



Emerging technologies and consumer perception for sustainable meat processing

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INTRODUCTION:

The responsibility to produce high quality, sustainable and cost effective meat products rests with producers, manufacturers, distributors and retailers to ensure that consumer demands are met. New and emerging robust technologies can play an important role in ensuring a more resilient meat value chain and satisfying consumer demands and needs.

OBJECTIVES:

The objective of this presentation is to outline various novel thermal and non-thermal technologies which have shown potential for meat processing applications. A number of process analytical techniques which have shown potential for rapid, real-time assessment of meat quality will be discussed.

RESULTS:

New and emerging robust technologies can play an important role in ensuring a more resilient meat value chain and satisfying consumer demands and needs. Novel thermal and non-thermal food processing and preservation technologies, including radiofrequency (RF), microwave, infrared, ohmic heating, high pressure processing (HPP), pulsed-UV light, pulse electric field (PEF), power ultrasound, cold atmospheric plasma and ozone processing have gained much attention in recent years. These technologies can offer several benefits, including increased process efficiency, improved product safety, enhanced quality attributes and extended shelf-life stability of products.

The commercial uptake and consumer acceptance of novel technologies in meat processing have been subjects of great interest over the past decade. Consumer focus group studies have shown that consumer expectations and liking for novel technologies, applicable to meat processing applications, vary significantly. New processing and meat quality assessment techniques have shown potential benefits to various stakeholders involved in meat production and supply chain. These technologies have demonstrated the potential in achieving various consumer demands associated with the meat product. Nonetheless, the path from the introduction of a new technology on the production line to consumer acceptance is not straight forward.

CONCLUSIONS:

The necessity for meat processors to address consumer risk-benefit perceptions, knowledge and trust in order to be commercially successful in the application of novel technologies within the meat sector.