EMULSIZYM®

BACKGROUND

Nukamel's Emulsizym® technology has been developed as an answer to the restrictions of the use of antimicrobial growth promoters (AGP). Emulsizym® replaces AGP in a natural way. It means that Nukamel's calf milk replacers are fully optimized with respect to health and digestion. The right choice and combination of raw materials are essential to its success. The Emulsizym® technology is built on three pillars:
1. The antibacterial properties of short- to medium-chain fatty acids.
2. Bioactive peptides derived from fermentation, which:
   a. are antibacterial, inhibiting the multiplication of bacteria
   b. stimulate the immune system.
3. A nutritional emulsifier, providing increased solubility and digestibility of fats.

EMULSIZYM® 4seasons

Due to increased pressure for a further reduction of the antibiotics use in animal feed, Nukamel has taken the Emulsizym® concept to the next level. In 2011, Nukamel developed a seasonal concept: Emulsizym® 4seasons. This concept adapts nutritional content to the seasonal differences occurring during the year. For instance, in general, European winters are cold and wet, whereas summers are mainly warm and dry. Sheds are more closed in autumn and winter time, and more calves are housed inside. Less ventilation, more dense housing, together with the wet and cold weather create higher risks of infection, such as respiratory diseases.

Therefore, the Emulsizym® 4 seasons concept in winter pays more attention to calves’ health by adding a combination of two different strains of probiotics – Bacillus spores (lichinemorphis and substilis) and lactic acid bacteria (Enterococcusfaecium) – and essential fatty acids – Omega 3 and Omega 6. The probiotics work in two ways. First, by colonizing the gut, beneficial bacteria reduce the growth of pathogenic ones, resulting in a balanced gut microflora. This is particularly beneficial for calves which have received a therapeutic antibiotic treatment, and assists a swift and full recovery. Second, by stimulating enzyme secretion, probiotics improve the digestion and availability of nutrients.

In summertime the risk of disease is lower. Therefore the focus during this period of the year is on optimal growth and performance. A 10% higher level of amino acids (lysine, methionine, threonine) is included in the CMR for this season, providing additional building blocks for calf growth. To further improve digestibility and gut health in summer, phytonogenic nutrients are added to the feed. This phytonogenic nutrients stimulates the secretion of digestive enzymes, thereby improving feed digestion and feed conversion ratio. Gut health is improved by enhancing antioxidant action, protecting microvilli and increasing the production of butyric acid, which encourages the beneficial micro flora. In summertime temperatures are higher, for calves a temperature zone which is comfortable during their first month is 15–25°C but after this first month it declines to 0–15°C. An extra benefit of this phytonogenic nutrients is a decrease in heat stress in summer, as it increases the calves’ water uptake.