

Moving away from Blanket Dry Cow Therapy: Key messages from CellCheck



Finola Mc Coy MVB, MSc, and Michelle McGrath BAgSc, MAnSci, MVB, Dip.SFP discuss moving away from blanket dry cow therapy and supporting the adoption of selective dry cow therapy in Ireland

The majority of antimicrobial use on dairy farms is for mastitis treatment and prevention. Dry cow antibiotic therapy (DCT) is the administration of long acting intramammary antibiotics at the time of dry off. This practice gained widespread implementation in the 1960s as part of the 'five-point plan'. Blanket dry cow therapy, which involves treatment of all quarters at dry-off, has been commonplace in Ireland for many years, but the recent European Veterinary Medicines Regulation (2019/6) and the requirement to use antibiotics more prudently, means that preventive antibiotic usage in groups of animals, including dairy cows at the end of their lactation, is no longer acceptable.

Only those animals with diagnostic evidence or a clinical diagnosis of infection at drying off should receive an antibiotic. This is known as selective DCT (SDCT). A key aim of the recent legislation is to protect human health, and to keep antimicrobials, in particular antibiotics, working to treat disease. When antimicrobial resistance (AMR) develops and spreads, then antibiotics can no longer be relied upon to treat disease in people or animals. AMR is a serious global public health threat with potentially devastating consequences for us and our families.

Selective DCT reduces antibiotic use by screening cows or quarters at the time of dry-off to identify the cows that have an infection and therefore would benefit from an antibiotic dry cow tube. A selective dry-cow strategy is not without risk, hence the importance of following the recommendations as set out below when making farm-level decisions.

SELECTION AND STRATEGIES

The selection of cows should be based on individual animal and farm-level information which the prescribing veterinary practitioner will need to review. Milk recording is recommended as a key tool to better inform SDCT by providing individual animal information. If milk recording is

not currently being done on-farm, then a California Mastitis Test (CMT) and/or a milk culture from each cow around the time of drying off are alternative ways of achieving individual cow information at a single point in time before drying off, but they don't give any information on mastitis control throughout the lactation. The farm-level information that should be available includes mastitis events and treatments, CellCheck Farm Summary reports (in herds that milk record), milk quality reports, culture and/or antibiotic susceptibility records.

The selection of a particular selective dry-cow strategy also depends on the level of on-farm risk present in the herd throughout the previous lactation and at drying off, meaning that each farm will require a bespoke plan that should be devised in consultation with the veterinary practitioner. Adopting a selective approach to dry cow treatment will require both a change in mindset and practice for many Irish farmers and their prescribing veterinary practitioners. To facilitate this change, CellCheck, the Irish national mastitis control programme, developed a Dry Cow Consult a number of years ago. The objective of this Dry Cow Consult was to enable farmers to engage with their nominated vet, to develop farm-specific selective dry cow treatment (SDCT) plans, where appropriate.

ELIGIBILITY CRITERIA

Dry Cow Consults have been delivered as part of the Targeted Advisory Service on Animal Health (TASAH) funded through the Rural Development Plan 2014-2022. Veterinary practitioners must first complete relevant training, delivered through the CellCheck programme, to be eligible to deliver a consult. To be considered eligible for the free service a dairy farmer must meet the following criteria:

- Average bulk milk tank somatic cell count (SCC) for the previous 12 months <200,000 cells/mL



Key winter housing questions to address in relation to mastitis control.

- At least four whole herd milk recordings in the previous 12 months.

The purpose of the eligibility criteria was to identify farms that have some evidence of good mastitis control, as well as the necessary information and records to support decision-making and planning. During the three-hour consult, milk recording results and farm records are reviewed, as well as current practices when drying off cows and dry cow management, to help identify and resolve any potential risks associated with a selective dry cow strategy. Animals potentially suitable for receiving internal teat sealant only at drying off are identified. Participants in a Dry Cow Consult are also invited to register for a Dry Cow Review the following year.

RECORDING THE RESULTS

Whole herd milk recording results, for the last recording before drying off and the first recording of the following lactation, are uploaded from participating herds. Treatment records (both dry cow and in-lactation) are also requested, although are not always received for all participating herds. Initial analysis showed that, although there was a slight increase in early lactation SCC in the group of cows treated exclusively with teat sealer at drying off, average SCC levels remained low (<200,000 cells/ml) and similar to those of cows treated with intramammary antibiotics at drying off.

The CellCheck-recommended selection criteria for administering teat seal only at drying off were not always followed, with some farmers still including a small number of cows with a history of high SCC (>200,000 cells/ml) in this group. Results also showed that, while a considerable number of animals from each herd were eligible for SDCT, farmers were still reluctant to fully engage in this practice and maintained a cautious attitude.

