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## The Big Comeback

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As far as comebacks go on a global scale it may not rival the Boston Red Sox coming from 3-0 down to win their first title in 86 years, nor the recent Masters win by Tiger Woods but the return of Neosoothe is pretty important not only for EA but also for clinicians and general public.

Unavoidable production issues have been overcome and a frustrating period has come to an end. Not only practitioners but general public have been ringing the company seeking an ETA as Neosoothe had a niche position in the market.

Having the active ingre-

dients of neomycin, hydrocortisone and lignocaine Neosoothe is ideal for treating rashes and hot spots in itchy animals. The neomycin is a broad spectrum aminoglycoside antimicrobial for getting surface infections under control, hydrocortisone suppresses excess inflammation and lignocaine has a local anaesthetic action thus breaking the 'itch-scratch cycle.'

Relief is rapid and long lasting for affected animals and, since nothing drives an owner more to distraction than an irritated itchy pet, the relief for pet owners is also palpable.

There are numerous products in this market but the unique combination in Neosoothe is not only highly effective but is also extremely economic, making it very attractive to clients. No wonder the phone 'rang of the hook' while it was unavailable.

### Special points of interest:

- \* Calol in NZ turns 25
- \* Peace of mind transition
- \* Metabolase and Metabolase regimes for ketosis
- \* No need for double PG dose with d cloprostenol

## The Repeats

It is winter sell in time and dairy takes the front line in this newsletter.

We do have two articles that are repetition from last year, simply because the scientific data had not arrived in time for last season.

These are on ketosis therapy and treatment for non cyclers.

The front page news on Neosoothe will please come small animal clinicians and there are still the jokes for everyone else.



## Metabolase and Metabolase Forte Dosage

A common question with Metabolase has been, “how often should you give it?” In the past the answer has been rather empirical with allusions to extent of malaise, the convenience factor and maybe cost. However, thanks to support from Fatro we have some concrete recommendations that can be made.

First of all, while Metabolase and Metabolase Forte have been predominantly used for facial eczema



cases in NZ, and that is a very viable option, the major use in Europe is for cattle with ketosis, both clinical and subclinical. Ketosis can be very complex and there is often not one magic bullet that can fix it.

Propylene glycol based nutritional supplements, such as Acetol, have been the ‘go to’ remedies in New Zealand for decades and that is not about to change.

However such supplements alone are, more often than not, not enough for complete recovery and best results, here and abroad, are obtained with a multi-faceted approach.

In this vein there has been considerable research in Europe on the

uses of creatinine and methionine together. These have been far more effective given parenterally as they often do not survive being metabolised by rumen microorganisms when given orally.

Data show that it is not a case of either a propylene glycol based product or a methionine/creatinine based product but rather a situation where using both gives statistically better results.

Our pastoral farming and much larger herds make blanket treatments with either not practical from an economic point of view, hence the use of starter drenches as a preventative on a herd basis. This is despite the fact that starter drenches are not a replacement for good nutrition.

Good nutrition may be the recommended objective but it is too late to institute that in the transition period; it is often a matter of righting wrongs.

Even with good nutrition herds there are always those cows at the bottom end that still suffer from subclinical, and even clinical ketosis. These are the targets for stronger therapy and the gold standard for them would be rigorous treatment with both a propylene glycol based product and a methionine/creatinine based product, i.e. Acetol and Metabolase.

As to a treatment regime it is now much simplified although slightly different for Metabolase as opposed to Metabolase Forte.

Metabolase itself has a few extra ‘goodies’ and is a more rounded therapy but has to be given in a 500 ml dose intravenously. This generally means veterinarian action, although many farmers are proficient at i/v injections.

Metabolase Forte has the essential ingredients in a much more concentrated form and must be given intramuscularly. Thus the dosing

regimens are centred on convenience.

Jeong J-K et al, treated cows with 250ml Metabolase for three consecutive days after calving (plus oral propylene glycol) and found highly improved parameters and concluded, “Treatment of dairy cows with propylene glycol plus L-carnitine and methionine improved the chances of resolution of ketosis and increased milk yield, while affecting neither the incidence of post-partum complications nor reproductive performance.”

