

## BACKGROUND TO THE PROJECT

When Mike and Sarah O'Brien arrived as Farm Managers at the Macalister Demonstration Farm in July 2007 they inherited a herd with a history of high Bulk Milk Cell Count (BMCC) levels. Mike and Sarah set themselves a goal to reduce BMCC to below 250,000 cells/ml and consistently achieve premium milk prices within three years. They have just finished their second milk season and are about to enter their second calving to apply their strategy. After two years of hard work and focus they are well on the way to a herd at the premium level.

Working with vet, Dr Mark Humphris, Mike and Sarah developed a plan based on the principles of the national mastitis program, Countdown Downunder.

## HOW DID THEY APPLY THE COUNTDOWN DOWNUNDER PRINCIPLES?

Broadly speaking, the Countdown Downunder program is a mastitis management system that aims to minimize exposure to environmental infection, refine the milking process to minimize transfer of infection, regularly monitor cow condition through herd test and factory test information, apply treatment at the first appearance of symptoms, and put in place a drying off process to minimize infection.

For Mike and Sarah the main areas of focus have been:

- Dry cow management - drying off at the right volume (7-12L), and controlling environmental challenge pre and post dry off.
- Calving time management - environmental control, removing calves as soon as possible, milking cows as soon as possible, rapid detection of clinical cases and appropriate therapy based on culture results.
- Lactation management - improved awareness of milk harvesters' role in reducing mastitis, improved teat disinfection.

## WHAT DID THEY DO IN EACH OF THE TWO SEASONS?

### Season One

The first season began at calving after a conventional drying off treatment of all milking cows using 600mg of a Cloxacilla product. Drying off had mostly been done when Mike and Sarah arrived. Heifers were not treated prior to calving.

The focus of the first milking season was on changing practice for identifying and treating clinical mastitis. This involved close inspection of the filter sock and looking for BMCC spikes on milk test report, then close inspection and stripping of identified high count cows at milking to identify and treat cases as early as possible.

Herd test results were important to identify and treat cows with subclinical mastitis, stopping high counts from developing. Thirteen cows with a history of mastitis and that developed the condition three times in the season were culled. As a further preventative, all cows were teat sprayed at milking.

The drying off strategy involved a blanket treatment of all milking cows with 600mg of a Cloxacilla product to reduce the number of new infections during the dry period and teat sealing all heifers for improved protection from environmental infection close to calving (Fig 1).



Fig 1: Teat sealing heifers

Once the heifers were brought back to the farm from agistment they were walked through the dairy prior to calving for three days where the teat sealing took place on the fourth day. Teat sealing was done by vets from the Maffra Vet Centre with total costs in the range of \$13-16 per heifer, depending on how quiet and clean they are.

This was a very challenging season as it was very wet and presented an increased risk of environmental infection to all classes of cattle. The cows were also agisted off the property after drying off at the end of the last season so the extra transport also raised the risk of infection.

### Second season

The beginning of the second season saw the mastitis control program step up a level. All cows were held on the farm at the end of the first season so infection during transport was not an issue. Only the heifers were transported back to the farm at which time they were teat sealed.

More accurate calving dates allowed springing cows to be managed separately for 2-3 weeks before calving. This included lead feeding and a move to fresh paddocks to minimize environmental contamination.

At calving in the first season cows were given a fresh strip of grass each day but had to walk back across soiled ground to a central hay feeder. In the second season the straw was fed on the fresh strip with a back fence to prevent access to soiled areas.

The monitoring program continued and milking staff attended a Countdown Downunder 'Cups on Cups Off' course to refresh their knowledge of how milk harvesters can reduce the impact of mastitis. This included a particular emphasis on effective teat spraying.

Twenty one cows with repeat infections or excessively high ICC levels were culled.

**SO WHAT HAPPENED TO MASTITIS LEVELS OVER THE FIRST TWO SEASONS?**

The effect of the mastitis control program can be viewed from a number of angles. There has been a dramatic improvement in both the incidence of mastitis in heifers at calving (Table 1) and in the Individual Cell Count (ICC) across the herd (Table 2).

Table 1: Cases in herd of calving time mastitis

	Season 07-08	Season 08-09
Heifers	26%	3%
Cows	8%	2%

Table 2: Number of high ICC cows in the herd

	Cows in herd with one ICC greater than 250 000 cells/ml in the season
06 - 07	67%
07 - 08	35%
08 -09	25%

This improvement can be seen at the herd level by following BMCC levels (Fig 2). The herd is now consistently under the level required for a premium payment.

**WHAT'S IN IT FOR THE FARMER?**

If today's milk quality figures (BMCC) are substituted into the milk production figures of 06-07, before mastitis control became such a focus, the farm would have earned an extra \$11 100 (an increase of 1.5%) in milk income. This doesn't include any of the extra milk production that results from better mastitis control and more than compensates for the estimated \$1 200 cost of heifer treatment.

Milking has also become progressively easier and much better for milking staff with fewer cows to exclude from the vat and no second herd to contend with. Everyone is happier!

**WHERE TO FROM HERE?**

As cows were dried off at the end of the 08-09 season dry cow treatment was given only to cows that did not have an ICC level below 150 000 cells/ml for six herd tests. Teat sealing for heifers has continued. Culling will also continue but is expected to be at a much lower level after some heavy culling in 08-09.

For the 2009-2010 season Mike and Sarah will work harder at preventing mastitis due to increased difficulty in treating cases and will continue to monitor the BMCC on Frank Tyndall's weekly graphs. In the next season the MDF is aiming for:

- Fewer than 5% calving time mastitis in the adult cows (fewer than 12 cases in the first 30 days after calving).
- Fewer than 5 % calving time mastitis in the heifers (fewer than 5 cases in the first 30 days after calving).
- Fewer than 2 cases per month per 100 cows during lactation (fewer than 6 cows/month with mastitis in November 2009 to June 2010).

BMCC spikes (arrowed in Fig 2) occurred at the AI time as it was very difficult to get the cups off and prevent overmilking at the same time as drafting cows for insemination. This has put cup removers high on the 'wish list' for dairy improvements.

Getting and keeping control of mastitis is a process that never ends. Set a strategy and stick to it - persistence has its own rewards.

The principles of Countdown Downunder can be found at [www.countdown.org.au](http://www.countdown.org.au).

Thanks to Dr Mark Humphris and Mike O'Brien for their input.

Fig 2: BMCC from 2006 to 2009