In all, 19 telephone interviews were carried out with the participants of the consult service in 2018. Audio recordings were professionally transcribed verbatim and analysed qualitatively using an inductive thematic analysis and identified six barriers and six facilitators to implementing SDCT. Barriers to SDCT included a significant fear of a resulting rise in mastitis incidence, infrastructural limitations, a perceived lack of availability of preventative advice, as well as peer influence.

Facilitators to implementing SDCT included adopting a gradual approach to SDCT, regulatory pressure, high standards of farm hygiene, education and the use of targeted veterinary consults. Despite cited negative influences, peer influence can be utilised to encourage the farming community to change this particular behaviour.

EFFICACY OF SELECTIVE DRY COW THERAPY

Selective dry cow therapy has proven to be effective when used in cows with an adequate udder health status. While SDCT is now a requirement under current Veterinary Medicines Regulations, for most dairy farmers in Ireland it will require a change in mindset and practice. Educating farmers on good drying-off routines is essential in order to build confidence and create awareness about the safety of moving to SDCT. Though there are challenges to face, engagement with professional support will be important and can be successfully facilitated through structures such as the Dry Cow Consult. Greater engagement in milk recording will also help with mastitis control and identifying cows that are suitable for SDCT at drying off. To get the best value from milk recording, the first of the recommended six milk recordings should be done within two months of calving and the last recording within a month of drying off with the remainder spread out during the rest of the lactation. A wide range of resources are available to help farmers analyse the milk recording information and should be availed of, as failure to act on the results limits the potential benefits from milk recording.

A new CellCheck dashboard has also been developed and once the farmer has given permission to their veterinary practitioner or advisor, they can view the milk records on the ICBF website, making it easier to develop a mastitis control plan. The more information gathered on each cow during the lactation, the better prepared we will be when it comes to cow selection for SDCT at the end of their lactation and also the more efficient and profitable our herds will be.

A recent international review of SDCT across many countries identified herd characteristics that contribute to improved SDCT outcomes and these include a relatively low bulk tank SCC, low contagious mastitis prevalence, hygienic drying-off practices, good housing facilities post drying off, good record keeping and veterinary support. Correct identification of infected cows or quarters throughout lactation, is also important for successful implementation of SDCT. When establishing an optimal SCC threshold for SDCT selection, it is important to consider that lowering the SCC threshold will increase the sensitivity of diagnosing an existing intramammary infection, but concurrently increase the proportion of false positives. We have recently completed a large number of on-farm events and were encouraged to see that a large proportion of farmers that attended these have been successfully practicing SDCT for the last number of years. Hopefully as confidence increases among other farmers, following initial positive experiences, these trends will continue.



Reader Questions and Answers

1. WHICH OF THE FOLLOWING STATEMENTS IS CORRECT:

- A. Blanket dry cow therapy, involves treatment of all quarters at dry-off.
- B. Blanket dry cow therapy involves treating some of the quarters at dry-off with an intra-mammary antibiotic tube.
- C. Selective dry cow therapy results in greater use of antibiotics.
- D. Following the new veterinary medicine regulation antibiotics can be used to prevent new infection.

2. WHICH OF THE FOLLOWING STATEMENTS IS CORRECT:

- A. The California Mastitis Test gives individual cow information for the entire lactation.
- B. Adopting a successful SDCT protocol is determined by all of the following, individual cow information, herd level information and level of on-farm risk.
- C. All cows are suitable for SDCT.
- D. There is no risk involved in SDCT and farmers are encouraged to just do it.

3. WHICH OF THE FOLLOWING STATEMENTS IS INCORRECT:

- A. Farmers are advised to do at least six milk recordings per lactation.
- B. To get the best information from milk recording the first should be completed within 60 days of calving.
- C. There is no need to collect any information during a cow's lactation.
- D. Greater engagement in milk recording helps with mastitis control and identifying cows that are suitable for SDCT at drying off.

4. WHICH OF THE FOLLOWING STATEMENTS IS INCORRECT:

- A. Excellent hygiene and drying off technique, correct cow selection and proper housing during the dry period are essential to ensure a successful outcome when using SDCT.
- B. The same SCC threshold used to select cows suitable for SDCT can be used across all farms.
- C. It is important to correctly mark and record any cow that receives an antibiotic dry cow tube.
- D. SDCT has been successfully adopted across many countries over the last number of years.

ANSWERS: 1A; 2B; 3C; 4B.