

Animal Health & Milk Quality

Spring Management Series 2021

Edition 3



Milk Recording, SCC & Mastitis control

Elevated SCC is a hidden cost on dairy farms. Unless a clinical case of mastitis is seen and treated, raised SCC levels are rarely acted upon but high SCC levels are costly with regards to lost milk production and the knock-on effect on herd fertility. The table below shows the potential losses from elevated SCC in the average Lakeland (80 cow) herd, using a milk price of 32c/l.

Litres lost per cow per year (SCC)

Herd SCC ('000s)	Milk/cow (litres)	€ loss
100-200	174	4,454
200-300	308	7,885
300-400	367	9,395
400+	422	10,803

The table illustrates losses in milk yield only (due to a level of infection within the udder) and does not consider discarded milk or treatment of mastitis cases.

Teagasc research shows that mastitis costs Irish farmers €60/cow/year. This figure comes from sub-clinical costs – such as milk quality penalties and the loss of milk production – and clinical costs. Clinical costs would include antibiotics, discarded milk, labour, veterinary and culling.

Getting SCC under control should be a priority on every farm and the first step in this process is milk recording.

Why milk record?

- 1 “You can’t manage what you don’t measure” is an oft-used quote but when it comes to milk recording there has never been a more accurate appraisal.
- 2 Regular milk recording provides better information than ad hoc, individual cow testing, and doing it regularly gives you more ‘bang for your buck’.
- 3 It allows you to react quickly to cows that have elevated SCC. These may have no visible signs of infection, but they will spread infection within your herd and raise your bulk tank SCC.
- 4 It leads to better informed breeding decisions by identifying the high performing animals in your herd. While you may be aware of the higher milk volume animals in the herd, do you know which animals are leaving behind the highest milk value? Milk recording helps you identify these animals by measuring the levels of fat and protein in each individual cow’s milk. You can then select out which cows you want to breed from to provide the next generation of heifers to enter your herd.

- 5 From 2022, dairy farmers will no longer be allowed to use blanket dry cow therapy across all the cows in their herd – without evidence that they require them. For this reason, **milk recording will need to become common practice on dairy farms.** Milk recording results will allow farmers to identify animals suitable for selective-dry cow therapy (SDCT).



When to record?

With the CellCheck Farm Summary Report, milk recording cows within 60 days of calving will measure the effectiveness of your dry cow treatment. This is critical for any farmer who was battling high SCC last year and who undertook a programme of targeted dry cow therapy this past winter. It will also highlight if new infections during the dry period have occurred.

For spring calving herds this would mean that milk recording should be carried out in the mid-March to early April period.

Leaving it later than this means your earlier calved cows will be further than 60 days into lactation.

Early lactation mastitis is a high risk. Early milk recording will give you an indication of any cows that need prompt attention.

Heifers: recent research has highlighted that high SCC in heifers may be more prevalent than you think. Early milk recording will identify any of these that need careful attention. It will also identify high performing heifers immediately.




Below is a recommended milk recording calendar for a spring calving herd:

Sample Milk Recording Schedule for Spring calving herd (4 tests)

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
		1st recording			2nd recording			3rd recording			4th recording
<ul style="list-style-type: none"> ▶ 1st recording - needs to take place within 60 days of the first cow calving, generally mid-March to early April. This will give an indication as to how effective SCC management in the dry period has been. ▶ 2nd recording - for mid-season SCC management and an indication as to how good main season grassland management is (milk protein highly influenced by grass quality) ▶ 3rd recording - as above and helps identify cows with more persistent lactations, thus identifying high performing animals in the herd. ▶ 4th recording - no more than 30 days before planned start of drying off. Identifies cows that are suitable for sealer only at dry off and cows that may require further action with regards to lowering their SCC before and during the dry period. <p>Note: 4 tests is the minimum recommended number to carry out yearly. However there is no reason why milk recording can't be carried out more often, indeed split calving herds would be recommended to record at least 6 times a year in order to hit the right stages of lactation for both Autumn and Spring calving cows.</p>											

If you haven't milk recorded before but would like to start this year, see our tips to getting started in the box below:

- 1** Identification - Freeze branding cows is the fool-proof method of identification. Make sure freeze brands are visible on the day of recording. Electronic tagging of all female dairy calves should also be considered.
- 2** In parlours with Auto-ID, make sure tags or pedometers are reading correctly and registered correctly on the computerised system.
- 3** Contact with Progressive Genetics milk recording team prior to first recording is recommended to ascertain what equipment is needed.
- 4** Make sure all equipment is clean before sampling (i.e., jars, jar taps & sampling bottles).
- 5** Good records - recording calving dates & dry-off dates is extremely important to have accurate milk recording data. Your herd also needs to be on the ICBF database, all reports are uploaded to this and available for viewing on your ICBF page.
- 6** If going down the eDIY route, have help available for the days you are recording. Milking will take longer on these days so be prepared for it. It is also possible to have a recorder accompany the eDIY meters and do this work for you, this is something worth considering.

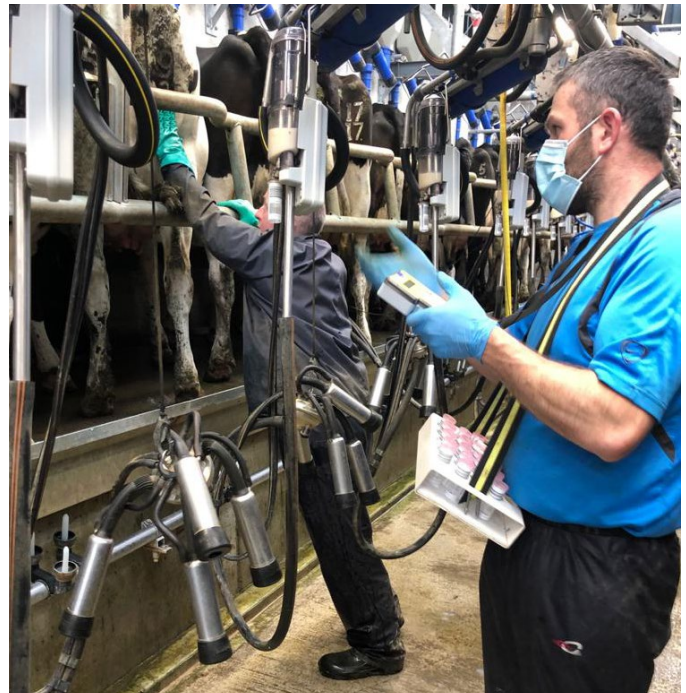
 The process of milk recording is straightforward as you can hear from two of our milk suppliers in this video. Click **HERE** to view.

Most important, when milk recording, is to use the information that is subsequently generated. If you start milk recording for the first time in 2021 and would like some help and guidance on interpreting the reports please contact Adrian from our Lakeland/Teagasc Joint Programme team on **087 413 8584** and he will be happy to help.

To get started Milk Recording contact Progressive Genetics milk recording team on **(046) 9540606**.

Mastitis – what is it?

Mastitis is one of the most important health and welfare issues affecting dairy cows. It is an infection that causes inflammation of a cow's udder which can be caused by bacteria or by injury. Mastitis can either be clinical or sub-clinical.



	Clinical	Sub-clinical
Clotting	✓	✗
Discolouration	✓	✗
Reddening	✓	✗
Heat	✓	✗
Pain	✓	✗
Swelling	✓	✗
Hardening	✓	✗
Reduced production	✓	✓
Decreased milk quality	✓	✓
Decreased cow fertility	✓	✓

Clinical mastitis is easily detected as the cow will display outwards signs of an infection. Sub-clinical mastitis is much harder to detect, An elevated bulk SCC test will be the first sign of a sub-clinical infection in the herd.

What to do where sub-clinical mastitis is suspected

- 1 **Organise a milk recording** – if you haven't milk recorded recently, organise a recording as soon as possible. This will give you individual cow SCC levels so you can identify the problem cows (see report below).

Persistently Infected Cows

Somatic Cell Count - SCC

5 Cows

Persistently Infected
 These cows have two consecutive tests over 200,000 SCC in the current lactation or if this is their first test after calving they did not cure over the dry period. % of Cows with Persistent Infections in your herd was 7%; target is less than 8%.

