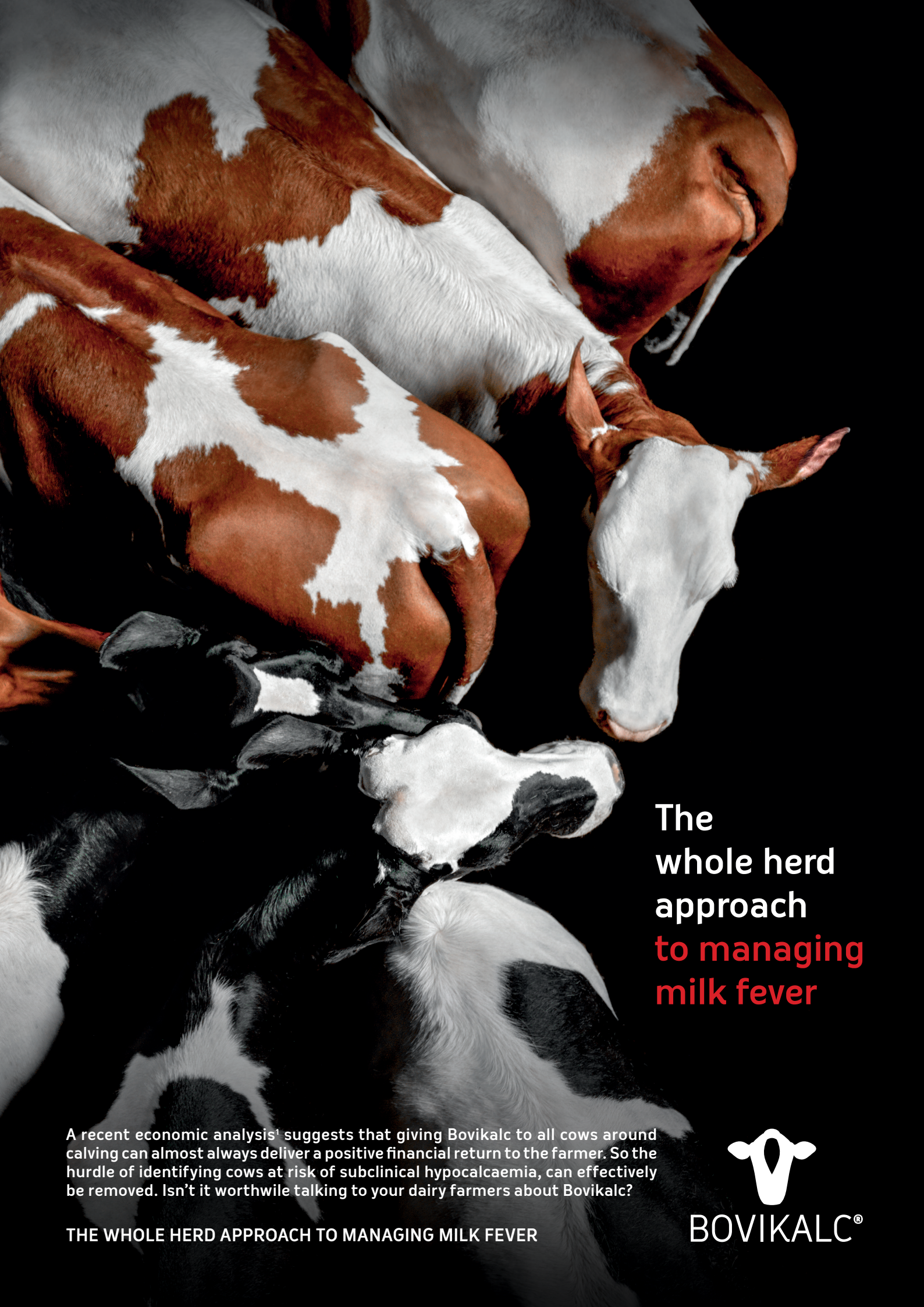


The whole herd approach to managing milk fever

A recent economic analysis[1] suggests that giving Bovikalc to all cows around calving can almost always deliver a positive financial return to the farmer. So the hurdle of identifying cows at risk of subclinical hypocalcaemia, can effectively be removed. Isn't it worthwile talking to your dairy farmers about Bovikalc?