The trial work by Antanaitis, et al, showed significant benefits with one 500ml intravenous dose, plus oral propylene glycol, followed up by another seven days later.

Arslan et al got excellent results using Metabolase Forte, 5 ml/100 kg bodyweight, intramuscularly once per day for seven days, plus oral propylene glycol. This would suit a farmer situation better, whereas the Metabolase treatment would fit in well with veterinary administration.

When one looks at the trial work done it is quite evident that both Metabolase and Metabolase Forte in combination with propylene glycol give significantly better results than using propylene glycol alone, the only debate has been the dosage.

Good results were seen with two different Metabolase regimes, either 250 ml for three consecutive days or two injections of 500 ml, seven days apart. Similar results were seen with Metabolase Forte injected for seven consecutive days.

Hence for ketotic cows in the New Zealand pastoral situation it would be quite reasonable for the veterinarian to inject 500 ml of Metabolase intravenously then leave Metabolase Forte as a follow up

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## Silver Anniversary For Calol

Competitors have come and gone over the last quarter of a century but Calol has remained supreme in the oral treatment of hypocalcaemia because of its unique features.

It was first launched at a winter conference in 1993 but really its first full season of use was 1994, 25 years ago! It overcame initial skepticism to take the milk fever market by storm and now, two and a

### Bus 177

On Nagy's first trip to Auckland he decided to take a bus into the city to look around. He asked a woman at the bus stop which bus he should take.

"Bus number 177," she told him.

Some hours later the woman was going past again when she saw Nagy still sitting at the bus stop.

"Did you not get the bus into town," she asked.

"Not yet," Nagy replied wearily. "So far 168 buses have gone past - eight more before mine arrives."

## Metabolase and Metabolase Forte Dosage

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treatment by the farmer for a few days.

All the benefits of correcting ketosis, including increased milk yield, should ensue.

References (available on request)

- 1) Antanaitis, et al, Effects Of Metabolase® On Several Blood Indices, And Productivity In Fresh Dairy Cows, Veterinaria Ir Zootechnica (Vet Med Zoot). T. 71 (93). 2015
- 2) Arslan et al. Effects of Combination of Acetylmethio-

half decades later it is clearly the market leader in oral therapy.

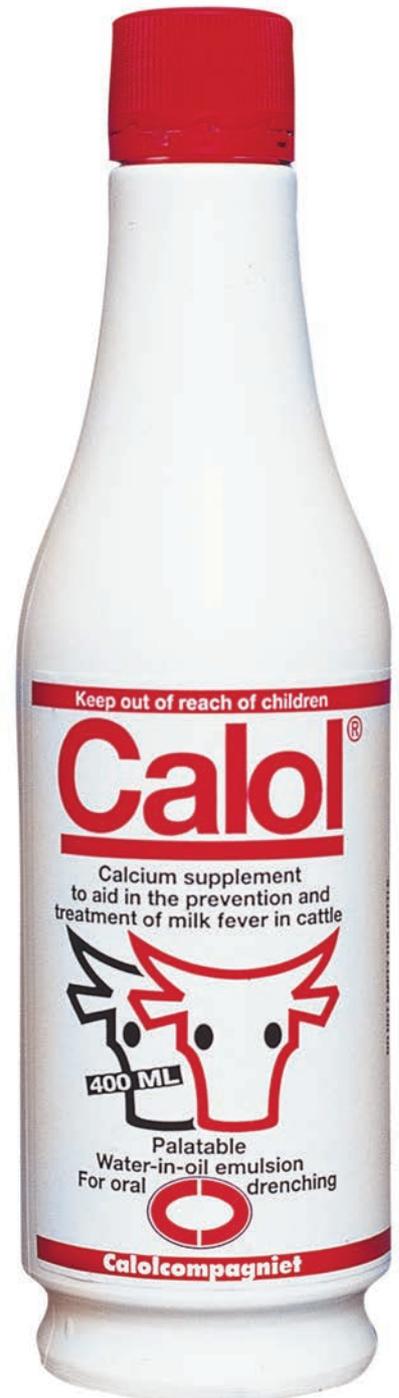
Calol was launched as a vet only product, because the company felt that veterinarians were best equipped to understand and promote the product. There was some initial cynicism in that the odd person felt that once Calol was established in the market sales would be opened up in the farm shops. This is happened with other products from some large companies, most notably a propylene glycol based product for ketosis. The feeling was that veterinarians were being used.

