Vet Call

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Reducing the risk of calving difficulty

No one enjoys calving difficulties. Certainly not the heifer or cow, the veterinarian who is called to assist, or the producer who has to foot the veterinary bill and deal with the increased risk of subsequent health problems for the cow and the calf. A certain percentage of difficult births is unavoidable, but cow herds can be managed so that a vast majority of births take place with little or no human assistance.

Managing heifers

The greatest proportion of calving difficulties occur in heifers having their first calves. These animals have not yet reached their full skeletal size, and their pelvic canals (birth canals) are not as large as canals in older cows. In addition, behavioral reasons or lack of experience may increase the risk of difficulty during the first calving. Because of the role heifers play in the amount of calving difficulty (dystocia) a herd experiences, the proper development of heifers from birth to first calving is essential to control dystocia.

Management tools that decrease the risk of difficult births fall into one of two categories — assuring the heifer is of adequate size and decreasing the risk of a large calf through proper bull selection.

Assuring that heifers will be large enough and have large enough pelvic areas at the time of their first calving involves hitting target weights. Heifers should weigh 60%-65% of their mature weight at the start of the breeding season. Hitting the target weight will result in a large percentage of heifers cycling at the start of the breeding season and will ensure that the heifers have had adequate nutrition for full expression of skeletal (including pelvic) growth. The heifers should continue to grow so that they reach 85% of their mature weight by calving as 2-year-olds.

Pelvic measurements can be taken at a year of age, before the onset of the breeding season. These measurements will have a good correlation to pelvic area at the start of the calving season nearly a year later. Pelvic measurements are helpful in identifying and culling any heifer that falls below a minimum standard, but pelvic areas do not fall into the category of "bigger is better." This is because pelvic area and calf birth weight are closely related; heifers with larger pelvic areas tend to have larger calves.

A minimum standard of 130-150 square centimeters (sq. cm) at one year of age or 180 sq. cm by 18 months (mo.) of age is reasonable. It is important to realize that selection based on pelvic area alone does not significantly reduce the number of heifers experiencing calving difficulty. This is particularly true if all, or almost all, heifers in a group have pelvic areas that are above accepted standards.

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Numerous studies have shown that heifers implanted with anabolic growth promotants at 2-3 mo. of age have larger pelvic areas as yearlings than controls without implants. However, the advantage for implanted heifers as yearlings was lost by the time they were ready to calve as 2-year-olds, and no difference in the occurrence of difficult births has been found.

Reducing calving difficulties

At calving, heifers should have a body condition score (BCS) of 6. This will increase the likelihood that they will have enough energy to complete delivery, yet avoid any complications that can occur if some are too fat at calving. Heifers should not be restricted in protein intake late in gestation in an effort to decrease calf size. This strategy is only slightly successful in reducing calf size, and it fails to reduce dystocia because the heifers are not nutritionally fit to complete the delivery. They tend to tire and quit before the calf is born. In addition, absorption of colostral antibodies is diminished, and milk production is decreased when protein is restricted.

Using expected progeny differences (EPDs) to select bulls that produce low-birth-weight calves is a powerful tool to reduce the number of difficult births. Calf birth weight is a primary factor in dystocia. Being able to accurately predict the birth weight of calves from a given bull, compared to other bulls, by utilizing EPDs, decreases the risk of selecting high-birth-weight bulls. Use of artificial insemination (AI) allows producers to utilize high-accuracy bulls and is recommended if current management is compatible with AI.

Using young bulls in a natural-service breeding program increases the risk of heavy-birth-weight calves, compared to using proven (high-accuracy) AI bulls; however, birth weight (BW) EPDs are still valuable as predictors of the genetic influence of a bull on calf birth weight. The risk of using young bulls is minimized if selection is limited to yearlings out of proven, superior calving-ease bulls.

By combining proper nutritional development of heifers with selection of low-birth-weight bulls, the risk of calving difficulties can be decreased. Decreasing dystocia in a herd results in a lower death loss at calving and reduced veterinary expenses, and improves calf and cow health and performance through weaning.

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