Transforming Dairy Farming in Romania

The Role of AI in Research and Precision Livestock Management

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Introduction

Artificial intelligence (AI) and precision livestock farming (PLF) technologies is transforming dairy farming globally by improving productivity, efficiency, and animal welfare. In Romania, small and medium-sized dairy farms face unique challenges, including financial constraints, limited digital literacy, and inadequate infrastructure, which hinder the adoption of these technologies

Objectives

- Explore how AI can address research and farm-management challenges in Romania
- Identify barriers & opportunities for sustainable adoption

Methodology

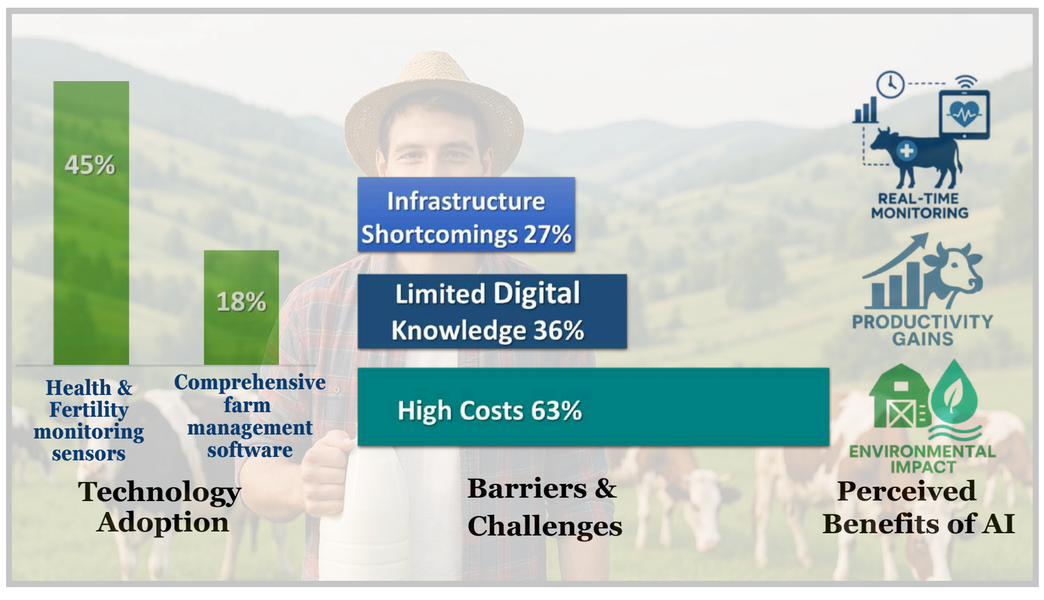
- Data collection: semi-structured interviews
- Respondents: 60% small farms, 40% medium farms; 8
- agrifood experts (vets, policy, tech providers) Focus areas: Current digital tech use; Barriers to adoption; Opportunities for AI integration

Results

Our interviews and survey data reveal a mixed picture of AI and PLF technology uptake among Romanian dairy farms. While nearly half of respondents are experimenting with sensor-based tools, comprehensive digital management platforms remain the exception rather than the rule. Farmers and experts alike point to a handful of key obstacles - but also to clear advantages - that will shape the next wave of adoption. Still, optimism prevails, stakeholders agreeing that AI may deliver real-time monitoring, measurable productivity gains, and smarter feed and waste management that attenuates environmental impact.

Analysis & Conclusions

- Our survey of Romanian dairy farms shows a clear first step toward digitalization: 45% of farmers now use health and fertility sensors to flag illness or estrus in real time, yet only 18% have adopted a full-suite farm-management platform that brings together herd records, finance and operations. Asked why broader software uptake lags
- behind, respondents pointed to 3 key barriers—high costs (63%), limited digital know-how (36 %), and spotty infrastructure (27%) that keep many producers anchored to analogue methods despite an appetite for innovation.



Our findings underscore a roadmap for accelerating technology adoption in Romania's dairy sector. First, the development of affordable, user-friendly AI tools, tailor-fitted for small and medium farms, will lower the financial barrier to entry. Second, national digital literacy programs designed to meet farmers' needs may build the confidence and skills required to harness thesetechnologies effectively. Third, targeted investments in rural broadband and support hubs will ensure the infrastructure backbone. Only through collaborative efforts between researchers, policymakers, and farmers—sharing knowledge, aligning incentives, and co-creating solutions —can the promise of AI and precision livestock farming be fully realized in Romania's dairy landscapes.

Aspects from dairy farm located in Neamt county, Romania

RoRuralia Rural Development Hub

RoRuralia Living Lab is connecting stakeholders for developing the rural and urban systems.

Ruralities

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