Expression of Interest: Terms of Reference
MLA Resource Flock: Satellite flocks for reproduction traits for Maternals
Date: 1/11/2021
MLA Program: Livestock Genetics
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1. Purpose:

Meat & Livestock Australia (MLA) are seeking breeders to collaborate and co-invest with the MLA Resource Flock project and contribute to the industry's reference population by collecting reproduction traits and genotyping industry animals as a satellite flock to the MLA Resource Flock.

2. Relevant and necessary background:

The MLA Resource Flock collects reference data (phenotypes and genotypes) for use in genomic testing, as well as providing a resource for additional R&D projects. The data collected is used for the purpose of generating Australian Sheep Breeding Values (ASBV's) and other genetic and genomic tools, for delivery to sheep breeders through Sheep Genetics.

Collecting data on industry relevant animals will improve the accuracy of selection for traits that are either too expensive to measure routinely, are hard-to measure or can only be measured late-in-life. These traits include lean meat yield, eating quality, disease resistance, animal welfare, reproduction, methane production and net feed intake.

The University of New England (UNE) is contracted by MLA to manage the MLA Resource Flock project.

A key component of the Resource Flock project this year is to seek additional co-investment from industry into the collection of genotypes matched to phenotypes for reproduction traits on maiden ewes from **MATERNAL** breeder (non-research) flocks, known as satellite flocks. These satellite flocks will need to demonstrate an ability to meet selection criteria for items such as additional co-investment through in-kind resources and the ability to meet data quality standards.

The sequence of events for successful Expressions of Interest will be:

1. Collect on farm reproduction data on the nominated animals as described in this document
2. Genotype the entire cohort of animals (maiden ewes) to measure for reproduction performance (including dry ewes)

3. Objective

Increase the number of animals in the reference population for reproduction traits by measuring and genotyping industry animals in satellite flocks. Focused on, but not limited to, breeds that currently have an insufficient reference population size.

The reproduction phenotypes recorded will include:

- A DNA sample (TSU) from all ewes first mated in 2022. The ewes must be ***naturally mated*** and all ewes of the cohort must be sampled including **DRY** and pregnant ewes.
- Pre-joining weight and condition scores
- Joining dates – conception method, service sire ID, ram in ram out dates, any back up rams used, management group prior to joining
- Pregnancy scan data relevant to this group including pregnancy scanning date, operator, and management group the ewes were managed in leading into scanning. **This must be scanning for multiples not wet and dry. This is for the purpose of the project – regardless of current on-farm practices**
- Lambing data including Lamb ID, date of birth, birthweight, lambing ease, maternal behaviour score, Birth type, Rear type, DAB's and dry ewes and lamb survival through to weaning
- Data is to be entered via the mating module in your respective software
- **All genotyped ewes are to be mated for a second mating the following year including the dry ewes.** This means the dry ewes genotyped from 2022 must be kept and mated again in 2023.

4. Terms of Reference: Scope

The project is seeking co-investment partners with ewes to collect both phenotypes and DNA samples for the 2022 lambing season **(lambing prior to Dec 2022).** There must be at least 50 maiden ewes in the cohort for that drop.

Individual breeders and/or breeder groups are invited to submit an Expression of Interest (EOI) to become a satellite flock if they meet the following requirements and information recorded on-farm. To participate, partners will need to commit to effectively manage and co-ordinate all the on-farm components of the project and ensure all requirements are met.

On-farm information captured on the animals is required to be submitted by the partner to MLA via Sheep Genetics evaluation. The data must include the reproduction phenotypes listed above (in Section 3. Objective).

Preference will be given to expressions of interest (EOI) that can provide information on minor breeds or sire lines within a breed with low representation in the Resource Flock, as well as for the greatest number of fixed effects. Flocks will need to demonstrate their previous ability to have recorded this information. Applications will also be assessed on key data quality metrics.

Desirable criteria

Applications will be preferred from proposed satellite flock(s) with:

- Cohorts with progeny from at least five sires and a minimum of 50 maiden ewes
- Representation of genes within industry that have not been previously represented in the MLA Resource Flock and will be of value to the future of the sheep industry.

Outputs and Outcomes

Successful EOI applicants will meet agreed milestones, which will identify progress in achieving the objectives and outcomes identified in this Terms of Reference (ToR) to result in the impact of improved annual rates of genetic gain in the Australian sheep industry.

Outcomes specific to this EOI will include:

- Reference populations for reproduction for a wider population of the Australian sheep industry.
- Increased accessibility of genomic tools and technologies in the Australian sheep industry.
- Improved productivity and profitability of sheepmeat breeding enterprises that contribute to industry targets.

Funding and Co-investment

Successful EOI's will be funded with sheepmeat levies and required to enter into a standard agreement with the University of New England (UNE) as a sub-contractor to the MLA Resource Flock project.

Project funding from UNE and MLA will include:

- Half the cost of genotyping of satellite flock animals (this includes TSUs and the type of test will be dependent on representation of genes in the current reference population), and

While the satellite flock(s) costs will include:

- information captured on-farm including pedigree, fixed effects and base traits
- half the cost of the genotype

Failure to meet requirements and timelines set by the Resource Flock staff including but not limited to TSU return deadlines, number requirements and data submission may result in additional costs for the applicant or exclusion from the project.

6. Confidentiality and Intellectual property

All data and cited references will be acknowledged in the MLA Resource Flock milestone(s) and final report. Any data/information collected under the satellite flock will be managed by MLA and

may be used for research and development by MLA, as well as being incorporated and used in the 'Breeding Values Services' and any 'National Genetics Data Platforms', defined as below.

Breeding Values Services means any service which involves estimation of genetic or genomic breeding values for cattle, goat and sheep, including without limitation the service offered which uses the analytical software currently known as BREEDPLAN and OVIS software;

National Genetics Data Platform means database or network of databases and analytics infrastructure established to store, process and enable access to, in accordance with defined IP rights, data, IP, products and tools relevant to livestock genetics;

Submissions

Breeders and/or breeder groups should submit the Expression of Interest Template to livestockgenetics@mla.com.au by COB on Friday 26th November 2021.

Meat & Livestock Australia will acknowledge receipt of each application. Applicants will be advised in writing of the outcome of their expression of interest.

Further information

For any enquiries about your eligibility or for further details on the EOI, please email Resource Flock Project Coordinator, Elise Bowen at sheepdatamanagement@gmail.com.