- Avoid spread from these cows to the non-infected cows in the herd.
- Implement parlour controls; pre and post spraying and/or cluster flush or dipping.
- Consider culling if more than one quarter is infected and they remain persistently high, or drying off the quarter if a single quarter is infected.

Cow ID	Calving Date	Lact	Current SCC 16/02/2021	% Tank SCC	SCC 10/12/2020	SCC 18/08/2020	SCC 18/06/2020	SCC Last test previous lact	SCC Average previous lact
996	20/04/2020	6	4279	20.4	3218	556	96	571	48
204	07/02/2021	5	643	4.5	342	261	159	342	136
79	29/03/2020	5	691	4.2	341	119	47	2960	154
128	14/12/2020	6	278	2.8		682	210	682	273
135	08/01/2021	6	262	2.0		372	286	372	151

This is a report generated after milk recording, it provides a list of all persistently infected cows, i.e. cows that have had 2 consecutive tests over 200,000 SCC (or if it is their first test after calving and they did not cure an elevated SCC from their previous lactation).

A similar list is generated of all recently infected cows with 1 test over 200,000 SCC.

- 2 Find the infected quarter** - The California Mastitis Test (CMT) is a simple procedure to help identify high SCC quarters within high cell count cows. It is impossible to identify sub clinical mastitis on-farm without this aid. Once milk recording has identified the problem cow(s) the next step is to identify the problem quarter(s).

The California Mastitis Test Kit is an excellent tool to help identify high SCC quarters within high cell count cows. The procedure is very simple, you should carry out the test prior to milking.

- ▶ Discard the first 3 draws from each teat and then fill each well with a quantity of milk, try to avoid cross contamination.
- ▶ Once all 4 wells have a quantity of milk, tilt the tray to a 45-degree angle, this will ensure there is an equal volume of milk in all 4 wells. Turn the tray back flat and squeeze the bottle until an equal quantity of reagent is applied to all four wells. There should be approx. 50:50 mix of milk and reagent.
- ▶ Stir the tray for 30 seconds and watch for any changes to the consistency of the solution. The degree of thickness reflects how high the SCC level is within the quarter and thus identifies the quarter(s) that have an infection.

It is recommended that you take a sample of milk into a sample bottle, label this and wait until the end of milking before testing, when there is more time to analyse and record the results.



Click **HERE** for a short video on how to use the CMT

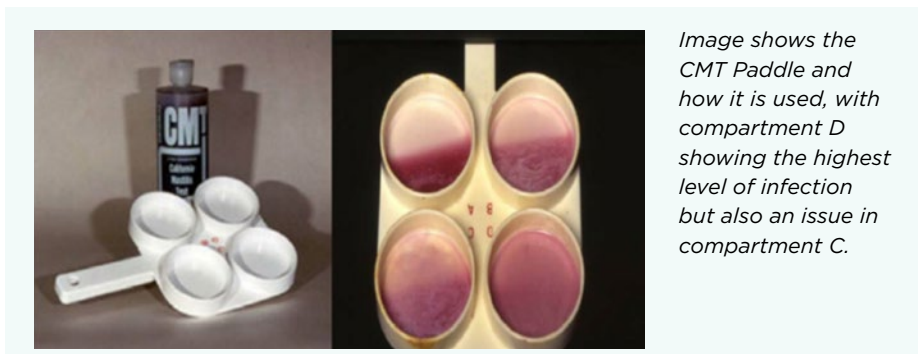


Image shows the CMT Paddle and how it is used, with compartment D showing the highest level of infection but also an issue in compartment C.

2 Identify the pathogen causing the sub-clinical mastitis

The next step is to send a sample from the infected quarter to a laboratory to identify the pathogen that is causing the elevated SCC. This is extremely important with regards to ongoing issues with antimicrobial resistance in animals. A sensitivity test will identify the offending pathogen and also identify the correct antibiotic to use in the treatment of this sub-clinical mastitis.

4 Treatment

Once sensitivity results are received back from the laboratory a course of treatment can be discussed with your veterinary practitioner.

