Informing New Zealand Beef (INZB)

Quarterly Progress Report: October – December 2023

Background

Beef + Lamb New Zealand with the support of Ministry for Primary Industries is leading the Informing New Zealand Beef (INZB) programme. The overall aim of the seven-year programme is to improve profitability and enhance sustainability across the beef industry through the development and adoption of improved genetics.

The objectives of the programme are to:

1. develop a beef genetic evaluation system that includes traits that are important to NZ beef farmers and supports a sustainable beef farming industry in NZ,
2. create easy to use tools which enable data to be efficiently collected, managed, analysed and used by farmers to make profitable decisions for their operation,
3. create a new approach to extension design with the goal of increasing farmer engagement across the beef industry.

Summary of progress during this quarter

Economic model and prototype selection index development nears completion

AbacusBio have worked closely with key B+LNZ staff to progress development of the index model. This has included development of models, parameterisation with bioeconomic inputs reflective of NZ beef systems, and modelling of economic values for each trait that is to be included within the prototype indexes.

Currently, the model has been developed to support delivery of maternal beef, terminal beef and beef on dairy indexes.

A joint IAG/TAG meeting has been scheduled for March, where the group will review the prototype indexes, methodology, trait weightings and selection responses to allow AbacusBio and B+LNZ to progress with finalisation of the index.

Fertility trait development work commenced on two pilot farms

Fertility trait development research has kicked off with cows from two pilot farms being tagged with CowManager tags in November. These tags are collecting data including heat

events (estrus)/alerts and behavioural data, including rumination, eating and activity status. This data is collected on an hourly basis and captured by sensors which feed information back to a computer, where CowManager software detects heat events. This data will allow us to collect more detailed information on fertility, with the overall objective of the work being to create a more accurate fertility EBV. If the pilot farm trial is successful, the research will be extended to include more farms in the trial.

Alongside fertility data, the health module is also being used – this module gives health alerts based on a combination of ear temperature and activity levels.

Promising results from the Greenhouse Gas Portable Accumulation Chamber (PAC) trial

In 2023, approximately 120 heifers from the Kepler Beef Progeny Test site were run through Portable Accumulation Chambers at AgResearch to determine if PACs were suitable for measuring GHG in beef cattle and to get an initial indication as to whether rumen microbial profiling is a suitable proxy measure for GHG emissions in beef cattle.

Results show that PACs performed as expected with no behaviour problems and were shown to be a suitable method for the measurement of methane emissions from young beef cattle. Although there is insufficient data at this stage for a heritability estimate, moderate repeatabilities can be considered as an upper bound of heritability and indicate that the genetic component is likely to be similar to that seen in sheep and dairy cattle where published estimates range from 0.1-0.3. This is good news, as it means that GHG emissions can be selected for in beef cattle. Rumen microbial predictors also performed well as a proxy measure and warrant further investigation.

Calving and Mating at Beef Progeny Test (BPT) sites

Calving continued at Kepler over October and into early November - 433 calves were born, with birth date and Calving Assistance Score recorded by farm staff. The calves were tagged, DNA sampled and weighed in November. Alongside this, Mature Cow Weight (MCW) and Body Condition Score (BCS) on the BPT cows was recorded.

In December, a total of 363 cows were Artificially Inseminated at Kepler to both Hereford and Angus bulls. Sires included 13 bulls selected from Angus and Hereford breeders across the country, as well as one international Angus bull. These bulls will also be used at Lochinver in January, alongside Simmental bulls. Pre-calving cow measurements were also recorded in December (MCW and BCS).

At the Lochinver site, calving started in October and continued through into early December. New mixed-age cows intended for the BPT were tagged with Progeny Test tags in November.

Key highlights and achievements

- Delivery of GHG PAC work results
- Prototype selection index development nears completion
- Parasite trait feasibility review completed
- Artificial insemination carried out at Kepler
- Calving at BPT sites
- Internal programme review held

Upcoming

- Review of prototype selection indexes at TAG/IAG meeting
- Four BCS and udder scoring workshops for breeders to be held
- Lochinver Beef Progeny Test field day
- Artificial Insemination at Lochinver BPT site

Investment

Investment period	Co-investor contribution	MPI contribution	Total investment
During this Quarter	$543,125	$362,083	$905,208
Programme To Date	$3.88 m	$2.59 m	$6.47m