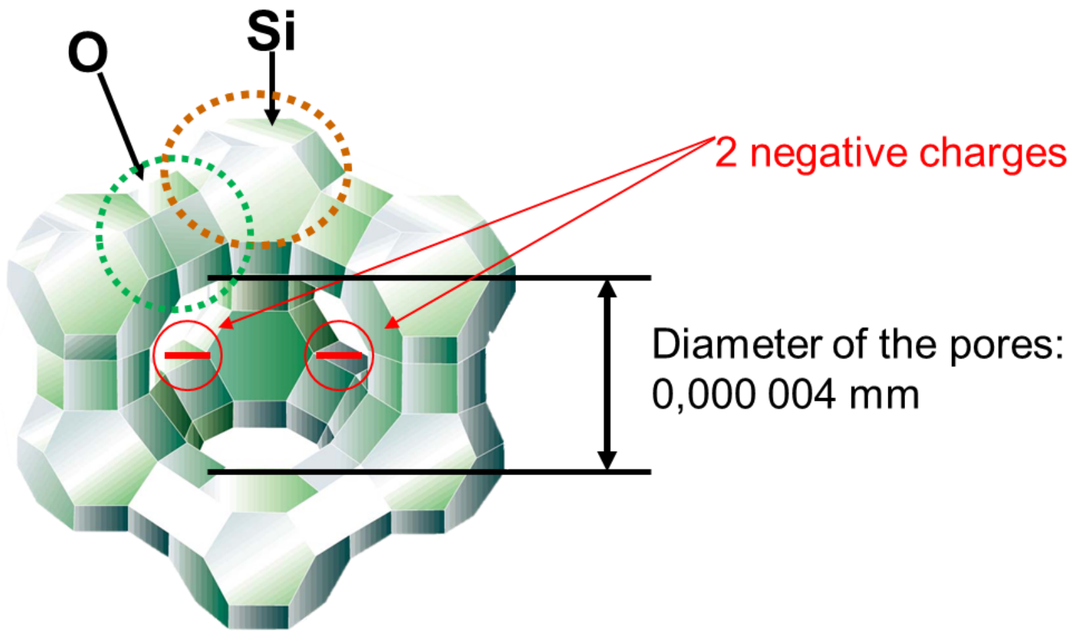
unipoint® ag

Klinofeed®

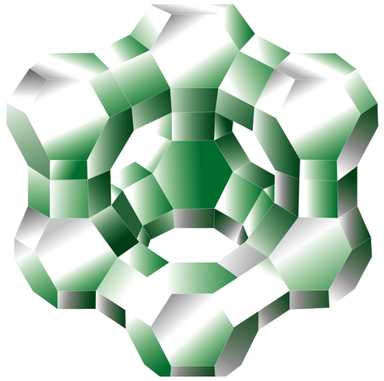
Benefits in Ruminuants

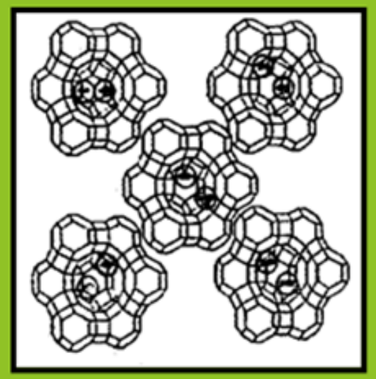
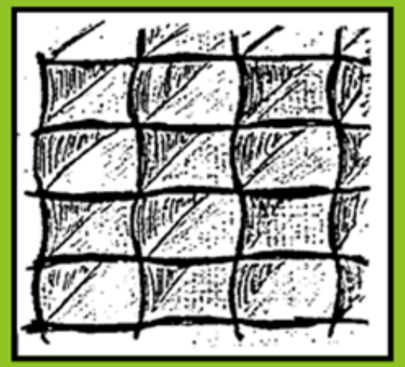
What is Klinofeed

Klinofeed is a natural mineral with a unique structure and exceptional ion-exchange capability.



