FarmIQ experiences

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FarmIQ programme – key facts

Programme start: November 2010
Length: 7 years
PGP funding: $59 million
Industry funding: $91 million
Commercial partners: Silver Fern Farms, Landcorp Farming Ltd, Tru-Test Ltd
Estimated potential economic benefits to NZ: $1.1 billion per year by 2025

FarmIQ programme – overview

In 2010, meat company Silver Fern Farms, farmer Landcorp and technology supplier Tru-Test joined forces with the Ministry for Primary Industries’ Primary Growth Partnership fund to launch FarmIQ, a seven-year programme that aims to create a demand-driven, integrated value chain for New Zealand red meat.

FarmIQ is progressing five distinct projects. These are: market research and product development; processing feedback; farm performance; genetics; and Farm Management System (FMS).

Each of these projects is significant in its own right, and all are adding value to the red meat supply chain. They are being integrated as the FarmIQ programme progresses – and the sum will be even greater than the parts.

The potential for gains begins before livestock are born – by using genetics that are well matched with the right on-farm systems and being able to select breeding that delivers good meat quality characteristics. On the farm and in the processing plant, electronic identification systems enable individual animals to be tracked and recorded, and performance can then be analysed and improved. Finally and critically, it involves matching products to markets.

The database system being built for farmers links all the other parts together. The market insights and improvements both on-farm and in processing are being recorded and measured through this system, which has the working title, Farm Management System.

The interactive farm database translates the complexity of a farm business, generating more robust and credible information which enables farmers to monitor and analyse their farm operation. This supports their decision-making.

FarmIQ is bringing the parts of the chain closer together. Farmers are starting to receive the information they require to produce animals that meet consumer preferences, and for this they will receive payments based on meat quality. Consumers will be offered premium-branded red meat that consistently meets their eating quality preferences. And the processing industry will begin to build approaches and relationships based on delivering value.
FarmIQ programme - progress

The FarmIQ PGP programme is now in its fourth year of operation.

Achievements to date are:

Completion of the new high-density chip, a powerful new sheep breeding tool. Testing of the chip against animals of known genotypes has progressed, and ram breeders could be using new breeding measures for meat yield and quality supplied by FarmIQ this coming season.

- A large eating quality testing programme completed and used to develop a new beef grading system (called the Beef Eating Quality System – Silver Fern Farms).
- New super-premium branded red meat programmes being tested in-market.
- Base infrastructure for in-plant tracking and measurement has been built.

Super-premium branded red meat programmes for food service have been launched in New Zealand and overseas, and a consumer version was launched in New Zealand (March).

Over one million EID tags have been distributed by FarmIQ, mostly to the 200+ FarmIQ farmers.

FarmIQ farm management system

- The FarmIQ Farm Management System (FMS) is still in development with three upgrades having taken place so far, the latest in April.
- FarmIQ is working with 130 farmers who are using the trial version and giving feedback.
- The FarmIQ Farm Management System will be ready for wider rollout later in the year.

FarmIQ farms

There are now 11 FarmIQ farms throughout New Zealand and each has an associated group of advisers including a vet.

South Island IQ Farms

<table>
<thead>
<tr>
<th>Farm and owner or manager</th>
<th>Address</th>
<th>Vet or practice involved (ST = also in Steering Team)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moana Lawson Family Partnership Rob Lawson, Manager</td>
<td>Steep Hill Road, Waikouaiti, Otago</td>
<td>Ivan Hollaway Vet Life</td>
</tr>
<tr>
<td>Rosebank Barry and Julie Crawford</td>
<td>Craigie Road, RD 1, Gore</td>
<td>Donna Hamilton (ST) and Lisa Birse Vet South Gore</td>
</tr>
<tr>
<td>Glenna Paul and Prue Ensor</td>
<td>Double Hill Run Rd, RD 1, Methven</td>
<td>Steve Williams (ST) Canterbury Vets</td>
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<tr>
<td>White Rock Mains Duncan and Tina MacKintosh</td>
<td>Loburn White Rock Rd, RD 2, Rangiora</td>
<td>Hamish Reid (ST) Vet Life, Oxford</td>
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<tr>
<td>Telford Allan Gorton, Manager</td>
<td>Owaka Highway, Balclutha</td>
<td>Clutha Vets</td>
</tr>
<tr>
<td>Landcorp Farming Ltd Stuart Farm Luke Wright, Manager</td>
<td>My York Road, Te Anau, Southland</td>
<td>Northern Southland Vets –Te Anau</td>
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North Island IQ farms