THE WHOLE HERD APPROACH TO MANAGING MILK FEVER

BOVIKALC®

Milk fever is the clinical manifestation of low blood calcium levels. Milk fever is a macromineral disorder commonly affecting dairy cows around the time of calving, usually within 1-2 days of giving birth[2]. Sub-clinical hypocalcaemia can also occur. This can impact on health and productivity, but may go undetected.

CLINICAL MILK FEVER:

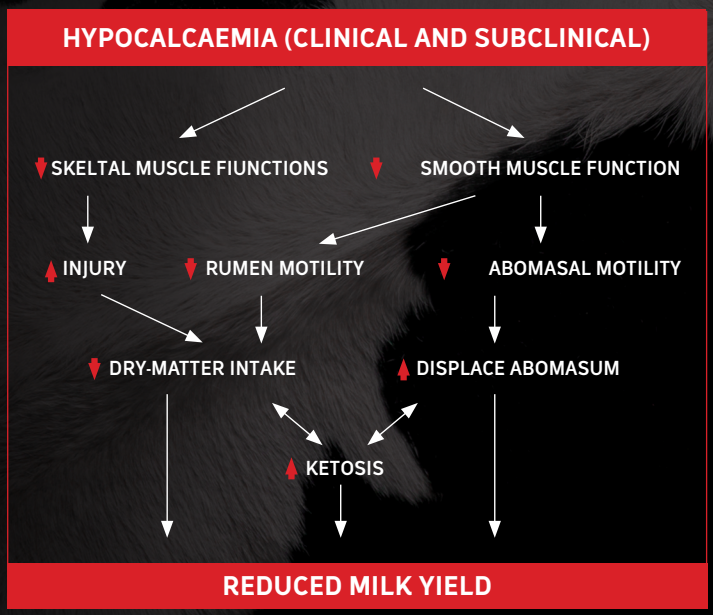
Cows show overt clinical signs, which may include: Cold extremities, a low temperature, mild bloat, poor appetite, constipation, unsteadiness on their feet or an inability to rise.

Signs can develop rapidly within 2-4 hours and if untreated can result in death of the cow within 10-24 hours, either as a direct result of the condition, or indirectly through related complications as 'downers'[3].

SUBCLINICAL MILK FEVER:

Calcium levels are below 'normal' but there are no apparent clinical signs; this may resolve or develop into clinical milk fever. Subclinical milk fever can have negative impacts on health and productivity[4].

Clinical cases can give an indication of the level of subclinical milk fever; for every clinical case there are around 3-6 subclinical cases in the herd[4]. However, herds can also have a problem with subclinical milk fever without clinical cases[2].



Cows with hypocalcaemia (clinical and subclinical) are at an increased risk of:[1,2]

- Mastitis
- Ketosis
- Retained placenta
- Displaced abomasum
- Dystocia
- Culling
- Reduced milk yield

TREATING CLINICAL MILK FEVER

Quick and effective therapy with intravenous calcium is essential to correct calcium levels, as this is a progressive condition that can lead to death in a very short period of time if left untreated. Recurrence following treatment of a clinical case is common (30-35% of cases)[5] and therefore measures to reduce the risk of milk fever following treatment are advisable, such as oral calcium supplementation.

MANAGING MILK FEVER

Clinical and subclinical milk fever[4] to a large extent can be prevented through transition cow dietary management and nutrition:

- Calve cows down in the right body condition - fat cows are more likely to get milk fever
- Feed dry cows forage as low in potassium as possible, particularly in the three weeks prior to calving
- Feeding small amounts of certain salts such as magnesium[4] or ammonium chloride can also help to reduce risk by contributing to a partial DCAB

WHAT IS DIETARY CATION-ANION BALANCE (DCAB)?