Different Structures of different Silicates



		
Clinoptilolite	**Sepiolite**	**Bentonite**
The crystal structure is stable and not swellable	Tubes that are not stable, and therefore swellable	Flakes that are not stable
Selective Binding	Non Selective Binding	Non Selective Binding

Mycotoxin Binding

Klinofeed is a moderate binder for different toxins and an alternative to other mineralic binders as Sepiolite and Bentonite.

Toxin	Ø Binding Capacity
Zearalenone	71%
Ochratoxin	96%
Aflatoxin	95%
Fumonisin	69%
DON	81%
T-2	68%

Klinofeed 4kg / t
200 samples
Laboratory BioCheck, Leipzig, Dr. A. Lindner, 2001

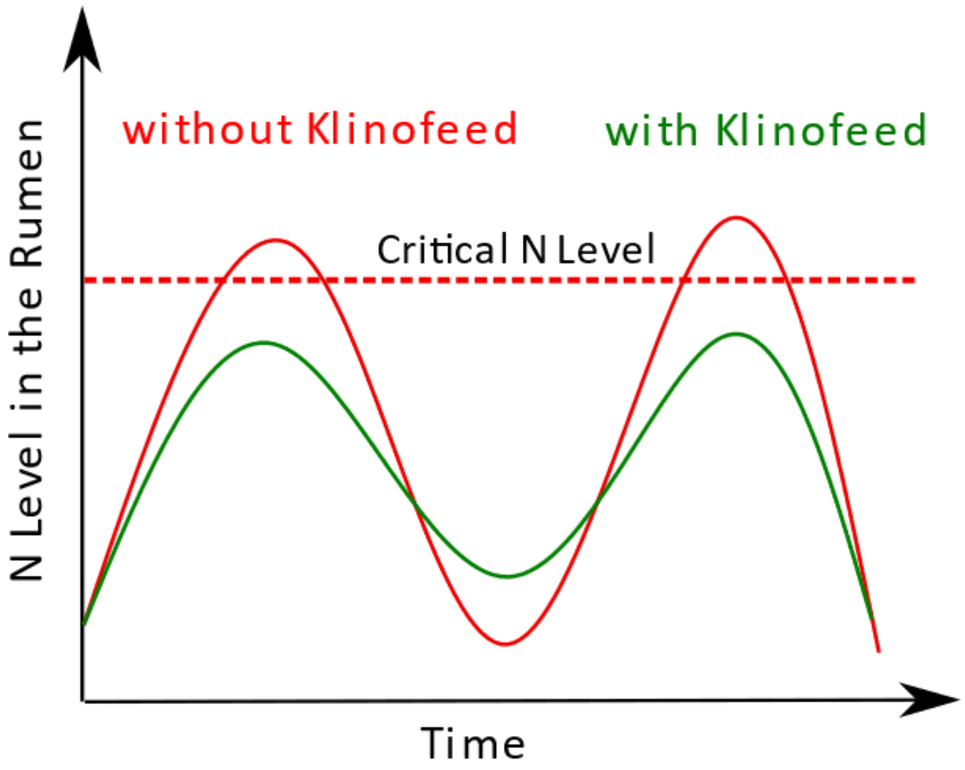
Toxin	Ø Binding Capacity
Aflatoxin	93.3%

Klinofeed 2 kg / t
Trilogy Analytical Laboratory, Inc, Washington, USA, 2020

Ammonium in the Rumen

Accumulated ammonia in the rumen ist transfered through the rumen wall andh the blood to the liver where it is detoxified. Which in the long term means a restriction of animal health due to liver and metabolic stress.

