAAB) publishes genetic evaluations for Holstein A.I. sires in the U.S., ranking them for the ease with which their calves are born. Two measures are used. The first is "probability of being better than average".

This estimate takes into account (1) his estimated transmitting ability and (2) how accurately his transmitting ability has been established.

A probability of 9% indicates that there is only a 9% chance that a bull's calves will be born with less difficulty on average than calves of an average bull. The sire with the highest probability is the best choice.

The second estimate is the percentage "expected difficulty for first calving". An estimate of 13% means that 13% of a bull's calves born to first calf heifers experience some difficulty at birth. Bulls with an estimate of 10% or lower should be used on heifers with which you expect there may be some dystocia problems at calving.

Bulls are not currently evaluated for the calving performance of their daughters.

How to Avoid Dystocia

- Feed heifers to calve with adequate size at 24 months and cows so that they are in good flesh to calve once a year but not over conditioned.
- Provide a clean, dry, well ventilated and accessible maternity area.
- Observe the calving.
- Give the cow adequate time to prepare herself for delivery.
- Observe strict sanitation procedures when examining a cow.
- Know your limitations and call for veterinary assistance when trouble occurs and before the cow becomes exhausted.
- Provide good neonatal calf care.
- Select service sires for heifers with calving ease proofs of 10% or less.

Trade or brand names are mentioned only for information. The Cooperative Extension Service intends no endorsement nor implies discrimination to the exclusion of other products which also may be suitable.