

Farmers' guide

DairyCo
Mastitis
Control Plan

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Introduction

The first whole UK approach to controlling mastitis began in the 1960s. Research done by the National Institute for Research in Dairying at the University of Reading resulted in the 5 point plan, which was aimed at the control of contagious mastitis spread between cows during milking.

Uptake of the plan by dairy farmers all over the country resulted in huge progress in the control of clinical and subclinical mastitis, especially in the control of contagious mastitis.

Incidence rates across the country fell from more than 150 cases per 100 cows per year in some herds to 40 cases per 100 cows per year between 1967 and 1982.

National average bulk milk somatic cell counts also dropped from over 600,000 cells/ml to 400,000 cells/ml.

Since then, several small studies have been done to determine the national rates of clinical mastitis. The rates of clinical mastitis were not much different from 15-20 years earlier; however, the pathogens that were causing mastitis were significantly different.

There had been a step away from contagious pathogens, which are adapted to survive in the cow's udder, to environmental pathogens, which are adapted to survive in the environment. This increased awareness and importance of environmental pathogens caused Defra to add a 6th point to the previously decided 5 point plan: **control of the cow's environment**.

Unfortunately, this plan did not go into detail as to how the environment could be managed more effectively and did not appreciate the complexities of managing environmental mastitis.

More recent work carried out in 2004–2005 showed a higher incidence of clinical mastitis in UK herds than was previously thought, with some farms reporting over 100 cases per 100 cows per year. The bacteria present in these herds were mainly *Streptococcus uberis* and *Escherichia coli* accounting for 23.5% and 19.8% of cases, respectively, again confirming a shift towards environmental causes.

An important point to consider when trying to control mastitis is that there are many factors that can influence the cause. This makes it hard to control the disease on farm by only changing one thing at a time and, in fact, changing one thing may actually make another problem worse.

This demonstrated the need for a structured plan that considered all the risk factors in controlling mastitis to be developed.

Development of the plan

The clinical trials for the development of the DairyCo Mastitis Control Plan (DMCP) started in 2004 on herds with an increased incidence of clinical mastitis.

In the initial trial, 26 farms were put on the DairyCo Mastitis Control Plan with another 26 herds being used as control farms with no intervention (plan) in place.

After a year, the herds that had received the plan showed a **22% reduction in cows affected with clinical mastitis** compared with the control herds.

These results proved that a structured approach to mastitis control, such as the DairyCo Mastitis Control Plan, could have a big impact on clinical mastitis incidence on farm. The plan was rolled out for national use and the first plan deliverer training course was held in April 2009.

By 2012, over 1,000 herds had the DairyCo Mastitis Control Plan in place on farm.

What is the DairyCo Mastitis Control Plan?

The DairyCo Mastitis Control Plan is a proven, structured, evidence-based and wide-ranging approach to mastitis prevention and control in dairy cattle.

Trained vets and consultants, **also known as Plan Deliverers**, use farm-specific information, such as milk records, clinical records and on-farm questionnaires, to identify the main factors contributing to mastitis on farm. All this information is brought together to produce a **farm-specific** set of practical recommendations.

The DairyCo Mastitis Control Plan is a cost-effective solution to mastitis prevention, supporting good animal welfare and the consumer image of dairy farming.

Making changes

It is important to understand that the reduction in cows with clinical mastitis, spoken about in this booklet, did not happen purely because the herds were put on the DairyCo Mastitis Control Plan.

Compliance and a willingness to change management practices and other areas of your farm, if needed, is essential.

Studies show that the greater the level of compliance with the recommendations produced by the plan, the better the effect on overall mastitis incidence.

Putting a cost on mastitis

There are many things that contribute to the cost of a case of mastitis and each farm will have its own set of problems and issues to take account of. Therefore, when looking at the impact of high cell count and mastitis on farm, it is important to take all of these factors into account.

The cost of a case of mastitis includes:

- Discarded milk
- Veterinary treatment costs
- Additional labour
- Yield reduction

And in severe cases:

- Culls
- Deaths

An average cost for a case of mastitis is estimated to cost £211 while average costs for severe cases is quoted as £1,148

Using the DMCP cost of mastitis calculator August 2013

How the DairyCo Mastitis Control Plan works on farm

Finding a Plan Deliverer

A list of registered Plan Deliverers can be found at www.dairyco.org.uk/mastitis or speak to your vet.

Step 1 Looking at farm data

Your Plan Deliverer will take a copy of your milk recording data and clinical mastitis data for **at least the last year**. To be most effective, this data should be electronic, eg a copy of your on-farm software coupled with milk recording data from a milk recording organisation.

The Plan Deliverer will then analyse the data in detail, looking for patterns of **seasonality** and diagnosing whether the majority of infections in your herd stem from the **dry period** or the **lactating period** and whether infections are predominantly from the **environment** or **spread from other infected cows**.

Your Plan Deliverer may also want to do some bacteriology in order to make a diagnosis. Speak to your vet about the procedure for getting milk samples tested and the information required.

Step 2 Farm visit

An on-farm questionnaire and survey will then be undertaken by your Plan Deliverer. All areas of the farm will be looked at and management practices observed including at least one milking. The areas of your farm that the Plan Deliverer will be looking at and will ask you questions on, include:

- Cow housing, including dry cows and heifers
- Milking parlour function and milking routine
- Management of the dry period
- Treatment of mastitis
- Other areas such as biosecurity and youngstock management

Step 3 Action plan

The collected data and information from the questionnaire will then be evaluated and a list of action points specific to your farm will be generated.

