

REVOLUTIONISING MASTITIS CONTROL

A revolutionary approach to using probiotics in a mastitis control program

PROBIOTIC REVOLUTION



With increasing antibiotic resistance there has been a call to implement other control measures for mastitis. During the 2018/19 season Probiotic Revolution has been looking at how we can use specific probiotic products to help with the control of mastitis at calving, during lactation and around drying –off.

Research into the use of Probiotics for the control of Mastitis.

Scientists have long maintained that an animal's immune system can be stimulated by administering oral doses of targeted strains of live probiotic bacteria. These bacteria colonize the colon of a cow stimulating its immune response to disease challenges. When a cow has a clinical or subclinical mastitis infection it will be reacting to this by producing antibodies to fight the infection. The addition of targeted strains of probiotics enhances this antibody response.

There are a number of factors that determine whether cows get mastitis. Although there are genetic differences between cows in their ability to withstand mastitis the general health and nutrition of cows is also a contributing factor. At calving a cow's immune system is weakened so metabolic diseases such as milk fever and ketosis help contribute to mastitis. We take measures to reduce milk fever but often little is done to reduce ketosis as it is largely sub-clinical. However the incidence of calving mastitis is correlated to sub-clinical ketosis.

"The maintenance of a strong immune system is important in reducing ketosis and mastitis around calving". (Goff and Horst)

This is supported by high doses of probiotic bacteria.

Ketosis is also a result of a cow's negative energy balance and its inability to effectively mobilise fat reserves with the sudden onset of milk production at calving. Elevated blood levels of ketones depress blood glucose levels and this in turn depresses appetite and intake.

In the Nocek trial the best milk response was obtained when probiotics started 21 days pre calving rather than just at calving.

Probiotic products formulated to assist with Mastitis control programs.

- 1. Pre Calving. Superstart Lead Feed.** This is typically fed for 16 days pre-calving and is generally formulated with anionic salts to reduce milk fever and ketosis at calving as well as a boosting cows immune system
- 2. Post Calving. BioRumen DFM (Direct Fed Microbial).** Fed as a pellet through in-shed feed systems or mixer wagons
- 3. Oral treatment of clinical cases of mastitis - 5 daily treatments of ImmunoMax** for when BioRumen is not being used or **Bovine Boost** when BioRumen is being fed
- 4. Drench ImmunoMax to high SCC cows** (IE over 1 million) during lactation - 5 daily treatments
- 5. Drench ImmunoMax to high SCC cows** (IE over 150,000) at drying off - 5 daily treatments

NOTE: All treatments are Nil Milk and Nil Meat withhold.

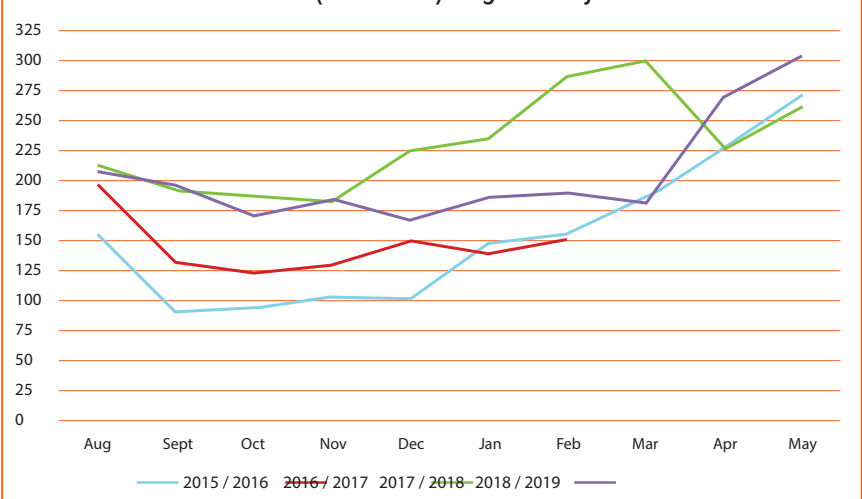
Case Study 1

John & Donna McCarty – Kaponga

John & Donna started using BioRumen to all cows 3 weeks prior to calving. The herd was affected by acidosis from feeding off wind flattened maize in the autumn and I would have to say that the **BioRumen** at the high rate of 50gm/c/d helped in their recovery. We also had less calving mastitis than usual with 17 cases treated compared with about 34 the year before.

