Terms of Reference

Antimicrobial resistance surveillance of Bovine Respiratory Disease Pathogens

Summary:
Meat & Livestock Australia (MLA) in consultation with the Australian Lot Feeders' Association (ALFA) is seeking MLA preliminary applications from individuals, organisations or project teams with the capability to undertake antimicrobial resistance surveillance of bovine respiratory disease pathogens for the Australian feedlot industry.

Background:

Antimicrobials are important for feedlot producers to ensure the health and welfare of animals in their care. The term antimicrobial generally refers to medicines that act to selectively kill or inhibit the division and multiplication of bacteria. Antimicrobial resistance (AMR) refers to the acquired ability of bacteria to survive in the presence of an antimicrobial that previously was able to kill or inhibit the growth of the bacteria. Antimicrobial stewardship (AMS) describes all those practices designed to reduce the need for antimicrobial use and to ensure that when antimicrobials are needed they are used in a way that maximises efficacy while minimising adverse effects including the selection of antimicrobial resistance. Thus AMS includes all those measures to refine, reduce and replace antimicrobial use. The Australian feedlot industry is committed to antimicrobial stewardship and is contributing to Antimicrobial National Antimicrobial Resistance Strategy (Australian Government 2015).

Bovine respiratory disease is the leading cause of morbidity and mortality of Australian feedlot cattle. A number of bacterial species have also been recognised as important to the BRD complex; these include *Mannheimia haemolytica*, *Pasteurella multocida*, and *Histophilus somni.* Antimicrobials are primary treatments against these pathogens. Antimicrobial resistance (AMR) monitoring and surveillance is the yardstick whereby the successful implementation of antimicrobial stewardship principles is effectively measured. It is important that surveillance of pathogens and the antimicrobial sensitivity of these pathogens are regularly assessed. This project will undertake antimicrobial resistance surveillance of bovine respiratory disease pathogens for the Australian feedlot industry.

Project Objectives:

1. Develop guidelines for feedlots to ensure best practice collection of specimens for antimicrobial resistance surveillance of BRD pathogens.

2. Conduct case studies (1-year duration) of how surveillance can refine choice of treatment for BRD pathogens at six feedlots with different antimicrobial usage patterns.
3. Determine antimicrobial resistance of bovine respiratory disease pathogens to antimicrobials used in beef cattle veterinary medicine.
4. Disseminate recommendations to each feedlot based on surveillance to refine antimicrobial use in consultation with each feedlot's consultant veterinarian.
5. Disseminate outcomes of the six case studies to the feedlot industry in a short "MLA Tips and Tools" series.

Methodology:
Whilst not limiting the capacity of the applicant to develop any particular methodology or technique it is envisioned that the methodology may include an assessment of any of the following:
   o AMR surveillance of bovine respiratory disease pathogens at Australian feedlots

The duration of the project should not exceed 18 months total, including a minimum of 12 months of sampling at each feedlot. A framework underpinning sample collection (temporal distribution, number of samples, sampling sites) should be included in applications. Additionally guidelines for feedlots should be developed to ensure best practice collection of samples for antimicrobial resistance surveillance of BRD pathogens.

The methodology adopted must be scientifically robust and achievable within the defined project period to meet project objectives. Methodology presented in the MLA full application, must be of a standard and level of detail to be accepted into a leading scientific journal in the field of microbiology or veterinary science.

Prior to submitting the MLA Full application, the applicant must identify feedlot collaborators that are willing to commit cattle for sampling, and obtain their support for the MLA Full application and methodology. Collaborators must be willing to make available and share electronic treatment records of animal health treatment records and necropsy records, and facilitate best practice collection of samples on live and deceased animals. Feedlots (de-identified of name) must be willing to have their information included in the Tips and Tools series of case studies.

Process:
The MLA feedlot program project application process has two stages:

Stage 1 - Applicants submit a **preliminary application, utilising the MLA Preliminary Application form,** addressing the Terms of Reference. Proposals will be scored against the selection criteria set out in the Terms of Reference.

Preliminary applications must not exceed four (4) pages. MLA will acknowledge receipt of each application. Applicants will be advised in writing of the success or failure of their preliminary application.

