



ID der Kurzfassung : 381

Beyond antibiotics: The impact of reduced use and alternative interventions on livestock welfare

Inhalt

The global rise of antimicrobial resistance (AMR) poses a major One Health challenge, threatening animals, humans, and the environment. Antimicrobial use (AMU) is a key driver of AMR, particularly in high-density livestock production systems. However, evidence on the animal welfare implications of AMU reduction strategies and non-antibiotic interventions remains fragmented.

This scoping review aimed to map the extent and characteristics of available literature on reduced antibiotic use and non-antibiotic interventions in global livestock production, focusing on reported animal welfare outcomes and their implications across the human-animal-environment interface.

Following the Joanna Briggs Institute (JBI) methodology, systematic searches were conducted in MEDLINE, Scopus, and Web of Science Core Collection, complemented by regulatory grey literature, including evidence published from 2015 onwards. Two-stage screening by independent reviewers applied a Population-Concept-Context framework; data were extracted using DistillerSR, and results were reported in accordance with PRISMA-ScR.

This review provides a synthesized evidence base on the effects of reduced antibiotic use and non-antibiotic interventions on animal welfare in food-producing livestock, identifies key knowledge gaps at the human-animal-environment interface, and supports researchers, veterinarians, and policymakers in designing sustainable evidence-informed AMR mitigation strategies within a One Health framework.

Keywords

Animal Welfare; Antibiotic Use Reduction; Non-Antibiotic Interventions; Antimicrobial Resistance; Food-Producing Livestock; Scoping Review

Registration ID

OHS26-27

Professional Status of the Speaker

PhD Student

Junior Scientist Status

Yes, I am a Junior Scientist.

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Track Klassifizierung: Agriculture & Food Systems

Typ des Beitrags: Poster presentation

Eingereicht von **WESTERMANN, Melanie** <melanie.westermann@lmu.de> am **Donnerstag, 18. Juni 2026**