

S06(T)-PP-4

Integrating bacteriological milk analysis into decision support tools for reducing the use of antimicrobials on dairy farms

Christa Egger-Danner¹, Walter Obritzhauser², Martin Mayerhofer¹, Marlene Suntinger¹, Clair Firth², Klemens Fuchs³, Annemarie Kaesbohrer², Birgit Fuerst-Waltl⁴, Thomas Wittek⁵

¹ZuchtData EDV-Dienstleistungen GmbH, Vienna, Austria

²Institute of Veterinary Public Health, University of Veterinary Medicine, Vienna, Austria

³Data, Statistics and Risk Assessment, Zinzendorfgasse 27/1, 8010 Graz, Austria, Austrian Agency for Health and Food Safety (AGES), Vienna, Austria

⁴Department of Sustainable Agricultural Systems, Division of Livestock Sciences, University of Natural Resources and Life Sciences, Vienna, Austria

⁵University Clinic for Ruminants, Veterinärplatz 1, 1210 Vienna, Austria, University of Veterinary Medicine, Vienna, Austria

Due to the increasing emergence of antimicrobial resistance on a global scale, the use of antibiotics in livestock production is an issue of growing concern. In an observational study in 249 dairy herds (6475 cow-years) in Austria, antimicrobial treatments, results of bacteriological milk cultures and various risk factors for mastitis were analysed. Standardized treatment data provided by 17 different veterinary practices showed diverse patterns of antimicrobials used for the treatment of udder diseases and for drying-off. Bacteriological analyses of quarter milk samples were carried out by six laboratories. Routine methods of pathogen detection, as well as the documentation and electronic transmission of the results of bacteriological milk cultures, were harmonised across the laboratories. Additionally, farm management information related to udder health management was collected. Management tools were developed to allow pathogen information from cultures to be incorporated into routine milk performance reports and summaries of veterinary diagnoses. Technical interfaces to the central cattle database as well as the required data protection measures were also developed and are currently implemented in the routine throughout the system.

This study also showed that the pathogens isolated from mastitis milk were predominantly contagious on some farms and mainly environmental on others. These results support the need to develop tools which lead to a more evidence-based prudent use of antimicrobials when treating mastitis and drying off dairy cattle. Analyses across routinely-recorded production data, health data and antimicrobial use provide valuable information on disease-risks as well as the cow groups at risk. Management concerns and causes of disease can be identified more easily and eliminated at an earlier stage. Assessing the infection status of the udder, by means of milk culture results, can assist in decision-making processes regarding more precise control and prevention measures to improve udder health. The more information available to both the farmer and herd veterinarian, the more targeted a treatment can be. Standardization and integration of data, therefore, play a crucial role in the prudent use of antimicrobials on dairy farms.

Keywords: bacteriological results, antimicrobials, decision support, standardisation

