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MLA's Profitable Grazing Systems supported learning program *Meat the Market - Lamb Compliance* training package was developed and piloted with the assistance of JBS Australia, Gundagai Meat Processors, the Sheep CRC Lamb Supply Chain Group (Program 2: Quality-based sheepmeat value chains) and ALMTech Program 5.

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Executive Summary

As the ALMTech technology programs have facilitated the development and deployment in abattoirs of technologies to measure carcass yield and eating quality for both lamb and beef, concurrently the project developed engagement programs for livestock producers and service providers to support the adoption carcass feedback to inform on-farm livestock management, and to improve compliance to specification. ALMTech has developed and delivered producer-focused adoption events and products aligned to MLA's producer engagement framework, including:

- Awareness Raising
 - Presentations to producer groups, industry events, and meetings.
- Advisor Capability Building
 - Train-the-Trainer and mentoring to support consultants to deliver the MtM-LC PGS in partnership with JBS Australia, GMP, and WAMMCO.
 - Delivery within MLA's Livestock Adviser Essentials program for early-career livestock advisers.
 - SA Livestock Advisers Updates and National Livestock Advisers Updates.
- Long Term Practice Change
 - Profitable Grazing Systems (PGS) package; *Meat the Market – Lamb Compliance* (MtM-LC) in partnership with JBS Australia and Gundagai Meat Processors.
 - JBS Southern Farm Assurance Producer Engagement R&D Adoption Project.
- Program Approach to Research, Development, and Adoption
 - The Supply Chain Group.

The critical success factor in achieving the uptake of objective carcass feedback by producers has been the engagement of supply chains as delivery partners. By working within supply chains, producers have been able to develop trusted and productive relationships with them as the abattoirs progress on the pathway to deploy new carcass measurement technologies, begin to provide carcass feedback to their suppliers, including lean meat yield and intramuscular fat, and explore value-based payment models.

Practice change programs that require financial contributions by producers to participate require that strong value propositions are evident to all parties when delivered within a supply chain context. In lamb at present, only one supply chain offers a strong value proposition which is achieved through a value-based payment system linked to objective carcass traits. For this processor, the PGS delivery model is well-suited. However, for most of the lamb industry, the value proposition is currently insufficient to achieve greater participation in the *Meat the Market* program. Consequently, until value-based payments become more widespread for lamb, a continued focus on awareness activities, and short-term practice change activities delivered within supply chains will be required in the near term to continue to support the adoption of objective carcass feedback.

The above is less relevant to the beef industry where value-based payment associated with eating quality (MSA index) is well established. In the near future, the expansion of the engagement programs to beef that have been piloted in the lamb industry in this project will progress with pace to support further uptake of objective carcass feedback by beef producers as the new yield and eating quality technologies are deployed within supply chains.

The strong foundations laid during the ALMTech project now open opportunities to support long-term practice change by producers through additional MLA programs, such as Producer demonstration Sites, and co-funded projects with supply chains, the MLA Donor Company, and Plant Initiated Project (PIP) funds.

1. Introduction and Background

Currently, lamb producers are paid predominantly on carcass weight. However, with new technologies for objective carcass measurement (OCM) of lean meat yield (LMY) and eating quality (EQ) currently being developed, it is hoped that future value-based trading systems can be implemented by processors which will reflect the true value of carcasses to the end consumer. Indeed, Gundagai Meat Processors (GMP) introduced the first value-based marketing grid for lamb in 2021, which included payment for LMY, and also intramuscular fat (IMF) since IMF is strongly associated with eating quality.

Previous technology (VIAscan) was used in the early 2000's in both Australia and New Zealand to measure lean meat yield, with processing plants including Castricum Brothers (Australia) and the Alliance Group (New Zealand) offering suppliers yield quality premium contracts. VIAscan continues to be used in New Zealand, with producers being rewarded for increased lean meat yield.

Unfortunately, there is a negative relationship between eating quality and lean meat yield and a threshold of 4% to 5% IMF has been proposed to achieve consumer satisfaction for palatability (Hopkins *et al.*, 2006). Following several years of New Zealand lamb producers increasing selection for lean meat yield, the average intramuscular fat percent (IMF%) for New Zealand lamb was 2.7% (Craigie *et al.*, 2017). This is compared to an average level of IMF% for Australian lamb of 4.2% (Pannier *et al.*, 2014), which is still considered satisfactory for eating quality. The difference probably reflects both the extent of Merino breeding and heavier carcass weights.

More recently through the ALMTech project, dual-energy x-ray absorptiometry (DXA) units have been installed by Scott Automation + Robotics in several lamb processing plants across Australia between 2018 and 2022. DXA was initially used to define cutting lines for the automated cutting of lamb carcasses and has now been calibrated to measure lean meat yield. Whilst mechanisms within the industry are getting closer to being able to provide enhanced carcass feedback including lean meat yield, fat, and bone percentages along with carcass weight, processors are reluctant to send market signals to increase lean meat yield to producers until there are concurrent measurement technologies in place to also measure eating quality.

The ALMTech project has been facilitating several technologies including meat probes and hyperspectral cameras to measure intramuscular fat, which is highly correlated with eating quality. The Meat-Eating Quality probe (MEQ probe) was the first technology to be commercialised for the measurement of IMF% and was accredited by AUS-MEAT in 2022. This technology, along with DXA is currently being used by Gundagai Meat Processors (GMP) to give feedback on IMF% and LMY, along with carcass weight and animal health conditions.

Except for GMP, payment for lambs in Australia is currently on carcass weight and fat score alone. This makes the value proposition for lamb producers to engage in training to improve lean meat yield and eating quality quite low.

The aim for producer engagement within ALMTech Program 5 was initially to develop the skills and capacity of lamb producers to have a balanced approach to the selection and management of lambs for both LMY and EQ and to halt the decline in eating quality that has been occurring since the early 2000's (Fig. 1). In addition, it was to prepare producers for what future grids might look like with OCM technologies and start the process of building open and transparent two-way communications between the producer and processor. The model of engagement has been to develop workshops alongside supply chains with access to processing facilities using OCM systems, such as DXA, to measure lean meat yield and plans for future implementation of technology to measure eating quality. This model has been

successful in building relationships not only between researchers and the processor for technology implementation but also between the processor and the producers who are likely to provide them with improved product compliance in the future.

Whilst this report predominantly focuses on supply chain engagement for lamb producers, similar models of engagement can be utilised within beef supply chains. One of the major differences is that there is currently a bigger value proposition for beef producers to utilise feedback and make improvements to eating quality as many processors are already paying premiums based on MSA Index and grade.

