



The First Month of Lactation – Minimising Ketosis



Mat O'Sullivan BVSc
Oamaru Veterinary Centre

A good start to a cow's season requires careful management through the springer and colostrum period to ensure that she maintains a high dry matter intake. Initial focus should be placed on prevention of metabolic disease, optimising immune function, adequate feed allocation and manipulating cow behaviour.

However, the first month of lactation beyond the colostrum mob is still very critical. Most cows will spend this period in negative energy balance – i.e. more energy is leaving their system than coming in and therefore they will lose body condition. This is why providing consistently high feed quality is imperative. We are already seeing many farms that are struggling to manage very high pre-graze covers due to good growth rates through the winter. These are impacting voluntary intakes and may have lower ME. Cows in significant negative energy balance may develop clinical or sub-clinical ketosis. Ketones are a by-product of inefficient fat break down and have a side effect of further appetite suppression.

Cows which are well fed/have a good appetite in the first month of lactation will lose less weight and have better mating performance. Try some of the following:

- Optimal pre-graze covers of 3,000 to 3,400

kgDM/ha in the first round will ensure good quality and easy harvest for the cow. You still need to maintain a residual at 1,550-1,600kgDM/ha to ensure quality in subsequent rounds.

- Aim to get your milking cows eating 4% of body weight in dry matter ASAP.
- Know what your daily cow requirement is



- No blocked waterlines
- ROI - 3 to 1
- Full season use deals available

and calculate your allocation every day - where feed deficits exist on any given day fill it with appropriate supplement.

- Use monensin (Rumenox/Rumensin TT), to increase feed conversion efficiency, by driving Propionate production. Clinical trials show boost in milk protein production and far less BCS loss. Use

strategically from calving up until end of mating.

- Internal parasites – the biggest impact these have is on appetite suppression. Almost all farms will have high levels of over wintered larvae this year. Aim to drench your herd by early/mid September.
- Vitamin B12 – is a requirement for energy extraction. Deficient cows will lose appetite. We see B12 levels drop at the same time as spring grass goes lush. This is partly due to rapid transit times through the gut impeding B12 absorption. A good rule of thumb is when faeces starts becoming loose look to give Vit B12.

In this Issue

- The First Month of Lactation – Minimising Ketosis
- Around the traps in the Maniototo/Omakau
- Care and Nursing of the Down Cow
- BVD Bulletin
- Electronic Cow Collars
- Minimising coccidiosis outbreaks
- Witness BoviD-5 calf scour test
- Supplement options this spring
- Dropped Hock Syndrome
- Free faecal egg counts and larval development testing
- MoozNews Extra

Around the traps in the Maniototo/Omakau



George Smith BVSc BSc
Oamaru Veterinary Centre

- Favourable environmental conditions have resulted in a large reduction in down cows.
- Freezing temperatures continue to play havoc with morning milking times. The week of the 17th of August saw temperatures plummet to as low as minus 10°C.
- The uptake of farms using sex semen is continuing to grow and pay dividends with a large selection pool of early replacements.
- Mastitis incidence rates remain low.

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Care and Nursing of the Down Cow



A 'down cow' is any cow that is recumbent and unable to rise unassisted. By correctly diagnosing, quickly treating, and nursing down cows to a high standard you will maximise their chance of recovery.

Down cows can occur for a variety of reasons, but need to be thought of in two parts:

1. Initial Cause of the Recumbency

'The 5 M's of Down Cows':

- 1) **Metabolic diseases** – low calcium/magnesium/phosphorus, acidosis and ketosis.
- 2) **Mastitis** – toxic mastitis, typically an E. coli or a severe Staph/Strep infection.
- 3) **Metritis** – watery, brown, smelly discharge after calving.
- 4) **Musculoskeletal/neurological disease**
- 5) **Massive sepsis** eg. Peritonitis

A proportion of cows that suffer from the above diseases will end up as 'downers' and go on to develop some secondary effects of recumbency.

2. Secondary Effects of Recumbency

When a cow goes down on a hard surface (ie. paddock), after as little as 3-6 hours muscle swelling and nerve damage occurs in the leg the animal is lying on.

This then becomes the MAIN REASON the animal is unable to rise, regardless of why she went down in the first place.

A veterinary exam now, if she hasn't had one already, is advisable to determine the reason the cow may still be down and determine the prognosis.