Too high or too low nitrogen content in the rumen has a bad influence on the rumen microbes. Klinofeed is able to cut the peaks of Nitrogen in the rumen

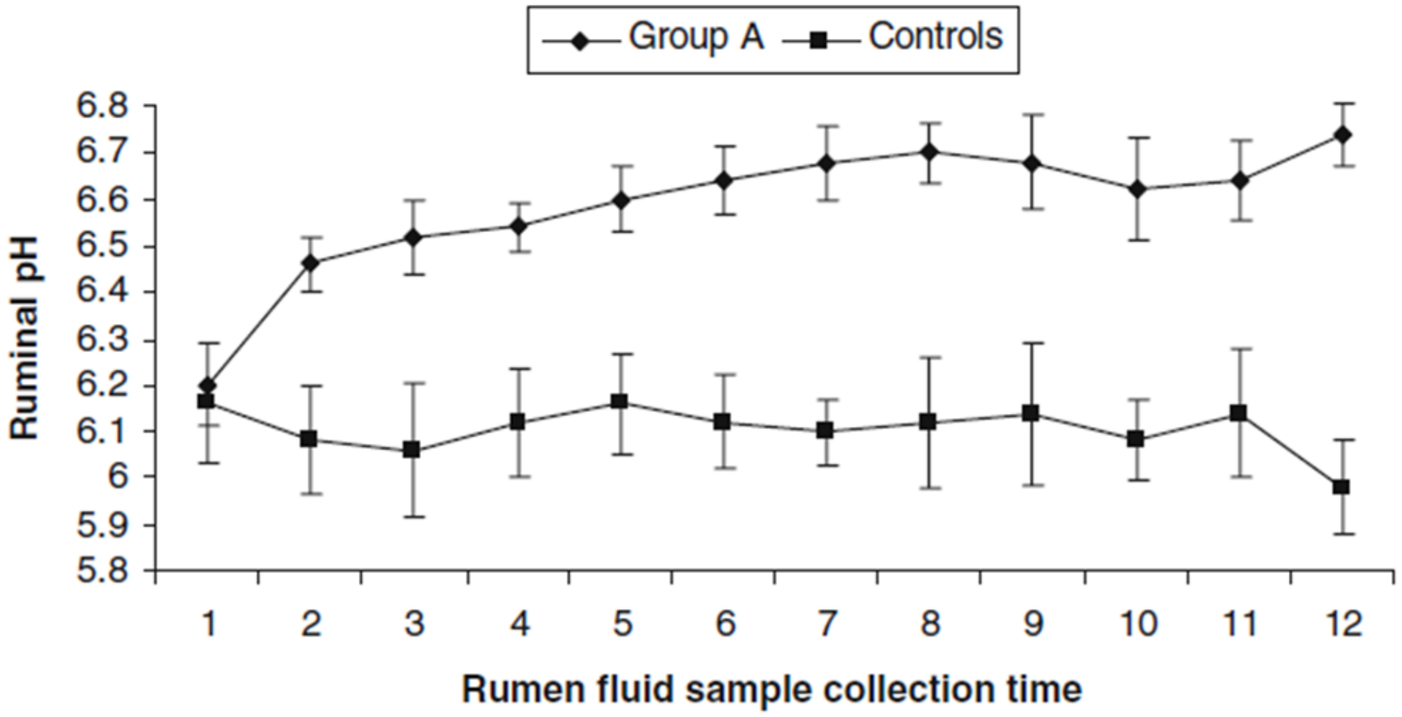


Buffering with Klinofeed

Klinofeed, with its preference for binding ammonium, can buffer the nitrogen level in the rumen for the microbes. The binding of nitrogen with Klinofeed is reversible. That means that the microorganisms can take nitrogen out of the Klinofeed pores.

This leads to a more stable rumen microorganism household and a stabilised pH value.

