ALMTech News

Fostering innovation through the value chain

The theme of the 2018 Australian Society of Animal Production (ASAP) conference (held at Charles Sturt University, Wagga Wagga) was 'Fostering innovation through the value chain', which is highly relevant to our ALMTech project. We are providing technologies and methods to better quantify product value. We are supporting innovation not only at the processing level, but also linking up innovations right through the supply chain. The presentations by ALMTech's Program 4 (Daniel Brown and Sarita Guy) highlighted the need for this linkage:

- Daniel's presentation outlined the current data capture throughout the supply chain. There are many opportunities to improve feedback systems through adding flexibility, improving communication and information sharing, and having a value proposition for feedback.
- Sarita's presentation outlined how carcase health data is a valuable resource for processors to better understand the main issues, and to perform risk assessment, routine monitoring, and forecasting of health issues. Providing this feedback to producers will allow them to make informed management decisions, to reduce the risk of health issues and to increase profitability for both processors and producers.

Sarita received the CSIRO Publishing Young Scientist Award for her ALMTech-aligned presentation at ASAP 2018. Other ALMTech-aligned award recipients at ASAP 2018 include David Hopkins (who is working with ALMTech's Program 2), and Bruce Hancock (who is working with ALMTech's Program 5). David and Bruce were both recognised for their eminent service to animal production within Australia, and were accordingly both made Fellows of the Australian Society of Animal Production.

Sarita Guy (centre), recipient of the CSIRO Publishing Young Scientist Award, with Animal Production Science Editor-in-Chief Wayne Bryden (left) and Australian Society of Animal Production President Phil Hynd (right)

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Executive Program

Program leader: Graham Gardner

Our 2018/19 Operational Plan has now been ratified by the ALMTech Steering Committee, so we are underway with establishing contracts for Year 3 of the project.

Our third Industrial Calibration Working Group (ICWG) meeting was held 27-28 June at the MLA office in North Sydney. New representatives were present from AUS-MEAT (Tony Webb), AMIC (Stacey McKenna), and AMPC (Matt O'Bryan). The ICWG are developing Calibration Standard Operating Procedures, containing details of experiments and traits for the devices being calibrated for Program 1 (LMY) and Program 2 (EQ).

Our consultant Garry Griffith has submitted two reports, detailing the economic impact of technologies on the pork and beef industries, respectively.

Program 1: Development of Lean Meat Yield (LMY) technology

Program leader: Graham Gardner

Further to the strong progress with the lamb DEXA system at Bordertown—whereby we can now demonstrate to industry that DEXA can provide a reliable measurement of LMY anywhere, anytime—Scott Automation and Robotics are considering the business case with respect to further progressing this device. A key outcome from recent DEXA calibration experiments was the demonstration that using a two-point calibration against air and a synthetic phantom enabled the repetition of DEXA values for carcase composition across a period of 3 days.

The Rockhampton beef DEXA system was pronounced operational at the start of June. Two weeks later, an ALMTech team led by Honor and supported by staff from Teys Rockhampton began the initial calibration scanning of tissue phantoms. These phantoms consisted of known mixtures of fat, lean and bone, formed into calibration blocks of known depth. This phase enables us to establish the base equations for determining tissue composition within carcase images.

Program 2: Development of Eating Quality (EQ) measurement technology

Program leaders: Dave Pethick & Pete McGilchrist

Soma Optics (Tokyo) are keen to collaborate with ALMTech regarding the NIR measurement of IMF. They have a number of NIR solutions for measuring fat melting point (beef) and IMF content (tuna). We hope to have the Tuna IMF device in Australia within the month so as to start generating initial calibration data using MLA resource flock slaughter lambs.

ALMTech and Frontmatec have made significant advances in the development of an IMF algorithm for lamb utilising 400 Kirby MLA resource flock lambs from 2017 and 120 lambs from LambPro. Frontmatec also confidently estimated the IMF of the lamb loin cut surface, so we will proceed toward the possibility of placing this device on the Scott LEAP system.

MEQ laser probe are now under contract with MLA. MEQ have been building datasets utilising objective meat quality data (e.g. IMF%, WBSF and pHu) from the BIN herds, MLA resource flock lambs at both Katanning and Kirby, and the CRC new vs old season lamb kills.

Program 3: Development of robotic technology

Program leader: Christian Ruberg

We are exploring several sub-surface high-resolution 2D and 3D imaging technologies that may enhance automation, inspection and sorting, and value chain feedback. High duty cycle CT imaging, as used in the airport baggage inspection field, and industrial cone beam CT are considered to have the technical and commercial potential for offal, soft tissue and carcase primal inspection. Rapiscan, the technology provider for the airport baggage CT scanner, has delivered a trial system to Melbourne. A trial protocol has been developed in conjunction with host site JBS Brooklyn. The evaluation trial is scheduled over the next quarter.

Program 4: Industry Databases

Program leader: Daniel Brown

We are wary of the timeline for delivering 3 new or enhanced breeding values, due to delays in the availability of fully calibrated new measurement technologies. To proactively address this concern, we organised a meeting with AGBU colleagues to scope for opportunities for enhanced breeding values for BREEDPLAN-recorded traits. Visual marble score as a proxy for IMF in lamb is being investigated, with data analysis underway.

Program 5: Data Decision Systems

Program leader: Wayne Pitchford

The Beef Value Calculator (BVC) is in its final testing phase with its developer Chris Smith. The BVC will be demonstrated in Rockhampton on 17-18 October at the next Supply Chain Group meeting, which includes a site visit to view the Teys beef DEXA system in operation.

The Lamb Value Calculator II (LVC II) is now complete and several supply chains are engaged in evaluating the model in their businesses. Additional functionality will be developed in the future as the Beef Value Calculator is progressed, where there is opportunity to contribute complementary functions across calculators.

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