Suffice to say that a quarter of a century later Calol still is, and has always been, a vet only product and the farm shops are limited to oral treatments that are sold solely on price and do not have the scientific backing of Calol.

When one considers that the discovery of hypocalcaemia being the cause of milk fever was just under a century ago the performance of Calol in the last quarter of that century is little short of staggering

nine, L-Carnitine, Vitamin E and Vitamin B12 on Some Clinical, Haematological and Biochemical Parameters in Cattle YYÜ VET FAK DERG (2008) 19(1): 9-14 (Abstract only)

- 3) Jeong J-K et al, Effect of two treatment protocols for ketosis on the resolution, post-partum health, milk yield, and reproductive outcomes of dairy cows, Theriogenology 106 (2018) 53-59



## Peace Of Mind Insurance

It is a little bemusing to hear of farmers today injecting cows ready to calve with calcium borogluconate in order to prevent milk fever. Indeed one farmer treats a whole herd this way and claims very little metabolic disease. It would be rather facile to say this result is due more to good luck than good management as the low incidence of disease could be attributed to other management factors on the farm since farmers today are more versed in techniques of reducing susceptibility to hypocalcaemia.

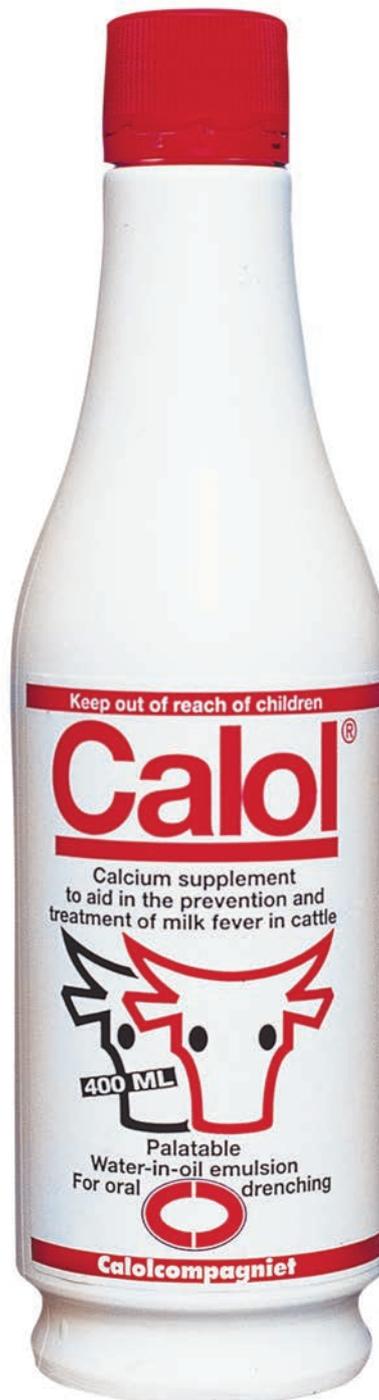
Back in the 80s and early 90s farmers often would give milk fever prone cows a 'bottle under the skin' when they were on the drop, in order to try and get a good night's sleep. It generally did not work for several reasons, one being lack of absorption. Practitioners generally knew on arrival to a downer cow that there had been give subcutaneous infusions because the lump was still there; on a cold winter's morning there had been very little absorption.

In the early 90s Calol was introduced to New Zealand as a unique product. While it is the market leader in the field two decades later it is often used as a therapy rather than as a preventative, but prevention was, and still is, the major indication.

