



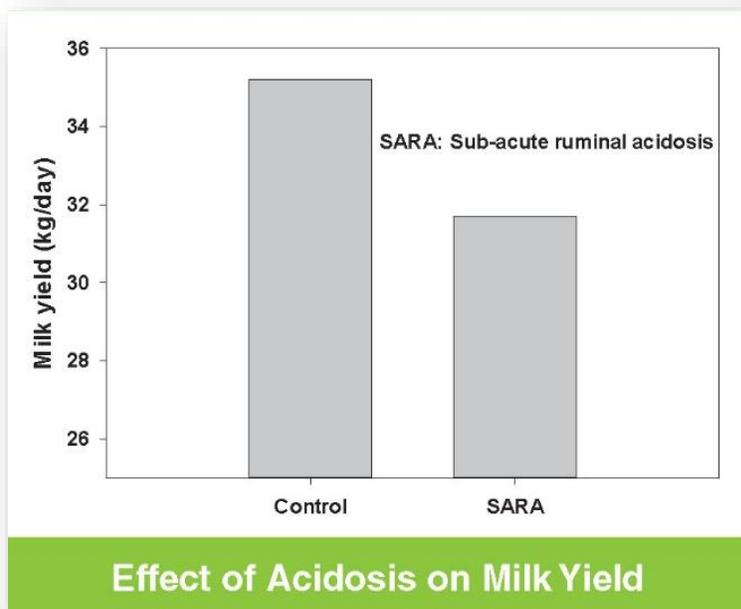
# Ruminant Acid Guard

*A Healthy Rumen is A Profitable Rumen!*

**SeaBuff®** is a rumen buffer derived from seawater Magnesium and seawater basins deposits, counteracting extra rumen acidity, resulting in rumen pH stability, creating the right rumen medium for profitable performance.

Maintaining stable rumen pH is the central focus and a key goal of managing dairy cow nutrition.

The Annual Cost of Rumen acidosis in the USA is \$ 1 billion with more than 20% of cows suffering from Sub-Acute Ruminal Acidosis (SARA)



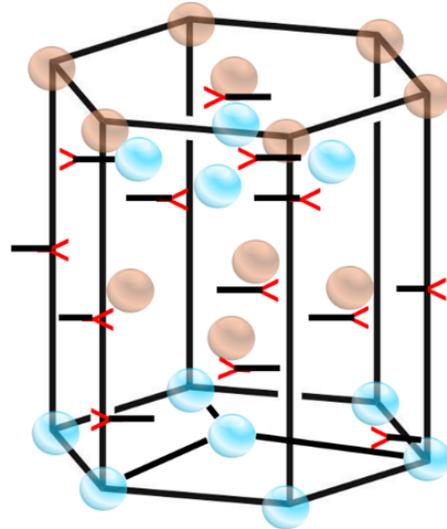
# SeaBuff Structure

● Calcium cation

● Magnesium cation

—< Carbonate anion

Layers of calcium and magnesium ions alternate within SeaBuff structure



*This diagram is the sole property of ADDiCAN INC.*

## ***Origin of SeaBuff®:***

SeaBuff® is derived from seawater Magnesium plus other vital elements from seawater.

SeaBuff® is derived from special coastal, supratidal Atlantic seawater basins deposits in which evaporite-saline minerals accumulate inside a sedimentary carbonate platform.

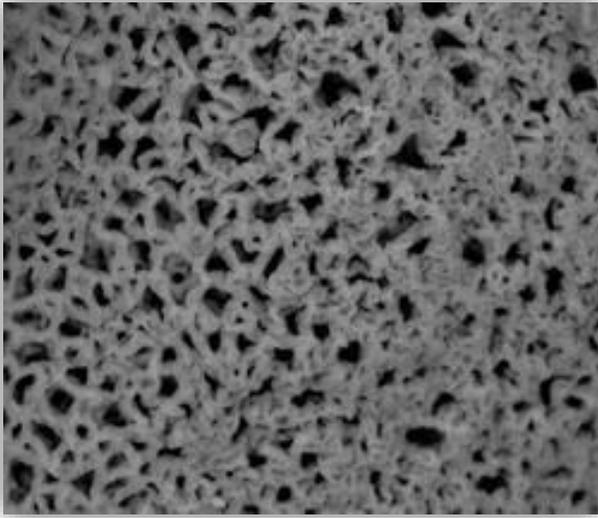
*Layers of both calcium and magnesium ions alternate within SeaBuff® structure.*

## ***Chemical structure of SeaBuff®:***

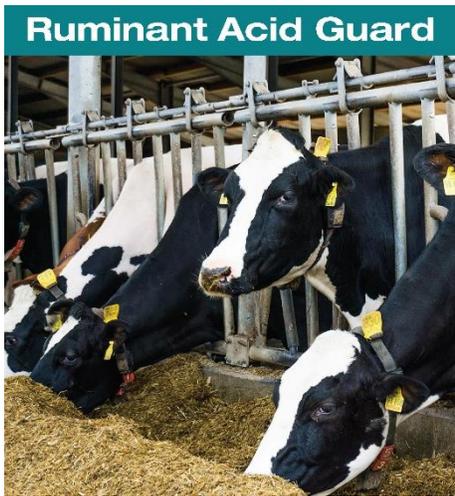
The calcium-magnesium carbonate product contained in SeaBuff® is made by a mole-for-mole exchange of Ca by Mg without macrotransport of carbonate. This can be expressed by the chemical equation



This result in forming a space-supporting framework (skeleton), then lead to a marked increase in permeability and porosity, resulting in high surface area to volume ratio.



