

The power of lactoferrin in calf milk replacer

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Lactoferrin is a natural component present in milk. In fact, it is a protein with a bio-active role. Bio-active means that lactoferrin actively interferes with several physiological processes. Lactoferrin boosts the immune system, and additionally has bactericidal and antiviral activity. This means that it actively stimulates health.

During processing of milk, a large part of the bio-activity of lactoferrin is lost, unfortunately. The several heating steps in dairy processing play an important role in this inactivation.

Furthermore, the level of lactoferrin present in processed dairy products can show large biological variations. Therefore lactoferrin is not present in its active form in dairy products like whey and milk powder and quantities can vary to a great extent.

FrieslandCampina extracts lactoferrin directly from fresh milk. In this way, the bio-activity of lactoferrin is optimally preserved.

Nutrifeed, as part of FrieslandCampina, has direct access to this bio-active lactoferrin and has



selected this special ingredient as a component of their latest premium product, Kalvolac Power, at a constant high level of 200ppm.

Activity of lactoferrin

Lactoferrin has proven its potential in high end infant formulas.

Nutrifeed has shown that the principle of supporting and improving health through lactoferrin also works for young calves.

Multiple tests, both at Nutrifeed's test farms and at the farms of cus-

tomers in The Netherlands and abroad, have demonstrated that young calves show remarkable development when fed Kalvolac Power.

The effect of lactoferrin shows immediately in the first and most critical phase of rearing – demonstrated by very healthy and active calves with shiny coats.

The high feed intake results in an optimal development of young calves, ensuring a future generation of top class dairy cattle.

Technical performance

The results of two calf trials show significant lower faecal disorders and a reduction in medicine usage and veterinarian treatments for the Kalvolac Power group with 200ppm lactoferrin. Lactoferrin clearly supports the health status and gives calves a perfect start.

The ultimate test to see the performance of Kalvolac Power with 200ppm lactoferrin is to test it against fresh cow milk. The average daily growth on fresh cow milk and Kalvolac Power is similar. After 43 days a numeric advantage on ADG for Kalvolac Power group (calves are weaned at 56 days) can be seen.

The Kalvolac Power group clearly scored better on all health parameters as lower diarrhoea and white manure resulting in a clear tendency for lower treatments and less medicine use in this group.

On fresh milk one of the four calves had problems with white manure (fat diarrhoea), while none did on Kalvolac Power.

The overall conclusion, based on these trials, is that lactoferrin has a clear positive effect on all health parameters and Kalvolac Power can meet with fresh cow milk and even outperform on health characteristics. ■



Fig. 1. Activity range of lactoferrin.

Table 1. Technical performances at two calf trials with 0 versus 200ppm bio-active lactoferrin. The second trial purely focused on health performance.

Group	Kalvolac without LF 38kg CMR Weaning at 56 days	Kalvolac Power 200ppm LF 38kg CMR Weaning at 56 days
First trial		
No. of calves	30	30
ADG day 1-21 (g/day)	523	516
ADG day 21-40 (g/day)	784	782
ADG day 40-56 (g/day)	1029	1056
ADG day 56-72 (g/day)	884	871
ADG day 0-72 (g/day)	788	789
Faecal disorder per calf (day)	1.79 ^a	0.90 ^a
Second trial		
No. of calves	30	30
Mortality (No. calves)	0	0
Faecal disorder per calf (day)	2.38 ^a	1.45 ^a
Medicines per calf (day)	2.90 ^a	1.10 ^a

^a Significant difference between both groups ($P < 0.05$).

Table 2. Results showing the performance of Kalvolac Power supplemented with 200ppm lactoferrin compared with fresh cow milk.

Group	Fresh cow milk 211 litre Weaning at 56 days	Kalvolac Power 200ppm LF 38.9kg CMR Weaning at 56 days
No. of calves	40	50
ADG day 1-21 (g/day)	557	571
ADG day 22-42 (g/day)	864	769
ADG day 43-56 (g/day)	1083	1153
ADG day 57-77 (g/day)	1264	1293
ADG day 0-77 (g/day)	911	915
Diarrhoea (% calf)	16	10
Diarrhoea (days/calf)	0.61	0.27
White manure (% calf)	26	0
White manure (days/calf)	1.08	0.00
Medicine (% calf)	18	12
Treats/treated calf (days)	5.4	1.7
Treats/calf (day)	1.13	0.20