WHAT DO BUFFERS IN DAIRY RATIONS COST?

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More to the Point: What is the best value?

- **A product with efficacy that exceeds other buffers**
- **ROI that reflects risk and reward**
- **Easy to access and use**
- **Suited for use in mineral dairy concentrates where space is critical**

As nutritionists we have two main ways that we assess the value of a product.

The first is looking at *cost/benefit pay backs* on animal performance. If this stacks up well, then we know our clients and their stock will benefit.

The second, *least costing*, accounts for the hard knowledge that even great products do not always get included in rations ex feed mills if such products will make feed lines more expensive and a company's feed product price uncompetitive despite quality and performance benefits.

The two main buffer options in Australia are Acid Buf Lithothamnium calcareum and sodium bicarbonate! Typically, they cost 4-8c/head per day depending upon the application. However, let's compare them.

1. Animal performance cost benefit

A simple look at sound University trial work in terms of local feed input and Milk costs reveals the productivity and economic benefits of Acid Buf ***Lithothamnium calcareum***.

Treatment	Control	Sodium Bicarb	Acid Buf
Buffer dose g	0	180	90
FCM L/day	26.9	29.9	32.8
Typical Milk c/L	50	50	50
DMI kg	23.1	24.2	23.3
Typical Feed c/kg DM	30	30	30
FCE	0.86	0.81	0.71
Milk Income $/day	13.45	14.95	16.4
Feed cost $/day	6.93	7.26	6.99
Margin over Feed	**6.52**	**7.69**	**9.41**
ADVANTAGE TO ACID BUF			**+$ 1.72**

You can clearly see that using a buffer is a good thing and that Acid Buf provides the best economic outcome.

2. Producing a ration at least possible cost per tonne

A product is far more attractive to many commercial nutritionists if it not only works well, but also saves money in raw material costs (measured via typical least cost linear programming exercise).

Having carried out this process myself quite a lot over my 20+ years, I wanted to look at the impact of buffer pricing on the raw material cost of a typical tonne of dairy feed.

I formulated a ration typical of spring feed (10-11% CP, 12.5MJ/kg DM, 16%NDF) and looked at the relative least cost $/T over a range of costs of Acid Buf and Sodium bicarbonate.

The following tables display the summary of ration raw material cost across a range of buffer costs. The same minimum specs used each time.

Bicard $/T	$450	$500	$550	
Ration $/T	$355.68	$356.43	$357.18	
Acid Buf $/T	$850	$900	$950	$1000
Ration $/T	$353.30	$353.67	$354.05	$354.42

Typical Advantage to Acid Buf in least cost exercise - savings in raw material cost in $/T.

	AB $850	AB $900	AB $950	AB $1000
BC $450	-$2.38	-$2.01	-$1.63	-$1.26
BC $500	-$3.13	-$2.76	-$2.38	-$2.01
BC $550	-$3.88	-$3.51	-$3.13	-$2.76

Across the range of prices there is always an advantage to Acid Buf, even when it is at a higher $/T and Sodium Bicarb is at a cheaper end of the spectrum.

Our ability to save “space” in a ration allows us to more easily and cost effectively hit challenging energy, protein and mineral specifications at a lower cost/tonne. In this case Acid Buf helps us considerably compared to Sodium Bicarbonate.

Those of you that formulate high mineral supplements and seek a low dose rate, will be especially aware of this benefit of space if comparing buffers!

So, I think we’ve ticked the boxes we set out to achieve.

In this comparison Acid Buf would be the buffer of choice!

- **Supports the performance that you will want from your feeds**
- **Keeps your feeds competitive with lower raw material costs**