Buffering with Klinofeed

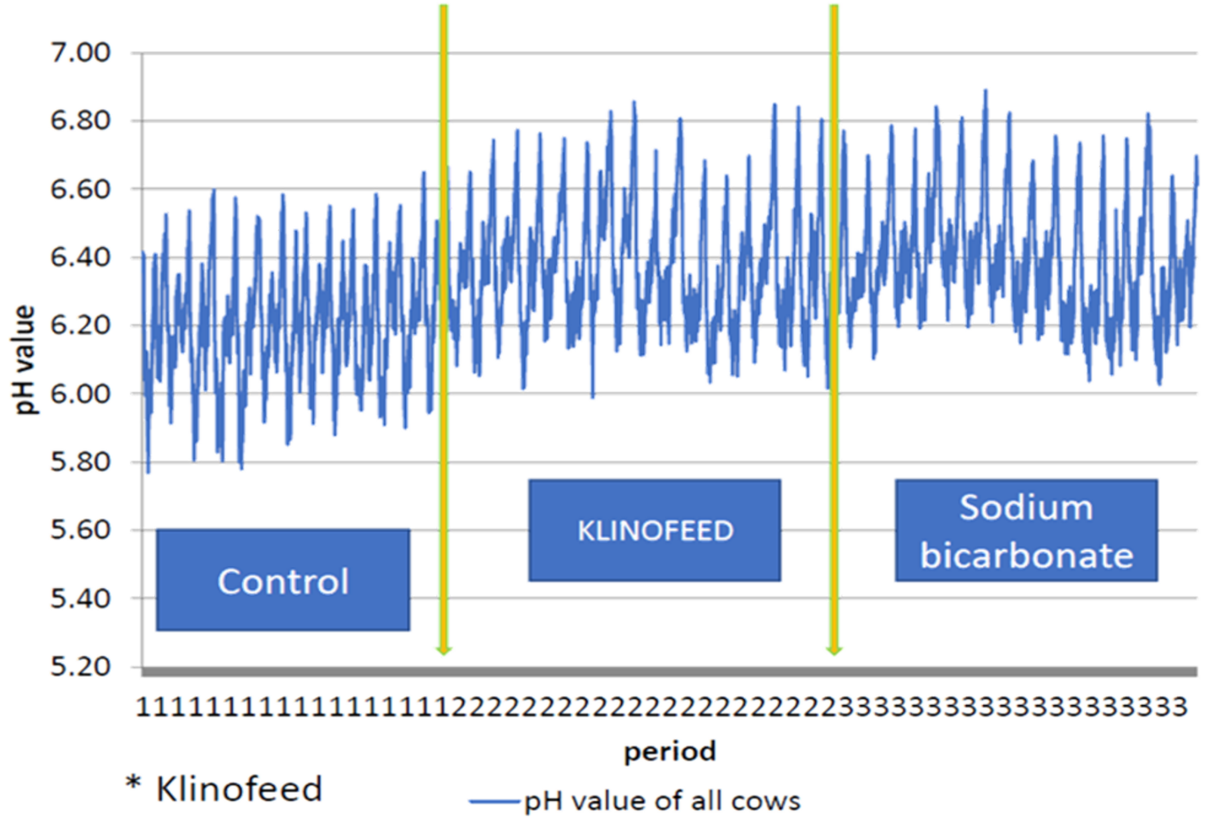


Group A: clinoptiolite 200g per day

Maria A. Karatzia et al. (2010)

Buffering with Klinofeed

pH Value of 10 cows measured with smaXtec bolus



Ammonium in the Intestine

Undigested protein is transferred to ammonium in the intestinal tract. A high ammonium content has several negative impacts on the animal.

- Ammonium damages the epithelial cells.

