DN NEWSLETTER issue 42

Accounting for 20% of the average dairies cost of production, heifer rearing represents the second highest cost on farm after feed. In this calf rearing newsletter we look at pre-weaning management - Colostrum, milk replacers, feed and forage - along with dry cow management, Actisaf and Safmannan.

It is well recognised that calving at 22 to 24 months of age limits this rearing cost, resulting in greater lifetime performance whilst also reducing the risk of metabolic issues at calving. To achieve this, the first few months of the calf's life are critical, and management of this period determines how they grow, how healthy they are and how likely they are to realise they genetic potential in future.

Pre-Weaning Management

By weaning, the bodyweight of your calves should have doubled, with concentrate intake exceeding 2kg/day. You cannot manage what you do not measure, therefore calves should be weighed at birth and periodically during the preweaning period to monitor growth rates.

The 4 Q's of Colostrum

Calves are born with an immature immune system and from birth are exposed to a wide range of stresses and infectious agents. Colostrum management is the single most important management factor in determining calf health and survival as it provides maternally derived antibodies, also known as immunoglobulins (IgG, A and M), that offer protection whilst the immune system develops.

For optimum colostrum management, consider the 4Qs:

• **QUALITY** - Before use, assess colostrum quality with a Brix refractometer and only feed colostrum which exceeds 50g/L of IgG. IgG content increases with parity or number of lactations, so pay particular attention to colostrum from 1st calving heifers. Where possible, feed colostrum from the calf's own dam and avoid pooling from multiple sources.

• **QUANTITY** - Ensure consumption reaches 10% of the calf's bodyweight within four hours of birth (to achieve a plasma concentration of at least 10g/L within 24 hours). For example, a 40kg calf will require 4kg.

• **QUICKLY** - To achieve successful passive transfer, feed as soon as possible after birth as IgG absorption rates fall by 60% within the first six hours.

• **QUIETLY** - Absorption of antibodies falls when calves are stressed, increasing the volume needed to achieve sufficient levels of protection. Keeping calves calm and quiet will prevent this, increasing efficiency of utilisation.

Milk Replacers

Feed conversion efficiency is highest during the first 8-10 weeks of life - calves can gain up to 1kg LW for every 2kg of DM consumed. A high growth target of around 0.80kg per day should be targeted.

Studies have shown that if feed intakes are impaired during this period, calves will never make up for shortfalls in growth rates or development of mammary cells, the gut and immune system. Maximising growth rates pre-weaning has also been shown to provide a significant boost to first lactation performance. To achieve this, a range of other factors such as biosecurity and ventilation must be carefully considered, and a quality milk replacer selected and fed at approximately 10% of the calf's body weight per day.

Dugdale Nutrition Progressive Calf Milk has been developed to provide your young stock with high quality, proven nutrition and are formulated to ensure optimal growth, health and performance.

DN Progressive Calf Milk is available as a skim or a whey powder and benefits from the fatty acid technology of NeoTec4, which in the UK is unique to Dugdale Nutrition and helps in the following areas:

1. Improve Feed Efficiency & Utilisation
2. Improve ADG (Average Daily Gain)
3. Improve Frame & Muscle Growth
4. Reduce Scours & Optimise Immune System

Starter Feed and Forages
To stimulate the physical and microbial development of the rumen, early intakes of a starter feed must be promoted. This is necessary to ensure that the calf can digest fibre as soon as possible within the rumen.

Intake of starter feeds will result in the production of acetic, propionic and butyric acid, also known as Volatile Fatty Acids (VFAs). VFAs are produced as a result of carbohydrate fermentation and are essential for the development of papillae on the rumen epithelium. To maximise nutrient absorption, development of the papillae must be extensive to provide a larger surface area within the rumen.

Calf starter feed should be high in starch, low in fibre and high in quality protein. After a gradual introduction, a feed rate of 300g per day should be targeted by week 3. It is now recommended that a high NDF (65%<) forage, such as hay or straw, is chopped to 2.5cm and fed as 4% of the calf's DMI. This promotes muscular development within the rumen and promotes intake of starter feed, stimulating rumination, increasing pH, and supporting papillae development.

The weaning process should commence at around 45 days of age or when the calf reaches their target weight or starter feed intakes. (Typically, a Holstein calf should consume 2kg/day over three consecutive days.) This process should include gradual reduction of milk replacer and increase in starter feed intake.

DN Youngstock Feeds
To double their bodyweight over the first 8 weeks, calves must be provided with the optimal nutritional support to develop an efficient and dynamic rumen, whilst also establishing an effective immune system.