Research has shown that the quality of the nursing care from this point on has the most profound effect on a cow's chance of recovery – there is very little benefit in nursing a down cow unless you can provide high quality care.

Tips for Nursing Care of the Down Cow

- 1) **Anti-inflammatories** – Indicated for almost every cow that is down for more than 3-4 hours. They will help

reduce the amount of secondary damage that occurs once she becomes recumbent. Eg. Metacam, Ketofen

- 2) **Bedding** – Quickly remove her from a hard surface (ie. paddock) and provide her with a clean, dry, warm, comfortable surface which provides good footing when trying to stand.
 - Straw, hay or sawdust work well but need to be 300-400 mm deep to provide an adequate depth.
 - Sand is a great option – a soft surface which moulds to her weight and lets urine drain away.
- 3) **Rolling** – Frequent rolling is important, especially if she can't roll from side to side herself.
 - This should be done as often as every three hours – a normal sitting cow swaps sides at least this often which prevents pressure damage to the down leg.
 - If this isn't done regularly, the type of bedding becomes even more important.
- 4) **Barriers** – Restricting the cow's movements can be important – a lot of secondary damage can occur to a cow crawling around and trying to stand.
 - Six large bales, two on each side and one front and back makes a suitable pen.
 - A pen also helps to restrict her on the bedding surface.
- 5) **Lifting** – Lifting should only be done if it is EFFECTIVE and SUPERVISED. Effective lifting means



were left on the ground.

- If the cow is unable to be lifted effectively, they are best left on the ground, with high quality nursing care, for a few more days before trying again (ie. this is where attention to bedding, rolling, and nursing really comes into play).
- 6) **Shelter** – Affects of extremes of hot or cold are exaggerated in down cows so provision of adequate shelter is an important part of the nursing.
 - 7) **Feed & Nursing** – Food and water MUST be within easy reach of the down cow and away from other cattle.
 - 8) **Milking** – Cows can be milked/stripped out to reduce the risk of mastitis and for comfort. Adequate teat disinfection and 'hygienic' bedding are particularly important.

Animals that are sitting up, bright and alert have a good prognosis if treatment is started early. As do cows that are lifted for a short period and are trying to stand. Generally, cows that are depressed have a poor prognosis. The welfare of any down cow must be given the highest priority and sometimes the best treatment in the end may be euthanasia.



that the cow is able to stand in a natural position and take some of her own weight.

- If a cow is hanging from a hip clamp or slouching in a sling, without taking any weight on her legs, more damage can be done to them than if they



Andrew Muir BVSc
Oamaru Veterinary Centre

- As we approach mating and people are sourcing bulls, ensure that they are blood tested negative and fully vaccinated for BVD. Fully vaccinated means, 2 shots of BVD vaccine given 4- 6 weeks apart prior to arriving on farm. Ask to see a certificate from a vet ensuring testing and vaccination has been done.
- If heifers are at a run off where you don't have full control of other cattle and you are keeping replacements from them seriously consider BVD vaccination. This is a common



Electronic Cow Collars

Simon Laming BVSc,
Oamaru Veterinary Centre

The Veterinary Centre is looking at electronic cow collars, and the use of the technology they offer.

We looked at several different options currently available, and felt that the Allflex system offered the best combination of cost-efficacy, reliability, easy to use software, and support on the farms.

- Collars cost around \$40 per cow per year, less quantity discounts.
- They will enable obvious production advantages
- There will be significant savings in staff and tailpaint
- They will free up management and personal time.

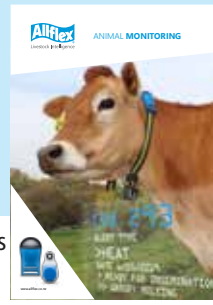
Simply identifying sick cows one day earlier, getting 1% extra days in milk, and reducing empty rates by 1%, will easily make this investment worthwhile.

The bigger advantage is freeing up pivotal

farm staff from arduous tasks to give them the time to fine tune essential management decisions.

We have been instrumental in getting Allflex collar systems installed on Providence Farm (1300 cows), and Fortitude Farm (950 cows). Our vets are keen to be involved with the roll out of collars on these 2 properties, and we will give regular updates on their implementation on the farm. With support from the Allflex field team, we will be exploring the different advantages this exciting technology can offer.

The expertise we develop will fit well with the production enhancing consultancy packages we have already developed for dairy farms, and will apply to a multiple range of electronic collar or tag technology. If you would like more information on cow collar technology, please discuss it with our vets.



