

Newborn Calf Care: A Holistic Approach to Health and Management

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SUMMARY

Calves are the future of the livestock industry. Proper management of calf rearing is crucial for dairy development. The success of a dairy enterprise depends on effective management practices and the survival of the calf crop. Proper care during the first few days of a calf's life can significantly impact its future growth, development, and productivity. These abstract outlines the key aspects of newborn calf care, including: Colostrum management: Ensuring calves receive adequate amounts of high-quality colostrum within the first few hours of life to provide essential antibodies and nutrients. Feeding and nutrition: Establishing a proper feeding regimen, including the appropriate amount and frequency of milk or milk replacer, to support the calf's growth and development. Housing and environment: Providing a clean, dry, and comfortable living space that protects the calf from extreme temperatures, wind, and other environmental stressors. Health monitoring and disease prevention: Closely monitoring the calf for signs of illness, implementing vaccination protocols, and taking prompt action to address any health concerns.

INTRODUCTION

The care and management of a newborn calf are crucial for its health and development. Providing proper nutrition, a clean environment and timely medical attention are key factors in ensuring the calf's well-being. Regularly monitoring the calf's growth and behavior can aid in early detection of any health issues. Additionally, creating a comfortable and secure space for the calf to rest and move around is important for its overall welfare. Implementing a holistic approach encompasses addressing the physical, emotional, and environmental needs of the calf. Ensuring access to fresh water and appropriate shelter are fundamental aspects of calf care. Regular veterinary check-ups and vaccinations play a vital role in preventing diseases. Calves should also have adequate space to exhibit natural behaviors and socialize with other calves. A holistic approach to calf care fosters a healthy and thriving environment for the young animal to grow and develop. Ensuring adequate ventilation and proper drainage in the calf's living area is essential for maintaining a hygienic environment. Regular cleaning and disinfection of feeding equipment and living quarters help prevent the spread of infections. Providing enrichment like scratching posts or toys can promote physical activity and mental stimulation.

Infectious diseases such as Pneumonia, Diarrhea, and Septicemia

Nutritional diseases occur in animals like scour and milk dehydration as well as non-infectious diseases like hypothermia and birth defects. It is important to be aware of common diseases newborn calves may face, such as pneumonia, diarrhea, septicemia, scours, milk dehydration, hypothermia, and birth defects. Being vigilant for any signs of illness or distress and promptly addressing them through proper nutrition, hydration, vaccinations, and medical care is essential. Preventative measures like maintaining a clean environment, regular health checks, and socialization can help minimize the risk of diseases and ensure the overall well-being of the newborn calves. The health and well-being of newborn calves are greatly influenced by the care and attention they receive. Vigilance in monitoring for signs of illness, ensuring proper nutrition and hydration, and providing timely medical care are fundamental in preventing common diseases like pneumonia, diarrhea, and hypothermia. By fostering a clean and safe environment, implementing vaccination schedules, and promoting socialization and exercise, calf caregivers can help ensure the calves grow up healthy, strong, and thriving.

Incidence of Calf Mortality

| Cause of mortality | Death rate (%) | Reference |
|--------------------|----------------|---------------------------------|
| Bloat | 65 | Sreedhar and Sreenivas, 2015 |
| Navel sickness | 60 | |
| Pneumonia | 15 | |

| | | |
|-------------------|-------|-----------------------|
| Septicaemia | 10 | Kharkar et al. (2017) |
| Ocular infections | 8.3 | |
| Underfeeding | 6.6 | |
| Overfeeding | 5.0 | |
| Gastroenteritis | 32.81 | |
| Pneumonia | 18.75 | |
| Others | 15.63 | |
| Septicaemia | 12.50 | |

Importance of Newborn Calf Care

Overall, a holistic approach to care and management ensures the newborn calf grows up healthy and content. Creating a comfortable and safe living area for the calf to thrive. Regular health checks and vaccinations as recommended by a veterinarian. Providing a clean and warm environment for the newborn calf and ensuring the calf receives adequate colostrum within the first few hours of birth. Proper sanitation and hygiene to prevent infections. Maintaining a stress-free environment is vital for the calf’s emotional and physical well-being. Monitoring the calf for signs of illness or distress. Handling and socializing the calf to promote gentle behavior. Adequate space to roam and interact with other calves is essential for its social development. Providing enriching activities like toys or scratching posts can also contribute to the calf’s mental stimulation and happiness. Proper feeding and nutrition for optimal growth and development. Regular hoof trimming and grooming help prevent injuries and promote overall comfort. Regular exercise is also important for the calf’s muscular development. Encouraging play and movement can help strengthen muscles and improve coordination skills. Providing ample access to fresh water and high-quality feed is crucial for the calf’s growth and overall health. Implementing a vaccination schedule by a veterinarian can protect the calf from common diseases. Ensuring good ventilation and proper bedding in the living area promotes a comfortable environment for the calf to thrive in. Regular health checks and vaccinations are essential in preventing common diseases and ensuring the calf’s well-being. Adequate space for social interaction with other calves aids in its emotional development. Hoof trimming and grooming are crucial for preventing discomfort and injuries. Providing engaging activities like toys or scratching posts helps stimulate the calf mentally. Promoting regular exercise through play and movement is vital for muscular strength and coordination. Access to clean water and nutritious feed supports optimal growth and health.

