CQUNIVERSITY RESEARCH

RESEARCH WITH IMPACT

INCREASING THE UPTAKE OF PERFORMANCE-RECORDING GENETICS THROUGH AUTOMATED LIVESTOCK MANAGEMENT SYSTEMS

Automated phenotyping technology to make performance recording easier and more affordable

With the support of Meat & Livestock Australia (MLA), CQUniversity Australia is addressing the challenge of increasing uptake of objective genetic performance recording in extensive beef production systems in Northern Australia.

The future for genetic improvement in northern Australian beef herds requires more cattle to have more accurate, more frequent and more reliable performance measures. But in the extensive beef production systems typical of northern Australia there are significant costs associated with performance recording – this means that genetic improvement programs need to capture data at lower costs and with less labour.

This project is consolidating a range of technologies, algorithms and data management systems that have the potential to be used to automatically record cattle performance. This will provide the starting point for cattle producers to begin exploring a whole of business approach to automated data capture and analyses tools.

Significance to industry

Automated livestock management systems (ALMS) can provide more accurate, more frequent and more reliable measures of performance than traditional methods.

The opportunity to more efficiently and economically record performance traits will not only increase the number of animals that can have recognised EBVs through BREEDPLAN, but will also provide a greater number of cattle that are available as a reference population for genomic evaluation.

Figure 1: Walk-over-weigh in use at a producer partner's central Queensland stud breeding operation.

Progress to date

The project has been running since 2018 and is being carried out over two phases. Phase one tested automated phenotyping technologies across the 1100 head herd at Belmont Research Station where Belmont acted as the 'hub' in an intensive research activity.

The current phase, phase two, links into the phase one hub with a series of producer-owned 'spokes'. This hub and spoke model has ensured high quality research, direct engagement and participation with end-users, and an efficient vehicle for extension to producers and industry.

Walk-over-weigh units have been deployed across stud and commercial breeding properties throughout Queensland and the Northern Territory with data gathered from these properties used to refine algorithms and improve the technology.

As the project has progressed, the focus has shifted to working with seedstock producers and genetic evaluation platforms to collect automated performance data that is complaint with the data requirements of BREEDPLAN.

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