Witness BoviD-5 calf scour test



Luke Smyth BVSc,
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An outbreak of scouring calves can be extremely stressful for everyone involved and leads to much concern about the possible root cause of the problem.

It is important to consider that calf scours are not a specific disease but the clinical sign of a disease complex with many possible causes, both infectious and nutritional. It is not possible to diagnose which infectious agent is causing the problem just by the smell and colour of the scour.

We are already seeing problems with scour outbreaks due to Rotavirus this spring.

The clinic is now using the Witness BoviD-5 Test as part of our calf scour investigation visit. This allows us to test calf scour samples in our clinic lab and provides rapid cost effective identification of the pathogenic agents within hours of setting foot on farm! The Witness BoviD-5 test can diagnose five of the main infectious causes of calf scours:

- Rotavirus.
- Coronavirus.
- E.coli K99.
- Cryptosporidium
- Giardia.

A tailored approach can be developed quickly depending on the infectious agent involved. Along with good hygiene, feeding and management techniques, this can significantly reduce the severity of a calf scour outbreak.

If Salmonella is suspected as a possible cause of a calf scour outbreak then samples will still have to be submitted to the lab for culture.

Minimising coccidiosis outbreaks



Finja Schmidt BVSc,
Waimate Veterinary Centre

Last spring saw several coccidiosis outbreaks so it is likely that we will see more this year. Using the same calf rearing paddocks every year increases the risk as coccidia may survive for up to two years on pasture.

How does coccidiosis present?

Presenting calves are typically >3-4 weeks of age and present with a bloody diarrhoea which may contain gut lining. The tail and back legs will often have this bloody diarrhoea staining. Calves appear very uncomfortable, be seen straining and have tails held in the air. In severe cases, up to 10% deaths

can occur due to anaemia and dehydration. In those that survive, growth checks may remain for many months and these animals are more susceptible to other diseases.

What is prevention or cure?

Calf meals which contain coccidiostats are only protective once calves are ingesting about 1kg/day (check the label as companies differ). If treating/preventing an outbreak we recommend Toltrox as a singular oral dose 3 weeks after being on pasture, or Deccox for at least four weeks, starting 2-3 weeks after being on pasture. Amphoprim can be used in severely affected animals as it also gives anti-bacterial protection. If you are unsure if your calves are protected, please call us to discuss the options available.

BVD Bulletin

way for BVD to be imported onto the dairy platform. In the last 4 weeks we have been dealing with a breakdown in BVD control that stems from young stock. So far 13 infected (PI) yearlings and 5 infected calves have been found. There is still time to vaccinate if a programme is begun now.

- Consider doing a spot test of your yearlings prior to mating to ensure they aren't carrying BVD virus. This is easy to perform and only requires taking bloods from 15 animals.



ACVM A11401



Hamish Newton BVSc, PhD
Oamaru Veterinary Centre



The heifers have now pretty much finished calving and most people's BMSCCs are under control. Don't be tempted to stop looking for

infected cows with the RMT or paddle test though. An infected cow that sneaks into to milkers early in the season will have a bigger

effect on the BMSCC than one that sneaks in now due to more cows' milk diluting out her cells but she is still a problem. Even if she does not have a major impact on the BMSCC she is still a source of infection for her herd mates – so keep up the effort of finding these cows before they leave the colostrum herd.

Supplement options this spring



Lucy Cameron BVSc, BSc
Waimate Veterinary Centre

Many areas have had an exceptionally dry lead up to spring and will be looking at supplement options. With protein levels in pasture generally more than meeting requirements, energy is your prime consideration. Therefore pricing feeds on cents/MJME is recommended, remembering to consider how much wastage is likely. Pros and cons of some feeds:

- **Barley** – a high energy (12.5 MJME) feed, with lower protein levels to compliment high protein spring grass. Increase allowance slowly to reduce risk of acidosis. To ensure maximal utilisation make sure grains are adequately crushed or grains may pass through without being digested.
- **PKE** – a very safe feed with moderate levels of both energy (11 – 11.5 MJME) and protein and no acidosis risk. High in fibre but no "effective fibre" to help

rumen function. Avoid feeding more than 3kg DM/cow/day to reduce the risk of an FEI grade. PKE is high in copper so if fed long term review your supplementation/monitoring programme.