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<tr>
<th>Farm and owner or manager</th>
<th>Address</th>
<th>Vet or practice involved (ST = also in Steering Team)</th>
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<tbody>
<tr>
<td>Ohineumeri Hannah and Sam Morrah</td>
<td>Bird Road, RD 4, Wallingford, Waipukurau</td>
<td>Richard Hilson (ST) Vet Services Waipukurau</td>
</tr>
<tr>
<td>Mairedale Ian Hopkins and Shelley Dew-Hopkins</td>
<td>Te Parapara Road, Kimbolton, Manawatu</td>
<td>Anthony Oswald Taihape Vets</td>
</tr>
<tr>
<td>Waikawa Farms Neil Aicken</td>
<td>Allen + Eyres Rd, RD 2, Tuakau</td>
<td>Jeremy Leigh (ST) Ruminant Health</td>
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<tr>
<td>Whangara Farms Richard Scholefield, Manager</td>
<td>State Highway 35, RD 3, Whangara, Gisborne</td>
<td>Trevor Cook (ST) Totally Vets Manchester St, Feilding</td>
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<tr>
<td>Mangarata (Taratahi) Paul Crick, Manager</td>
<td>Caves Road, RD 6, Masterton</td>
<td>Stuart Bruere (ST) Chapel St Vets, Masterton</td>
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Steering team involvement

Each FarmIQ project has a steering team that the farmer chooses to help guide them towards achieving their objectives. Usually this is made up of key advisers, including the following: accountant, veterinarian, livestock agent (often Silver Fern Farms), colleague or other farmer, agronomist, soil scientist, rural banker and consultant. Seven of the 11 teams include a vet, which enables those vets to have a much wider understanding of the farm and assist with key decisions. The farmer, in turn, gets the benefit of having their most trusted rural professional at their side.

Recently, a small questionnaire was sent to the vets involved. Feedback from the vets on the steering teams has been very positive. The FarmIQ structure provides the opportunity to try things in a real-farm situation that they can then take to their other clients. Many have done animal health investigations on the IQ Farm, such as faecal egg count reduction test and trace element studies. Often these studies scrutinise normal farming practices more closely thereby justifying their existence in the Animal Health Plan. For example, Stuart Bruere is doing a large Iodine trial with Mangarata that is attracting widespread attention, and the results will be published when complete.

Farm studies

A key focus of FarmIQ is to enable farmers to measure production responses to management changes. When complete, the FarmIQ Farm Management System will make it very easy to measure actual production (for example, live weight and carcass weight (CW)) and link it to the farmer’s decisions. Both animal treatments and carcass characteristics can be matched to individual EID tags, providing an excellent platform for doing on-farm comparisons. These are more robust than most on-farm studies, but the numbers are usually smaller than required for a trial which means the results are not always scientifically significant.

IQ Farm example

Waikawa farms – Neil Aicken

Snapshot of the Waikawa Business Plan:

- Business goal $>1,000 Economic Farm Surplus (EFS) per hectare (and >500kgCW/ha)
- Need to produce at least two tonnes more feed from pasture to achieve business goal
- Three-pronged approach to raising farm performance and profit:
Farm IQ experiences

- Raise pasture production through a different approach to fertiliser application; measure and compare results
- Raise pasture production through new pasture types; measure and compare results
- Fine-tune animal and pasture management

Farm detail

This is an intensive Friesian bull beef using techno grazing systems on 458 effective hectares near Pukekawa, just south of Auckland. The farm is fenced into 1300 permanent paddocks with another 300 when subdivided for a wet winter round.

It is an example of close monitoring of farm performance, which the Farm IQ Farm Management System supports.

The techno grazing systems allow replicate studies to be done with ease. The 458ha has been divided into 12 farmlets which each represent similar contour, soil types and systems. Each farmlet is monitored – currently on Farmax and in future the Farm IQ Farm Management System. Gross margin (GM)/ha ranges from $628 to $2,041.