Stage 2 - Should your preliminary application be successful, MLA will invite you to submit a **full application, utilising the MLA Full Application form**. Proposals will be scored against the selection criteria set out in the Terms of Reference. Final project approval will be subject to contractual agreement between the applicant/s and MLA.

In particular, the MLA Full Application should detail:
1.   Detail the approach that will be adopted to address the project objectives.
2.   Detail the specific work activities proposed and timelines for their achievement.

3. Provide details of the information/data to be collected, collated and assessed and how these activities will be undertaken.
4. Include a detailed and fully costed budget that covers all the resources required to undertake the work, including details of basis for charging (daily fees, number of days, expenses, etc.).
5. Propose a payment schedule, taking account of the following:
   o Progress payments may be negotiated against project milestones if the size and timescale of the project warrant this. The proposal should propose milestones and payments if required.
   o A minimum of 20% of the project budget must be retained for payment against the final milestone.
   o Payment of fees will be upon MLA acceptance of the attainment of the project milestones.

Selection Criteria:
Applications will be reviewed by Meat & Livestock Australia, and selection of the successful proposal will be based on assessment against the following criteria:

Stage 1:
1. Background of Proposed work
2. Outputs, outcomes and impacts of the project
3. Quality of Brief Project Design and Methods to achieve project objectives
4. Quality of Preliminary Budget
5. Value for Money of Preliminary Budget
6. Delivery Timeline

Stage 2:
1. Applications fulfilment of the methodology and terms of reference requirements of the project.
2. Quality of the methodology to achieve project objectives.
3. Quality of budget justification.
4. Value for money of application.
5. Delivery timeline.

Reporting Requirements:
The successful applicant will provide milestone reports (if required) and a final report giving full details of the results of the work. Milestone and final reports will be prepared in line with MLA report guidelines and delivered in Microsoft Word format.

In addition to MLA standard reports, the following will also be provided to MLA at the time of delivery of the Final report:
1. 6 case studies as MLA tips and tools delivered as a Microsoft Word document (3 pages maximum per case study)
2. a copy of all project data, including meta-data
3. a 600 word (maximum) magazine article with one high resolution image (>1MB file size)
4. a Microsoft Power-point presentation summarizing key project outcomes

MLA encourages publication of project outcomes (upon MLA approval) in relevant scientific journals. Journal publication costs if required to be supported by MLA, should be included in the budget.

Timing:

The project should not exceed 18 months total including 12 months sampling at each feedlot.

Budget:
Indicative budget for the FY18/19 financial year is $150,000 AUD. There is no set budget for the total project however, applicants should deliver a fully justified budget to achieve project objectives. Value for money is a selection criterion at both stages of application assessment.

Meetings:
The applicant needs to allow for two half-day presentations/meetings with the MLA Feedlot Project Manager, one at project inception and one at the stage of delivery of the final report. The MLA project manager will travel to the applicant in all cases.

The successful applicant shall report directly to Dr. Joseph McMeniman, MLA Feedlot Project Manager.

Confidentiality and IP:
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.

All data and cited references must be acknowledged appropriately in the final publication and it is the sole responsibility of the applicant to ensure copyright laws are not breached.

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

Conflict of interest:
Applicants, research teams or subcontractors with any potential conflicts of interest, should thoroughly outline these in this application, including how they propose to manage them, if applicable.

Project Proposal Submissions:
To access the MLA Preliminary and Full application templates (Grain-Fed, Live Export & Goats), go to www.mla.com.au and follow the links to Research and Development, then Funding opportunities and Research organisation funding to download the applications.

MLA applications at either stage must be lodged electronically as Word document to: applications@mla.com.au

Stage 1 MLA Preliminary Applications must be received by Thursday 22nd March at 5pm (Queensland time).

Stage 2 MLA Full Applications must be received by Monday 21st of May at 5 pm (Queensland time).

Strict adherence to the time deadline for applications will occur. Applications received past the deadline will not be assessed. Applications not received in the standard MLA application template will not be assessed.

Further Information:

Dr. Joseph McMeniman
Feedlot Project Manager
Research Development and Innovation

Meat & Livestock Australia

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