- **Molasses** – high energy (12 MJME) and very low in protein. Molasses is mostly sugar so introduce slowly and limit to 2 litres/cow/day to reduce acidosis risk. Highly palatable so very useful for mixing with other feeds or as a carrier for minerals.
- **Baleage** – a very good source of fibre, baleage has moderate energy (9.5 – 11.5 MJME) and protein levels, but quality can vary considerably. Check that it looks and smells good, a feed test may be helpful. Wastage can be high depending on how it is fed out.
- **DDG** – a safe high energy (12 – 13 MJME) feed as it has very little starch. High levels of protein, which bypasses the rumen, unlike the rapidly digestible protein in pasture. Quality product should be yellow-blond, a brown colour may indicate heat damage, which will be less palatable, and some of the protein may not be digestible.

Recording events

Many of you are using the MINDA app on the phone to record calvings. Can we please ask that you also start recording health events even if they don't result in a milk with hold period such as down cows, and lame cows. Keep it simple though, for example for a lame cow record her as either

- Between Claw/Footrot
- White Line Disease
- Other Lameness

Free faecal egg counts and larval development testing



Cooperia oncophora

We have secured funding from Boehringer Ingelheim to do faecal egg counts and, really excitingly, larval development tests (the worm eggs, if any are present, will get hatched to tell us what species the worms are) on calves 10 to 14 days after a drench. This won't cost you. What will happen is that with each drench purchase from us you will be given a pack to collect some poo samples from the calves 10 to 14 days after drenching. In the sampling pack is a form with some boxes to fill in about what drench was used and when, and the date samples were taken etc. Please fill in these forms, as if we don't get "complete data-sets" when we pull all the data together missing data can result in some of the results not being usable. Once the calves have left home and are at the grazier's encourage your grazier to participate in this project as well. This project will potentially benefit graziers the most, as parasite control is a big and ongoing issue for dairy graziers. We hope with this information to be able to better understand what parasites are causing issues and when. Your participation in this project will really add to our knowledge about what worms are causing problems and when. We will be able to give better advice about what products to use and when.



Dropped Hock Syndrome

Euan Tait BVMS,
Waimate Veterinary Centre

A recent outbreak of "Dropped Hock Syndrome" was observed locally affecting 12 heifers with varying degrees of severity prior to calving. Dropped Hock Syndrome is a degenerative and inflammatory disease affecting the connective tissues of hindlimbs in cattle resulting in abnormal, short stepping gaits in mildly affected animals and progressing to full recumbency and inability to extend the hock joints.

A recent study at Massey University has found the disease to be multi-factorial, but with an increase in likelihood possibly attributed to low copper levels. Sampling of livers from heifers – both affected, and non-affected – revealed that copper levels were very depleted in this group. Of the affected animals around half responded to treatment of anti-inflammatories and the whole group was subsequently supplemented with injectable copper and no animals have been

affected since.

While there is not a specific cause attributed to this disease, it is a timely reminder that good husbandry and supplementation of trace elements is key. Sampling livers and taking bloods is a quick and easy way to monitor if trace element supplementation is adequate on your farm.



EXTRA

PREPARING FOR MATING

High Returns from Drenching, Requires Optimal Timing and an Effective Treatment

Eprinex contains Eprinomectin - the most potent broad-spectrum Avermectin/Milbemycin identified to date. Because it is more potent, Eprinomectin continues to kill worms at lower concentrations. Eprinex has been scientifically engineered to be;

- the **fastest** acting,
- **most potent** broad spectrum pour-on available for lactating dairy cows - it kills a wider range of parasites for longer,
- It shows a consistent **increase in milk productivity** (80 trials) and **improved reproductive performance** (~13 day earlier conception in NZ Heifer study).
- **Eprinex** is the only pour-on with a New Zealand label claim for increased milk production.

- Trials show treated cows **graze for nearly an hour** longer each day. Published randomised controlled trials with Eprinex showed an average milk production increase of 1.3L of milk per cow per day. **First round spring pastures will tend to have a high load of autumn larval contamination. Treatment with Eprinex in early September will continue to protect from accumulated and incoming larvae until cows reach the end of the first round of grazing. This should set the herd (and farm) up well for low parasite challenge for the rest of the season.**



Planning For Reproductive Success – Reproductive Consults with your Prime Vet

The majority of farmers feel that 'Non Cycling Cows' are the greatest restraint in achieving good reproductive performance.

