



QUALITY CALF PERFORMANCE

by Steyn Pretorius

The manner in which a calf is reared builds the foundation for a future cow to reach her genetic potential during lactation. Rearing a calf for optimal growth not only encompasses the provision of sufficient nutrients, but also ensures proper rumen and intestinal development. One of the key aspects in achieving this is to look at intestinal health, a major obstacle in calf-rearing systems.

Young calves are highly susceptible to disease as they are still developing their immune and digestive systems. Therefore, the occurrence of digestive disorders such as scours is common and can be detrimental to the calf's development, or even fatal if not treated correctly.

When looking at the effects of scours, it is not just the health of the calf that is compromised, but

also their productive performance-like growth. The development of the microbial population in the digestive tract, rumen, and gastro-intestinal tract is also, in essence, reset and needs to be re-established to ensure proper digestion and nutrient absorption. As these calves are already on the back foot in terms of development, they struggle to attain the efficiencies of calves that were not impeded in their growth.

HYGIENE

The primary focus in a calf-rearing system should be hygiene. Applying good management to ensure proper cleaning or sterilisation of the mixing and feeding equipment as well as providing clean bedding in pens already reduces the risk of contamination and infection. Attention should also be given to the quality of water and feed provided to ensure that it is fresh and not a source of contamination. Fly control measures should also be in place to limit contamination of feed and surfaces.

The quarantine of sick calves away from healthy calves also aids in limiting the spread of diseases. Implementing strict biosecurity measures could prevent contamination. Making sure people that enter the calf facility follow a strict disinfection protocol (shoe disinfection, hands, and clothes), can decrease the risk of cross-contamination from other facilities or other parts of the farm.

STRESS

Another key factor influencing the susceptibility of calves to disease is the susceptibility to stress. From birth, the calf is immediately exposed to stressors like weaning, the lack of maternal protection, increased human contact, and exposure to environmental conditions. Therefore, limiting stress is essential for calf well-being.

Exposure to high ambient temperatures places calves under heat stress, increasing their respiration rate and requirement to cool down. This type of stress has been seen to compromise the integrity of epithelial tissues lining organs such as the lungs and

intestines, which can lead to infections and leaky gut. High ambient temperatures also impact intake and the bacterial microbiome in the gut.

NUTRITION

Adding probiotics to milk replacers could improve beneficial bacterial populations reducing the chances of gastrointestinal tract damage such as leaky gut or scours. Trace minerals like zinc and chromium could lessen the impact of stress-related symptoms, i.e. heat stress and leaky gut.

Chromium improves the energy metabolism of the calf by improving energy metabolism and energy retention on a cellular level by improving glucose uptake. Zinc plays a critical role in immunity and gut integrity by supplementing tight junction formations between epithelial tissue preventing leakage and possible infection.

Milk replacers contain a range of fat sources that need to be effectively emulsified and absorbed by the calf to use as an energy source. Any gastrointestinal problems could decrease the calf's ability to emulsify and digest these fats. Bio-emulsifiers such as lysolecithins could be added to milk replacers to help increase the digestibility of these fat sources and, thus, assist the calf in utilising these fats more easily and efficiently.

Realising the importance of proper hygiene and nutritional practices during the first few months of calf rearing will lower calf mortalities and improve the productivity and the profitability of your future dairy cow. [mpo](#)

