

Critical Care of the Newborn Calf
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For most beef cow herds, the single most important means of increasing income is increasing the number of calves weaned and sold relative to the number of cows in the operation. Several large studies have surveyed the causes of reproductive inefficiency and calf loss with similar trends found. In dairy cattle, 75% of perinatal mortality occurs within one hour of birth. In beef cattle, 69% of calf deaths between birth and weaning occur within 96 hours of birth. In Florida, a study supported by the Florida Cattlemen's Association evaluated the causes of calf losses for a South Florida ranch during the 2006 and 2007 calving season. Results from this study was similar to other studies, calf losses were found to occur most frequently around calving with few losses occurring during gestation and few losses for calves one month of age and older.

Knowing that the significant period for calf loss occurs at or shortly after birth makes the immediate and if needed vital care of a new born calf a essential control point for ensuring calf health and ranch income.

With most calf loss occurring in the first few days' postpartum, adequate resuscitation of the newborn is critical to decreasing calf losses in both beef and dairy herds. On many commercial ranches, calving occurs in large isolated pastures with mixed groups of different aged cows with limited ability for producers to continuously monitor calving cows. Frequently cows are monitored once a day with heifers being "gone through" several times a day.

In all species the cornerstones to resuscitation are; establish a patent airway, initiate breathing and establish adequate circulation. In cattle following a difficult birth resuscitation of the calf first focuses on establishing breathing. Cardiac resuscitation is not generally attempted because calves born without a heart rate are unlikely to be viable. If a producer assists a calf immediately after delivery (first 30 seconds) the calf should be placed in sternal recumbency to maximize ventilation. To insure a patent airway, calves should have their upper respiratory tract (nose and mouth) cleared of any fluid or physical obstruction. This is often accomplished simply by wiping the nostrils and opening the mouth and removing any mucus or fetal fluids. Calves should never be suspended by the rear legs for an extended period of time or swung around by their back legs. Calves should make active respiratory movements within 30 seconds of being delivered. There are many methods that have been advocated for establishing respiration. Rubbing calves placing a finger a blade of grass or straw in the nose initiate a gasping reflex and helps aerate the lungs. Pouring cold water over the calf's head or ear has been recommended for hypothermic respiratory stimulation. Mouth to nose or mouth to mouth resuscitation can be initiated, however it is difficult to establish respiration because of air leakage and air often travels down the esophagus filling the abomasum further impeding the calf's ability to breath. The drug Doxapram Hydrochloride stimulates the respiratory center in the brain and has been used successfully to stimulate respiration.

After the calf is breathing and assuming the cow is not in your back pocket, the umbilicus should be dipped in an organic iodide or other mild antiseptics. Strong caustic

agents should be avoided as they are often associated with irritation and inflammation of the umbilicus and surrounding structures.

With a majority of calves born in Florida during moderate temperatures, hypothermia is not of major concern. However, calves when moving from an intrauterine to an extrauterine environment even in Florida can experience dramatic shifts in environmental temperatures. In the normal calf, shivering and nonshivering thermogenic processes ensure adequate adaptation to extrauterine life. Rapid decreases in body temperature and a failure of the regulatory mechanisms to restore normal rectal temperatures are characteristic of calves born following dystocia.

After calves are breathing and moving or struggling to stand the next critical element for that calf is to ingest and absorb adequate high quality colostrum. The ingestion and absorption of colostral components plays a major role in the immunological capability of the neonate. Research has shown many time the positive relationships between adequate colostrum absorption and calf health.

Calves that become wedged in the pelvic canal for prolonged periods of time may suffer from swelling of the tongue and head. Deliver helps venous return and a decrease in the swelling within a few days. Swelling may also be reduced by “gently” massaging the head and tongue. Furosemide may also aid in resolution of the edema. If a calf is unable to generate a coordinated suckle response, colostrum should be administered to the calf and nutritional support provided until the calf is able to nurse without assistance.

Critical care for a distressed calf involves; immediately after deliver calves should be placed in sternal recumbency to maximize ventilation. The nose and mouth can be cleaned of any fluids by hand. The calf should be vigorously stimulated by rubbing around the head or body, and by placing a finger in the calf’s nostril. A lack of response to these stimuli or an inability of the calf to remain stable in sternal recumbency after ten minutes generally indicated a poor prognosis.

The economic viability for a beef herd is significantly affected by the number of calves weaned compared to the number of cows in the herd. If a producer is to maximize his ranch returns, care of calving cows and their newborn calves is one of the critical control points with regards to ranch profitability.