Our range of youngstock feeds have been developed with this in mind, supporting calves and heifers from birth through weaning and onto the rearing stage. Our rearing range will support breeding heifers through to calving and other youngstock through to beef production, including:

- Progressive Rumistart 3mm Pellets
- Progressive Calf 6mm Nuts
- iStart 3mm Pellets
- Progressive Heifer 6mm Nuts
- Progressive Heifer Straw 6mm Nuts
- Stockmaster 6mm Nuts
- Pro-Start Blend
- iGrow 16 6mm nuts
- Pro-Grow Blend

Dry Cow Management

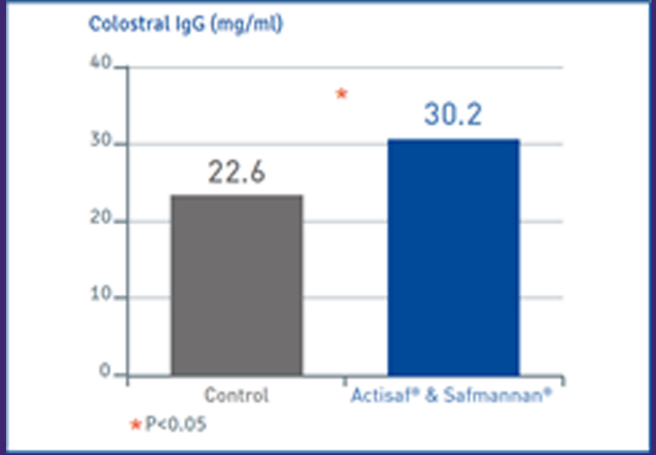
The health of a cow and calf are inextricably linked, so careful cow management throughout the transition period is critical. Several metabolic and hormonal changes occur at this stage, altering both the innate and adaptive immune systems - resulting in immunosuppression and an increased susceptibility to disease, such as mastitis and metritis.

Immune alterations often also lead to systemic inflammation, the maintenance of which can result in the loss of approximately 2kg of glucose every day. At a time where a falling DMI limits energy levels, this is costly as it increases the severity of negative energy balance (NEB).

At calving, the impact of NEB is severe, increasing susceptibility to issues like ketosis, mastitis, displaced abomasum and metritis. Often there is also a loss of colostrum quality, milk production and fertility.

The provision of Actisaf® and Safmannan® during transition helps support a healthy gut and immune system. In trials, this has been seen to limit systemic inflammation, indirectly support the increasing energy requirements of the cow, and boost milk production during early lactation. Studies have also identified a link between supplementation and an increase in colostrum IgG levels. Alone, Actisaf® supported a 15% increase, however when fed alongside Safmannan®, this rose to 34%, demonstrating that supplementation of the transition cow indirectly promotes calf health and viability.

Figure 1: Effect of supplementation with a blend containing live yeast Sc 47 and parietal fraction during the close-up period on immunoglobulin concentration in colostrum (Marden et al. 2013)



What is Actisaf® live yeast?

Actisaf® Sc 47 live yeast jump starts rumen development in young calves, setting them up to be more productive members of the milking herd.

ActiSaf Sc 47

It also optimises the rumen environment and stimulates key microbial species that:

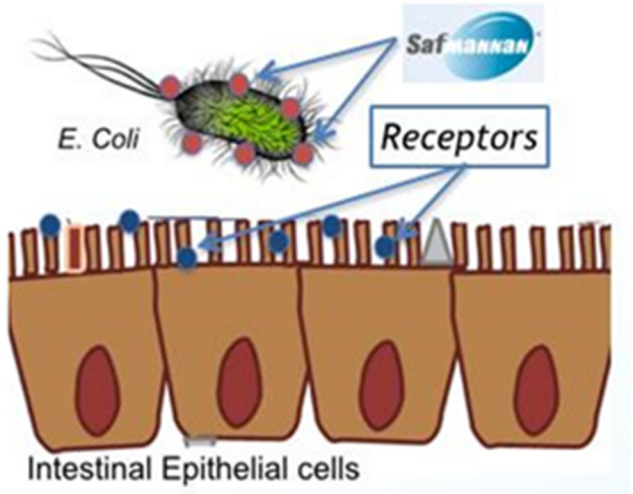
- Stabilise rumen pH by converting lactic acid into propionate, a key driver of live weight gain.
- Increase overall VFA production (to promote rumen development).
- Increase the production of microbial protein (the highest quality protein.

What are the benefits of feeding Actisaf® to calves?

- Improved digestibility of fibre and feed conversion efficiency, driving daily live weight gain
- Reduced incidence of digestive upset during stressful periods such as weaning
- Faster, smoother transitions onto solid feed Sc 47

What is Safmannan®?
Safmannan® is a unique premium yeast fraction that is rich in specific mannans and β-glucans. Mannans have been proven to bind harmful gut pathogens, whilst β-glucans support the immune system, helping to identify and deal with the threat of infections more effectively.

In simple terms, it helps to reduce bacterial load by attaching to bacteria and carrying it out of the intestine. Clever stuff!



Above: Safmannan attached to the gram negative pathogens, therefore stopping them from attaching to the intestinal wall.

So, what are the benefits of feeding Safmannan® to calves?

- Reduced growth checks during periods of stress and challenges, such as weaning and housing changes
- Supported immune status and better resilience against pathogens
- Reduced susceptibility to diarrhoea

In conclusion, Safmannan will help to support the immune system in any situation, stimulating animal performance and helping cattle and sheep in challenging situations.

SafMannan

We have several sheep, dairy and beef feeds containing Safmannan, along with complementary products to supplement your animals.

For further information, please do not hesitate to contact your local DN Sales Specialist or email our Veterinary Technical Manager, Debby Brown:

debby.brown@dugdalenutrition.com

Dugdale Nutrition

170 years of innovation

iFeed
INTELLIGENT FEEDING by Dugdale Nutrition

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