

BOVINE MASTITIS AND DATA QUALITY

FARM mastitis data is vital to assess the incidence, trend and impact of mastitis on each individual unit.

The data presented to vets is frequently inaccurate, missing or illegible, meaning assumptions sometimes have to be made and gaps filled. Mastitis data comprises clinical mastitis and subclinical mastitis information, both of which are necessary to build up a full picture of the mastitis problem within a herd.

Subclinical mastitis data

From the outside, it would appear surprising that subclinical mastitis data quality on the whole is far superior to clinical

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discusses why the need for in-depth and accurate mastitis data is essential to combating the issue, as well as preventing it in the future

mastitis data. Subclinical mastitis data consists of individual animal cell count recordings alongside cow identification and date-of-cell count testing. This is a common tool used by farmers to maintain bulk tank milk quality, monitor subclinical mastitis trends and provide the information required for pedigree animal registration and evaluation. In reality, it becomes apparent that the work involved in col-

lecting and presenting this data is predominantly undertaken by milk recorders and improves the usefulness of laboratory cell count information when done accurately. Individual cow information is well-presented from testing laboratories, allowing farmers to act on the information at herd level, where bulk milk cell count penalties may be imposed, and at the individual quarter, when treatment

of cases may be beneficial. Errors in subclinical mastitis data include incorrect cow identification and mixed-up samples, both of which are minimal on most farms. Problems with the data include factoring (where the milk recorder takes a single sample at each recording) or herd changes that may affect cell count, such as the stress of a herd TB test immediately before milk recording.

Subclinical mastitis data is available for vets to evaluate for their clients once a data authorisation form has been completed. This allows opportunities to discuss the somatic cell count results following each recording, as well as discuss

subclinical mastitis patterns, treatments and prevention.

Clinical mastitis data

It is frustrating that, while subclinical mastitis data is plentiful and reasonably accurate, the vast majority of herds do not have clinical mastitis data in a format that is up to date, accessible or correct. Ideally, all clinical mastitis cases would be recorded in a format that can be analysed by a vet alongside subclinical mastitis data.

The information would include date of case, cow identification, and quarter affected, and could also include severity of signs (grade of mastitis), treatment and outcome, as well as calving date. This would build a

"It's vital farmers are encouraged to record mastitis cases accurately."

picture of the number of mastitis cases on a farm, including the seasonality pattern of cases, the number of repeat cases, the case rate by days in milk and treatment outcomes. On-farm software is available that facilitates recording of this information so vets can update their own database. Wouldn't it be great if all, or at least most, farms could supply this information?

In reality, it is a constant struggle to get any accurate

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Dry Period Clinical Mastitis Monitor

Cow ID	Calving Date	1st 30 Day Mastitis?	Cow ID	Calving Date	1st 30 Day Mastitis?
1			13		
2			14		
3			15		
4			16		
5			17		
6			18		
7			19		
8			20		
9			21		
10			22		
11			23		
12			24		

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

HERD CELL COUNTS

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

COWS FOR INJECTABLE TREATMENT AT DRY OFF

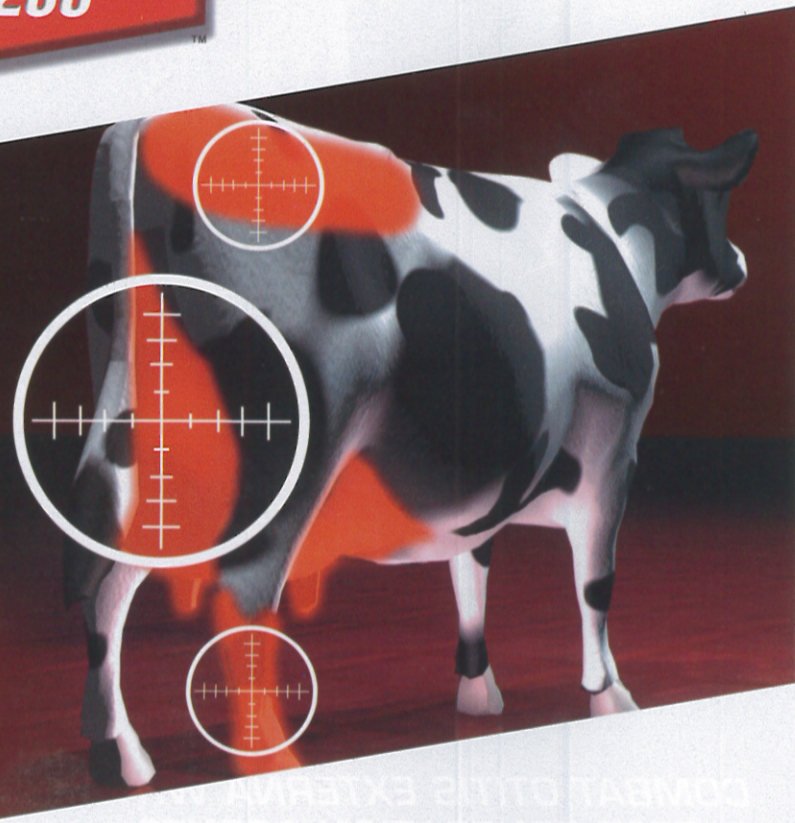
Cow	Antibiotic	Dry off date	Cow	Antibiotic	Dry off date