The DCAB is the balance of positive and negative ions in the diet - when negative ions predominate (negative DCAB) this lowers blood pH. This acidification helps the cow to mobilise her own calcium reserves from her bones and to increase calcium uptake from her GI tract.[4]

However, adding supplements to achieve a negative DCAB increases the cost of the ration. Additionally, some anionic salts are not thought to be palatable and may make cows less willing to eat the dry cow ration, reducing dry matter intake at an important time. A vet or nutritionist can advise on the correct way to feed these salts.

SHOULD WE CONSIDER ROUTINE CONTROL OF SUBCLINICAL MILK FEVER?

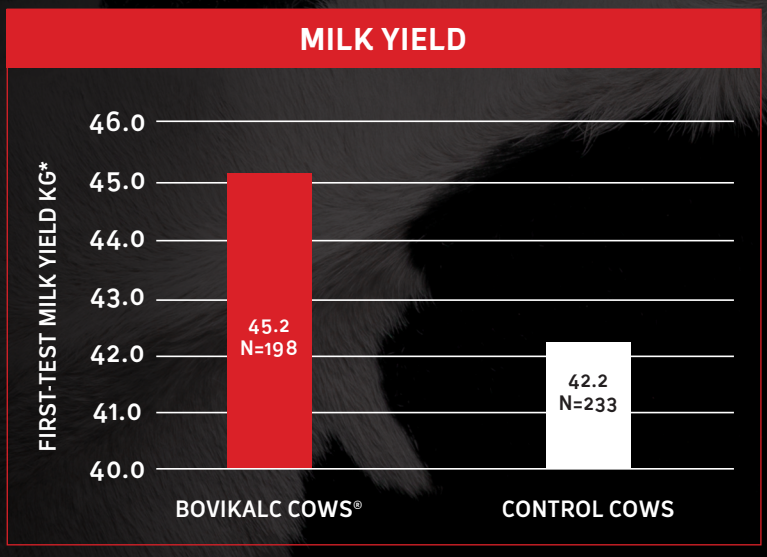
A large-scale landmark research study says **YES**[6]

- 2 large US commercial dairies (mean herd size 3450)
- Cows in their second lactation or greater (n = 927)
- Excellent milk production (mean rolling herd average = 12,400 kg)
- Low incidence of clinical and subclinical hypocalcaemia (< 5%)
- Cows received either 2 Bovikalc® boluses or no oral Ca supplement

MAIN OUTCOMES:

- Only 6 cows out of all the cows during the study were treated for clinical milk fever
- Only 14.2% of all cows were hypocalcaemic 8 to 35h after calving
- Second and later lactation cows, cows with higher than average milk production in the previous lactation and lame cows responded best to supplementation with Bovikalc®:
- Fewer health events in the first 30 days in milk (e.g. metritis, displaced abomasum)
- Higher milk production than in the previous lactation
- The cows supplemented with Bovikalc gave 3.1 kg more milk (+7.2%) at the first DHIA# test date after calving (about 16-19 DIM)

#DHIA test is a US Dairy Herd Improvement Association measurement of milk produced over 24 hours



*Lame or previous milk >105%

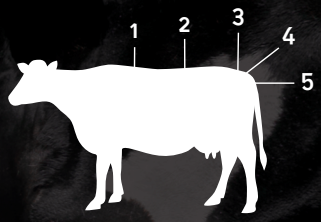
48%

OF COWS THAT WERE GIVEN BOVIKALC® PRODUCED SIGNIFCANTLY MORE MILK[6].

IDENTIFYING COWS AT RISK OF SUBCLINICAL MILK FEVER?

