BupH'er the challenges of high-demanding dairy cows

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High-performance dairy cows deserve special attention, especially in early lactation. This high-demanding animals generally consume large proportions of concentrate, but as a consequence often suffer from insufficient dry matter intakes. Digestive disorders such as subacute rumen acidosis can arise too, having a negative impact on milk production. Nuscience developed the Mervit BupH portfolio to provide the best answer against these challenges.

BupH'er to safe rumen pH levels

At the renowned Schothorst Feed Research (SFR) station in The Netherlands, the impact of Mervit BupH Steady on rumen pH was tested using smaXtec boluses. 12 animals were used in a 3-week periods 4x3 Latin square design. Despite large individual animal differences, a significant decrease in range of rumen pH was observed (Figure 1). This indicates animals being fed with Mervit BupH can better cope with high fermentative diets, as the difference between minimum and maximum rumen pH levels remains smaller. Animals susceptible to acidosis will longer remain within safe rumen pH ranges.

Positive effect on dry matter intake, milk yield & milk urea

Also individual dry matter intake (DMI) and milk production was assessed during the SFR study. Even though basal ration DMI was already high in all treatment groups, feeding Mervit BupH Steady led to even larger DMI levels (Figure 2). This helped to boost milk yields of the Mervit BupH treatment, with no effects on milk fat, protein or lactose concentrations. Nevertheless, a slight but significant drop in milk urea was found (from 20.0 for the control treatment to 18.9 mg/dL for Mervit BupH Steady), indicating a positive impact on rumen protein utilization.

Figure 1: Mervit BupH Steady buffers the rumen pH between a smaller and safer range of minimum and maximum pH levels

Figure 2: Mervit BupH Steady has a positive effect on dry matter intake (full columns) and milk yield (empty columns)
Mervit BupH supports a safe passage through acidotic periods

More importantly, it is of interest to protect cows during acidotic conditions, which often occur during the most critical phases of early lactation. At the end of each period during the SFR study, rapidly fermentable carbohydrate intake was gradually increased to induce mild subacute acidotic conditions. Focus was given to animals susceptible to acidosis, as indicated by elevated levels of specific milk fatty acids such as t10 C18:1, C15:0 and the t10/t11 C18:1 ratio (Jing et al. 2018). These animals were found to better withstand the challenging acidotic periods as seen by a positive impact on rumen pH parameters and smaller levels of milk fat depression markers (Figure 3).

![Figure 3: Mervit BupH steady had a reducing impact on markers of milk fat depression (t10 C18:1, C15:0) and positively influenced rumen pH parameters under acidotic conditions](image)

New Mervit BupH portfolio

Nuscience developed the Mervit BupH portfolio to support your dairy cows during their most challenging periods. **Mervit BupH Steady** contains an optimal mix of buffering components to maintain safe ruminal pH levels throughout the whole day. **Mervit BupH Stress** also contains Vitanox natural anti-oxidants to maintain a strong ruminal and intestinal epithelium and supports the tight junction barrier to alleviate a heat stress induced leaky gut situation. Finally, **Mervit BupH Safe** adds the proven effects of medium-chain fatty acids to support your animals’ immunity in order to boost milk production even further by glucose savings.

![Figure 4: Mervit BupH supports high-producing animals by keeping rumen pH within safe levels, which prevents suboptimal milk production levels as indicated by the effect on specific milk fatty acids](image)