

Terms of Reference

Nutrition

Summary

Meat & Livestock Australia is seeking Preliminary Proposals from individuals, organisations or collaborative project teams with the capability to undertake research, development, adoption and extension (RDA&E) activities that deliver improved nutritional practices for ruminant livestock and increased market compliance from pasture based systems.

The 2018/19 RD&A priorities for the sheep meat and grassfed beef sectors for the northern and southern Australian regions continue to identify “Rumen technologies to improve efficiency” as a priority to drive productivity, improve environmental sustainability and identify accurate methodologies to measure feed conversion efficiencies for grazing livestock. Specific issues arising from industry consultation include the manipulation of feed conversion ratio through targeted supplementation and other interventions, and the application of technologies and methodologies that effectively lower enteric methane emissions, but can be used as a proxy for improved production efficiency and reduced environmental impact.

The 2018/19 RD&A priorities for the sheep meat and grassfed beef sectors will also target “development of on-farm diagnostic capability to determine nutrient status of growing/breeding cattle”, “commercialisation of established and new technologies for analysing pasture quality” and “strategies to manage feed gaps that ameliorate weight loss and target market opportunities cost-effectively”. Proposed work is to concentrate on delivering outcomes that will achieve productivity gains from grazing ruminants through better management of growth paths and efficiencies for livestock systems.

Key industry performance indicators for these priorities are summarized in Table 1. In addition to ensuring that project outcomes achieve a tangible impact, proposals that also support growing industry capability and capacity (R&D) for the future growth of the red meat industry will be considered favourably.

Table 1: Key industry performance indicators addressed by this ToR

	MLA 2020	MISP 2020	SISP 2020	BISP 2020
Pillar	Productivity and profitability	Productivity and profitability	Production efficiency in farms and in intensive finishing systems	Productivity and profitability
Priority / theme	Production efficiencies in farms and feedlots	Production efficiency in farms and feedlots	Increasing livestock productivity through new research	Production efficiency on farms
Imperative / activity / program		Increasing livestock production through new research / Minimum whole-of-sector increases in productivity growth	Increasing livestock productivity through new research	Increasing livestock production through new research / Prioritise and invest in new research with highest potential

		above baseline levels: northern beef production sector- 0.5% by 2020 and 2.5% by 2030; southern beef production sector- 1.75% by 2020 and 7% by 2030 and Sheep meat production sector - 1.5% by 2020 and 5% by 2030		for productivity gains that will improve profitability in northern and southern Australian production systems
KPI	By 2020, improvement in total factor productivity of: 1.75% (southern beef); 0.5% (northern beef); 0.5% (sheep meat)	Increasing whole sector productivity growth above baseline through new research – Northern Beef: 0.5%, Southern Beef: 1.75%, Sheep 1.5%.	Reduction in the cost of on-farm sheep meat production (\$/kg liveweight) by 1.5% by 2020, and 5% by 2030	Increasing productivity growth above the baseline: — Northern beef production of 0.5% by 2020 and 2.5% by 2030

Background

The Terms of Reference (ToR) is based on a compilation of RD&A priorities from NABRC, SAMRC and WALRC. The list was compiled after consideration of the 2020 meat, beef and sheep industry strategic plans (MISP/BISP/SISP2020) and consolidating input from regional research councils (NABRC/SAMRC/WALRC).

The execution of RD&A that will result in productivity gains and improve profitability is a common requirement across sectors and regions. Management of the seasonal feedbase and supplementation for improved animal productivity is a common goal. The ToR is not limited to one region or red meat sector; gains in rumen efficiency that improve feed conversion efficiencies in grazing systems for both beef and sheep and the need for rumen technologies to improve efficiency, the development of on-farm/ crush-side diagnostics to determine nutrient status of growing/breeding cattle (including commercialisation of handheld Near Infra-red spectroscopy device for analysing pasture quality) and methods to ameliorate weight loss over the dry season to enable targeting of different markets cost-effectively are national priorities.