- SeaBuff has basin sedimentary Calcium (22%), seawater Magnesium (12%) and vital elements from seawater, therefore dietary inclusions of Calcium and Magnesium can be reduced to take account of this.
- Unique hexagonal structure with high surface area to volume ratio, neutralising more acid over a longer period of time.
- Ideal Calcium : Magnesium ratio, so that it can be included in far-off and close up dry cow rations.



The key factors in deciding which of these types of buffer should be applied to your dairy ration is the acidity challenge inside the rumen and the critical magnesium level. There is a significant difference between buffer types in their respective ability to neutralize rumen acidity. Also, as long as the amount of each is adequate, the balance of magnesium and calcium still has a major impact on Ruminant Animal Performance.

“Rumen calcium to magnesium ratios – Should you be concerned?,” include the following:

### Calcitic Buffers

### SeaBuff<sup>®</sup>

low magnesium content and are derived from deposits of primarily calcium carbonate.	Derived from deposits of calcium carbonate combined with magnesium carbonate and contains much higher levels of magnesium (more than double the regular calcitic buffers).
Only contains calcium in the form of calcium carbonate with very low magnesium content.	Sea Buff contains significant amounts of magnesium along with calcium.
Will only supply sufficient calcium but insufficient magnesium to maintain rumen condition (Low Buffering).	SeaBuff (high magnesium) has the added benefit of increasing available magnesium (High Buffering).
Increase rumen calcium to magnesium ratio (Only 5% magnesium) resulting in tetany (grass tetany) or paresis (milk fever).	Balanced Calcium to magnesium ratio. 22 % Ca to 12 % Mg
Rapidly dissolved in Water so act for <i>short</i> time inside rumen.	Slowly dissolved in water so maintained buffered <i>rumen pH</i> for <i>prolonged</i> time.

## Field Trial on SeaBuff:

268 Lactating cows were administered SeaBuff as part of their Total Mixed Ration (TMR). Manure Screening was conducted Before and After 10 days of using SeaBuff.



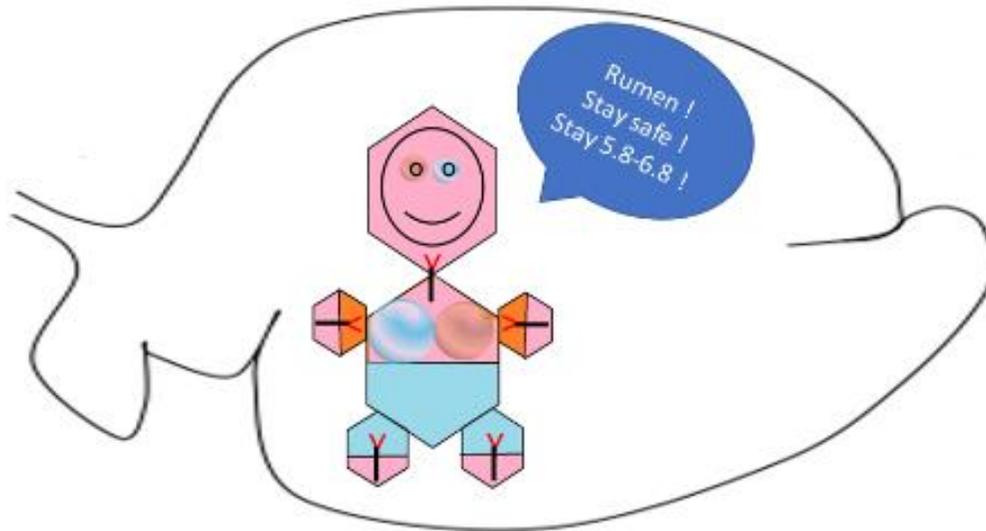
Manure Screen Picture **Before** Administration of SeaBuff. High percentage of Middle Screen indicated **Acidosis**, Poor Rumen Condition and indigestion

*This image is the sole property of ADDiCAN INC. ©*



Manure Screen Picture **After** Administration of SeaBuff. High percentage of Bottom Screen indicated **Buffered** Rumen Condition and maximum digestion

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*This diagram is the sole property of ADDiCAN INC. ©*

The benefits to SeaBuff over regular calcite buffer come down to its Longevity, Durability, Hardness, Lower water and acid solubility, Porous structure, Strength, Useful by-products, Richness in magnesium, and it's a money SAVER.

## Benefits of SeaBuff

- ✓ SeaBuff® is a rumen pH optimiser that optimises the fermentation process inside the rumen so that the conversion of feed to milk and/or meat is as efficient as possible.
- ✓ SeaBuff® Elongate the time that rumen stays between 5.8 to 6.8.
- ✓ SeaBuff® is a main rumen fermentation driver as stabilizing the rumen environment optimises fiber digestion, raising final milk components (butter fat and solids), improving milk quality and quantity and increasing daily gain and meat yields.
- ✓ SeaBuff® buffering action provides an ideal media inside the rumen for optimum production of the VFA's in right proportions. i.e. propionate as glucose precursor which increase the potential for milk production and milk protein, acetate which increase the potential for milk butter fat
- ✓ SeaBuff® suppresses rumen protozoan Entodinium spp., thus maximizing nitrogen utilization by rumen bacteria.
- ✓ SeaBuff® decreases methane production by 15–32% (Hay) and by 50–70% (Barely Grain).
- ✓ SeaBuff® has a high acid absorbency and absorbs more than twice the level of the regular low magnesium calcite buffers.