Session 4 – "Carcass quality and innovation in abattoirs"

An overview of carcass quality and innovation in abattoirs presented by **Dr. Ole A. Alvseike**, Animalia, Norway

The global meat industry is under increasing pressure to meet rising demand while adhering to sustainability and ethical standards. It faces major challenges in preserving and enhancing carcass value and meat quality, driven by factors such as variability, inconsistent processes, technology adoption, economic constraints, regulatory pressures, and workforce skill gaps. At the same time, the industry stands at the edge of a technological transformation. Innovations are emerging that promise to reshape abattoir operations and carcass quality assessment. To address issues of consistency, efficiency, and economic viability, the sector is actively adopting advanced technologies. We provides our perspectives of current practices, innovative solutions, and future trends in meat industry primarily in abattoirs and cutting plants, including visual image analysis, near infrared spectroscopy, dual X-ray absorptiometry, computed tomography, and artificial intelligence, that may revolutionize carcass and meat evaluation and processing, explaining how these technologies work, their benefits, and their limitations. Additionally, advancements in data analytics, traceability, imaging, and sustainable practices are expected to boost efficiency, improve product quality, and enhance sustainability across the supply chain. We will also address the practical challenges of implementing these technologies, including economic feasibility, regulatory compliance, and operational consistency. It highlights emerging drivers and trends, and present case studies to help stakeholders adapt to evolving market demands. In conclusion, the abattoir sector is at a critical juncture. Embracing innovation is essential to balance growing global meat demand with the need for ethical, efficient, and sustainable production. Future research should focus on cost-efficient, refined objective and automated assessment systems and integrate artificial intelligence with conventional statistics to improve classification accuracy, reduce waste, and optimize processing. Most importantly, collaboration among technology developers, suppliers, abattoir managers, policymakers, and researchers will be key to turning innovation into practical, scalable solutions that benefit the entire meat supply chain. By embracing these changes, the meat industry can secure long-term competitiveness, maintain consumer trust, and support responsible production practices. (J. Kongsro, T.E.B. Skramstad, O. Alvseike, 2025, Carcass and meat quality and innovation in fresh meat industry, Meat Science 231, 109960)



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Ole was graduated from the Norwegian School of Veterinary Science, Oslo in 1992. He has worked in large and small animal practice, and in the Food Safety Authority both locally and centrally. His PhD dealt with Salmonella epidemiology and public health. After a year in the Norwegian Public Health institute, he has worked in Animalia – Norwegian Meat & Poultry Research Centre since 2002, leading the work in meat safety, carcass grading, meat cutting. Alvseike is chairing the International Meat Automation Congress (iMAC). He led a working group in the recent COST Action "RIBMINS" (www.ribmins.com) addressing new technologies in Meat Safety Assurance Systems. Alvseike represents the Norwegian Veterinary Association in UEVH (Secretary General), and he is chairing FVE's Working Group on Veterinary Public Health and Sustainability.