While in Europe a four bottle course was recommended, and had trial work behind it, it was quite clear that the New Zealand situation was quite different and a four bottle course was not practical for several reasons. At the time herd sizes in Europe, by our standards, were extremely small averaging 7-20 depending on the country and being kept alive by subsidies.

New Zealand already had an aver-

age herd size of 250-300 cows and is it much higher now. Drenching so many cows several times around calving was far too labour intensive, especially in a concentrated calving period. In Europe the small herds also calved more sporadically so cows received more individual attention.



Then there was the cost factor. Our dairy industry is based on pastoral farming with no subsidies and having to get product to the other side of the world at a competitive price. Four bottles per cow at 1994 price to farmer of more than \$16 was quite a lot of money over a whole herd.

**"quicker, cleaner, faster to administer, faster in action and more effective"**

Therefore compromises were made both in use and marketing of Calol. Whole herd dosing with the full regime was not advocated and instead farmers were told to target their cows. Cows prone to milk fever were generally the older cows, high producers and from families with a history of hypocalcaemia.

In the days before corporate farming, if a farm had 200 milking cows and the then national average of 5% hypocalcaemia then there was probably not a farmer in the country who did not know which 10 cows in their herd to target for prevention.

The swing to whole herd dosing with starter drenches, not because they were necessarily effective but because they were cheap and easy, took a lot of focus away from targeted prevention and Calol came more to be used as a therapy, something at which it was also spectacularly successful. It has been so successful in this regard that some have forgotten its original *raison d'être*, i.e. a preventative therapy.

The news that farmers are even considering injecting calcium under the skin as a preventative measure shows that there is still a

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# Peace Of Mind Insurance

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place for peace of mind insurance, but the 'bottle under the skin' is hardly the best way to achieve it.

The question has been asked as to whether CalciTAT would work, as it is much more compact and easier to administer and its lower overall amount of calcium is offset by having a more readily utilizable form of phosphorus. The short answer is yes, but there is a better way and that way is Calol.

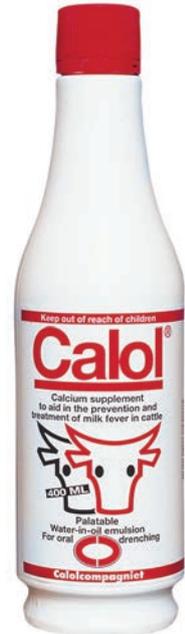
First of all administration orally is actually more rapid than by injection, 500ml taking quite some time to infuse subcutaneously. Then there is the



hygiene question. There is no puncturing of skin with a large needle in unsanitary conditions so no risk of infection or abscessation.

Calol is also faster acting as absorption across the gut membrane is more rapid than from a subcutaneous injection site and the change in blood pH, thus mobilizing the cow's own body calcium, is more effective than simply supplying calcium ions.

Therefore not only is Calol specifically formulated for this regime, it is also cleaner, faster to administer, faster in action and more effective



<b>Administration</b>	Cumbersome	Easy	Simple
<b>Absorption</b>	Very slow	Fast	Fast
<b>Hygiene Level</b>	Low	Reasonable	High
<b>Calcium level</b>	8g	4g	49g

# The Honest Lawyer

A lawyer, who had a wife and 12 children, needed to move because his rental agreement was terminated by the owner who wanted to reoccupy the home.

He was having a lot of difficulty finding a new house.

When he said he had 12 children, no one would rent a home to him because they felt that the children would destroy the place. He could-

n't say he had no children, because he couldn't lie -- we all know lawyers cannot and do not lie don't we?

So he sent his wife for a walk to the cemetery with 11 of their kids.

He took the remaining one with him to see rental homes with the real estate agent.

He loved one of the homes and the price was right -- the agent asked:

"How many children do you have?"

He answered: "Twelve."

The agent asked "Where are the others?"

The lawyer, with his best courtroom sad look answered, "They're in the cemetery with their mother."

It is no surprise to find that most politicians are lawyers.