Action points will be prioritised into 'must', 'should' and 'could' categories depending on their significance in tackling the current mastitis and somatic cell counts issues.

The Plan Deliverer (vet or consultant) will then use **their clinical judgement** to decide which action points will have the biggest impact on your farm.

Your Plan Deliverer (vet or consultant) will go through the action points with you and discuss **how best to implement them on your farm**.

You will work on a plan of action together and a date for review will be agreed, usually three months from the first visit.

Step 4 Review

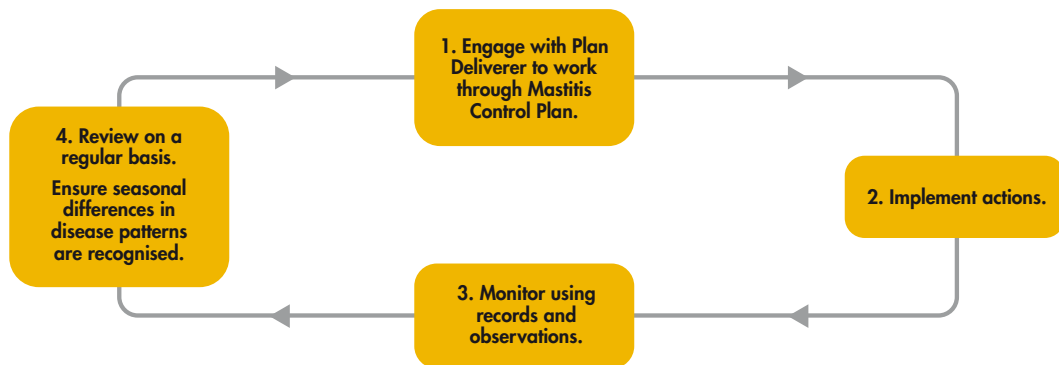
Your Plan Deliverer will analyse your milk recording and clinical mastitis data from the time that you started on the DairyCo Mastitis Control Plan or had your last plan review. They will be able to see how your herd's mastitis status has changed since actions points were implemented.

You will be able to discuss with them how you think things have been going and how you have managed the 'action points'.

Dependant on the data, your plan deliverer may suggest other actions to make further improvements.

Regular reviews with your Plan Deliverer are vital for the success of the DairyCo Mastitis Control Plan on farm. There is no one quick fix for prevention and control of mastitis.

The delivery of the DairyCo Mastitis Control Plan is continual. Regular monitoring and reviewing of data and action points is vital to ensure reductions in clinical mastitis and somatic cell counts. It may be that, over time, different areas are focused on to make further improvements.



DMCP at a glance

What?	Why?
<p>... is the DMCP?</p> <ul style="list-style-type: none"> • A structured approach to mastitis control and prevention • An all-round approach that produces action points that are tailored to individual farms • An array of resources to increase knowledge and understanding. 	<p>...use the DMCP?</p> <ul style="list-style-type: none"> • To gain a mastitis programme that is individually tailored to your farm • To lower clinical mastitis and high cell count incidence on farm • To reduce the financial impact of mastitis on your farm • To reduce antibiotic usage on farm.
How?	What if?
<p>...does the DMCP work?</p> <ul style="list-style-type: none"> • It creates an achievable set of action points to tackle clinical mastitis and high somatic cell counts, which are relevant to your farm • It uses trained Mastitis Control Plan Deliverers to analyse on-farm data and diagnose the source of infection on your farm • It looks at all aspects of your farm to give a thorough, structured approach to mastitis prevention and control. 	<p>...it is not for me?</p> <ul style="list-style-type: none"> • You may feel you have little to gain by reducing mastitis incidence and somatic cell counts on farm. The costs associated with mastitis are listed in this booklet, but please ask your local Extension Officer, or visit our website for our mastitis cost calculator to work out the costs on your farm • You may feel this is only for large herds. The DairyCo Mastitis Control Plan is beneficial to herds of all sizes • If you are still in doubt, why not talk to a farmer who has done the plan. Talk to your local Extension Officer who will be able to put you in contact.

DairyCo support

DairyCo works with the Plan Deliverers to ensure that producers receive the Plan delivered in a professional and consistent way.

Support materials, such as paper-based resources and guides relative to the areas identified as action points within your farm plan can be accessed from the DairyCo website www.dairyco.org.uk. Short training videos on different tasks such as performing a California milk test or taking an aseptic sample can be found on the DairyCo YouTube channel. Our Extension team also holds meetings around the country related to the DairyCo Mastitis Control Plan, check the DairyCo website for details.

For more information, contact your local DairyCo Extension Officer www.dairyco.org.uk/contact-the-team or email mastitiscontrol@dairyco.ahdb.org.uk for further guidance.

Glossary

Mastitis – Persistent, inflammatory reaction of the udder tissue

Environmental mastitis – Mastitis transmitted through contamination of the cow's environment

Contagious mastitis – Mastitis transmitted from cow to cow via the milking parlour, milker or other vectors

Dry period origin – Mastitis occurring in the first 30 days in milk

Lactation period origin – Mastitis occurring after the first 30 days in milk

Dry period cure rate – The number of cows that enter the dry period with a somatic cell count > 200,000 and calve down with a somatic cell count <200,000 therefore curing while dry.

Dry period infection rate – The number of cows that enter the dry period with a somatic cell count of <200,000 and calve down with a somatic cell count of >200,000, therefore becoming infected while dry.

Dry period failure to cure – Cows that enter the dry period with a somatic cell count >200,000 and calve down with a somatic cell count >200,000 therefore either failing to cure or curing and becoming re-infected again before calving.

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