



UNIVERSITY OF LIFE SCIENCES "KING MIHAI I" FROM
TIMISOARA
"YOUNG PEOPLE AND MULTIDISCIPLINARY RESEARCH
IN APPLIED LIFE SCIENCES"



"Young people and multidisciplinary
research in applied life sciences"

16-17 November, 2023

PRECISION LIVESTOCK FARMING – USING DAIRY MANAGEMENT INFORMATION SYSTEM AFIMILK IN DAIRY FARMS

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Abstract

Due to the significant fluctuation in milk prices, energy costs, and feed prices in recent years, dairy farms have been subject to a broad range in profit levels. Using a real-time management informational system for each individual cow will be a helpful technique to monitor activities on modern dairy farms. The effectiveness of a cattle management information system used in a cattle farm from N-E Romania is described in this paper. The management system enables the farmer to make decisions based on the reports it provides, regarding the milk yield and electrical conductivity obtained in the milking parlour, the health and fertility of the cows based on data recorded by the pedometer attached to the cow's leg. Findings suggest that the system AfiMilk supports precision agricultural concepts and increases the performance of the cows and the efficiency of milk production and offers important data to support decision making, such as for breeding programs, nutrition and animal welfare. Dairy farms which adopt smart technologies may increase their competitiveness in the market and diversify the products they sell.

Keywords: dairy cattle, dairy farm management, management system. precision livestock farming

Introduction

Technologies are changing the shape of the dairy industry across the globe. Undoubtedly, these technologies will continue to change the way that dairy animals are managed.

This technological shift provides reasons for optimism for improvements in

both cow and farmer well-being moving forward. Precision dairy monitoring is the use of technologies to measure physiological, behavioral, and production variables on individual animals to improve management strategies and farm performance. Precision dairy monitoring technologies provide tremendous opportunities for improvements in individual animal management on dairy farms. Although technology provides opportunities to monitor cow health, comfort, and welfare, a producer must still practice good husbandry techniques. However, these technologies can only enhance a well-managed system, due to the increase in available information. Recent advances in the development of precision livestock technologies provides methods to monitor the health and

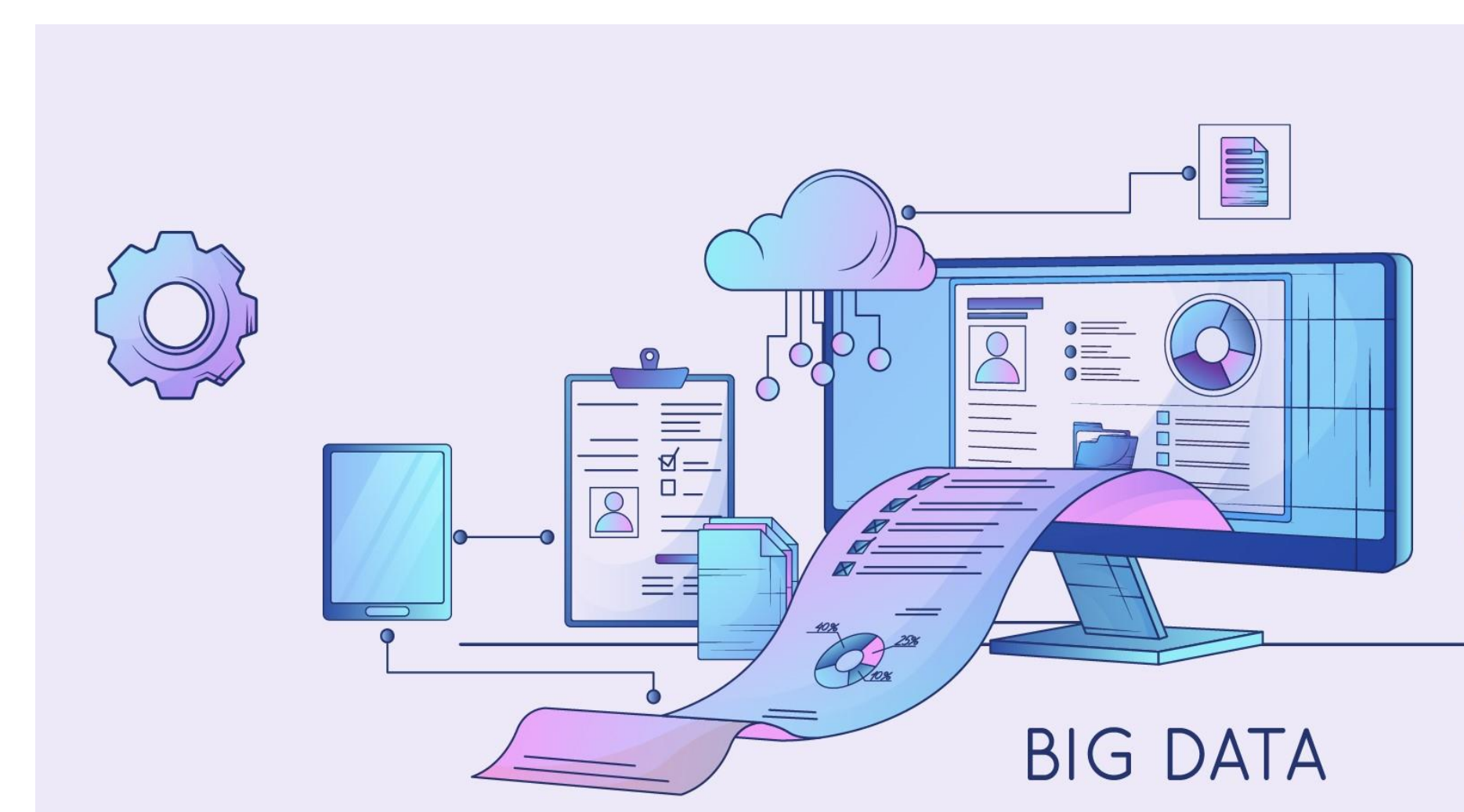
welfare of animals as well as key areas of production such as housing and feed efficiency, on data collection and analysis using different techniques to monitor livestock, such as on-animal sensors, thermal imaging and acoustic techniques.



Results and discussions

Wathes et al. (2008) described precision livestock farming as "the management of livestock production using the principles and technology of process engineering." Average dairy herd

size is increasing, making it more difficult for producers to devote adequate time to each animal and watching them all day every day is impossible. Consequently, small changes in production or efficiency can have a major impact on profitability. The resulting growth in competition has intensified the drive for efficiency, resulting in increased emphasis on business and financial management. The decision-making landscape for a dairy manager has changed dramatically, with increased emphasis on consumer protection, continuous quality assurance, natural foods, pathogen-free food, zoonotic disease transmission, reduction of the use of medical treatments, and the emergence of a new social ethic regarding the care of animals. Many of these changes can be attributed to tremendous technological progress in all facets of dairy farming, including genetics, nutrition, reproduction, disease control, and management.



Conclusions

Investment decisions should include a thorough, formal evaluation of profitability. The human factors to successful technology adoption cannot be overlooked. Excitement about technical capabilities must be balanced with consideration of implementation challenges and economic realities. Precision dairy monitoring technologies will never replace producer intuition and management, but they may enhance it by providing extra information to make better-informed decisions.