Cattletech Project - A study of on-farm worm control in cattle

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Measuring the value of high frequency parasite monitoring on beef and dairy farms

Who funded the Project?

The Cattletech Project was a year long case study and was jointly funded by Technology NZ, 12 Project Farms and the following corporate sponsors: CRT Ltd, ASB Bank, Ravensdown, Dairy Brands, FECPAK International Ltd, NRM (Note: No levied funding was used in this project.)

Where were the Project Farms located?

The 12 project farms were a mixture of both beef and dairy operations. All of the farms had a focus on young stock production and performance. They were geographically spread from Keri Keri in Northland to Otautau in Southland.

What approach did the Project take?

FECPAK had already developed and refined an advanced FEC system for the sheep industry, however the sheep system required further refinement for use in the cattle industry. The refinement procedure included undertaking dry matter trials to establish moisture variation between sheep and cattle samples. Egg distribution in cattle faecal pats was also an issue that was addressed for the cattle system. These modifications to the sample preparation combined with FECPAK’s high volume counting chamber has allowed farmers using the FECPAK system to achieve repeatable, reliable FEC results on young cattle to a sensitivity of 10 epg. Most of the industry is still using an outdated 50 or 100 epg sensitivity. In order to support the new FEC test, slaughter trials were carried out and full digest worm counts were undertaken. The results showed even low worm burdens were detected by the new FECPAK FEC method. Along with the method refinement, a quick mob average test protocol was developed. This allowed the project farmers to increase test frequency without impacting heavily on their operational time.

Following refinement of the method and equipment, the next stage was to integrate this new test results with regular stock weighing and stockman...
observations in order to establish relative epg levels where animal performance was affected.

Along with FEC levels, LWG performance and stockman observation, the project farmers also supplied pasture feed levels, stock movement information, anthelmintic treatments and any other animal health treatments. This information was collected in order to gain a greater understanding of the parasite dynamics on each of the project properties.

Project Findings

The following points highlight the key findings:

- Every property is unique
- Seasonal conditions - major impact
- Every property has different management tools at their disposal
- Flexibility
- Integrated approach - key to success

Reduction of Drench Spend

A number of the project farms significantly reduced drench usage. The Baldwin property achieved a 40% reduction over the project. This translated to a direct drench saving of $7000. The Irvine property achieved a similar result with a 30% reduction. These results were achieved without a reduction in animal performance. Many of the project farmers believe this saving was even more significant when labour and opportunity costs were added in. The degree of drench reduction was relative to the level of usage before the trial. The majority of the project farms showed a reduction in drench frequency but in many cases it was dollars saved that was the most significant issue. Using lower cost products and still achieving effective worm control and animal performance realized these dollar savings.

Detection of Worm Burdens - Outside Expected Risk Periods

As equally as important as reducing drench frequency was the detection and treatment of unexpected worm burdens. On a number of the project farms that followed a low drench usage policy, the treatment of an identified problem resulted in enhanced performance from the affected animals. The focus across the project farms was to follow a strategic treatment approach based on the new FECPAK FEC result, animal performance data in addition to the stockman observation. Like any farm management decision, timing is everything.
Drench Treatment Failure

Part of the benefit of being able to undertake a quick and accurate FEC test instantly, was the ability to check the effectiveness of the drench products and applications being used on the project properties. As the project farmers began to test the success and or failure of their treatments, an alarming pattern began to develop. Of the twelve project properties nine reported post treatment positive egg counts. These cases were followed through using larval cultures to identify the species that was surviving the treatment. The results demonstrated the importance of using an effective product. The Thomas property in Southland experienced a dramatic improvement in animal performance by simply changing to an effective formulation, in their case at a significantly lower cost.

The CattleTech findings relate to Angela Molloy’s (Lincoln Kelloggs Scholarship) farm survey that found eleven of eighteen properties with post treatment failure. In 1999 Dr Bill Pomroy (Massey University) stated that New Zealand has more cases of anthelmintic resistance in cattle than the rest of the world put together.