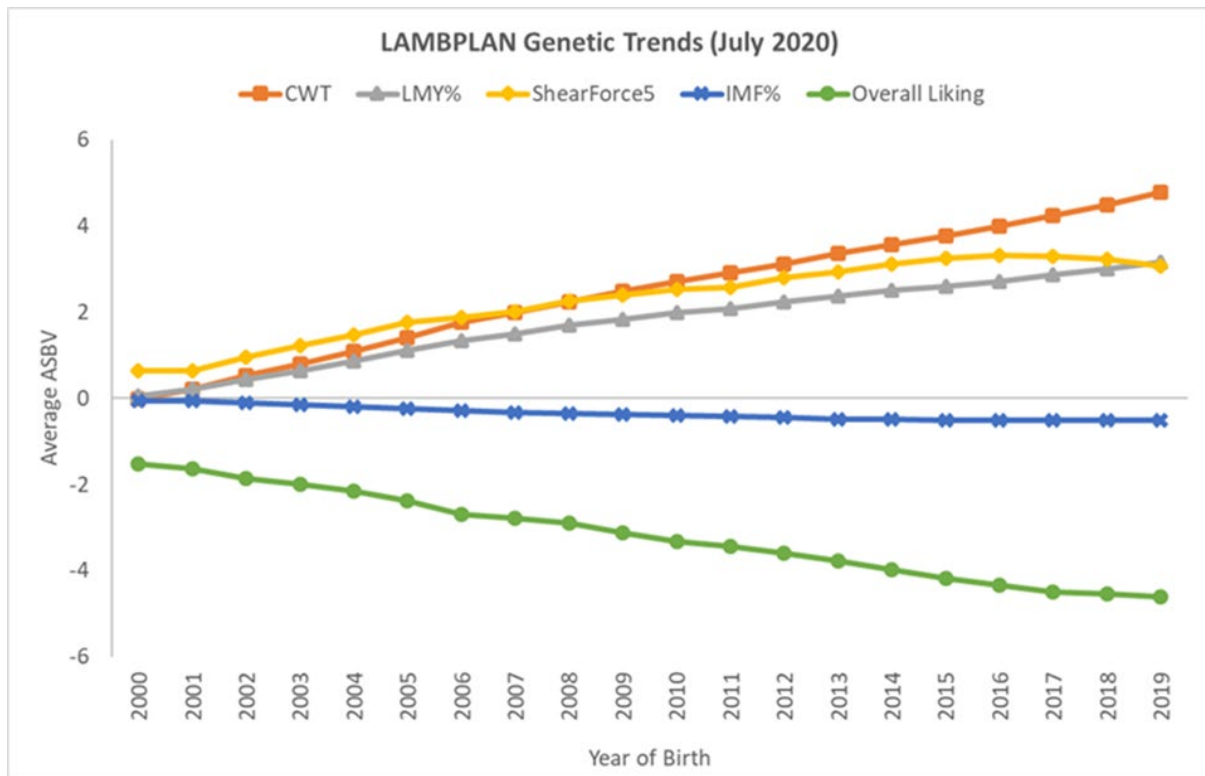


Figure 1. LAMBPLAN Genetic Trends (July 2020), Sheep Genetics.

2. Producer Engagement Activities

2.1. MLA Producer Adoption Pathway

As a key partner with significant expertise in developing and supporting learning pathways for livestock producers, MLA's producer adoption pathway (Fig. 2) has been used to guide and align activities developed during the ALMTech program. Within this pathway and the underlying strategic framework, the ALMTech program has been focussed on i) awareness activities, ii) advisor capability building, iii) long-term training programs and iv) a program approach to research, development, and adoption.

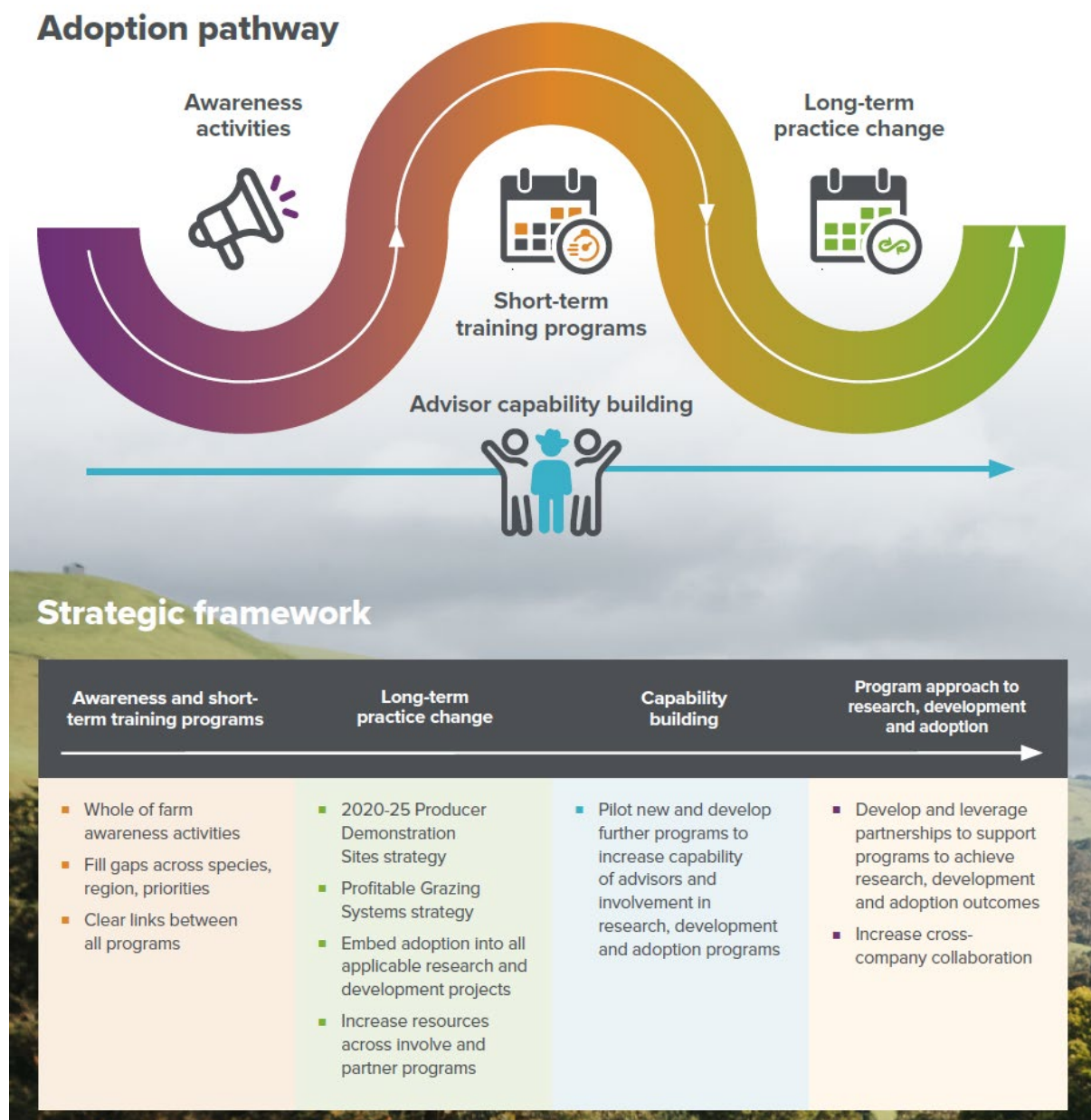


Figure 2. Meat & Livestock Australia's producer adoption pathway.

