

ALMTech News

No. 8



Meat for thought

Conferences are an important place to obtain academic and industry feedback on new research ideas. As highlighted in the April issue of this newsletter, several researchers working on the Project will soon be leaving for Ireland to participate in the 63rd International Congress of Meat Science and Technology. They will also attend the United Nations Economic Commission for Europe (UNECE) workshop on *Sustainable Meat Markets, Cross-border Trade and Eating Quality*. This workshop will focus on eating quality, beef and lamb carcass grading to underpin consumer satisfaction and the implementation of UNECE standards.

At the recent International Committee for Animal Recording (ICAR) meeting held in Edinburgh, Daniel Brown presented a paper titled "Objective carcass measurements to improve lean meat yield and eating quality in Australian beef, sheep and pork". Feedback regarding the Project was positive and colleagues provided constructive comments. In particular, links associated with similar activities underway in New Zealand, the UK and Ireland have been identified and will be beneficial for this Project. It also became evident that ensuring our measurement protocols are included into ICAR guidelines would be very useful if the opportunity arises for sharing data internationally.

Both Heather Channon and Darryl D'Souza will present invited papers at the biennial Australasian Pig Science Association conference to be held later this year in Melbourne. Heather's paper reviews eating quality assurance for the pork industry over the past 16 years. In his paper, Darryl discusses what consumers want. Both papers will provide insight for research being done in this Project.

A paper of interest to the Project has just been published in *Meat Science* and is titled "Selection for intramuscular fat and lean meat yield will improve the bloomed colour of Australian lamb loin meat". Honor Calnan (Postdoctoral Fellow P1) is the lead author for the paper and based on her findings, concluded that selection for lean meat yield in lamb will have neutral or positive effects on meat colour. She also added that selection for increased intramuscular fat will make the bloomed colour of lamb meat lighter and redder.

Given the amount of relevant research being done externally to this Project, an infographic has been developed to show the links between the ALMTech Project and other MLA funded projects. The next step will be to add in projects funded by other organisations.

The Objective Carcass Measurement Adoption and Commercialisation (OCMAC) Taskforce that has been set up to assist in managing relevant adoption and commercialisation aspects will work closely with all ALMTech program leaders.

Times are becoming more exciting in this space. Please don't hesitate to contact me about Project queries.

Graham Gardner

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Program E: Program Executive

Program leader: Graham Gardner

One of Richard Apps' many jobs is to manage this Project on behalf of MLA. This means that he solves many of the everyday issues that arise and helps to keep the Project on track. However, he is also frequently on the road, meeting with stakeholders and letting people know about the research.

For an excellent example of a seminar detailing DEXA and associated topics and presented by Richard see: <https://www.youtube.com/watch?v=VXTBjkzidk8>

(Seminar presented at Central West Farming Systems' two-day Precision Agriculture seminar held from 28th to 29th June 2017. Published on 18th July, 2017).

A priority in PE has been to write up the Operational Plan for 2017/18 (as decided at the Annual Review that was held in April). This has been done and the next step involves writing contracts for research participants.

P1: Development of Lean Meat Yield technology

Program leader: Graham Gardner

One of the activities focused on recently in P1 has been calibration.

There are several different means of estimating carcase composition that may be used to calibrate the DEXA. These include: Saleable Meat Yield (SMY); Dissectible Lean Meat Yield (D-LMY); Chemical Composition; Virtual dissection via Computed Tomography (CT).

For each there are their advantages, disadvantages and considerations for standardisation. A summary has been written that helps to highlight the strengths of CT compared to these other alternatives. It will act as a working terms of reference document for the Industry Calibration Working Group (see the ALMTech Newsletter No. 7 for more details about this Group).

P2: Development of eating quality (EQ) measurement technology

Program leaders: Dave Pethick & Pete McGilchrist

Calibration considerations are also important for eating quality (EQ).

The predictive traits that require calibration for the EQ measurement technologies include: intramuscular fat/marbling; meat colour; fat colour; carcass maturity/age; ultimate pH; tenderness; eye muscle area; fat depth; fatty acid profiles; minerals; glycogen (live animal).

The traits for calibration for each predictive trait are numerous. For example, for intramuscular fat/marbling, the trait for calibration is chemical fat (NIR and soxhlet - gold standard for measuring %IMF). A summary detailing all traits as well as trading relevance and a description of and considerations for testing has been written for the Industry Calibration Working Group.

P3: Development of robotic technology

Program leader: Christian Ruberg

Keeping research applicable so that it can be used in practice is a priority for this Project. Recently, Christian Ruberg led a group on a site visit to review and assess measurement technologies against needs and constraints within an abattoir.

P4: Industry Databases

Program leader: Daniel Brown

The multidisciplinary skill-base of the researchers involved in this Project adds to the strength of the research. A prime example of this is the direction provided to researchers from P4 with regard to data collection.

For example, Daniel Brown has detailed the requirements regarding genetic carcase data that can be obtained from commercial slaughter activities.

These requirements include: valid groups (true contemporaries); animals must not be "harvested" from the feedlot pen or grass finished mob; animals must have relevant fixed effects (birth dates, litter size, sex etc.); pedigree (DNA); sires randomly mated; effective progeny numbers.

P5: Data Decision Systems

Program leader: Wayne Pitchford

As briefly mentioned already, the OCMAC taskforce has been set up with Gary Burrige as the Chair. It is independent of this Project but activities will complement those already planned for the Project and in particular for P5.

This taskforce will deal with DEXA and OCM solutions, including eating quality aspects.

Membership will comprise of: a representative of each peak industry council; other processors; a representative from MLA and the Australian Meat Processing Corporation (AMPC); and Graham Gardner.

Whilst the focus on the taskforce is on adoption and commercialisation of the technology, P5 is more about focussing on the research aspects.