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Guide to safe implementation of selective dry cow treatment

Antibiotics are essential medicines, both for humans and animals, but their ongoing use contributes to the development of antibiotic resistance. Therefore, antibiotics must be used with considerable care to protect public (and animal) health into the future.

Prior to 2022, it has been common practice to treat all quarters of all cows with an antibiotic tube at drying-off. This is known as a blanket dry-cow strategy. However, new veterinary medicine legislation (2019/6) is now in place, requiring a different approach to the prescribing of veterinary medicines. Under this new legislation, which your veterinary practitioner is obliged to adhere to, only those animals with diagnostic evidence or a clinical diagnosis of infection at drying off should receive an antibiotic. This is known as a selective dry-cow strategy.

The CellCheck Technical Working Group (TWG) of Animal Health Ireland have prepared detailed science-based guidelines to assist in the move to a selective dry-cow strategy on Irish farms.

With selective dry-cow therapy, the selection of cows suitable to be administered either teat sealant alone at drying-off, or teat sealant and antibiotics, should be based on both individual animal- and farm-level information, which your prescribing veterinary practitioner will need to review. This includes:

- Information about the risk of mastitis in each cow, generally available through routine milk recording (or other methods that are, or may become, available to objectively monitor mastitis). If routine milk recording is not currently being done on your farm:
 - » For this lactation, it is recommended that either a one-off milk recording, a California Mastitis Test or a milk culture from each cow around the time of drying off should be completed.
 - » In future lactations, milk recording should be introduced as a routine practice.
- Information about mastitis on the farm, including mastitis events and treatments, CellCheck Farm Summary reports (in herds that milk record), milk quality reports, culture and/or antibiotic susceptibility records.

This information will help your prescribing veterinary practitioner to understand the mastitis situation in the herd (throughout the previous lactation and at drying-off), and the likelihood that individual cows are infected at the time of drying-off.



Herds at lower mastitis risk

- Where there is evidence of optimal mastitis control, for example, a bulk milk somatic cell count (SCC) consistently below 200,000 cells/mL during lactation and a new infection rate during the dry period of less than 10%.
- Where good practices and high levels of hygiene can be achieved at drying off, throughout the dry period and at calving.
- Where the herd keeper or owner is willing to engage with their prescribing veterinary practitioner in decision-making around their selective dry-cow strategy.

In these herds, the following is a suggested approach to cow-level selection for dry-off treatment:

- Cows at low risk of infection at drying-off (as a guide, this could include cows with SCC consistently below 100,000 cells/mL, and no history of clinical mastitis, throughout the lactation) may be suitable for internal teat sealant only at drying-off, provided high levels of hygiene can be achieved during administration.
- For other cows, with evidence of infection at drying-off, internal teat sealant as well as an antibiotic tube should be considered.

A guide to prescribing and mastitis control in lower risk herds is presented later.

Herds at higher mastitis risk

In herds at higher mastitis risk, such as those with a bulk milk SCC above 200,000 cells/mL at any point during the lactation, selective dry-cow therapy is more challenging. In these herds, mastitis infection risk is higher, and it can be difficult to accurately distinguish infected and non-infected cows at the time of drying-off. *A guide to prescribing and mastitis control in higher risk herds is presented later.* In these herds, it is critical that the farmer work closely with their veterinary practitioner and other service providers to rapidly and sustainably improve on-farm mastitis control. Support is available from Animal Health Ireland and partners to assist with this.

In summary

- Your prescribing veterinary practitioner will use cow- and herd-level infection to guide their decision-making, so that antibiotics at drying-off are only administered to those animals with diagnostic evidence or a clinical diagnosis of infection.
- In exceptional circumstances, your prescribing veterinary practitioner can prescribe antibiotics to an individual animal without evidence of infection at drying-off, but only – for that animal – if the risk of infection is high and the welfare implications are severe.
- As outlined in the legislation, antibiotics must not be used on any farm ‘to compensate for poor hygiene, inadequate animal husbandry or lack of care or to compensate for poor farm management’.
- A selective dry-cow strategy is not without risk, hence the importance of a detailed review of all farm and individual animal-level information by your prescribing veterinary practitioner.

LOWER RISK HERDS

PRESCRIBING DECISIONS BY YOUR VETERINARY PRACTITIONER

Mastitis is under good control with consistently low levels of infection*

MILK RECORDING	NO MILK RECORDING
<ul style="list-style-type: none"> • Individual animal information of cow level SCC readings from previous recordings to individually assess specific animals with clinical or subclinical mastitis as well as an ongoing assessment of all lactating animals. • Available herd level information of all the antimicrobial use on the farm including records of mastitis events, treatments and related outcomes, ICBF/CellCheck reports, bulk tank SCC trends, mastitis pathogen challenges and antibiotic outcomes (if available) to provide a detailed and thorough understanding of the farm, the herd(s), staff, facilities and farm management. • European prescribing guidelines click here. 	<ul style="list-style-type: none"> • Individual animal information where the following should be used, in the absence of milk recording data, to identify individual cows that have evidence of infection requiring antibiotic treatment: <ul style="list-style-type: none"> » A single milk recording from each cow 4-6 weeks before drying off. » Individual milk culture results, or » Individual CMT, as carried out by the prescriber. • Available herd level information of all the antimicrobial use on the farm including records of mastitis events, treatments and related outcomes, bulk tank SCC trends, mastitis pathogen challenges and antibiotic outcomes (if available) to provide a detailed and thorough understanding of the farm, the herd(s), staff, facilities, farm management. • European prescribing guidelines click here. • It is important to commence whole herd milk recording from the start of the next lactation.