2.2. Awareness Activities

Over the course of the ALMTech project, many awareness activities have been delivered across all five of the project's programs. These are captured in the project's Extension Activity Log which accompanies the ALMTech Final Report. The aims of these activities have varied and have included:

- raising awareness of the pipeline of technologies being developed to objectively measure yield and eating quality of lamb and beef carcasses,
- informing producers of the significance of, and opportunities presented by receiving objectively measured carcass feedback for yield and eating quality,
- understanding the interactions between animal health and carcass yield and eating quality,
- interpreting carcass feedback, and
- on-farm opportunities to identify and change management practices in response to feedback, and improve carcass compliance, and farm productivity and profitability.

Some recent examples of these activities include:

- Delivery of animal health workshops as part of the Enhanced Abattoir surveillance program for the University of Adelaide Project *Producer engagement study to reduce the financial impact of endemic conditions in sheep* (P.PSH.0852). Face-to-face, at JBS processing facility (Feb 2020), online with JBS (June 2020), and face-to-face on-farm (October 2020).
- JBS Great Southern Grass Matters Podcast - *All about lamb with Elke Hocking*, 17th September 2020.
<https://player.whooshkaa.com/episode?id=733934>
- Presentation to Fleurieu Ag Bureau Ag, 15th September 2020, *Ag Technology, Use of beef and lamb carcass feedback - data to decisions*
- Presentation to Upper North Farming systems group, 29th September 2020, *Ag technology, Use of farm tools (LDL) to assess sheep carcass feedback*
- *Know your Product* - Webinar for Ag Victoria, November 2020
<https://www.youtube.com/watch?v=XmY1-9jZ79q&feature=youtu.be>
- MLA Meat Up forum, Gawler 5th March 2021, *Using processor carcass feedback for better on-farm decisions*.
<https://www.mla.com.au/globalassets/mla-corporate/extensions-training-and-tools/documents/meat-up/gawler-2021/meat-up-processor-carcass-feedback.pdf>
- Online conference presentation at the 33rd Australian Association of Animal Sciences Conference, 1-3rd February 2021. *Lamb lean meat yield and eating quality workshop – A supported learning program*.
- Presentation to Inverbrackie producer group, July 2021. Presented online *Understanding lean meat yield and eating quality*. This included an analysis of data from one of the producers' lambs that were processed on GMP's research grid (HSCW, DXA data – Fat, Bone and Meat% and IMF%) in relation to ASBV's of the ram team (benchmarked in RamSelect).
- Animal health PIRSA workshop delivery of "Using carcass health and quality feedback from processors and lot-feeders for better on-farm decisions", Kangaroo Island, November 2021.

2.3. **Advisor Capability Building**

2.3.1. *Training and Mentoring of Livestock Advisers*

To extend the impact of MtM-LC PGS, train-the-trainer events have been planned and delivered.

- An independent livestock consultant in NSW was mentored to deliver the MtM-LC PGS with GMP between June 2019 and August 2020. (Appendix 1).
- Train-the-Trainer workshop was delivered in June 2022 for Western Australian consultants involved in the delivery of the MLA SheepLinks project: *Carcase feedback for improved on-farm productivity* (P.PSH.2140). This workshop was delivered in conjunction with the WAMMCO. Attendees included four independent livestock consultants from two WA consulting companies, and three Department of Primary Industries and Regional Development staff. The outcome of the WA training is that several of the consultants will deliver the MtM-LC PGS to producers involved in supplying lambs to WAMMCO and other supply chains in WA.

The PGS delivery model has an expectation that the producer must pay a portion of the workshop which was agreed upon with MLA at \$500. This requirement has met resistance from producers due to a current lack of a value proposition for improving eating quality and lean meat yield from WA supply chains. The main cohort of producers participating are seedstock sheep producers who have identified value in producing rams suited to future lamb markets rewarding yield and eating quality.

- Mentoring, co-delivery and Train-the-Trainer for staff from Agriculture Victoria, Southern Farming Systems, and JBS Supply Chain Officers.
- A modified MtM-LC workshop to upskill JBS buyers.

2.3.2. *Livestock Adviser Essentials and Livestock Adviser Updates*

Livestock Adviser Essentials

MLA's *Livestock Adviser Essentials – Meat the Market*, was delivered online in February 2022 to 10 early career Livestock Advisers from across Australia.

Overarching learning objectives:

- Outline the role of the adviser in assisting clients identify causes of non-compliance and in helping them find potential on-farm solutions.
- Encourage relationship building across the value chain.
- Identify areas for skill development for themselves and their clients.

The workshop incorporated both beef and lamb examples and included analysis of feedback, awareness and use of industry tools and resources including MtM-LC PGS supported learning program, LDL, myMSA, RamSelect, Sheep Genetics, Breedplan, BeefSpecs Calculator and drafting tool, Grass to \$'s and Pasture Principles.

The highlight of the workshop was the presentations on beef customer requirements from JBS' Supply Chain Manager (Mark Inglis), and on lamb customer requirements from GMP's CEO (Will Barton). A virtual processor tour of the GMP abattoir was also facilitated in which participants were able to see the two objective carcass measurement technologies, DXA and MEQ's IMF probe in action.

Participants gave the workshop a rating of 8.4/10 for overall satisfaction and 8.2/10 for overall value of attending the workshop. The following are quotes from participants and a snapshot of the monitoring and evaluation report from this workshop is presented (Fig. 3).

“Awareness of market specifications was great and having the processor tour really helped understand the theory.”

“This workshop brought genetics, market specifications, processor objectives and marketing strategies together for me”

“I now understand how objective measures of carcass assessment fits with industry objectives”.