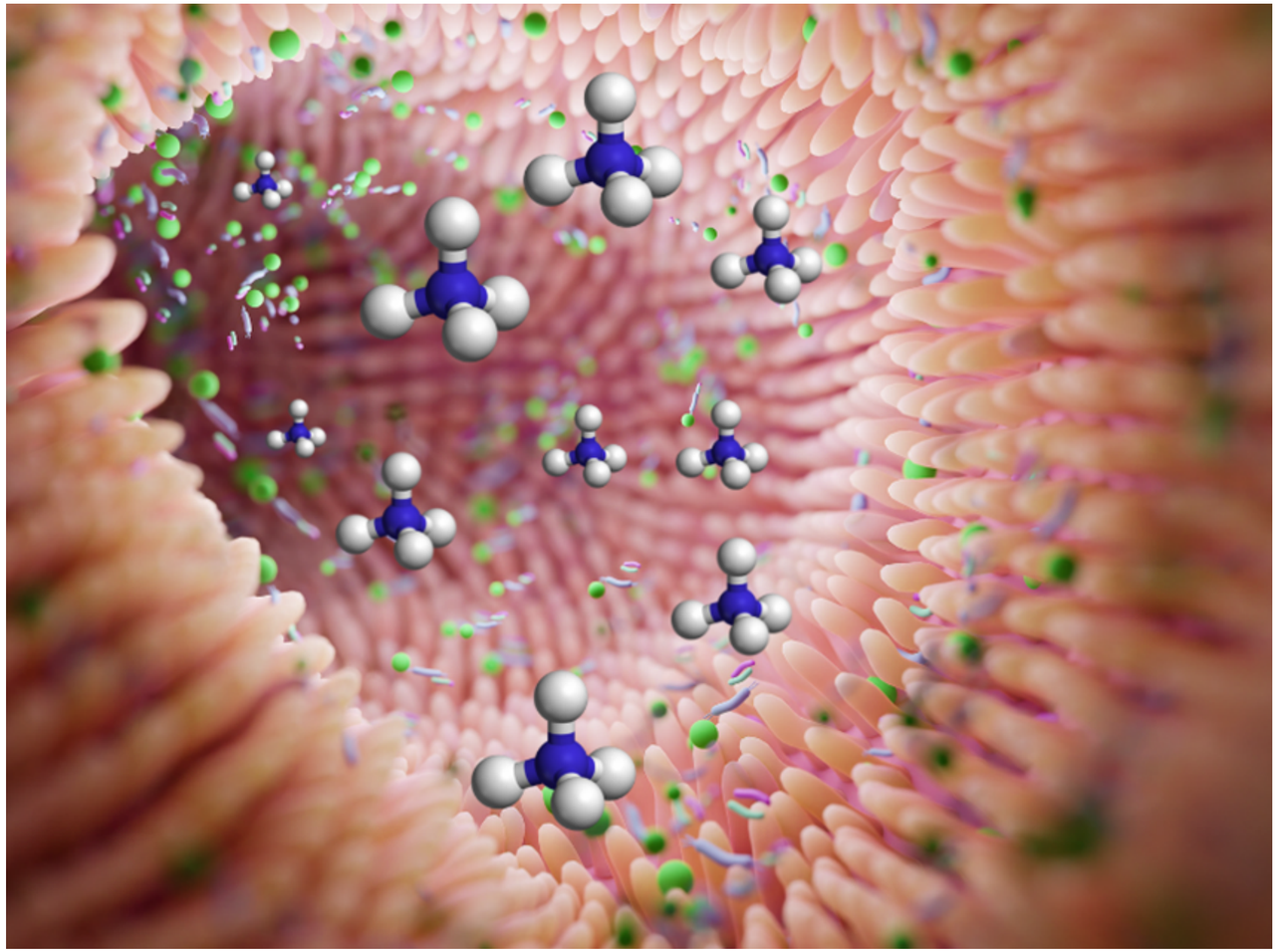
Nutrient absorption is affected by frequent epithelial cell renewal in the intestines resulting in slower growth rate and reduction of production performance (Ziggers, 2003).

- Ammonium must be transferred in the liver to urea by the use of energy.

