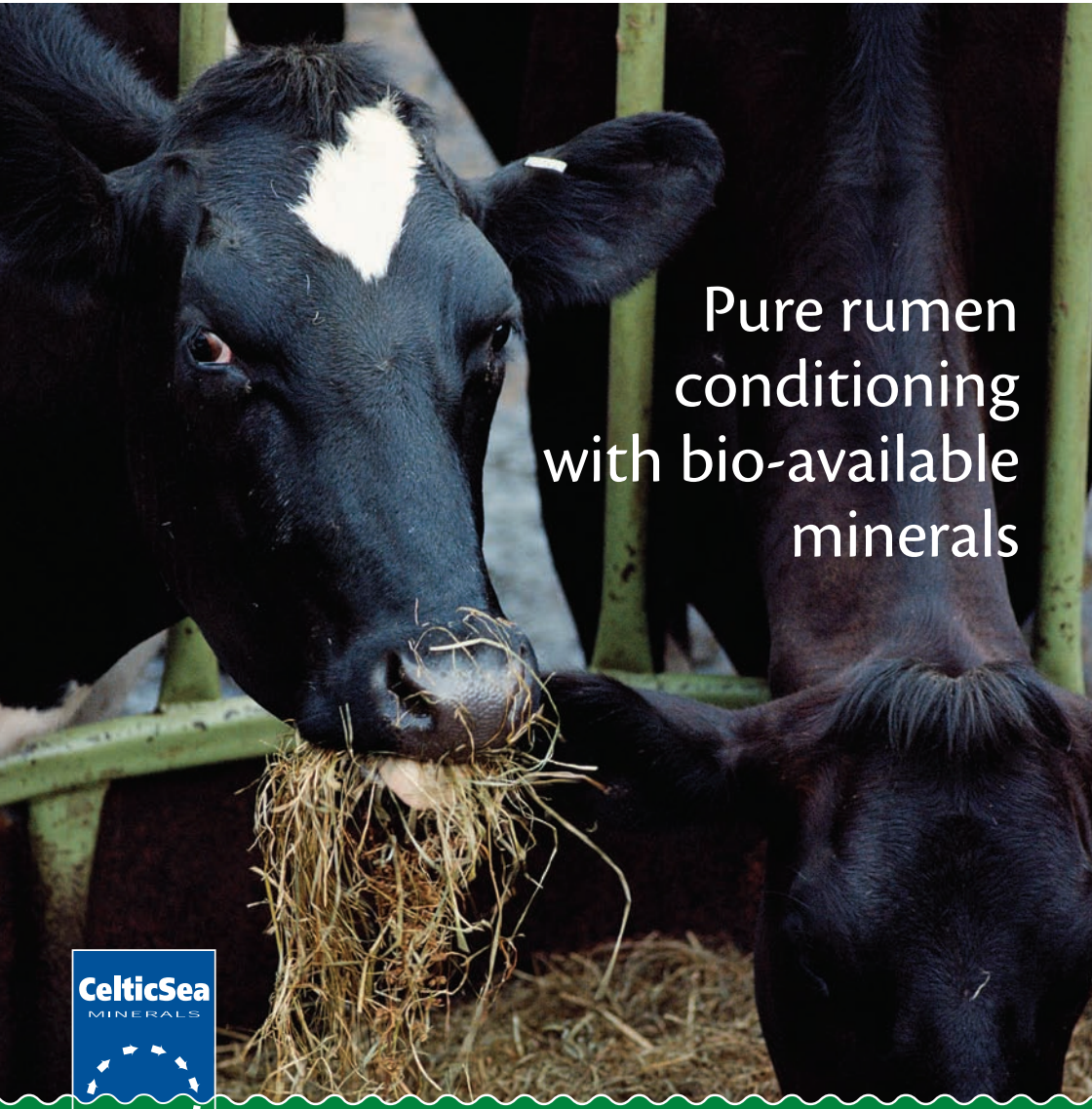
calmin

PURE RUMEN CONDITIONING



Pure rumen conditioning with bio-available minerals

CelticSea MINERALS

Conditioning the Rumen in Lactation

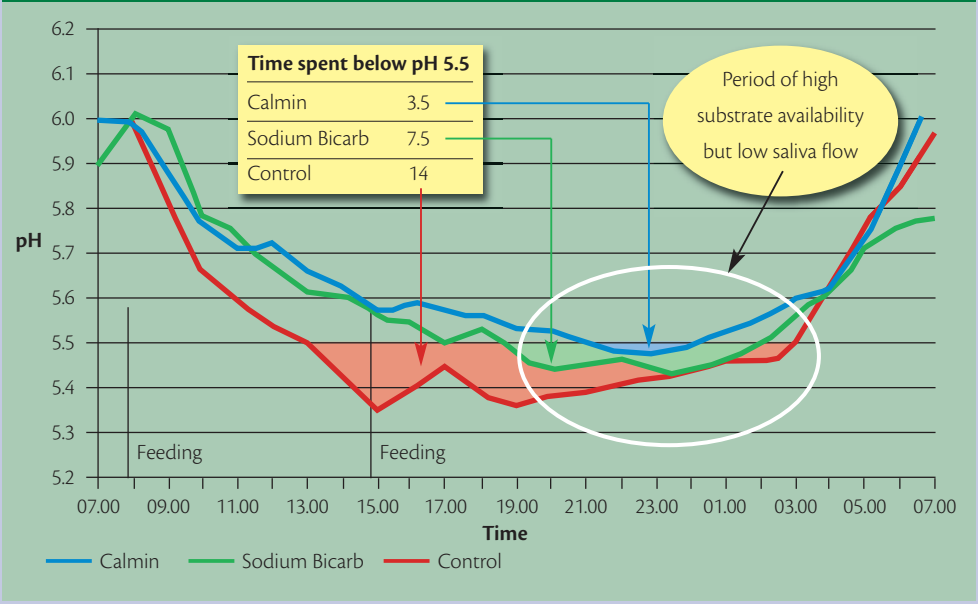
Failure to maintain a consistent rumen pH in high yielding dairy cows may result in metabolic disorders and reduced production performance. Increasing energy supply through increased use of concentrates or rapidly fermentable fiber can plunge the rumen into acidosis, at which level lactic acid starts to accumulate and volatile fatty acid (VFA) production is compromised. This results in a very inefficient rumen.

To optimize both milk yield and quality, it is important to minimize the amount of time rumen pH drops below 5.5. This will lead to increased volatile fatty acid production and improved rumen efficiency

How does Calmin condition the rumen?

1. By holding the rumen pH between 5.5 and 6.2:

The importance of pH 5.5
University of Stellenbosch - South Africa (2006)



The effect of conditioning the rumen with Calmin (90g/cow/day) was compared with a buffering agent, sodium bicarbonate (180g/cow/day) and a control (see graph, previous page).

The graph demonstrates clearly that the Calmin treatment minimized the amount of time the pH spent below 5.5, resulting in a much more efficient rumen leading to greater milk production:

Production trial results:			
	Control	**Calmin**	**NaHCO3**
Average Daily Milk Yield (lb)	60.8	70.1	64.2
4% FCM (lb)	59.3	72.3	65.9
Average Milk Fat (%)	3.86	4.21	4.18
Average Milk Protein (%)	3.43	3.47	3.38
Average Milk Lactose (%)	4.57	4.58	4.59
Milk Fat Yield (lb/d)	2.34	2.93	2.69
Milk Protein (lb/d)	2.05	2.40	2.16

2. By increasing total volatile fatty acids:

The balance of volatile fatty acid production is crucial to rumen efficiency and optimum milk production.

The production of propionate needs to be maximized with an optimum amount of acetate still being produced.

Feeding Calmin at between 80-100g/cow/day maintains the VFA ratio while increasing volatile fatty acid production leading to optimum rumen efficiency and milk production.

Effect of Calmin on volatile fatty acid production		
Calmin (g/cow/day)	**Acetate: Propionate Ratio**	**Total VFA** (m.moles/litre)
<60	2.5 : 1	80-85
80-100	**2.5 : 1**	**120**
>150	3.3 : 1	100 and falling

3. By providing a bio-available source of calcium and magnesium:

Calcium Release				
	0-2 hours	**2-4 hours**	**4-6 hours**	**6-8 hours**
Calcium	56.71%	74.57%	87.55%	**100.00%**

Magnesium Release				
	0-2 hours	**2-4 hours**	**4-6 hours**	**6-8 hours**
Magnesium	86.17%	87.16%	95.96%	**98.66%**