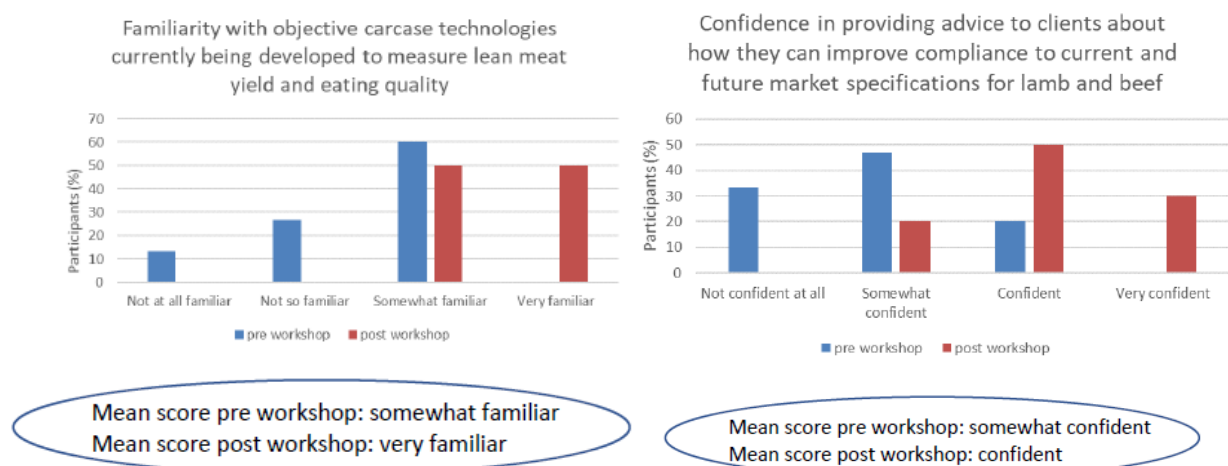


Figure 3. Livestock Adviser Essentials monitoring and evaluation.

Livestock Adviser Updates

Livestock Adviser Updates was pioneered by South Australian Livestock Advisers (SALC, Miller *et al.* 2021). SALC is a network of independent livestock consultants providing services to the South Australian livestock industry and has members extending their service reach to Victoria and internationally. Since 2017, SALC has facilitated six successful annual SA Livestock Advisers Updates for both its members and the wider livestock advisory network including from the commercial livestock product merchandising sector. These updates have provided opportunities to upskill a wide range of advisers who provide services to livestock producers in the activities of the ALMTEch program. The success of these professional development forums encouraged MLA to launch a series of National Livestock Advisers Updates in 2019 to provide similar support to the consulting sector nationally.

2.4. Long-Term Practice Change

2.4.1. Meat the Market – Lamb Compliance Supported Learning Program

The development of the Profitable Grazing Systems (PGS) supported learning program *Meat the Market – Lamb Compliance* (MtM-LC) was funded by MLA between 2019 and 2020. The workshop was piloted with three producer groups across South Australia and New South Wales. The delivery of these pilots was co-funded by ALMTech, with in-kind support from JBS Australia, for the delivery of two SA Pilot workshops, and Gundagai Meat Processors (GMP) for the delivery of the NSW pilot.

With a whole supply chain focus, the MtM-LC PGS was designed to be delivered through existing supply chains with access to processing facilities using objective carcass measurement systems, such as DXA, to measure lean meat yield. In the future, these supply chains may also have hook tracking and objective assessment of eating quality. However, these were not considered essential to commence this training package.

The pilots demonstrated that the workshop is a great platform for processors to engage with their producer suppliers to build relationships and trust and help their producers achieve better compliance with specifications.

With an aim of assisting producers to improve lamb carcass compliance and eating quality, the main learning outcomes are for participants to:

- Understand Lean Meat Yield, Eating Quality and Objective Carcass Measurement terminologies.
- Understand that processor grids form the basis for customer specifications.
- Interpret carcass feedback to develop practical solutions to increase compliance, through genetics, nutrition and management changes on-farm.

The program was delivered over three sessions, with a mix of theory, on-line and hands-on learning within the processing plant and on-farm. After the completion of a review of the pilot workshops, it was determined that a coaching session was essential to ensure all participants had access to LDL (or proprietary) data to assess carcass compliance and to benchmark their current ram team using tools such as RamSelect.

Individual presentations at the end of the workshop encouraged participants to pull the information they have learned from the workshop together and work out what they are going to do differently in the future. This peer-to-peer learning between producers is likely more effective in creating change and adoption than theory alone.

"Producers need to join in these programs whenever they get the chance because you learn so much from the other producers. The type of people who join in group learning are the people who are happy to share their wins and their losses, and we all learn just as much from the losses". Josh Hancock, a lamb producer who attended the JBS pilot workshop.

Major tools and resources used within the workshop include the following:

- Improving lamb lean meat yield - A technical guide for the Australian lamb and sheep meat industry, Sheep CRC, 2019.
<https://www.mla.com.au/globalassets/mla-corporate/marketing-beef-and-lamb/documents/meat-standards-australia/improving-lamb-lean-meat-yield-interactive-july-2019.pdf>

- Live assessment yard book
https://www.makingmorefromsheep.com.au/literature/167055/Live_assessment_yardbook.pdf
- Module 3 - Market focused lamb and sheepmeat production
<http://www.makingmorefromsheep.com.au/market-focussed-lamb-and-sheepmeat-production/>
- Livestock Data Link and Solutions to Feedback Library
<https://www.integritysystems.com.au/data--feedback/livestock-data-link/>
<https://solutionstofeedback.mla.com.au/>
- RamSelect
<https://ramselect.com.au/>
- MLA Genetics hub
<https://genetics.mla.com.au>
- Sheep Genetics
<https://www.sheepgenetics.org.au/>
- Sheep CRC factsheets
<https://webarchive.nla.gov.au/awa/20191029154833/http://pandora.nla.gov.au/pan/59698/20191030-0039/www.sheepcrc.org.au/resources/ampc-mla-sheep-crc-factsheets.html>

The main skill developed throughout the workshop is fat scoring to achieve better compliance for carcase weight and lean meat yield. Live assessment was done at each of the three sessions. To assess this skill, lambs were assessed live in lairage and then followed through and measured in the chiller at the GR site. Producers received a correlation of their live-to-carcase assessment on the day to enable them to further improve their assessments. Further improvements could be made to this workshop if objective measurement technologies for live animal assessment could be demonstrated and utilised within the workshop (i.e. microwave hand-held scanner).

The use of real data, case studies, and examples from producers within the group to demonstrate the use of tools such as Livestock Data Link and the RamSelect App was valued more highly than the theory sessions.

Providing awareness of existing extension, adoption and analytical tools was a key feature of the program, along with encouraging producers to turn data into information and ultimately decisions and actions to address compliance issues.

Whilst there are more comprehensive genetics and pasture-focussed workshops around, this supported learning program encouraged producers to think about their current genetics as well as the feed quantity and quality throughout the season, in relation to their time of lambing and lamb marketing and their subsequent ability to meet target market specifications. The program provided links to further information and highlighted where further skill development may be beneficial and acts as an ideal *feeder* activity signposting producers to additional MLA PGS programs and Producer Demonstration Site (PDS) activities.