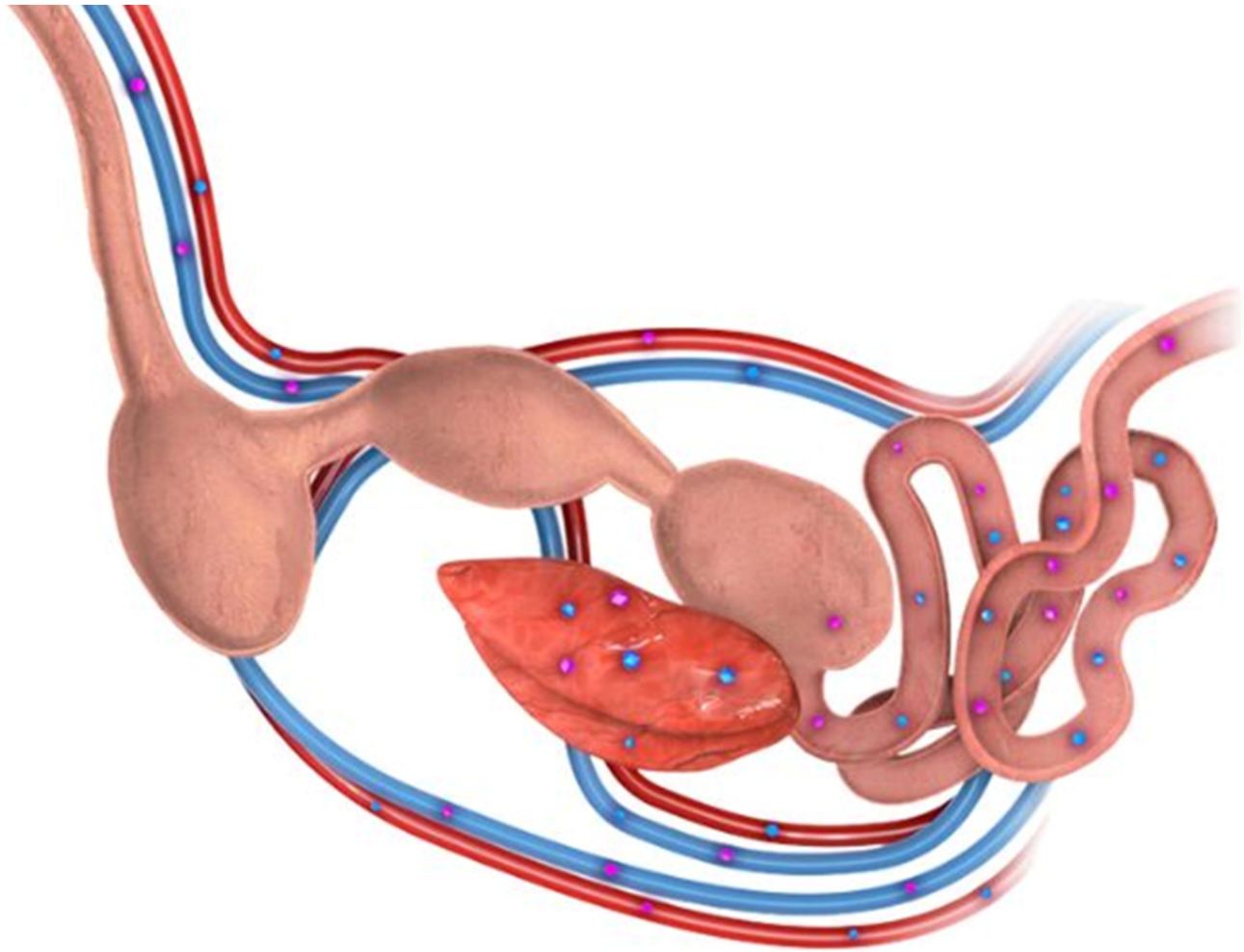
- High ammonium content leads to wet faeces.

With the binding of ammonium Klinofeed detoxifies the digestive tract and relieves the animals.

