



Recommendations for Selective Dry Cow Therapy Towards Global Harmonization of Antimicrobial Stewardship in the Dairy Sector

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- Udder Health

Introduction

Selective Dry Cow Therapy (SDCT) has become a cornerstone of antimicrobial stewardship in dairy production, particularly following the implementation of EU Regulation (EU) 2019/6, which prohibits prophylactic use of antibiotics in livestock. Since January 2022, this regulation has transformed Dry Cow Therapy across Europe from a preventive, blanket treatment approach to a selective, evidence-based practice. While this represents a major advancement in antimicrobial reduction, it has also highlighted significant gaps in knowledge, data consistency, and practical implementation across the dairy sector.

These gaps include: (1) the lack of harmonized definitions of cow- and herd-level eligibility for SDCT; (2) inconsistent use of somatic cell count (SCC) thresholds and diagnostic tools; and (3) the absence of globally accepted protocols integrating management, hygiene, and monitoring standards.

The International Dairy Federation (IDF) initiative described here aims to fill these gaps through the development of science-based, globally harmonized recommendations that

ensure udder health and milk quality while reducing antibiotic reliance. The work aligns with UN Sustainable Development Goals (SDG 3, 12, and 15) by promoting responsible antimicrobial use, sustainable dairy farming, and improved animal welfare.

Material & methods

The project adopts a structured, evidence-based methodology combining a comprehensive literature review, expert consultation, and comparative gap analysis across existing national and international frameworks. The study is carried out under the IDF Standing Committee on Animal Health and Welfare (SCAHW), and selected global experts in dairy management, veterinary medicine, and policy.

The initial phase of the project involved a systematic gap analysis to map current knowledge and practice discrepancies related to SDCT.

Key steps included:

- Data compilation from peer-reviewed literature, national guidelines, and private assurance schemes.
- Comparative assessment of existing SDCT frameworks to identify variations in eligibility criteria, diagnostic thresholds, antimicrobial decision tools, and risk management procedures.

The gap analysis revealed several critical inconsistencies:

- Divergent SCC thresholds for treatment eligibility (ranging from 100,000 cells/mL to 200,000 cells/mL).
- Incomplete alignment of diagnostic methods (use of CMT, bacteriology, or electronic SCC data).
- Uneven access to veterinary support and data systems across regions.
- Absence of a unified decision-support framework integrating udder health monitoring, antimicrobial stewardship, and economic sustainability.

These gaps underscored the need for a harmonized, evidence-driven approach adaptable to both high-input and emerging dairy systems.

A structured literature review was conducted. Inclusion criteria focused on:

- Randomized or observational studies assessing SDCT efficacy.
- National policy and guideline documents related to antimicrobial use in dairy.

- Meta-analyses evaluating the impact of SDCT on mastitis incidence, SCC, and antimicrobial reduction.

3. Expert Consensus Process

Findings from the gap analysis and literature review will be presented to an IDF Expert Working Group representing academia, veterinary associations, and dairy industry stakeholders. The group develop recommendations across three key dimensions:

1. Eligibility Criteria: Definition of herd-, cow- and quarter-level indicators.
2. Implementation Guidelines: Hygienic procedures, sealant use, monitoring frequency, and data recording.
3. Performance Evaluation: Indicators for post-calving infection rates, antimicrobial usage (DDDA metrics), and herd health outcomes.

The final product will be peer-reviewed and published as an IDF Bulletin, with open access to maximize global uptake.

Results & Discussion

Preliminary findings from the gap analysis show that SDCT, when properly applied, can safely reduce antimicrobial use by 30–70%, maintaining udder health at levels equivalent to or better than blanket therapy. However, implementation success is highly dependent on herd health monitoring infrastructure, farmer training, and data accuracy.

Countries with centralized recording systems (e.g., Denmark, the Netherlands) have achieved robust adoption and consistent outcomes, whereas regions lacking structured data collection face challenges in identifying suitable cows for selective therapy. Moreover, the inconsistent definition of “low-risk cows” contributes to confusion and potential udder health risks.

The IDF project’s harmonized framework seeks to:

- Establish a risk-based decision tool integrating SCC, infection history, parity, and management factors.
- Promote minimum data standards for eligibility determination.
- Provide best-practice protocols for dry-off hygiene, sealant use, and monitoring.
- Encourage international alignment with NMC and OIE antimicrobial stewardship objectives.

This harmonization will support global comparability of antimicrobial reduction data and ensure that selective approaches maintain high milk quality and animal welfare standards.

Conclusion

The IDF project “*Recommendations for Selective Dry Cow Therapy (SDCT)*” provides a critical step toward global harmonization of antimicrobial use at the dry period. By addressing scientific and practical gaps through systematic analysis and expert consensus, the project will deliver a globally relevant, evidence-based framework for SDCT.

The resulting IDF Bulletin will guide dairy professionals, veterinarians, and regulators in adopting selective therapy responsibly balancing antimicrobial reduction with udder health and farm productivity. The recommendations will reinforce the dairy sector’s commitment to sustainable farming and responsible medicine use worldwide.

References

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