TREATMENT REVIEW

Treatment	Start date	Total quantity of medicine used	Withdrawal period (MILK)	Withdrawal period (MEAT)	Earliest date for sale of animal	Medicine administered by
S/1/09	10 tubes	60hrs	7days	12/1/09	Richard	
3/2/09	3 tubes	20hrs	7days	10/2/09	Richard	
6/2/09	4 tubes	"	"	13/2/09	Richard	
4/2/09	3 tubes	120 hrs	7days	13/2/09	"	
6/2/09	3 tubes	"	"	13/2/09	"	
10/2/09	8 tubes	60hrs	7days	12/2/09	"	
17/2/09	3 tubes	120 hrs	7days	24/2/09	"	
12/2/09	3 tubes	"	"	24/2/09	"	
12/2/09	3 tubes	"	"	"	"	
24/2/09	3 tubes	"	"	21/3/09	"	
24/2/09	3 tubes	"	"	"	"	
24/2/09	3 tubes	"	"	"	"	
25/2/09	6 tubes	24 hrs	7days	27/2/09	"	
27/2/09	3 tubes	132 hrs	28 days	27/5/09	"	
28/2/09	3 tubes	132 hrs	28 days	29/5/09	"	
7/3/09	5ml / 20ml	60 hrs	7days	12/3/09	"	
5/3/09	4 tubes	132 hrs	28days	4/4/09	"	

Where two or more medicines are administered simultaneously, the length of withdrawal period should be recorded in the length of withdrawal column.

Top: a wipe-clean poster to determine whether clinical cases are likely due to dry period infection. Middle: a wipe-clean poster to go in the parlour for recording clinical mastitis cases. Bottom: using a medicine book to gain mastitis data – a camera is invaluable for storing the information.



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information. Methods of overcoming this involve providing different and appropriate ways of recording the information, regular monitoring of lactating cow intramammary-tube usage and time spent in parlour discussing teat quality and mastitis.

Ways to improve information recording include: provision of a diary with columns already provided, a whiteboard with recording table, medicine book supply and popular wall charts that can be displayed in the parlour or by the intramammary tube store. Don't forget to supply pens on string where appropriate. All these methods allow data to be captured on farm using a camera, so the vet (or support staff) can collate

the information in a usable format. Clearly, the more information that can be accurately recorded, the more likely a thorough data analysis can be performed and a correct farm herd evaluation provided. However, any accurate information is better than no information or poor-quality data, and farmers should be actively encouraged to record mastitis clinical case numbers at minimum.

The most basic farm data should consist of mastitis case numbers, developing a picture of the herd mastitis pattern or seasonality and a guide as to whether the situation is improving or deteriorating. This allows the severity of the problem to be judged so the appropriate level of intervention can

be provided. The next level of data to determine the pattern of mastitis within a herd is whether mastitis cases are occurring as a result of dry period infection or infection during lactation.

An assumption is made that any infection apparent early in lactation is acquired during the dry period. In fact, dry period infections may present later in lactation, but it is helpful to determine whether the dry period is playing a fundamental role with a mastitis problem.

For this assessment to be made, we require either a calving date or a tick box to say the mastitis case has occurred within the first 30 days following calving, for example. Once this information has been received, it is possible to begin analysing herd mastitis patterns. This process must be

ongoing because a full picture cannot develop until data recording has been performed for at least 18 to 24 months and, even then the situation on farm can change.

Further information can be added to this data set to allow analysis of case recurrence (both individual quarters and individual cows if possible), treatment response and the link between subclinical and clinical mastitis cases. It is advisable to keep the clinical and subclinical information in a format that can be compared together.

This may be through the use of herd management and analysis software, or it may involve manually evaluating spreadsheets or farmers' diaries. Incorrect information may be supplied when farmers do not regularly record or update their medicine treatment

records, but, in my experience, incorrect clinical mastitis information is generally second in line to the lack of information recorded on farm.

It's vital farmers are encouraged to record mastitis cases accurately so valuable assessments of mastitis prevalence and patterns on farm can be made to develop appropriate treatment protocols and invest in mastitis prevention methods.

We can all provide resources to farmers that may aid the recording of accurate mastitis information. Using this, and engaging with farmers in mastitis control, we can encourage them to build on this data recording, so we have more information in the future to add to the subclinical mastitis data and deal with mastitis appropriately in each herd. ■

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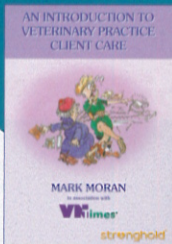
By Mark Moran (45 pages) ISBN 1-85054-199-X

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Contact Jackie Prentice on 01733 383538, or alternatively email her on jacquelineprentice@vetsonline.com



JUDITH ROBERTS graduated from the Royal (Dick) School of Veterinary Studies, Edinburgh in 2003. She spent three years in practice before moving to the University of Cambridge as the farm animal resident and then to Lambert, Leonard and May. Her interests lie primarily in cattle medicine and surgery, and she is working towards a PhD in conjunction with the University of Lancaster's engineering department, using advances in technology that can be applied in the veterinary field.



★ SPOTLIGHT ★

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