The producers rated the interactive hands-on sessions favourably, with the highlight being the processor tour. Producers appreciated the transparency and openness of the processors sharing information and left the workshop having a greater understanding of the logistics and factors affecting processing. The use of headsets added to the experience with more information able to be conveyed within the tour.

Non-tangible benefits reported by producers included:

- Developing a relationship with the processor.

- Peer-to-peer learning and stimulating group discussions.
- Future skill development opportunities identified.

Since every processor/supply chain will have slightly different requirements and technologies, the workshop was designed to be tailored to suit different regions and individual supply chains. One of the key success factors was for the supply chain host to be involved in every session of the workshop and to be given opportunities to discuss their customer requirements and future directions for the business.

If the processor does not use Livestock Data Link, they will have another method for producers to access carcase feedback electronically. Login, access, and use of alternative systems need to be provided by the processor/supply chain host both prior to and during the workshop.

As a result of attending the workshop, producers come out of the program better prepared for what future grids might look like with objective carcase systems in place and a starting point to develop practical solutions to feedback so they can improve lamb compliance, profitability, and eating quality.

Further information on the methodology and feedback from the pilot workshops of the supported learning program has been published by Hancock *et al.* (2021).

A case study from one of the pilot producer participants has been published on the MLA website. "Making supply chain linkages," Josh, Madeline and Wayne Hancock, Reedy Creek SA. <https://www.mla.com.au/extension-training-and-tools/profitable-grazing-systems/making-supply-chain-linkages/>

Meat the Market – Lamb compliance workshop outline

A. Session 1 – Identifying the potential, Venue: farm or research centre.

- pre-workshop knowledge, attitude, skills, and aspiration (KASA) survey. Introductions, expectations, and outline of workshop sessions.
- essential terminologies – understand LMY and EQ.
- overview of objective carcase measurement (OCM).
- live lamb assessment of fat score against coach/buyer.
- Livestock Data Link (LDL) or proprietary objective carcase feedback training and coaching.
- assess current practices and develop action plan.

B. Session 2 – Understanding the customer, Venue: supply chain processing facility.

- introduction by processing facility and/or supply chain host.
- live animal fat score assessment of lambs in lairage (against carcase GR fat score).
- individual producer presentations: carcase compliance, lamb production and financial KPI's.
- tour of processing facility (including lairage, processing floor, chiller and fabrication room).
- observe objective carcase assessment (OCM) technologies in-plant.
- demonstration of an 'ideal' lamb carcase and an explanation of customer specifications (fat score two versus five).
- measurement of GR fat score on lamb carcasses in the chiller.
- MSA and retail and customer specification presentations.
- Review action plan.

C. Session 3 – Practical solutions to non-compliance, Venue: farm or research centre.

- understanding and identifying genetics to improve LMY and EQ.
- develop a breeding objective for a lamb enterprise.
- introduction to the RamSelect app (to be followed up with one-on-one coaching)
- understand the effect of growth path and nutrition on LMY and EQ.
- map nutritional requirements for lamb enterprise against seasonal feed production
- assessment of pasture quality and quantity.
- complete action plan and post-workshop KASA survey.

D. Coaching session, Venue: producer's farm office with a computer (can be delivered remotely).

- coaching on LDL to assess compliance and using RamSelect to benchmark ram team
- coaching by either the facilitator or supply chain coordinator or both, depending on skill set (RamSelect, LDL, or proprietary carcase feedback system). Timing would be dependent on producer needs.

E. Review online meeting or face to face (could incorporate animal health session).

- Timing: after the main lamb selling season to review action plans and assess compliance.
- Explore options for further skill development as a group or individually.

2.4.2. *Meat the Market – Beef Compliance*

In collaboration with Agriculture NSW, the structure and learnings of the MtM-LC PGS are being transposed to develop a similar short-term practice change workshop for the beef industry. The content of the beef workshops is currently undergoing final review prior to piloting in a collaborating supply chain.

In collaboration with JBS, a 6-year MLA donor company beef supply chain adoption project commenced in late 2022 with support from ALMTech consultants. The JBS Southern Farm Assurance Producer Engagement R&D Adoption Project will work with JBS' Southern Farm assurance beef groups to improve product supply consistency and quality and will also provide mentoring to JBS employees. This project will provide an opportunity to pilot and further refine the planned *Meat the Market – Beef Compliance* PGS-style workshop and underpin long-term practice change for JBS suppliers targeting eating quality and yield against the company's carcase specifications.

2.5. Program Approach to Research, Development, and Adoption

2.5.1. The Supply Chain Group

MLA's Strategic Framework for producer adoption (Fig. 2) encompasses a program approach to research, development, and adoption. It encourages this through:

- i) Developing and leveraging partnerships to support programs to achieve R, D & A outcomes, and
- ii) increasing cross-company collaboration.

The focus of the ALMTech Supply Chain Group is research, development, and adoption of meat science, engaging with supply chains, and facilitating enhanced producer feedback. The Group is comprised of key MLA and AMPC Program Managers (Objective Carcase Measurement, Genetics, Producer Engagement, Meat Standards Australia, Integrity Systems Company, Genetics, Meat Processing R&D), ALMTech researchers, state Departments of Agriculture, and collaborating supply chains.

It has focused on collaboration, co-investment and capacity building, and the critical success factor has been research that is embedded in supply chains from planning through to inception, and with commercialisation in mind at every step.

Over the course of the ALMTech project, the Supply Chain Group has been a primary mechanism for the project to contribute to achieving these strategic objectives. The group's activities have achieved real impact within the processing sector by supporting them to engage with objective carcase measurement technologies, and benefit from sharing of information to strengthen relationships within supply chains.

3. Discussion

True carcass value that reflects customer requirements is a combination of carcass weight, lean meat yield and eating quality. Payment systems based on these traits requires industry acceptance of accurate OCM systems such as DXA and other technologies currently being validated through the Advanced Livestock Measurement Technologies (ALMTech) program.

The holy-grail for the red-meat industry is to have objective carcass measurement systems installed in most of the beef and lamb processing plants across Australia, measuring both eating quality and lean meat yield and providing feedback and pricing signals back to the producer that are reflective of what the customer wants, or at least the value the processor can extract.

The benefits to industry of having a payment system based on lean meat yield and eating quality are numerous and include faster genetic gains for these traits, minimising overfat animals which reduces the cost of production both on-farm and at a processing level, reduces the environmental impact, and improves customer satisfaction. The ability of processors to provide relevant and accurate carcass feedback to producers regarding compliance with customer specifications is critical to achieving these benefits.