# Prostaglandin Dose and Recent Corpora Lutea

Most recommendations for treating non cycling cows are herd recommendations based on the typical non cyler. However there are always those stubborn ones, those at the bottom of the chain that need something extra.

The two biggest issues are corpora lutea being too recently formed, and so less responsive to prostaglandin stimulation, or nutritional status simply being too low for animals to respond well enough.

In the first instance the natural resistance of corpora lutea to exogenously administered luteolytic agents early in dioestrus has been widely studied in ruminants. This is may be due to the reduced availability of endothelin-1 and increased level of prostaglandin dehydrogenase in early corpora lutea compared with mature corpora lutea. Endothelin-1 is a proteinaceous vasoconstrictor agent and steroidogenic cell modulator produced from endothelial cells after injection of PGF<sub>2</sub>α that alters progesterone production in cattle, whereas prostaglandin dehydrogenase metabolizes PGF<sub>2</sub>α to its inactive form, 15-keto-PGF<sub>2</sub>α in ewes.

Therefore it is eminently feasible that variations in prostaglandin dosage could possibly overcome these mechanisms.

There has been work recently done in New Zealand showing a 3% increase in pregnancy if their racemic cloprostenol dose is increased from 2 ml (500 µg) to 3 ml (750 µg) per cow. This tallies with other data from around the world showing that the response rate in cows with a partially sensitive (or refractory) corpora lutea aged between 2-5 days, when the sensitivity towards PG is questionable.

**"the pure potency of the d cloprostenol may make it more effective in the presence of prostaglandin dehydrogenase"**

This can be improved by either increasing the dose rate or giving a second injection 24 hours later.

So, when a blind treatment with hormones using a synchronisation program is applied, since the ages of corpora lutea are not determined, the administration of a higher dose of prostaglandin could improve the positive results.

Whether or not to adopt the higher dose is a matter of benefit/cost ratio, considering the time spent for double injection and for the cost of a larger dose. However when we look at the work done by Montaser *et al* comparing racemic clo-

Therefore, for a better response with refractory corpora lutea in a blind synchronisation program, the options are:

- 1) If using racemic d/l cloprostenol, or dinoprost, give an extra injection thus increasing the workload and the cost of treatment.
- 2) If using racemic d/l cloprostenol, or dinoprost, increase the dose and also the cost of treatment
- 3) Get similar results, with no cost increases, using a standard dose (150 µg) of d cloprostenol (Dalmazin)
- 4) If cost is not the object get the best results using 300 µg of d cloprostenol (Dalmazin)

Group	Follicular size (mm)	Days to heat	1st insemination pregnancy rate (%)
Dinoprost 25 mg	11.17±0.433	3.7± 0.26	10
d/l cloprostenol 500 µg	11.53±0.33	3.3 ± 0.21	30
d cloprostenol 150 µg	15.5±0.82	3.6 ± 0.31	40

prostenol with dinoprost and d cloprostenol it appears that the pure potency of the d cloprostenol may make it more effective in the presence of prostaglandin dehydrogenase and so offer a more economical solution.

Note: generic names are substituted for the trade names used in the original article.



In addition Valldecabres-Torres *et al*, indicated that there is a further increased benefit with an increased dose of d cloprostenol, 300 µg in place of 150 µg.

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- 2) Montaser and El-Desouky, Effect of Dinoprost Tromethamine, Cloprostenol and d-Cloprostenol on Progesterone Concentration and Pregnancy in Dairy Cattle, *Journal of Agriculture and Veterinary Science (IOSR-JAVS)*, Volume 9, Issue 2 Ver. I (Feb. 2016), PP 64-67
- 3) Pérez-Marín *et al*, Oestrus Synchronisation in Postpartum Dairy Cows Using Repetitive Prostaglandin Doses: Compari-

*(Continued on page 7)*

## Now This Is Fake News!

A headline grabbing article on TVNZ looked at “bad news for one of our major industries”.

Taking figures from a scientific survey the aim seemed to be making the dairy industry look bad when it came to the environment, the whipping boy as usual.

