



# Guidance on Antimicrobial Resistance from the Dairy Sector

## Introduction

This document describes what antimicrobial resistance (AMR) is, outlines dairy sector guidance on prudent use of antimicrobials and defines the global dairy position on AMR. These initiatives complement the many animal health, animal welfare and food safety practices that the dairy sector has in place to deliver safe and secure dairy products to global consumers.

## What is AMR?

Antimicrobials are medicines used to treat infections, particularly those caused by bacteria, to maintain human and animal health. Some bacteria have developed full or partial resistance to various antimicrobial agents. Resistance occurs naturally in bacteria through spontaneous mutation or natural selection, but can be accelerated due to incorrect use of antibiotics in human medicine, animal medicine, and plant medicine. This phenomenon is known as AMR.

AMR is important, because it limits the range of antimicrobial agents that can be used to treat infections effectively. This can mean an increase in the prevalence and severity of disease in humans and animals, and impacts animal welfare, human health, food safety and food security. It may result in additional costs associated with treating infections due to the requirement to use newer, higher cost or multiple antimicrobials.

## Global dairy position

One of the roles of the International Dairy Federation is to encourage good animal health and welfare to minimize the need for antimicrobial use. The IDF promotes prudent and responsible use of antimicrobial agents within the global dairy industry to ensure that they continue to be effective and useful for curing diseases in animals. Use of antimicrobials is only part of an animal health management programme that aims to limit disease in animals and improve animal welfare. Early detection of disease allows early intervention and this minimises the need to use antimicrobials. Improved infection prevention and control measures limit disease spread and progressively reduce the usage of antimicrobial agents. The dairy sector will continue to evaluate potential strategies to decrease antimicrobial agents' usage as they may arise.

## Management of AMR

AMR is not constrained by geographic or human/animal borders. Resistant bacteria arising either in humans, animals or the environment may spread from one to the other, and from one country to another. Limiting the development of AMR requires the implementation of global strategies by public health, veterinary and environmental authorities in all countries of the world. At a national level, with respect to animal health services, these include:

- Communication and awareness-raising of all stakeholders involved
- Adequate legislation on the prescription and use of antimicrobial agents in humans and animals
- Good governance of national human and animal health systems
- A well-trained veterinary profession regulated by law and supervised by proper regulatory authorities
- Effective compliance management supporting responsible and prudent use strategies

### Objectives of responsible and prudent use

Responsible and prudent use of antimicrobials includes implementing practical measures and recommendations intended to improve animal health and welfare while preventing or reducing the selection, emergence and spread of antimicrobial-resistant bacteria in humans and animals. Such measures include:

- Ensuring the rational use of antimicrobial agents in animals (in particular, Critically Important Antimicrobials) with the purpose of optimising their efficacy, safety and usefulness in animal and human medicine
- Complying with ethical obligations and the economic need to keep animals in good health
- Preventing or reducing the transfer of resistant micro-organisms within animal populations, the environment and between animals and humans
- Protecting consumer health by ensuring the safety of food of animal origin with respect to residues of antimicrobial agents

- Identifying and addressing gaps in the food system

### Guidelines for prudent and responsible use

#### Dairy farmers:

- Support a herd with optimal resistance to disease
- Set up biosecurity measures to prevent introduction of diseases and resistant bacteria onto the farm
- Implement an effective herd health management programme
- Set up cleaning and disinfection strategies to prevent spread of diseases
- Implement a management programme for chronically infected cows
- Ensure the use of antibiotics is based on adequate diagnostics evaluation
- Use all antimicrobial agents and veterinary medicines as directed
- Ensure milking routines do not injure the animals or introduce contaminants into milk
- Ensure animal feed and water are of suitable quantity and quality
- Ensure animals are free from discomfort, pain, injury and disease
- Avoid feeding milk-containing residues to calves or other animals on the farm
- Avoid preventative use of antimicrobials
- Support the implementation of strategies leading to the eradication of specific antimicrobial agents

- Ensure that the withdrawal times set for the antimicrobials are respected before the milk from treated animal is used, supported by strategic residue testing of milk

At that level, tests can target only one or a few substances but need to be applicable for single cow, on-field testing. The performances of these testing tools need to be comparable to those used at other levels of the supply chain.

#### Veterinary services – veterinarians and veterinary para-professionals:

- Ensure appropriate veterinarian animal healthcare decisions
- Ensure reliable diagnosis and prevention of diseases
- Assess the requirements for antimicrobial treatment
- Consider alternatives to antimicrobial treatment
- Avoid treatment of in-curable animals as well as self-curing diseases with antimicrobials
- Select an appropriate antimicrobial agent and formulation for the circumstances
- Give clear advice on the appropriate use of the antimicrobial product, including the dose, rates and length of treatment, on the need to observe withholding periods, and on the need to record details of treatments administered and products used
- Promote awareness of AMR amongst the veterinary profession and with farmers

- Declare and register at national level (national authorities) all drugs prescribed on farm

#### Food processing companies:

- Provide clear specifications for raw materials
- Set up quality management systems
- Apply HACCP principles for the management of AMR-related hazards, including antimicrobial residues and antimicrobial resistance organisms
- Audit compliance with use requirements
- Use quick test procedures (with an appropriate antimicrobial scope) to make sure milk containing residues are detected before processing

#### Pharmaceutical companies:

- Provide the necessary information to allow the scientific assessment of antimicrobial products for efficacy and safety at any level of the supply chain
- Provide the necessary information about conditions of use, including duration of the withholding period
- Only supply approved antimicrobial agents through regulated channels
- Ensure that packaging labels clearly articulates correct use and dosage information
- Monitor post-market product performance

### Regulators:

- Assess the suitability of antimicrobial agents for use with dairy animals prior to registration
- Implement controls to avoid accidental introduction of antimicrobial agents from imported food and feed on farm, as different substances may be allowed for use in different countries
- Implement controls over the supply and use of antimicrobial agents on dairy farms, including ensuring veterinarians and veterinary para-professionals are well trained
- Monitor for adverse outcomes of antimicrobial use, including antimicrobial resistance
- Provide a regulatory regimen that ensures and monitors prudent use of antimicrobials
- Develop and implement monitoring and surveillance systems using wide screening tests applicable to different levels of the chain (farmers, veterinarians, food processors and dairy laboratories, etc.)
- Guarantee transparency along the supply chain, making public the list of approved drugs, to be prescribed and used effectively for treatment of cows, as well as quantities and purpose of use

### Resources

The FAO Action Plan on Antimicrobial Resistance 2016-2020, 2016

IDF Guide to Prudent Use of Antimicrobial Agents in Dairy Production, 2013

OIE World Organisation for Animal Health, Antimicrobial Resistance Fact Sheet, 2015

OIE Terrestrial Animal Health Code, Chapter 6.9, Responsible and Prudent use of Antimicrobial Agents in Veterinary Medicine, June 2016

OIE List of Antimicrobial Agents of Veterinary Importance

Critically Important Antimicrobials for Human Medicine, 2016

WHO Global Principles for the Containment of Antimicrobial Resistance in Animals Intended for Food, WHO/CDS/CSR/APH/2000.4, June 2000

WHO, FAO and OIE unite in the fight against Antimicrobial Resistance

Control and Detection of Antimicrobial Residues in Milk and Dairy Products. IDF Factsheet – April 2014

Bulletin of the IDF No. 442/2010 - Current situation and compilation of commercially available screening methods for the detection of inhibitors/antibiotic residues in milk



**International Dairy Federation**  
[www.fil-idf.org](http://www.fil-idf.org)