One of the issues in achieving industry-wide adoption of OCM to deliver value-based payment systems is that each processor or supply chain will have a different vision of what their grids might look like depending on their individual customer requirements. They will also adopt different objective carcass technologies, utilise them for different purposes, and will also be likely to have different delivery methods for carcass feedback to the producer.

Between 2017 and 2022, considerable effort has gone into the development of models of extension and delivery that can successfully engage and upskill producers and advisers to understand the potential impact the introduction of OCM systems will have on future carcass compliance and what on-farm solutions to non-compliance can be implemented. These have included a range of awareness-raising events and activities, adviser capability development, long-term practice change activities, and supported by a program approach to research, development, and adoption.

At the commencement of this project when the long-term practice change MtM-LC PGS supported learning program was being developed, there was little value proposition for lamb producers to improve carcass traits such as lean meat yield and eating quality. Currently, there is only one processor in Australia delivering and paying a small number of producers on a grid based on a combination of carcass weight, lean meat yield, intramuscular fat, and animal health conditions.

As well as being a forward-thinking processor, one of the critical success factors has also been the support provided by the ALMTech program to firstly integrate the new technologies within the existing plant infrastructure, then to assist with developing the value proposition for improved efficiencies due to carcass sortation and processing better yielding and superior eating quality carcasses which then evolved into the current value-based payment grid. Running concurrently, was the workshop in which GMP shared their vision for the future with a select group of suppliers and worked alongside them and a livestock consultant to understand their enhanced carcass feedback and to develop management strategies to improve compliance with the new grid.

The producer engagement within the GMP supply chain stimulated several other extension activities including:

- producer clients sending in lambs on a research grid to obtain carcass feedback on LMY and EQ.

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- communications from producers within this workshop to their Seedstock ram suppliers asking for ASBV's for LMY and EQ traits (Inverbrackie Border Leicester producer group webinars). Resulting trial work producing datasets that can be linked to Sheep Genetics as well as being used for case studies such as "proof of concept of the use of ASBV's to improve IMF and LMY".
- producer research trials initiated to look at the effect of different genetics, nutrition and management systems on LMY and EQ (MH Premium Farms).
- ongoing relationships and two-way flow of communication between producers and processors striving to achieve increased compliance to both LMY and EQ.
- Presentations at the MLA Livestock Genetics Forum (2022):
 - o Will Barton (GMP) <https://youtu.be/qiQbYvEzvVg>
 - o Jim Meckiff (PGS MtM-LC PGS deliverer)
 - o Lamb producers who participated in the GMP MtM-LC PGS
 - Rob Linden (Aberfeldy) <https://youtu.be/oXRAIigoPNE>
 - Nick Gay (Heulen Pastoral Company) <https://youtu.be/MmKay7joE9Y>
- Development of further engagement of the supply chain with producer clients <https://www.sheepcentral.com/gundagai-launches-new-lamb-grid-for-imf-yield-and-animal-health/>

Whilst the MtM-LC PGS program has been a successful long-term practice change activity for this lamb processor, for others where there is no immediate financial incentive for the producers to improve lean meat yield and eating quality, the value proposition is limited. Moreover, for these supply chains, the producer-pays PGS model is not supported by the supply chains as they do not see the commercial value in inviting producers to company sponsored events that require the producer to pay a significant contribution to its delivery. It is simply "not good business".

Nevertheless, the value of delivering activities within supply chains lies in the ability of producers to be involved in the journey and to be prepared for what future grids might look like and to have the opportunity to assess current and trial OCM feedback provided by the processor on a line of their own lambs. This only has an impact if the processor is engaged within the workshop and outlines what their customers want and how these specifications will be communicated to the producers in the form of value-based payment grids. Consequently, a gap in the current ALMTech extension and adoption program is a short-term practice change activity/activities that can be delivered within supply chains that are on the OCM journey, but not yet at the value-based payment level, and which requires only a nominal participation charge, or delivery is sponsored by the supply chain. This gap will be addressed through focussed development in early 2023.

The major success factor is to therefore provide a framework for the engagement process to build relationships not only between researchers and the processor for technology implementation, but also between the processor and the producers who are likely to provide them with improved product compliance in the future. For widescale adoption of larger processors to implement similar technology and grids, support for processors and their producer clients is critical.

4. Recommendations

Activities post-ALMTech should be designed to bring the supply chain and service providers up to a level of knowledge around OCM technologies, value chain principles and what genetics, nutrition and management tools are available to implement changes on-farm to improve lean meat yield and eating quality. Activities could include, but are not limited to the following:

- Continuation of the MLA Livestock Adviser Essential - Value Chain workshop.
- There is a real value proposition to work with Livestock agents, to demonstrate they can have an important role in assisting their producer clients interpret processor feedback and point them in the right direction of a livestock adviser, MLA tools or PGS programs to achieve better compliance to specifications.
- Develop a Livestock Adviser Essentials model to be tailored and delivered to graduate programs within companies such as Nutrien and Elders employing Agriculture and Animal Science graduates.
- Support for initial engagement of producers within supply chains with OCM technologies installed. This could involve specific activities for processor clients involved within existing or developing supply chain quality assurance programs (pre-PGS MtM delivery).
- Support for the provision of supply chain officers (could be early career livestock advisers within supply chains) through the development of processor-led MLA projects such as MDC and PDS projects that involve producer engagement activities and link research, processors, advisers and producers in a collaborative model of delivery.
- Leverage government funded activities through providing additional extension activities around supply chain engagement within existing programs (i.e. drought-hub activities).
- Support for the development of further objective assessment tools for the use in live animal assessment of IMF%, GR fat and carcass performance.

Online videos that would be useful to develop for publication on MLA's "The Toolbox" <https://elearning.mla.com.au/>

- OCM terminology and technologies
- MSA / EQ / LMY
- Animal health conditions – causes and prevention
- Live assessment (GR)
- Case studies (producer/processor). These will result from some of the activities already presented within this report.

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Final report

PGS Mentoring Lamb Compliance

Project code: L.ADP.2000.C2
Prepared by: Elke Hocking
Elke Hocking Consulting
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Abstract

The aim of this project was to support the training of a new deliverer for the Profitable Grazing Systems supported learning program 'Meat the Market – Lamb Compliance.' Using a tailored mentoring approach which included phone and email mentoring support pre- and post-workshop delivery, along with co-delivery of the workshop, the trainer was able to become familiar with the package content and delivery style. Since the mentee already had technical expertise, the focus for the mentoring was on the delivery approach rather than support for learning technical content.

The desired outcomes of this mentoring activity were achieved, including mentoring the deliverer mentee, as per an approved mentoring plan, to build their capacity to:

- 1) deliver a high quality, effective SLP that there is market demand for.
- 2) recruit participants for future delivery of this SLP, through developing a relationship with the value chain.
- 3) engage and empower producers to have a value chain approach to improving lamb compliance and profitability.
- 4) act as a champion and support good governance of the PGS program.

