

Terms of Reference

Effect of Heat Load and other factors on the incidence of Dark Cutting Carcasses of Feedlot Cattle

Summary:

Meat & Livestock Australia (MLA) in consultation with the Australian Lot Feeders Association (ALFA) is seeking expressions of interest from individuals, organisations or project teams with the capability to undertake research strategies to reduce the incidence of dark cutting carcasses in feedlot cattle during periods of excessive heat load.

Background:

Many Australian feedlots report an increased incidence of dark cutting carcasses during summer as a result of excessive heat load. Dark cutting is a complex multifactorial condition influenced by factors both pre- and post-slaughter. Maximising muscle glycogen is critical to minimising the incidence of dark cutting beef. Periods of excessive heat load are theorised to minimise feed intake of cattle and result in stress which collectively lower muscle glycogen. Recently, post-slaughter conditions have also been reported to influence incidence of dark cutting carcasses. Hughes et al. (2014) reported the incidence of dark cutting carcasses decreased from 8 to 3% as time of grading was increased from 14 hour to 31 hours post slaughter.

Reducing the time that cattle are off feed and duration of lairage is theorised to be critical to minimising dark cutting carcasses. Fasting periods of greater than 24 h have been reported to increase the incidence of dark cutting carcasses and reduce quantity of hot carcass weight marketed from United States feedlot research. No Australian research has examined the effects of duration of lairage on carcass characteristics of feedlot cattle during summer.

Project Objectives:

1. To determine the effects of time off feed and duration of lairage on carcass weight, ultimate pH and incidence of dark cutting carcasses of feedlot cattle during summer.
2. Determine whether time to grading influences meat colour of these carcasses.
3. Make recommendations to minimise the incidence of dark cutting carcasses during summer conditions in Australia.

Methodology:

Whilst not limiting the capacity of the applicant to develop any particular methodology or technique it is envisioned that the methodology may include any of the following:

- Audits of feedlots supply chains
- Analysis of existing feedlot and/or abattoir databases
- On-site feedlot and abattoir lairage research

The methodology adopted must be scientifically robust and achievable within the defined project period. Due care must be taken to ensure that experimental design has adequate statistical power to detect treatment differences for the desired level of response. Furthermore, a clear framework for statistical analysis of data must be presented with the full application.

Methodology presented in the full application, must be of a standard to be accepted into a leading scientific journal in Animal or Meat Science.

Process:

The Expression of Interest should be submitted using an MLA Full Project Application supplemented with appendices as required, to address any specific requirements. The application must be submitted as a Microsoft Word Document. To access the project application template, go to www.mla.com.au and follow the links to Research and development, then Funding opportunities and Research organisation funding to download the MLA Full application template and guidelines.

In particular, the proposal should:

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:
 - 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.
 - A minimum of 20% of the project budget must be retained for payment against the final milestone.
 - Payment of fees will be upon MLA acceptance of the attainment of the project milestones.

Selection Criteria:

Applications will be reviewed by the ALFA Research & Development Committee and Meat & Livestock Australia, and selection of the successful proposal will be based on assessment against the following criteria:

1. Soundness of the method proposed to achieve the project objective;
2. Demonstration of the applicants knowledge and understanding of the relevant issues;
3. Track record of the applicant and proposed team members; and
4. The project budget, delivery timeline and assessed value for money.

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.

In addition to MLA standard reports, the following will also be provided to MLA at the time of delivery of the Final report:

1. a copy of all project data, including meta-data
2. a 800 word (maximum) magazine article

3. a Microsoft Power-point presentation summarizing key project outcomes

The MLA Feedlot R&D program encourages publication of results in peer-reviewed scientific journals. Publication costs if required to be supported by MLA, should be included in the budget.

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 both 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.

Further Information:

Dr. Joseph McMeniman
Feedlot Project Manager
On Farm Innovation and Adoption
Meat & Livestock Australia

Phone: 0447 264 341
Email: jmcmeniman@mla.com.au

Project Proposal Submissions:
Proposals must be lodged electronically as Word document to: applications@mla.com.au

Proposals must be received by 5pm Friday 22nd July, 2016.

Strict adherence to the time deadline for applications will occur.