5 Preventing spread

Mastitis and some mastitis causing pathogens can be highly contagious and can easily spread causing huge financial loss to your farm through discarded milk, veterinary treatments and underperforming cows. Mastitis causing pathogens can spread in a variety of ways – from cow to cow in the parlour (through clusters) or on cubicles and from cow to cow via person milking. Therefore, hygiene in the milking parlour and in cow housing is critical in managing SCC.



The table below lists important points to remember when it comes to controlling SCC & mastitis:

Cow/Cow housing/environment	Milking Parlour
Clean down cubicles twice daily	Operators must wear gloves
Bed cubicles twice daily (lime or other dry product)	Wash and disinfect gloved hands regularly
Scrape passageways regularly	Wash and disinfect gloved hands after touching high SCC cows
Avoid overcrowding (one cubicle per cow minimum)	Where possible milk high SCC cows in the last row
Locate drinking points away from cubicles	Cluster dip after milking a high SCC or mastitis case
Roadways to paddocks free from muck pooling	Cluster flush systems should be considered in problem cases
Collection yard cleaned twice daily	Parlour washed down after every milking
Good nutrition - cows in good BCS have healthier immune systems to fight pathogens	Milking machine should be regularly serviced and liners changed every 2,000 milkings.

Seek Help!

Ongoing SCC and mastitis issues do not just have a financial effect on farms, there is also the added mental strain of dealing with constant cases of mastitis or an elevated SCC. Help is available and should be sought out. If you are constantly dealing with these issues contact one of our Joint Programme Advisors, and they can help you put a plan in place in conjunction with advice from your veterinary practitioner to not just treat infections but to also seek out and eliminate the cause of these infections.



Farmer Focus



Aisling Neville Ballinakill, Moate, Co. Westmeath

Farm Profile

Farm size: 164.75Ha

Cow Nos.: 160

% of herd calved to date: 85%

% of MP grazed to date: 40%

Turnout date: 15th February, currently grazing by day and getting 3-4 hours grazing after milking in the evenings (back to cubicles at 9pm)

First milk recording: 26th February

Why do you milk record?

“Milk recording is integral to herd management on my farm. It helps me to identify high SCC cows, persistently high SCC cows and also shows me my better cows from a milk solids perspective”.

The recording process

As an eDIY customer, Aisling told us that “meters are dropped to the farm either the day before a scheduled recording or early on the day of recording”.

Milking through a 16-unit parlour, Aisling sets the meters up before milking and this process takes about 30 minutes. “It is vitally important to have help on farm on the day of recording as sampling my herd of 145 cows took an extra 60 minutes where a milk sample was being collected and an extra 30 minutes where milk volume was being recorded.”

Using the results

The first thing I receive after recording is a list of the higher SCC cows in the herd. If these cows haven't shown signs of mastitis, I will investigate further by using the CMT paddle to identify which quarter or quarters are high. I will then take a sample from the infected quarter and send it for sensitivity analysis. After that I will talk to my vet about suitable treatment. I recorded earlier than usual (26th February) this year as my bulk SCC was higher than I like it to be. I want to identify and treat any issues quickly before they become problematic. If a cow shows up as persistently infected, then she is culled from the herd.





Farmer Focus (Continued)

Informed breeding decisions

After SCC the next thing I will look at is how individual cows are performing in terms of fat and protein content. If an individual cow is below herd average for fat and protein % along with kgMS produced, I will use a beef sire on her. I also use it as a guide when selecting dairy sires to use on the herd, I can better focus on what the herd needs when I have milk recording information.

Selective Dry Cow Therapy (SDCT)

I practice SDCT on the farm and this would be impossible without the information generated from milk recording. Without a full year's milk recording data it would be like "working blindfolded" and SDCT could not be carried out.



"I initially signed up for 4 milk recordings, but I plan to carry out 6, sampling every other month. Milk recording is a must for my farm business and an important tool in cow management that I wouldn't want to be without", Aisling said.



Joint Development Programme

Lakeland Dairies/Teagasc Joint Development Programme has produced this Spring Management Series. Our advisors are currently available by phone to discuss all farm related matters.

- ▶ Colin Anderson 087 7467424
- ▶ Owen McPartland 087 3302254
- ▶ Adrian McKeague 087 4138584