Mentoring a livestock advisor with existing technical knowledge, networks, and relationships within their own region in the delivery of an actual PGS SLP, through the provision of phone and email support along with co-delivery opportunities, was a highly effective way of engaging the livestock adviser within the PGS program.

Executive summary

Background

The vision for the Profitable Grazing Systems program is to have a financially sustainable adoption program that is aligned to the MLA 2020 targets that extends MLA R&D outputs and achieves increased producer skills and capability, practice change and whole farm business improvement through increasing producer understanding of:

Business profit = management capability + evidence + value chain approach

In the Profitable Grazing Systems (PGS) business plan, service provider engagement and capability to deliver were recognised as being critical to the success of the program, and currently lacking in some areas. MLA investment into training and support for the deliverer network was recommended to upskill service providers to ensure their ability to engage successfully with PGS.

Following the development of the Profitable Grazing Systems supported learning program 'Meat the Market – Lamb Compliance' (PROJECT NO. L.PGS.1833), the workshop was piloted with three producer groups across South Australia and New South Wales. The delivery of these pilots was funded by the ALMTech project (from leftover Sheep CRC funds) and was delivered by developer Elke Hocking Consulting, along with initial support from Bruce Hancock (Sheep CRC supply chain group). In-kind support was provided by JBS Australia, for the delivery of two SA Pilots, and Gundagai Meat Processors (GMP) for the delivery of the NSW pilot.

This project funded the co-delivery and mentoring component of the NSW pilot workshop at Gundagai Meat Processors, Gundagai, between June 2019 and August 2020. The mentoring process within this project was aimed to support the trainer to deliver an MLA-owned SLP, using a tailored mentoring approach which included phone and email mentoring support pre- and post-workshop delivery, along with co-delivery of the workshop to become familiar with the package content and delivery approach. Since the mentee already had technical expertise, the focus for the mentoring was more on the delivery approach than support for learning technical content.

This project mentored Jim Meckiff from *JM Livestock*, in the delivery of the MLA owned Off-The-Shelf Supported Learning Package 'Meat the Market - Lamb Compliance.'

Mentoring activities included phone and email support to the mentee, along with the value chain host, Michelle Henry, Supply Chain officer for Gundagai Meat Processors (GMP), prior to and following each session of the pilot workshop, along with co-delivery of Session 2 and de-briefing meetings after each session to ensure continuous improvement of the SLP.

The developer, Elke Hocking Consulting, prepared all participant and trainers materials, monitoring and evaluation Pre- and Post-Kasa and evaluation sheets for all sessions delivered at GMP (SLP developed for PROJECT NO. L.PGS.1833 Lamb Lean Meat Yield and Eating Quality – Realising the Potential). Mentoring included phone meetings and email communications with all deliverers, hosts and a representative from the ALMTech project, to go through session plans and organisation details prior to each session, along with detailed debriefing sessions (including evaluation of participants feedback) following the delivery of each session to ensure a thorough process of continuous improvement could be achieved.

Session 1 – 21st June 2019, GMP.

This session was delivered by Bruce Hancock (who was involved in the SA Pilots as a co-deliverer but has since retired). Jim Meckiff, in conjunction with Michelle Henry, the supply chain officer of Gundagai Meat Processors (GMP), engaged the producers to attend the workshop series. Funding for support from the mentoring for this session was funded through the ALMTech project.

Session 2 – 13th November 2019, GMP and host farm (organised by mentee).

This mentoring project supported this session and involved attendance of the mentor, co-delivery, phone and email support with the mentee to deliver Session 2 of the SLP at GMP. This session also involved the identification of a producer host for the pasture and genetics component. Jim Meckiff recruited the host producer from his existing producer networks, with support from Elke Hocking to determine host requirements and preparation of practical examples for use within the workshop (ram selection, entry of ram team into RamSelect and other associated Sheep Genetics data presentation). Travel and accommodation to Gundagai for Elke Hocking was paid for by the ALMTech project.

Session 3 – Delivered virtually on 25th August 2020.

This session was supported by this mentoring project and was scheduled to be delivered on the 18th of March 2020 but had to be postponed due to the fires across Australia affecting mentor, value-chain host, and some participants. Further postponement occurred because of Covid-19 restrictions preventing entry of participants into GMP.

The aim of this session was to conduct a tour of the processing plant, along with a presentation from the value-chain host (GMP) on customer specifications and what future grids might look like under a value-based payment system based on objective carcase measurements of lean meat yield (DXA) and eating quality (measurement of intramuscular fat). Mentoring support for this workshop involved phone meetings initially to organise the logistics of the processor tour and requirements for the value-chain host, along with going through the details of the session plan with Jim Meckiff so that he could deliver this session by himself.

A decision to conduct a shortened version of Session 3 virtually via Zoom, involved mentoring support to Jim Meckiff and the processor host to determine the key learning outcomes to be covered within the processor presentation by CEO of GMP Will Barton, along with logistics of how the virtual processor tour would run. Following the Session on the 25th of August, mentoring activity included a debriefing zoom meeting to discuss the success of the virtual processor tour by the mentor Elke Hocking, ALMTech representative Sean Miller, Jim Meckiff and Michelle Henry.

Mentoring outcomes

The desired outcomes of this mentoring activity were achieved, including mentoring the deliverer as per an approved mentoring plan (Appendix 1) to build the deliverer's capacity to:

- 1) deliver a high quality, effective SLP through the completion of all processes as set out in the mentoring plan (pre- and post-session mentoring, along with co-delivery and continuous improvement of the SLP).
- 2) recruit participants for future delivery of this SLP, through developing relationships with value chains with Objective Carcase measurement technology installed (Gundagai Meat Processors).
- 3) engage and empower producers to have a value chain approach to improving lamb compliance and profitability.
- 4) act as a champion and support good governance of the PGS program.

Appendix 2 shows an evaluation from Session 2, in which the participants of the workshop evaluated the delivery of the different components of the workshop, including evaluation of the mentee.

Feedback

The mentee Jim Meckiff, of JM Livestock, was inspired by the workshop and thought it was a great model to engage producers through the value chain. He said it opened the door for him to be able to work with some of the participants one-on-one following the workshop, to give them more support to analyse their carcase feedback and make more informed decisions on-farm regarding their genetic selections and management decisions.

Regarding Session 3, his comments were: "What a great tour of the plant for the participants and insight toward the future of lamb at GMP." Jim hopes to do a follow up activity with participants involved in the SLP in February 2021 to review the "Lamb Crop of 2020" and make plans for 2021.

Recommendations

Mentoring livestock advisors with existing technical knowledge, networks and relationships within their own region, through co-delivery, phone and email support, is a highly effective way of engaging livestock advisers within the PGS supported learning program.