<table>
<thead>
<tr>
<th>Farmlet</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
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<tr>
<td>Area</td>
<td>35.1</td>
<td>31.9</td>
<td>39.2</td>
<td>32.9</td>
<td>47.9</td>
<td>22.6</td>
<td>47.9</td>
<td>31.3</td>
<td>24.3</td>
<td>38.7</td>
<td>47.4</td>
<td>28.0</td>
<td>70.5</td>
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<tr>
<td>Net CW/ha</td>
<td>384</td>
<td>459</td>
<td>354</td>
<td>337</td>
<td>303</td>
<td>395</td>
<td>401</td>
<td>401</td>
<td>424</td>
<td>626</td>
<td>271</td>
<td>309</td>
<td>360</td>
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<tr>
<td>Gross Margin/ha</td>
<td>$987</td>
<td>$1,396</td>
<td>$1,345</td>
<td>$1,092</td>
<td>$628</td>
<td>$1,251</td>
<td>$1,175</td>
<td>$1,206</td>
<td>$2,041</td>
<td>$981</td>
<td>$1,007</td>
<td>$1,325</td>
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Stock numbers

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<tr>
<td>Total Stock Numbers</td>
<td>469</td>
<td>510</td>
<td>404</td>
<td>495</td>
<td>570</td>
<td>517</td>
<td>1443</td>
<td>1522</td>
<td></td>
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<tr>
<td>Average LW</td>
<td>265</td>
<td>280</td>
<td>350</td>
<td>385</td>
<td>345</td>
<td>350</td>
<td>568</td>
<td>570</td>
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<tr>
<td>Total LW</td>
<td>124285</td>
<td>142800</td>
<td>141400</td>
<td>190575</td>
<td>310650</td>
<td>294690</td>
<td>576335</td>
<td>628065</td>
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<tr>
<td>Total LW/ha</td>
<td>1258</td>
<td>1371</td>
<td></td>
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Pasture cover is recorded in every system (pre and post grazing) every fortnight. Rainfall and soil temperature are also recorded.

Copper investigation example

All Waikawa bulls are routinely given two injections of 2ml of copper in June and August to counter the historically low availability of copper in winter. In 2012 as part of a small comparison study, in 6 mobs of R2 bulls (79 total) only the even-numbered bulls were dosed with copper on June 26. Monitoring showed the treated group were 13kg heavier at Day 0 (26 June) but by the 15 of January were only 1kg heavier. A pasture sample taken in late April
2012 indicates that iron is typically higher in the area where these bulls graze. Although lowering serum copper levels in sampled bulls, this treatment does not appear to influence growth rates in this situation, as it would for example if molybdenum was high.

In some processing plants diseases identified at slaughter are now reported according to an individual EID tag. This information will be automatically uploaded to the FarmIQ Farm Management System and reports can be generated directly by the farmer. In future, this will enable disease incidence to be analysed on the farm of origin and in the near future traced to the genetics as well. This information will enable fast and accurate disease monitoring. The slaughter diseases below are from 1120 bulls on Waikawa, but some bulls will have more than one disease reported.

Forage investigation example

The forage plan is focused on increasing feed production, and several demonstrations have been set up to explore opportunities. These include Fescue, AR37 Ryegrass (Base), two versions of Plantain – one high-cost and the other low-cost, and more recently Italian Ryegrass. Plantain has been attracting a lot of farmer interest.

Plantain with red and white clover was planted on 5.55ha, in a high-cost option, and compared to a control area of 5.59ha of existing ryegrass and clover pasture.

Results from Plantain:
- No significant differences in carcass weight production
- Similar levels of feed intakes on both Plantain and Control
- High cost of establishment as Plantain was preceded by a winter annual ryegrass
Plantain dominated in establishment so the red and white clover did not establish well. Some animal health challenges with Plantain-dominant sward (bloat, low dry matter (DM)). Although it was over-sown with red clover in spring 2013, two dry summers, insects and grazing pressure meant that an alternative has now been planted (Italian Ryegrass).

Conclusion

FarmIQ is a bold initiative that is definitely helping the farmers that are directly involved with it to drive their farm performance. There are indications that the knowledge transfer is extended to the associated people on the Steering Teams. The vets, for example, have the added advantage of using more accurate local knowledge to assist other farming clients.

Each FarmIQ farm holds one or two field days each year and until recently these have been by invitation only. The latest round was promoted and open to wider attendance. In future as more results and more robust recording through the Farm Management System is achieved, these will attract more interest from commercial farmers. The transfer of knowledge should then dissipate faster to a wider audience.

The FarmIQ vets that responded to the questionnaire were in support of this Primary Growth Partnership programme and enjoyed their role in it. This is despite some early scepticism. Now that the FarmIQ PGP is in its second half there will be more information relayed to the farming public. It would be advantageous for vets that are not involved to learn more from their local FarmIQ project and ask how they can be at the forefront of the technological advancements occurring on sheep, beef and deer farms. You can start by visiting www.farmiq.co.nz and registering for newsletters.
Acknowledgements

Bob Thomson – AgFirst Northland, FarmIQ