Here are some tips for performing better care and management of newborn calves:

- Provide adequate colostrum within the first few hours of birth Ensure proper nutrition and hydration.
- Keep the calf in a clean and dry environment.
- Monitor for any signs of illness or distress.
- Provide appropriate vaccinations and deworming as needed.
- Immediately after the birth, any membranes or mucus adhering to the mouth, nostrils, eyes, and ears of the newborn calf should be carefully removed to facilitate normal breathing.
- Usually, a cow will lick her calf dry. However, under certain situations, if a cow doesn’t do this or is not allowed to do so, make the calf dry by rubbing with clean, dry towels or bedding over the head and ribs, this will not only dry off the calf but also enhances thermoregulation.
- Make sure that calves begin active breathing or respiration within 30 seconds, especially after a difficult birth. This can be done by tickling the inside of the nose with a straw, finger, or other instrument pinching the nasal septum, or using a 20 gauge 1.5” needle and place in the acupuncture site in the center of the nose or by pouring cold water on the calf’s head, which causes the grasping reflex in the calf or artificial respiration should be introduced by pressing and reflexing alternatively the chest wall or if the young one is smaller in size hold it by the hind limbs, lift it with the head down and swing it. Care is taken so that the young one is not slipped cut of hands.
- The navel cord of the calf is tied 2.5 cm away from its body and cut about one centimeter below the ligature and the navel in 7% tincture of iodine. Re-apply antiseptics to the stump for 2-3 days.
- Record the birth weight of calves.
- A normal healthy calf gets up within 30 minutes. A calf must receive colostrum within a few hours after its birth.
- Feed ample amounts of colostrum as soon as possible within the first hour after birth. Provide a second feeding within 12 hours of birth. The intestine of the newborn calf begins to lose its ability to absorb the large antibody

molecules in the colostrum within 1 hour after birth. By the 9 hours after birth, there is a 50% reduction in the ability to absorb antibodies. Gut closure is complete at 24 hours of age. Furthermore, at this time, typical digestive enzymes in the abomasum and small intestine do not work or function only partially, allowing immunoglobins to enter the small intestine unharmed. Furthermore, colostrum contains enzyme inhibitors, which enable immunoglobins to avoid intestinal breakdown.

- The quantity of first colostrum feeding should be around 4-5% of the calf's body weight and during the first 24 hours after birth, a calf should receive colostrum @ 12-15% of its body weight to guarantee adequate absorption of antibodies by the digestive tract. Usually, the colostrum obtained in the second milking after calving contains about 60-70% of the antibodies present in the first colostrum milk. Colostrum feeding should be continued for the first 3-4 days of life. The calf needs 3-4 liters of colostrum daily in 3 equal feeds.
- Good quality colostrum looks thick and creamy. Colostrum which is thin and watery should not be fed to calves. Always use colostrum obtained from a healthy cow.
- Wash the udder and teats well before collecting colostrum. Filtering colostrum may help to remove some debris.
- Colostrum can be stored at room temperature for 1-2 days, refrigerated for 7 days, or frozen for up to a year. Frozen colostrum should be thawed on warm, low, or medium heat, and it should be thawed repeatedly to avoid overheating.
- In the absence of colostrum, a mixture of 2 eggs in 30 ml castor oil is good. Another colostrum substitute can be prepared by mixing an egg, 275 ml warm water, 5 ml castor oil, 525 ml warm whole milk, 10000 IU of vitamin A, and 80 mg of Aureomycin and the mixture can be given three times a day for four days. Injectable immunoglobulin products produced from purified bovine blood may be useful to increase circulating antibody levels in calves with failure of passive transfer that is older than 24 hours of age.
- Weaker calves need assistance. Hence, a weak calf must be assisted to its feet and be held so it can nurse or it may be fed colostrum using a clean nipple bottle. For too weak calf stomach tube can be used to feed the colostrum.
- If a calf shows anemia, an injection of 150 mg of iron dextrin solution may be given within a few hours of birth. An injection of vitamins A, D, and E is also recommended.
- Meconium is passed within two hours of first suckling. If meconium is not passed an enema with 1 teaspoon of soda bicarb in one liter of lukewarm water may be given.
- Marking of the calf with an appropriate method of identification is done with removal from the dam.
- Calves may be kept in individual calf boxes.

CONCLUSION

Understanding and addressing all aspects of calf care, from proper handling during birth to ensuring adequate colostrum intake and monitoring for signs of illness, is crucial for their well-being. By staying attentive to their health needs, maintaining a hygienic environment, and providing necessary treatments and vaccinations, calf caregivers can safeguard against infectious diseases, nutritional imbalances, and other health challenges. Newborn calves require continuous monitoring and care to ensure their health and well-being. Proper handling during birth, adequate colostrum intake, and timely medical attention play crucial roles in preventing common diseases and nutritional imbalances. By adhering to these practices and remaining vigilant for any symptoms of illness or distress, caregivers can nurture healthy, resilient calves from their earliest stages.

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