Achieving a high rate of pre-mate cycling will enhance both submission and conception rates.

Our reproductive consults are targeted with advice and monitoring to promote early resumption of cycling.

- Review of key reproductive problem areas from last season

- Regular BCSing and nutritional checks
- Manipulation of reproductive hormones through nutrition
- Strategic management of high risk (low BCS) cows
- Trace mineral profiling
- Time-lined KPI's leading up to mating
- Tailored tailpaint program and options for optimising non-cycler outcomes once mating nears

- Handy hints and tips gathered from top performing farms – Heat detection, Bull management, heifer mating, disease treatment and prevention.

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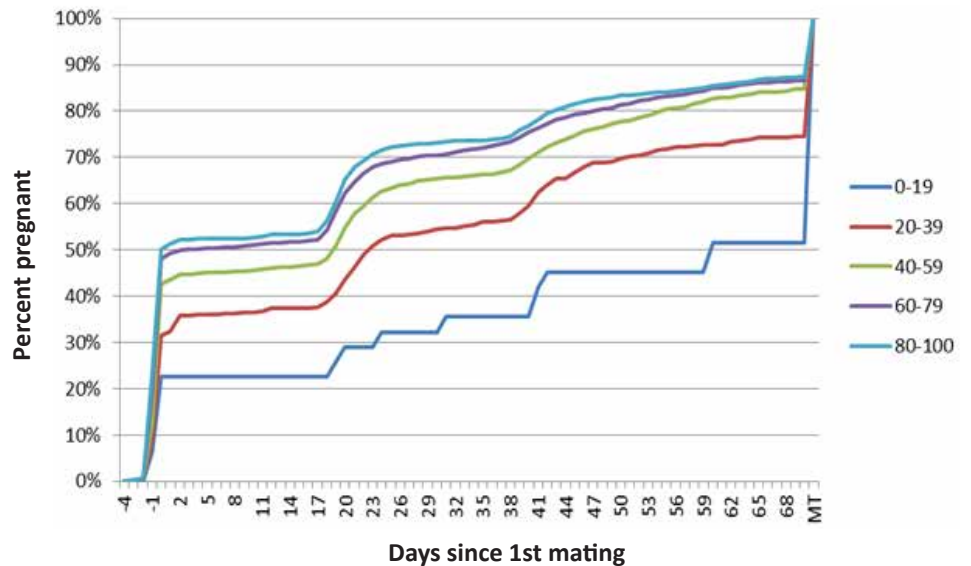
Backing Winners

– Which Cows Should Be Treated with a CIDR?

Our Veterinary Centre research team examined 8,500 non-cycling cows treated from 64 farms in our practice.

This is the biggest single study conducted in NZ on CIDR outcomes at a commercial level. From this study we were able to identify the optimal number of days-in-milk when treated, best time to treat relative to PSM and the optimal age of treatment. Overall the average first service CR was 47% which is extremely good for cows being mated on the first oestrus for the season. Cows under five years had the best response. Optimal first service conception rate occurred from cows >45 Days in Milk (DIM) and optimal MT rates in cows >40 DIM.

Relationship between Days since calving at treatment and Reproductive Outcome



Setting Up a Non-Cycler Programme

Getting the best results takes good planning. Where applicable back the cows likely to give the highest returns. From our studies the best returns come from non-cycling cows calved at least 40-45 days before treatment. For a herd which starts mating on the 23rd of October that intends to treat non-cyclers 9 days before the PSM they could follow the plan below.

- Cows calving after the 1st of Sept are identified as late calvers with a stripe over the hips. (Those calving after the 20th of Sept are marked with a stripe over the hips of another colour)

- Tailpaint should be applied to all cows on the 18th of September.
- August Calving non-cyclers treated on the 14th of October.
- September calving non-cyclers (calved by

- the 20th of September) treated on the 3rd of Nov (day 10 of mating).
- Very Late calvers and those other cows not mated treated on day 24 of mating 16th of Nov.



Are your cows low in Iodine?

There is a new test available for testing I status. Iodine is important in the expression of oestrus/heat.