RISK FACTORS

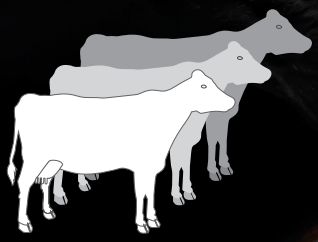
If all transition dairy cows are at risk of subclinical hypocalcaemia and 50% of the herd is known to be affected, can known risk factors provide a realistic guide as to which cows to supplement?[2,7]



Cows with high body condition scores

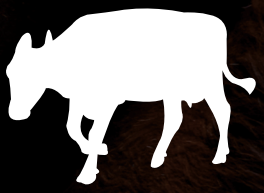
Cows with high milk yields in their previous locations

Cows with a prior history of milk fever



Cows in second and greater lactation

Freshly calved cows that go off feed after calving



Cows with lameness

BALANCING RISK AND COST

An obstacle to the management of the key subpopulations is the additional work and costs involved in identifying them.

- Strategically supplement multiparous high milk yield cows?
- Or lame cows
- Or both subpopulations

VS

- Cost of extra efforts and analysis
- Additional work on the part of farm employeess
  - Records must be analysed to determine which cows had high previous lactation mature equivalent milk yield
  - Cows must be locomotion scored near or at calving

A recent economic evaluation of Bovikalc supplementation looked at which strategies delivered the best return on investment (ROI)[1].

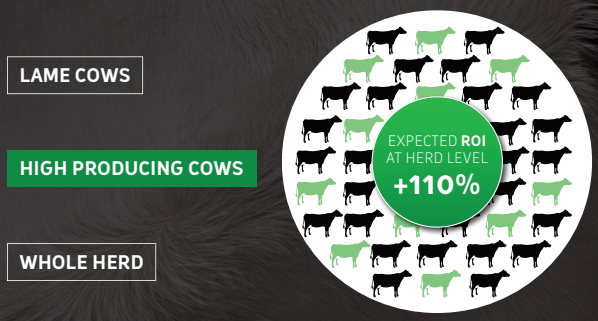
STUDY DESIGN

The study examined oral calcium supplementation in multiparous dairy cows comparing 4 different strategies;

- Supplementation of cows with a high previous lactation mature-equivalent milk
- Supplementation of lame cows
- Supplementation of both cows that have high previous lactation mature-eqivalent milk yield and cows that are lame
- Supplementation of all cows second and greater lactation

The study was designed to take account of all the significant costs and to take inputs normally presented as fixed and use a 4 year analysis of the market to take account of variation within them.

This provides a more realistic framewotk of return on investment.



Although certain subsets of the herd may offer higher returns, an average return of 30% can be expected by farmers giving all of their dairy cows* Bovikalc around calving.

*2nd and greater lactation.

WHY BOVIKALC?

Each bolus provides 43g of available calcium:

- calcium chloride (fast release)
- calcium sulphate (slow release)

Each bolus also lowers the cation/anion ratio, leading to an acidifying effect, much like a DCAB diet has, that helps the cow to mobilise her own calcium reserves[4].

The bolus dissolves in the rumen within 20-30 minutes and helps to raise blood calcium levels over a prolonged period of time.

Proven financial benefits for using in all cows in their second or greater lactations[1], isn't it worthwhile talking to your dairy farmers about Bovikalc?

THE WHOLE HERD APPROACH TO MANAGING MILK FEVER

HOW TO USE BOVIKALC

MINIMUM PROTOCOL

FIRST BOLUS
At the first signs of calving

SECOND BOLUS
Immediately after calving

If necessary, give 1 or 2 additional boluses at 12-15 hr intervals

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FOR SUPPLEMENTATION FOLLOWING CALCIUM INJECTION

- 1st bolus 2–3 hours after calcium injection
- 2nd bolus 12–15 hours later

(provided that cows can raise their head and are starting to eat and drink).

Only administer Bovikalc using the approved applicator.

Boehringer Ingelheim

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