



Control and Detection of Antimicrobial Residues in Milk and Dairy Products

IDF Factsheet – April 2014

Antimicrobials are used in veterinary medicine to treat infectious diseases in animals caused or complicated by microorganisms, mainly bacteria, or to prevent the development or spread of infection in healthy animals.

Necessity for a prudent use of antimicrobials in animal production

The use of antimicrobials in animal production is meaningful in maintaining or restoring animal health and welfare. However, a prudent use is required to avoid residues and development of antimicrobial resistance. The International Dairy Federation (IDF) has developed specific guidance on the prudent use of antimicrobials in dairy production.¹

Antimicrobial residues can potentially enter the food chain, especially if food-producing animals are treated without proper precautions being applied, or if biological conditions in animals show major deviations from the norm.

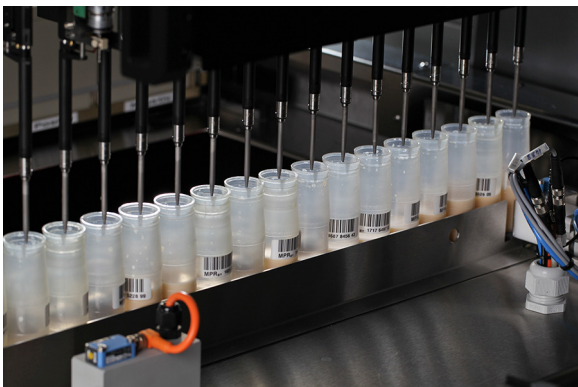


Photo Credit: MPR

Consumers have a legitimate interest in residue-free foods, since residues may have a negative health effect. Furthermore, antimicrobial residues can lead to the formation or selection of resistance mechanisms in microorganisms and may also have an allergenic potential.

Legislation on residue levels

There is extensive legislation on the registration and the administration of antimicrobials in animal production. Furthermore, substance-specific Maximum Residue Limits (MRLs), or Safe Levels, are stated for various animal products in national and international legislation. These are thresholds where action has to be taken to safeguard food safety.

The two pillars in risk minimization

Minimizing the risk of antimicrobial contamination in milk and milk products is based on two pillars:

1. Avoiding antimicrobial contamination of raw milk by adequate management practices and a prudent use of antimicrobials, i.e. preventive measures to keep animals healthy and strictly keeping to prescribed withholding times in case of treatment.

¹ IDF Guide to Prudent Use of Antimicrobial Agents in Dairy Production (2013)

2. Effective screening with suitable analytical methods and procedures to detect eventual contaminated batches throughout the dairy chain as early as possible and discarding these. Screening systems are most effective where an integrated chain management approach and proactive measures are applied.

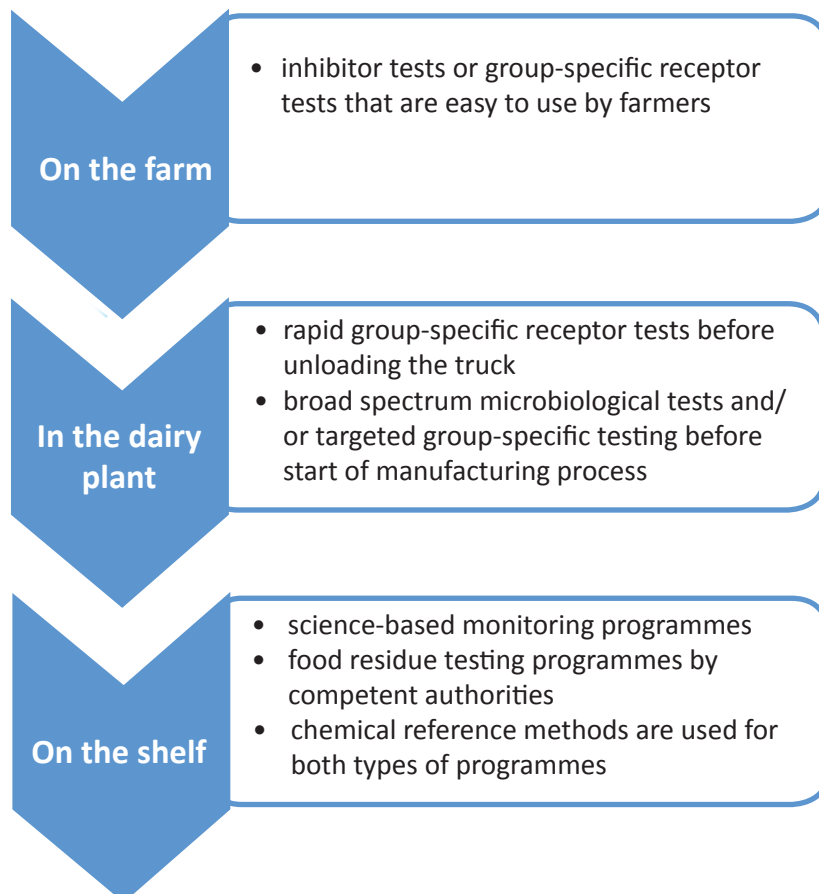


Photo Credit: Fotalia/MPR

Help in the use of analytical methods

IDF, in partnership with ISO, standardizes procedures for antimicrobial residue testing, develops guidance on their application and communicates new developments to the stakeholders in the dairy chain. These outputs contribute to the safety and quality of milk and dairy products worldwide.

Schematic presentation of IDF/ISO guidance to detect and control antimicrobial residues in the dairy value chain:



For Further Information

- ISO 13969 | IDF 183 - Milk and milk products - Guidelines for a standardized description of microbial inhibitor tests
- ISO 18330 | IDF 188 - Milk and milk products - Guidelines for the standardized description of immunoassays or receptor assays for the detection of antimicrobial residues
- ISO/TS 26844 | IDF/RM 215 - Milk and milk products - Determination of antimicrobial residues - Tube diffusion test
- Current situation and compilation of commercially available screening methods for the detection of inhibitors/antibiotic residues in milk. Bulletin of the IDF 442/2010
- IDF Guide to Prudent Use of Antimicrobial Agents in Dairy Production – 2013

Coming Soon...

- Bulletin of the IDF - Strategies for detecting antibiotic residues in milk: guidance on the application of screening and confirmatory methods in integrated dairy chain management.
- Bulletin of the IDF - Detection of inhibitors and antimicrobial residues in milk and dairy products by screening methods – Guidance on preparation of the test portion.

