

Meat Industry R&D Initiatives Update

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Meat Industry R&D Initiatives Update

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 - Meat Research Fund (MRF)
 - Industry Initiatives Fund
 - EECA
 - Ovine Automation Ltd
 - Beef opportunities

SmartStretcher / SmartShape



- Outcomes
 - Improved tenderness
 - Upgrade low value cuts
 - Portion Control

“Stretch & form”

Halal Immobilisation Systems



- Outcomes
 - Meet Halal and EU regulations
 - Maintain market share
 - No compromise to worker safety, animal welfare or meat quality

“Immobilisation procedure tested”

Smart Stimulation



- Outcomes
 - Improved consistency
 - Improved customer satisfaction
 - Controls the rate of pH decline

“Stimulation specific for each carcass”

- Whys and How of handling chilled NZ lamb
- New value propositions for the NZ lamb pelts
- Meat Quality Model
- Very fast chilling
- Extending shelf-life of NZ chilled lamb



Meat Research Fund

- Set up as a replacement for MIRINZ Inc
 - *To protect and enhance the profitability of MRF members by commissioning research into commercialisation that addresses:*
 - *Food Safety*
 - *Meat Quality*
 - *Regulatory Compliance*
 - *Worker Welfare*
- That are common across MRF members and considered “industry good”*

Meat Research Fund

- Six projects have agreed to be funded on a voluntary basis
 - Controlling ultimate Ph
 - Extending shelf life beyond expectations
 - Understanding and managing the colour of NZ lamb
 - Smart Stim
 - Storage life of chilled products
 - Breaking the life cycle*
- FRST have agreed to co-fund these projects

Meat Research Fund

- A seventh project wasn't co-funded
 - Collaborative PhD student projects
 - Fell outside of the application criteria
 - Given a modest cost, still hopeful that industry will support this project
- Next Steps
 - Finalising the legal structures
 - Projects will be managed via a series of limited partnerships (LP's)
 - Finalise provider contracts
- **Start the R&D!!!!!!!!!!!!!!!!!!!!**



Meat Industry Initiatives Fund

Industry funds, in conjunction with NZFSA, a range of mutually agreed projects in Food Safety and Market Access

- Bacteriophage decontamination of hide
 - Development and validation of the effectiveness of bacteriophages as a decontamination agent for E.coli O157:H7 on bobby calf hides
- Efficacy of Antimicrobial Interventions
 - Validation of the efficacy of current post-slaughter interventions on bobby carcasses for the reduction of target pathogens, in particular E.coli O157:H7

Meat Industry Initiatives Fund

- PHI Guidance Material final
 - Updating of MIA PHI guidance document, taking into account recent research
- Validation of Alternative Cleaning Frequencies
 - Evaluation and redesign of the sampling plan and statistical analysis (where necessary), and microbiologically validate the draft protocol. This will lead to robust scientific validation of reduced (previously approved and future) cleanup frequencies, giving direct cost gains and allowing quicker follow-on operations

- Nitrogen factors in lamb meat
 - Evaluation of the significance of NZ meat industry scientific data to support nitrogen factors for NZ meat
- Development and validation of a real-time PCR assay for *Clostridium estertheticum*
 - Validation of a real-time PCR assay for detection of *C. estertheticum* in meat, fecal and environmental samples

Energy & Water Efficiency Benchmarking Programme

- Background

- These surveys were commonplace until 1996
- Energy is a major expense for the meat industry, with latest estimates indicating costs of between 80 and 150 million dollars per year
- Traditionally, water has been a readily available resource to NZ industries. However, in the future this will not be the case because of the growing demands of the Resource Management Act and the associated increasing cost of water treatment
- Energy usage benchmarking exercises carried out by MIRINZ in the 1990's indicated declining energy consumption per tonne of output. In contrast, recent (albeit limited) studies suggest that energy usage per tonne is now increasing and has done so for the last decade
- The costs of electricity, coal and natural gas have increased by a factor of 1.35, 1.8 and 1.88 respectively since 1996

Energy & Water Efficiency Benchmarking Programme

- Deliverables
 - Monthly reports to each plant indicating energy usage per tonne, comparisons to industry average and advice on where efficiency improvements could be targeted
 - A final report individualised for each plant summarising the 12-month period
 - A final report to MIA analysing the industry-wide data for the 12-month period
 - An industry workshop to discuss the results and ways to improve efficiency

Energy & Water Efficiency Benchmarking Programme

- 26 plants have agreed to participate
- EECA are co-funding
- Commencing now(ish)
- Year two opportunities
 - Best practice guidelines
 - Identify specific opportunities, either collectively or as an industry

- A number of work programmes underway
- Evisceration and brisket cutter
 - Alpha system successfully installed at Alliance Group Mataura plant
 - High levels of efficiency

- Other areas of R&D
 - Foreleg and Brisket role
 - Development of an ultra sonic knife for use in forequarter clearing
 - Stub and tail cutting
 - Sock splitting

Beef Opportunities

- Joint NZ/Australia R&D Automation Steering Group
 - TOR agreed
 - First meeting 19 October 2010
- Other opportunities are being explored with industry in the following areas:
 - Beef slaughter
 - Beef packing
 - Auto primal loading
 - Cut identification