FIL TAIL PAINT

FULL
RANGE OF FIL TAIL
PAINT AVAILABLE



Metrichecking Cows – How to Optimise the Outcome

Endometritis is an infection of the lining of the uterus. Any cow which has an infection in her uterus will suffer a delay in resumption of cycling activity (one cause of non-cycling cows). If infection is still present at the time of insemination then this will interfere with sperm and embryo survival. Long standing uterine infections will also cause permanent uterine scarring. If the surface of the uterus is scarred, implantation and survival of the embryo is impaired. Trials have shown that cows treated with a Metricure 7-28 days post calving have far better subsequent reproductive results than cows treated 5-8 weeks post – calving. Checking and treating in calving batches will improve results. Waiting until early October to do a singular whole herd check is an opportunity cost/lost. Uterine infections (although still present), are harder to detect due to the low volume of discharge from the cervix.

This leads to a large proportion of uterine infections being missed. Going to the trouble of Metrichecking a whole herd in October and finding just 2% is probably not an economic exercise.

Cows calved by the 25th of August should have been Metrichecked by now. Cows calving 20th Aug – 10th Sept should be checked mid to late Sept, and cows calving after this date in early October. Use a simple identification such as tailpaint to identify early verse later calvers.

- Dirty cows have ~20% higher empty rates than healthy herd mates
- Untreated dirty cows conceive on average 2-3 weeks later.



Premating Check List

- Tail Paint – this should go on 35 days before (~ 18th September) the planned start of mating. Any cows calving after the 1st of September should get a different colour tail paint to identify late calvers for the purpose of non-cycler treatment.
- Metricure all 'at risk' cows 2-3 weeks post calving ('at risk' cows = RFM's, vaginal discharges, dead calvings)
- Metricheck herd in batches. Identify with tail paint and check 7-21 days post calving.
- Ensure adequate trace element status – blood test herd in late September early October. Selenium, Iodine, Copper, Zinc and Vitamin B12 deficiencies can all affect reproductive performance. Vitamin B12 levels are generally low in the months from late September to December. Strategic use of vitamin B12 in mid/late September and again four week later anecdotally increases submission and conception rates (CR).
- Multimin Injection given two to four weeks pre-mate increase 6 WICR by 3 - 4%. (national & local trials)
- Consider BSCing your herd in early/mid September and again at P.S.M. This will help with strategic decision making.
- Run light cows as a separate herd at least 3 - 4 weeks before PSM and feed preferentially and or OAD milk.
- Drenching lighter animals and heifers will give a significant reproductive boost. In the Eprinex trial involving the Lincoln Dairy Farm, treated heifers conceived on average 12.9 days earlier than untreated heifers.
- Feeds or feed additives such as grains or Rumensin, boost proprionate production in the rumen, which may indirectly increase submission rates.
- Feeds with a higher fat content (e.g. PKE) fed just before and through the mating period may increase C.R.
- BVD vaccinate heifers and cows in herds where BVD has been diagnosed or in herds experiencing higher than normal embryonic loss, abortion and empty rates. Animals should be vaccinated twice, four weeks apart with the final dose at least two weeks before PSM.
- Start sourcing bulls now. Try to establish a low risk M. bovis source (ask your vet). Ensure they are BVD vaccinated and blood tested BVD free. Consider also getting bulls vaccinated for Pink Eye if this has been a problem in the past. A 600 cow herd using AI for 6 weeks will require 7 bulls in the herd at all times, plus 7 extras to rotate on an every second day basis. A 600 cow herd which AI's for just 4 weeks will require 10 bulls in the herd at all times and 10 extra to rotate.
- Work out your intended planned start of mating, and book in your synchrony programs with Vet and AI tech now.
- Plan to start mating heifers 5 - 10 days earlier than the herd.
- Submit non-cyclers for treatment 5-10 days before PSM.
- Book in a Reproductive Consult with your vet.