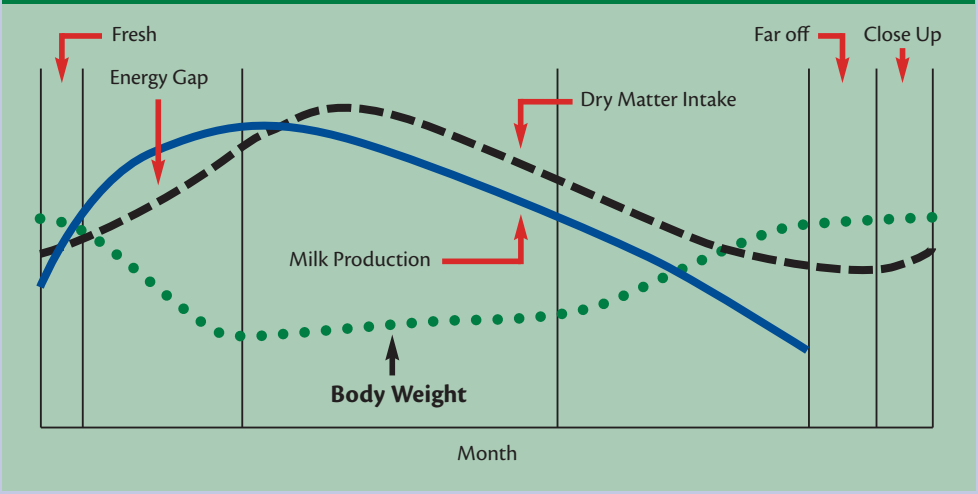
Certain minerals are utilized by bacteria within the rumen and others (e.g. magnesium) are absorbed directly through the rumen wall. It is therefore essential that these minerals are in a soluble form at rumen pH. The calcium and magnesium in Calmin are totally bio-available and can be readily absorbed through the rumen wall or utilised by the bacteria to improve rumen efficiency.

Calmin and the Close Up Dry Cow Diet

The management of the post calving negative energy gap starts in the close-up dry cow diet by feeding increased levels of concentrate.

Reducing the negative energy gap improves milk sustainability, as well as allowing the cow to gain weight for better fertility. Unfortunately, by increasing concentrate levels during transition the cow runs the risk of increased incidence of sub-acute ruminal acidosis and metabolic disorders.

Management of the negative energy gap
Courtesy of the University of Illinois



How does Calmin help reduce the negative energy gap post-calving?

Calmin neutralizes pH allowing:

- Increased consumption of concentrates pre-calving
- Reduced incidence of sub-acute ruminal acidosis and metabolic disorders

calmin

PURE RUMEN CONDITIONING

Calmin conditions the rumen and allows it to work more efficiently. Calmin is manufactured from red algae, which is harvested from clean, unpolluted waters off the coasts of Ireland and Iceland. It is a pure source of bio-available minerals deposited within its structure by the sea, especially calcium and magnesium.

Thanks to its unique honeycombed physical structure and large surface area, Calmin breaks down slowly in the cow – conditioning the rumen and neutralizing significantly more acid, over a longer more constant period, than many conventional buffers. As Calmin breaks down it releases highly bio-available calcium and magnesium to the cow.

Calmin in the lactating cow

- **Better neutralization of rumen acid**
- **Excellent source of bio-available minerals**
- **Improves fiber digestion**
- **Boosts milk yield and quality**

Calmin in the dry cow

- **Allows increased concentrate feeding close to calving**
- **Excellent source of bio-available minerals**
- **Reduces the risk of metabolic disorders**
- **Conditions the rumen for lactation**

calmin
PURE RUMEN CONDITIONING

Recommendations for Use:

Dairy cows (Lactation)
1.76-2.82oz/cow/day

Note:
1. Diet acidity should be taken into consideration when determining rate of inclusion. The more acidic the diet, the higher the inclusion.
2. In the event of the diet acidity not being apparent include at 2.82oz/cow/day and reduce to level of acidosis control.
3. During periods of high summer temperatures (heat stress) increase inclusion rates by 20%.

Dairy Cows (Dry cow transition)
1.76oz/cow/day

Beef Cattle (Feedlots):
0.88-1.76oz/cow/day

Sheep & Goats (Feedlots):
0.5% of compound feed

Metric and US notations:
50g = 1.76oz 80g = 2.82oz
90g = 3.17oz 180g = 6.35oz

AVAILABLE FROM:

CelticSea MINERALS

Celtic Sea Minerals
Strand Farm, Currabinny, Carrigaline, Co. Cork, Ireland. **T:** (353) 21 4378377 **F:** (353) 21 4378466
www.celticseaminerals.com