Objective

MLA is seeking expressions of interest to conduct RD&A activities for improved nutrition using targeted and strategic supplementation practices, direct manipulation of the rumen and on farm/crush side diagnostic technologies that result in increased levels of animal productivity for beef and sheep.

Proposed work will address:

- direct production improvements associated with rumen intervention
- targeted new and novel compounds to improve rumen function
- supplementation opportunities and practices, and management of seasonal feed gaps using alternative crops/by products that maximise feed conversion rates and growth path potential for sheep and/or cattle
- development and validation of new/novel or established technologies (blood, saliva, urine tests, NIRS) that support on farm/crush side diagnosis for improved nutritional management

- Accurate and cost-effective FCE measurement in pasture systems, and options for manipulation of FCE through supplementation and other interventions
- ensuring Australia's RD&A capacity is maintained across institutions, organisations and teams relevant to ruminant nutrition
- address extension gaps and failures that limit adoption and industry impact.

Scope

Work is national in scope. The application and solutions within each project may be regional and focused on enterprises producing grassfed cattle and sheep meat.

Duration of projects will typically be 1-3 years and in some cases up to five years, especially where several generations of animals are studied.

Collaborative teams across institutions are encouraged to apply to take advantage of complementary skills including research, development, adoption and expertise in the use of technologies. Participation of producers and engagement with producer networks is encouraged, especially in setting and reviewing the direction of research, development and adoption of practical, on-farm practices.

Output/s

Proposed RD&A activities will meet agreed milestones which will identify progress (2018-2021) in achieving one or more of the objectives identified in this ToR. Outputs specific to each project that deliver to industry must be clearly identified in the proposal and may include:

- records of producer consultation, engagement and networking
- revision of existing or new producer manuals and/or on line tools that support best practice nutrition management for beef cattle or sheep including supplementation opportunities and practices, management of seasonal feed gaps and economic analysis of benefits.
- results of testing technologies, developing prototypes and introducing practice change on farm which involves producer collaboration and networking.
- milestone and final reports including progress, data, analysis and recommendations for future work, development and extension
- Scientific, peer reviewed publications in Australian and international journals

Outcome/s

By June 2025, whole sector productivity growth is increased above baseline through new research and adoption of new practices on farm that achieve specifically 0.5% for Northern Beef: 1.75% for Southern Beef or 1.5% for Sheep. In addition, it is envisaged that the grass fed sector of the industry will be better equipped to manage whole of life growth paths for sheep and cattle, at slaughter every animal meets compliance (target), and economic analyses highlight benefits over time for the costs and returns of current practice verses the new recommended practices.

Proposed budget and timeframe

Projects with budgets ranging from \$50,000 to \$500,000 per year across three years will be considered. In some cases projects of up to five years may be funded.

For sheep, it is likely that only one project can be supported from this Open Call.

Confidentiality and intellectual property

Successful projects will be funded with sheepmeat and/or grassfed beef levies.

Applicants must identify any background intellectual property (IP) they bring to the project. All data and cited references must be acknowledged appropriately in the final publication. It is the responsibility of the applicant to ensure copyright laws are not breached.

Where further information is available which may assist the successful applicant in meeting the requirements of the project, MLA will provide such information to the successful applicant.

The successful applicant will be required to enter into a standard agreement with MLA.

MLA will share and discuss this proposal with producers, technical experts, other research organisations and research and development corporations. Please acknowledge this freedom to operate.

Deadline for submissions

Preliminary proposals must be received by MLA before 6.00pm (NSW time) Monday, 30 October 2017. Applicants are encouraged to contact relevant MLA project/program managers to discuss the merits of their preliminary proposal prior to submitting. Late proposals will not be accepted.

Use the preliminary proposal template to submit proposals electronically to MLA at:
projectcall@mla.com.au

Preliminary Proposals will be acknowledged and recorded on the MLA project information system. Applicants will be advised in writing of the success or failure of their Preliminary Proposal in January 2018.

Further information

If you have questions regarding these terms of reference, contact:

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