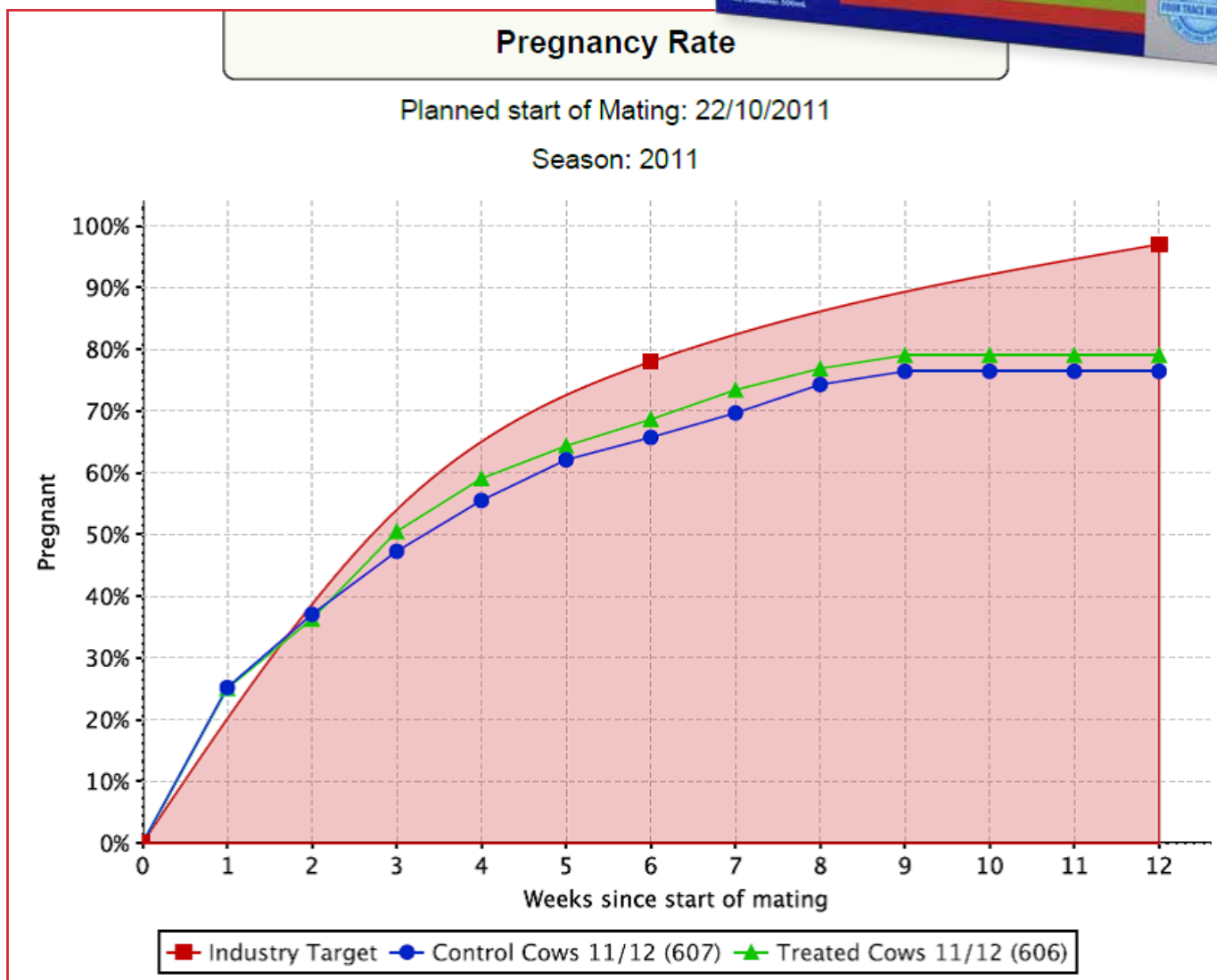
Multimin Injection Premating to Lift Reproductive Performance – a Vet Centre Trial

A local 1,200 cow farm receiving a well reputed trace mineral blend had pre-mating bloods and livers taken. Serum selenium averaged 880 units and liver coppers averaged 790 units. Both of which are very good and would under normal circumstances not be recommended to give additional supplementation.

Half of the herd (606 even ear tag # cows) were given Multimin (a 5ml dose), 3 weeks before the PSM. All cows on the farm continued to get minerals through the dos-a-tron throughout the entire lactation.

The result

The Multimin treated cows referred to as 'treated cows' are in green in the graph below and the non-treated cows are referred to as 'control cows' and are in blue.



From 4 - 7 weeks after the start of mating there was a 4% difference in pregnancy rate between the treatment and control groups in favour of Multimin. By the 9 weeks there was a 3% difference in Not In-Calf Rate. This difference meant 22 extra Multimin treated cows got in calf over the seven-week AI period and the median conception date was shifted forward by 2.3 days.

At a \$6.50 pay-out this would provide a gross return of \$20/cow treated in additional milk production, a \$30 return for reduction in empty rate (from a nine-week mating - using pregnant value minus cull value) and another \$5/cow treated attributed to additional heifer replacement.

Total net return = \$51/cow treated. The Return on investment (ROI) in this case was 14:1

