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Practical applications to improve udder health: A pathogen-specific approach

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Due to advancing technology on dairy farms, data integration is becoming increasingly important with regard to professional herd management. The aim of this study was to develop pathogen-specific udder health evaluations to upgrade the web- based udder health program and allow a proactive improvement of udder health in Austrian dairy herds. Investigations were preceded by data harmonization and the integration of the results of bacteriological milk cultures from laboratories into the Central Austrian Cattle Database. Udder health status can be assessed using various factors. In this study, test-day somatic cell count records, the veterinarian-reported diagnoses of acute and chronic mastitis, as well as the results of milk sample cultures, were combined. Research and development was based on data collected during an observational study conducted in cooperation with 250 farms, 17 veterinarians, 6 milk laboratories and research institutions. Almost 6,900 quarter milk samples collected from lactating dairy cows with (suspected) udder health problems were available. Pathogen-specific udder health reports on individual cows, current and previous herd infection reports, and parameters allowing benchmarking both within and across herds were developed and subsequently displayed in clearly arranged charts. Such evaluations provide vital information on farm-specific pattern(s) of pathogens annually or even over a predefined period of time. In addition, the combination of bacteriological data and routinely-recorded animal production and health data provide details on period(s) of risk of infection as well as the cow group(s) at risk. The pathogen-specific program allows a step-by-step analysis of animal and herd udder health status. Management issues and possible reservoirs of infection can therefore 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 leading to more precise control and prevention measures to improve udder health. One of the main challenges regarding this tool is the availability of quarter milk samples on a regular basis to ensure good quality and a high informative value of the evaluations. Apart from supporting management decisions, results of bacteriological milk cultures may also be used in genetic evaluations of udder health. Thus, practitioners need to be motivated and trained accordingly in order to achieve sufficient data availability. The more information available, the more targeted a treatment can be: this tool could, therefore, play a crucial role in the prudent use of antimicrobials on dairy farms. Results are in routine use in the herd management program within the Central Cattle Database in Austria and Germany (RDV) to assist veterinarians and farmers.

Keywords: pathogen-specific, bacteriological milk analysis, culture milk sample, udder health, herd management, preventive control