The small print, or more correctly the softer voice showed that the NZ dairy industry is a far better ecological model that the more intensive systems overseas.

The study looked at acres of land needed per litre of milk plus CO<sub>2</sub> emissions/L.

When the figures are put in table form we are not in too bad a shape after all. And added at the end, *sotto voce* of course, was the little line that New Zealand dairy uses much less water per litre of milk than either soy or almond milk.

Some of those old journalistic jingoisms such as “never let the facts get in the way of a good story” still ring true.

It is also a great example of that other noted line, “bad news sells.”

Milk

**Almond**

**Soy**

**Cow**

**NZ cow**

Area/L  
(m<sup>2</sup>)

Kg CO<sub>2</sub> /L

0.5

0.7

0.7

1.0

9

3.2

1.0

1.6

## The Candle

A couple desperate to conceive a child went to their priest and asked him to pray for them. “I’m going on sabbatical to Rome,” he replied, “and while I am there I’ll light a candle for you.”

When the priest returned three years later he went round to the

couple’s house and found the wife pregnant and busy attending to two sets of twins. Elated the priest ask where her husband was so that he could congratulate him.

“He’s gone to Rome,” came the harried reply, “to blow out that candle!”

## Prostaglandin Dose and Recent Corpora Lutea

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son between D-Cloprostenol and Dinoprost, *Acta Veterinaria* 2015 Mar; 63 (1): 79-88

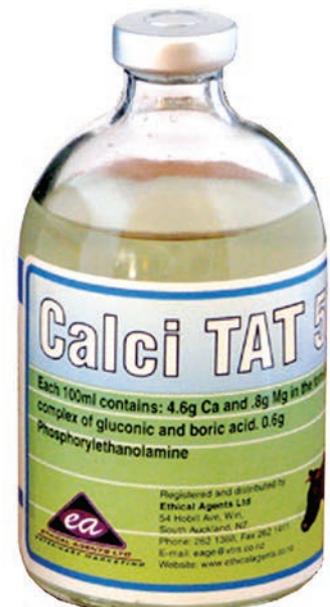
4) Stevenson *et al*, "Luteolysis and pregnancy outcomes after change in dose delivery of prostaglandin F2α in a 5-day timed artificial insemination program in dairy cows," *Kansas Agricultural Experiment Station Research Reports*: Vol. 0: Iss. 2.

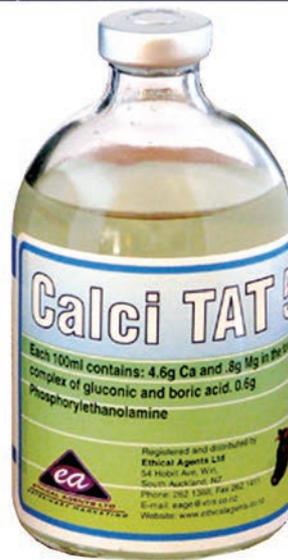
5) Valldecabres-Torres *et al*, Effects of d-cloprostenol dose and corpus luteum age on ovulation,

luteal function, and morphology in non-lactating dairy cows with early corpora lutea, *J. Dairy Sci.* 95 :4389–4395

6) Wiltbank *et al*, Effect of a second treatment with prostaglandin Fα during the Ovsynch protocol on luteolysis and pregnancy in dairy cows, *J. Dairy Sci.* 98:8644–8654

7) Young, Evaluation of Prostaglandin dose for NZ non-cycling dairy cows. NZVA Conference 19 -22 June 2018





## Language

Two road workers were at a construction site when a car with diplomatic plates pulls up.

“Parlez-vous francais?” the driver asks.

The two men just stare blankly.

“Hablan ustedes espanol?” the driver tries.

Once again they just stare.

“Sprechen Sie Deutsch?”

They continue to stare.

“Parlate Italiano?”

Nothing.

Finally the man drives off in disgust.

One worker turns to the other and says, “Maybe we should learn a

foreign language.”

“What for?” the other replies. “that guy knew four of them and a fat lot of good it did for him!”