Ammonium in the Intestine



Ammonium in the Intestine



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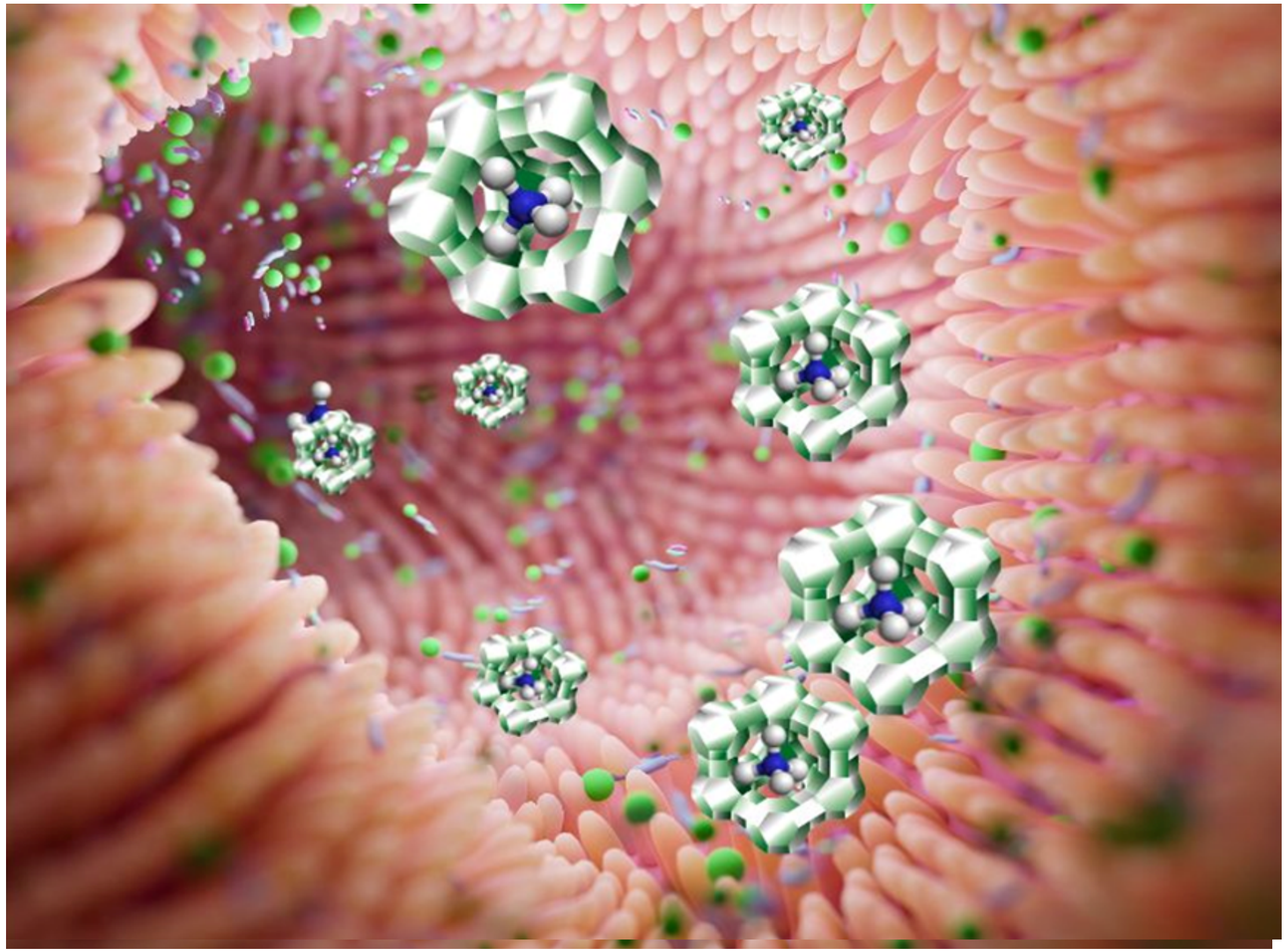

Benefits

Lower Risk of SARA

- Buffering and increasing the pH level in the rumen similar to sodiumBicarbonate but with half of teh dosage.

Lower somatic cell counts

- Binding ammonium in the rumen and in the intestine tract

Improved Digestion

- Binding Mycotoxins
- Better rumen and intestinal flora

Application and Dosage

- Minimum 100 gram per cow and day
- With danger of SARA increase up to 150 gram
- Suspicous of Mycotoxins increasement up to 150 gram

Compared to sodium bicarbonate Klinofeed has a wide range of applications in the entire dairy herd.