LOWER RISK HERDS

MASTITIS CONTROL DECISIONS

MILK RECORDING	NO MILK RECORDING
<p>Seek professional support to maintain optimal mastitis control.</p> <p>At the time of dry-cow prescribing, your veterinary practitioner should:</p> <ul style="list-style-type: none"> • Conduct a review of treatment of in-lactation cases in the past season. • Develop and agree a standard operating procedure for the treatment of in-lactation cases in the following season. 	<p>It is important to commence whole herd milk recording from the start of the next lactation.</p> <p>Seek professional support to maintain optimal mastitis control.</p> <p>At the time of dry-cow prescribing, your veterinary practitioner should:</p> <ul style="list-style-type: none"> • Conduct a review of treatment of in-lactation cases in the past season. • Develop and agree a standard operating procedure for the treatment of in-lactation cases in the following season.

HIGHER RISK HERDS - All other herds PRESCRIBING DECISIONS BY YOUR VETERINARY PRACTITIONER

MILK RECORDING	NO MILK RECORDING
<ul style="list-style-type: none"> • Individual animal information of cow level SCC readings from previous recordings to individually assess specific animals with clinical or subclinical mastitis as well as an ongoing assessment of all lactating animals. • Available herd level information of all the antimicrobial use on the farm including records of mastitis events, treatments and related outcomes, ICBF/CellCheck reports, bulk tank SCC trends, mastitis pathogen challenges and antibiotic outcomes (if available) to provide a detailed and thorough understanding of the farm, the herd(s), staff, facilities and farm management. • European prescribing guidelines click here. • Where the risk of new infection over the dry period is unacceptable, your prescribing veterinary practitioner may consider that prophylactic or preventative use of dry-cow antibiotic is justified to protect cow welfare but it is critical that the risk factors are addressed and resolved prior to the next drying off period. 	<ul style="list-style-type: none"> • Individual animal information where the following should be used, in the absence of milk recording data, to identify individual cows that have evidence of infection requiring antibiotic treatment: <ul style="list-style-type: none"> » A single milk recording from each cow 4-6 weeks before drying off. » Individual milk culture results, or » Individual CMT, as carried out by the prescriber. • Available herd level information of all the antimicrobial use on the farm including records of mastitis events, treatments and related outcomes, bulk tank SCC trends, mastitis pathogen challenges and antibiotic outcomes (if available) to provide a detailed and thorough understanding of the farm, the herd(s), staff, facilities and farm management. • European prescribing guidelines click here. • Where the risk of new infection over the dry period is unacceptable, your prescribing veterinary practitioner may consider that prophylactic or preventative use of dry-cow antibiotic is justified in order to protect cow welfare. In these exceptional cases, the risk factors should be addressed with your veterinary practitioner and resolved prior to the next drying off period. • A comprehensive whole milk recording programme should commence at the start of the next lactation.

HIGHER RISK HERDS MASTITIS CONTROL DECISIONS	
MILK RECORDING	NO MILK RECORDING
<p>You should engage with your veterinary practitioner, Co-op Milk Quality Advisor, Milking Machine Technician or Teagasc Advisor to resolve any issues on-farm to ensure effective mastitis control. Each of the following will be needed:</p> <ul style="list-style-type: none"> • A detailed understanding of the factors (including cause(s) and driver(s)) contributing to suboptimal mastitis control based on a detailed on- and off-farm investigation. • A plan developed and agreed with you to robustly and sustainably address each of these factors, including agreed actions and timelines and objective measures to monitor progress. • Ongoing and regular assessment and review using professional and CellCheck supports available to you. <p>At the time of dry-cow prescribing, your veterinary practitioner should:</p> <ul style="list-style-type: none"> • Conduct a review of treatment of in-lactation cases in the past season. • Develop and agree a standard operating procedure for the treatment of in-lactation cases in the following season. 	<p>It is important to commence whole herd milk recording from the start of the next lactation.</p> <p>You should engage with your veterinary practitioner, Co-op Milk Quality Advisor, Milking Machine Technician or Teagasc Advisor to resolve any issues on-farm to ensure effective mastitis control. Each of the following will be needed:</p> <ul style="list-style-type: none"> • A detailed understanding of the factors (including cause(s) and driver(s)) contributing to suboptimal mastitis control based on a detailed on- and off-farm investigation. • A plan developed and agreed with you to robustly and sustainably address each of these factors, including agreed actions and timelines and objective measures to monitor progress. • Ongoing and regular assessment and review using professional and CellCheck supports available to you. <p>At the time of dry-cow prescribing, your veterinary practitioner should:</p> <ul style="list-style-type: none"> • Conduct a review of treatment of in-lactation cases in the past season. • Develop and agree a standard operating procedure for the treatment of in-lactation cases in the following season.