

Nurturing locally, growing globally – ICoMST 2017

The 63rd International Congress of Meat Science and Technology (ICoMST 2017), hosted by **TEAGASC**, took place in Cork recently.

Temple Grandin – welfare evaluations at slaughter

World-renowned animal behaviour expert Temple Grandin was one of the keynote speakers at the International Congress of Meat Science and Technology (ICoMST 2017) recently in Cork. Her talk focused on on-farm conditions that compromise animal welfare, and that can be monitored at the slaughter plant. She said that handling and stunning at slaughter plants has greatly improved through the use of numerical scoring. Her presentation encouraged the use of numerical scoring systems at the slaughter plants to assess conditions that compromise welfare, which occurred either during transport or on the farm. She explained: “Some of the transport problems that can be assessed are bruises, death losses, and injured animals. Welfare issues that occurred on the farm, which can be assessed at the abattoir, are body condition, lameness, lesions, injuries, animal cleanliness and internal pathology”. She went on to say that there are important welfare issues that cannot be assessed at slaughter. They are on-farm euthanasia methods, use of analgesics during surgeries, and the type of animal housing systems. She stressed that welfare evaluations at slaughter have the potential to greatly improve welfare. Grandin is a designer of livestock-handling facilities and Professor of Animal Science at Colorado State University. Facilities she has designed are located here in Ireland and also in the United States, Canada, Europe, Mexico, Australia, New Zealand, and other countries. In North America, almost half of the cattle are handled in a centre track restrainer system that she designed for meat plants. Curved chute and race systems she has designed for cattle are used worldwide, and her writings on the flight zone and other principles of grazing animal behaviour have helped many people to reduce stress on their animals during handling. Grandin is also internationally famous as a spokesperson on autism and was the subject of the award-winning, semi-biographical film *Temple Grandin*.

Sustainable diets

The role of meat in strategies to achieve a sustainable diet lower in greenhouse gas emissions was presented by Maeve Henchion, Teagasc, Rural Economy and Development Programme. Henchion highlighted the complexities regarding sustainability in terms of meat consumption, and

possible strategies that could be implemented to mitigate its climatic impact. She outlined how sustainable diets are possible without the elimination of meat: “For instance, overconsumption of food in general, beyond our nutritional requirements, was found to be a significant contributor of emissions. Non-voluntary and voluntary mitigation strategies offer potential to reduce dietary greenhouse gas emissions. All mitigation strategies require careful consideration, but on-farm sustainable intensification perhaps offers the most promise. However, a balance between supply and demand approaches is encouraged. Health should remain the overarching principle for policies and strategies concerned with shifting consumer behaviour towards sustainable diets”.

Alternative protein sources

Demand for protein is continuously increasing and despite advances in research and development of alternative protein sources, animal protein still holds a key role in the supply of this essential nutrient. Teagasc researcher Anne Maria Mullen explains: “Approximately half of the live weight of animals raised to produce meat is categorised as ‘the fifth quarter’, commanding lower market values than prime meat cuts. From the sustainability as well as from the protein quality points of view, it makes sense to explore the sources of high-quality protein already available, but not utilised to their fullest potential”. Her talk summarised current opportunities for aggregating value to some of these protein-rich co-products from the meat-processing chain, underpinned by research advances on both technical and social aspects. The work is part of a large research initiative looking at the exploration of Irish meat processing streams for recovery of high-value protein-based ingredients for food and non-food uses – the ReValueProtein project.

CO in meat packaging

Carbon monoxide (CO) has many value-added benefits in meat packaging due to its colour-stabilising effects and enhancement of meat quality attributes. The regulation of CO within meat packaging varies worldwide and remains a topical and controversial issue. CO is prohibited in the EU for use in meat packaging mainly due to fears that it may mask spoilage, therefore misleading consumers. The issue of



consumer acceptance of CO was not considered. Teagasc's Lauren Van Rooyen explains: "Applying CO pretreatments prior to vacuum packaging enhances colour while allowing discolouration to occur by the use-by date, thereby addressing concerns about safety. Recent work showing European consumer acceptance of CO in meat packaging demonstrates its future potential within the EU. The information provided may support framing future policies intended to assure consumer protection, safety, choice and interest. Re-evaluation of permitting CO as a packaging gas within the EU may be warranted".

Award winners

Carlos Alvarez, a post-doctoral researcher in the Department of Food Quality and Sensory Science, Teagasc Food Research Centre, Ashtown, won runner-up in the International Meat Secretariat Prize at the Congress for his work on the ReValueProtein project.

Teagasc Walsh Fellow Jamie Cafferky, Department of Food Quality and Sensory Science, Teagasc Food Research Centre, Ashtown, won the ABP student award for best industry-relevant oral presentation at the Congress for his work on sensory and texture attributes of beef.

The main theme of the 63rd ICoMST was 'nurturing locally, growing



Pictured at ICoMST are (from left): Ciara McDonnell, Teagasc; keynote speaker Temple Grandin, Colorado State University, USA; Michael Creed, TD, Minister for Agriculture, Food and the Marine; and, Declan Troy, Congress Chairman, Teagasc.

globally'. Teagasc's Assistant Director of Research and Congress Chair, Declan Troy, explains: "In addressing this, it was considered how science can offer the meat production and processing sector solutions to enable it to nurture sustainably at local level while offering opportunities to grow globally".

Acknowledgements

ICoMST 2017 took place at the Rochestown Park Hotel during August 13-18, 2017, and the organising committee was chaired by Teagasc's Assistant Director of Research Declan Troy. Teagasc acknowledges all the sponsors and especially the main sponsors of the event (ABP, Kerry, Meat Technology Ireland and University College Cork), and the work of the many Teagasc staff and students who contributed to its success.

Further reading

Over 450 papers were presented at the congress, many by Teagasc researchers.

Scientific papers are published in a special issue of *Meat Science* – <http://www.sciencedirect.com/science/journal/03091740/132?sdsc=1> – and the full conference proceedings have been published by Wageningen Academic Publishers – <http://www.wageningenacademic.com/doi/book/10.3920/978-90-8686-860-5>.

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