Each year we treat spring mastitis with antibiotics while we are feeding calves. Then we simply strip cows with mastitis and if it reoccurs they are on the cull list. This year we decided to use probiotics after the calves were weaned. In our case we used **Bovine Boost** to give extra support to the **BioRumen** we were using. We only treated 4 cows that had hard quarters and white lumps in their milk. After 3 days of drenching with **Bovine Boost** the quarters softened and the visual mastitis was gone. This result just blew us away. We were also impressed with the results we saw with some ill health cows. We also tried it on 5 cows with a SCC of over 1 million. There was no reduction in SCC but that's no indication that it wasn't working on cows with a chronic long term infection as we wouldn't expect SCC to drop if we used antibiotics on these cows. We will now evaluate the use of **ImmunoMax** on some cows for 5 days prior to drying off that have a cell count of over 150,000. At drying off each year we treat all cows that have two herd tests over 150,000 or one over 300,000. If we continue to see the results we have seen so far this year I have a feeling we may not be using any antibiotics next year.

SCC (thousands) August - May



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Case Study 2

Phil Froese – Otorohanga

Because we are transitioning to organic milking this year we have to get away from using antibiotics. Consequently we used Cpravivon over the whole herd for the last time at drying off. In other years we used Dryclox over all cows. Nevertheless we had plenty of mastitis in the cows in the Spring and the first line of defence was to treat them with the Probiotic Revolution product for 3 to 5 days. If they didn't clear up we used Mastalone. No Mastalone was used after the 1st November.

Up to the end of calving on the 6th September we treated 25 cows and 6 had to be retreated with Mastalone. We didn't test which pathogen we were treating over this period but they were all in the first week of calving so I presume it was Strep Uberis. Based on the cows not treated with Mastalone this is a 76% cure rate. The results in heifers was a bit poorer – at 60%. Because they would not have had any exposure to mastitis until calving their immune system would take longer to start fighting the infection than older cows. If I just look at the apparent cure rate excluding heifers then it was 80%.

From the 6th September to the end of October a further 23 cows were treated and 5 needed the follow up Mastalone treatment. I would expect more of these cows to have had Staph Aureus but the apparent cure rate was still 78%.

From the 1st November onwards we are still treating cows with probiotics and culling those that don't clear up.

Because we were getting such good results with clinical cases we assumed we could effectively treat sub-clinical mastitis. So we also treated some cows with a high SCC. I am extremely happy with the success rate we have had and there are huge savings in discarded milk.

This year I will treat all my cows with **ImmunoMax** for 5 days at drying off and will start the herd on **Superstart Lead Feed** prior to calving.

Case Study 3

Robbie Van der Poel – Otorohanga

From the 1st February onwards I started treating with **ImmunoMax** spring calving cows that had mastitis. I treated 12 cows for 5 days within excess of the daily dose rate of 10gm/cow/day. On the basis of using the Rapid Mastitis Test only 1 of the 12 cows didn't cure. I am extremely pleased with this result.

NOTE. In case studies 2 and 3 the treatments were for 5 days and we strongly recommend that the full 5 day course is used. In severe cases 6 treatments can be used at 12 hourly intervals.

Further evaluation of ImmunoMax at drying off

Because farmers have had treating clinical mastitis with **ImmunoMax** we are making the following packs available to evaluate in their herds. These can be used to treat some high SCC cows at drying off.

Note prices exclude GST

ImmunoMax		Dose 10gm/d for 5 days	
Quantity Kg	Price	Cow doses	\$/cow dose
1.2	\$440	24	\$18.33
2.5	\$865	50	\$17.30

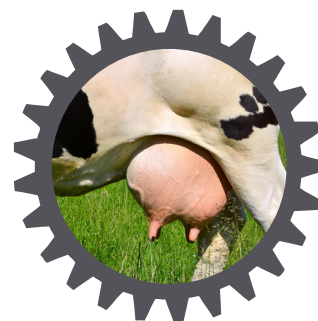
Further evaluation of the treatment of clinical mastitis.

We are making small 5 cow packs available for farmers to evaluate the effectiveness of **ImmunoMax** on cows with clinical mastitis or other health issues.

Note prices exclude GST

ImmunoMax		5 Cow Pack	
5 Cow Packs	Price	Cow doses	\$/Cow dose
1 x 250g	\$100	5	\$20.00
2 x 250g	\$190	10	\$19.00

BOVINE
IMMUNOMAX



Use **ImmunoMax** to revolutionise mastitis control

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