The key success factor for this SLP is that it must be delivered through a value chain that is moving towards measurement of lean meat yield and eating quality and has commenced installation of objective carcase measurement systems such as hot or cold DXA. For this reason, targeting and mentoring livestock advisers with existing relationships or involvement with such value-chains to deliver this SLP will be more effective than conducting train-the-trainer sessions with generic livestock consultants.

The development and concept of the virtual processor tour within this project has also laid the foundation for future delivery in this style to producers where entry to processor plants (due to Covid-19 or other logistical issues) is not possible. This method of delivery can be used for future workshops as well as for remote mentoring / training activities.

Appendix 1 – Mentoring application training plan

| | | |
|---|---|--|
| Mentor Applicant details: | Mentor Name: | Elke Hocking |
| | Organisation: | Elke Hocking Consulting |
| | ABN: | 53 915 530 384 |
| | Phone number: | 0427 667 081 |
| | Email address: | elkehocking@gmail.com |
| Mentee Applicant details: | Mentee Name: | Jim Meckiff |
| | Organisation: | JM Livestock |
| | ABN: | 90 554 939 324 |
| | Phone number: | 0428 332 280 |
| | Email address: | jamesmeckiff@gmail.com |
| SLP Mentoring is provided for (SLP Title): | Lamb LMY & EQ (Lamb compliance) | |
| When & where: <i>SLP Activity, date, time, venue/s, town/s.</i> | <p>Session 1 - 21st June 2019, mentoring via phone before and after workshop (Bruce Hancock and Michelle Henry - both involved in this pilot workshop)</p> <p>Session 2 - 13th November 2019, Gundagai Meat Processors, Gundagai</p> <p>Session 3 - 18th March 2020, Gundagai Meat Processors, Gundagai</p> <p>Post workshop and potential assistance with another workshop - via phone 2020</p> | |
| Budget | <ul style="list-style-type: none"> Mentoring fees | 4 days (1 day already invoiced after Session 2) 3 days remaining |
| | <ul style="list-style-type: none"> Mentor costs (including travel) | Travel expenses from Adelaide to Gundagai have been covered by ALMtech/Sheep CRC funds for Session 1 and 2 and 3 as well as delivery of Session 2 and 3. |
| | <ul style="list-style-type: none"> Other items | |
| | <ul style="list-style-type: none"> Total cost for mentor activity (to be invoiced based on time) | 4 days @\$1,500/day = \$6,000 |

| Mentoring Plan | |
|---|--|
| <p>Mentee and Mentor developed mentoring plan. Discuss with mentee their requested focus of the mentoring activity:</p> <ul style="list-style-type: none"> • Delivery • Coaching • SLP technical support <p>Describe how this will be included in your mentoring plan.</p> | <p>Delivery: Co-delivering sections of workshop</p> <p>Coaching: Phonecalls involved in mentee preparing for each session of the workshop (identify host farm, livestock for assessment, pasture for assessment, follow up one-on-one with producers from the workshop), evaluations and debriefing following workshop.</p> <p>Technical Support: Provision of resources and discussions regarding tailoring to the region/processor/producers</p> |
| <p>Detailed mentoring program. Calendar & description of mentoring:</p> <ul style="list-style-type: none"> • Pre • during • post SLP delivery. <p>When how (e.g. phone, face-to-face) and what.</p> | <p>Pre-SLP Mentoring: Phonecalls prior to workshop regarding workshop preparation for S1,2 & 3 (via phone) (0.25 days per session = 0.75 day)</p> <p>Mentoring during SLP delivery: Co-delivery Sessions 2 and 3 – 0.5day face-to-face on the day before each workshop with mentee. Comprehensive evaluations and debriefing after Sessions 1-3 (0.5 day each session: face to face and phone). 2 days</p> <p>Post SLP Mentoring: Phonecalls regarding follow-up one-on-one with producers from the workshop. Potential for future group activities identified during the workshop and identification of new groups. 0.5 day</p> <p>Further phone mentoring during 2020 for mentee to potentially deliver another workshop along with Supply chain host (Gundagai Meat Processors - Michelle Henry also co-delivering) (0.75 day including preparation, debriefing each session and continuous improvement of resources) <i>Only charge if this goes ahead.</i></p> |
| <p>SLP technical resources required</p> | <p>LMY trainer and participant notes, slides, resources (Mentor provided all printed materials for this workshop - paid by ALMtech/Sheep CRC for this pilot)</p> |

Appendix 2 – Participant evaluation of deliverers GMP Pilot Session 2

Session 2: Practical Solutions to non-compliance, 13th November 2019, Gundagai Meat Processors

| | Average | min | Max |
|---|------------|-----|-----|
| Prime Lamb Profit Drivers: Elke Hocking | 8.8 | 5 | 10 |
| Understanding ASBV's & Indexes / breeding objective: Elke Hocking | 9.3 | 8 | 10 |
| RamSelect App: Jim Meckiff | 9.3 | 7 | 10 |
| Feed quality and quantity - Elke Hocking | 8.8 | 6 | 10 |
| Nutrition and growth path - effects on LMY & EQ - Elke Hocking | 8.8 | 6 | 10 |
| Host rams: ASBV's (practical - on farm) - Jim/Elke/host | 9.7 | 9 | 10 |
| *Pasture assessment (on-farm): Jim Meckiff | 6.3 | 2 | 10 |
| Seasonal feed production / Action plan: Elke Hocking | 8.7 | 8 | 10 |
| Event coordination / Catering / Venue: Michelle Henry | 9.7 | 8 | 11 |
| How satisfied with this event | 8.8 | 5 | 10 |
| How valuable | 8.8 | 5 | 10 |
| Recommend to others | 88% | | |
| Plan to make changes | 75% | | |

* No feed to assess in pasture assessment, so difficult to do. Spent time looking at containment pens

What did you like most and why?

- New tools available: RamSelect
- Openness of all conversation, positive environment
- Understanding of ASBV's
- All sheep farmers should do this. Well done
- Drought lot management
- Farm workshop and talk at the start from CEO Will Barton, of Gundagai Meat Processors
- The point being demonstrated that looks aren't everything
- Learning about ASBV's and selection of rams

What did you like least and why?

- All interesting - you can always learn something
- Last session on calculating growth rate of lambs
- Pasture assessment: no pasture to assess

Suggestions for improvement

- More sessions for different areas
- Try to finish up by 4pm so we can travel
- More detail on ASBV's

Specific Feedback on each Session:

Host rams: ASBV's & Indexes (on-farm practical session)

- Great to demonstrate the point using ASBV's

Event Coordination / Organisation / Catering / Venue:

- Excellent
- Food was excellent. Great food on offer (FOO)