

Managing to Decrease Newborn Calf Problems

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Most calf deaths are attributed to infectious disease such as scours, septicemia, pneumonia. However, non-infectious problems cause most of the losses in the first 2 to 3 days, and these problems greatly increase the risk of later infectious disease if they do not kill the calf right away. Management practices aimed at identifying and resolving these very early problems are the single most direct and cost effective way to improve calf health.

What are these early calf health problems? Typically they are physiological disturbances such as hypothermia and hypoglycemia. Dystocia is the most important single contributor to these types of problems and has been estimated to increase calf death risk by 4 to 8 fold. Although decreasing the incidence and severity of dystocia increases neonatal survival, many calves have problems at birth without dystocia. Efforts to enhance calf health and survival should include strategies for correcting physiological disturbances.

Common Aspects of Neonatal Disease

During the birthing process the newborn is subjected to trauma and a period of low oxygen supply (anoxia/asphyxia) which are exaggerated in dystocia. Within just a few minutes the newborn must then adapt to life outside the uterus. The baby must breathe properly, remove waste products, generate heat and maintain body temperature, alter blood flow, stand, and seek food. Each aspect of this process is dependent on the others. Because all body systems are adapting, it is most common for one problem to lead to others.

Outward signs that this adaptive process is not progressing normally can be subtle: inactivity, weakness, slowness in normal behavior (standing, suckling), low body temperature, and low or erratic heart and respiratory rates. It is common for affected calves to look fairly normal for 15 to 30 minutes after delivery, but then to gradually become weaker and less responsive. Decreasing vigor or responsiveness are the first evidence of problems. Calves are remarkably resilient and can survive well if sufficient care and time are provided.

Frequently Identified Neonatal Problems

Inactivity or lethargy: Decreased activity is characterized by delayed standing and suckling. These activities generate body heat and provide nutrition and immunological support against disease.

Hypothermia: The calf's body temperature is usually 1 to 2 oF above the rectal temperature of the dam immediately after birth and will drop to about 102oF within 15 to 30 minutes after delivery. A sign of problems is body temperature that continues to drop below this level. Hypothermia can occur even in very warm surroundings.

Hypoxemia (low blood oxygen): This is a frequent problem that arises when respiratory and circulatory systems are slow to adapt or inadequate for life outside the uterus. No animal can thrive without adequate oxygen, and this problem contributes to all of the other problems that can be seen.

Acidosis: As they exit the uterus, calves have low oxygen, low total body fluid, and mild acidosis. These self-correct if the calf breathes well, obtains fluid food, and maintains good blood circulation. Calves that are compromised at birth or suffer dystocia don't correct these deficits, and they worsen with time.

Hypoglycemia: This is a less frequent occurrence than the other problems, but can represent a life-threatening problem to the newborn. Calves rarely develop hypoglycemia after consumption of colostrum or milk.

Poor Colostral Transfer: Calves with dystocia or other physiological problems such as hypoxemia or acidosis are prone to poor immunoglobulin protection. This is due to delayed or decreased colostrum consumption and decreased intestinal absorption with poor gastrointestinal activity.

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All of these common newborn problems contribute to further calf health problems and death. Despite the fact that most of these are easily treated, and generally responsive to treatment, they are usually overlooked. Simple steps to minimize losses include:

1. Develop a calf monitoring scheme.
2. Provide special care to calves that are at high risk to develop problems and circumvent them before they develop.
3. Promptly treat the problems that do occur.

Guidelines for Calf Monitoring

Good mothering attention from the dam provides nuzzling and licking in order to dry the calf and encourage it to stand. In a dairy operation the calf manager provides this stimulation in lieu of the dam. Normal newborn calves may reasonably be expected to stand within one hour of birth. The calf's body temperature should not decrease below 101oF. An active suckling reflex should be present, even before the calf has stood. The calf should remain attentive, responsive, and strongly active throughout the first two hours of life.

Assessment of the dam's health, the type of delivery, the maturity of the newborn, and the physical and behavioral characteristics of the newborn should be recorded. Calves

born from an ill dam or with any degree of dystocia, or that appear premature at birth, will have an increased likelihood of encountering problems. For the first several hours after birth, calves should be evaluated frequently.

Guidelines for Calf Care

Calf survival is dependent on the attention of the calf manager in lieu of the dam. Calves should be promptly dried and warmed with towels and hair dryers, provided adequate shelter and supplemental heat with lamps, stimulated to move about, and suckle.

Rubbing the calf, lifting it to stand, encouraging it to walk about, providing colostrum via nipple feeder, or, if no suckle is elicited after a couple of hours, providing colostrum via esophageal intubation are all part of the duties of the calf manager.

If the calf does not appear to respond positively to these nursing care efforts, the veterinarian should be called. While additional treatments are not difficult to administer, calves which need more care should be thoroughly assessed to insure optimal results.