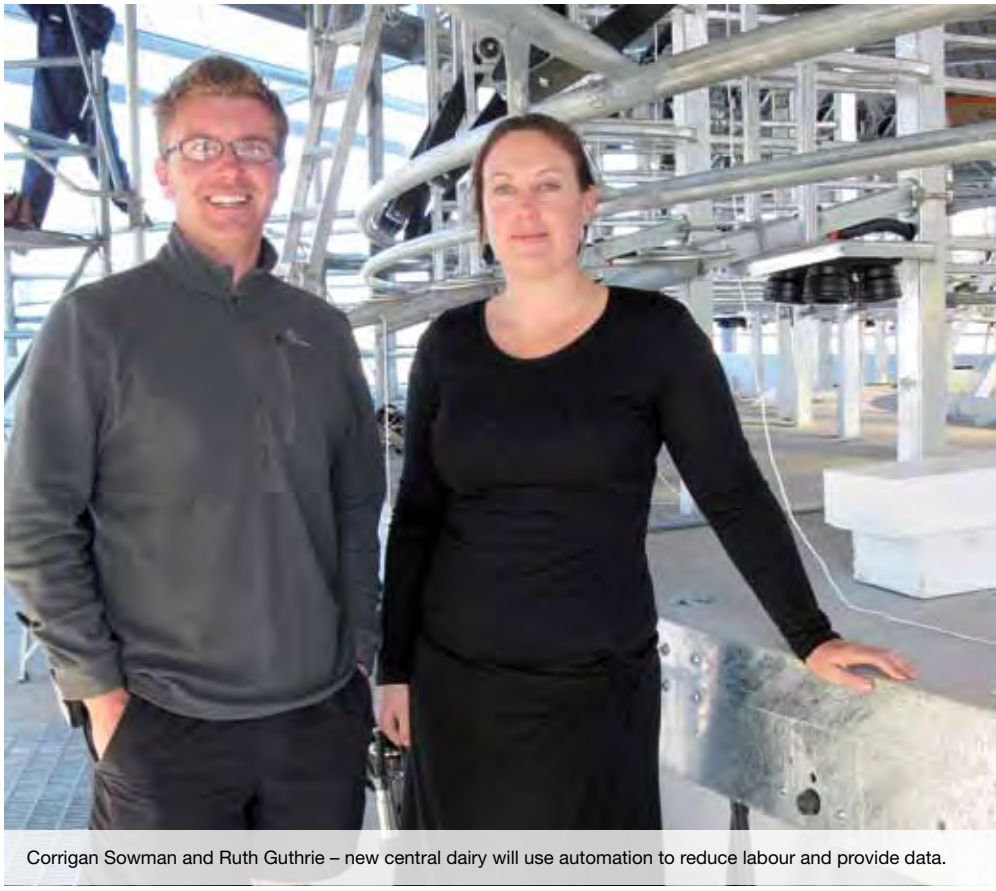
‘Data girl, gadget boy’ get results

With a heap of technical know-how, a Nelson couple have begun their farming career with a science-based strategy using data from every aspect of their farm.

Location: Takaka, Golden Bay
Area: 265ha effective
Runoff: 130ha
Cows: 930 crossbred, reducing to 850
Breeding: Breeding worth (BW) 114, production worth (PW) 143
Production: 374kg of milksolids (MS)/cow
Supplements: 621kg of dry matter (DM)/cow including grass and maize silage, palm kernel
Irrigation: K-Line
Farm dairies: 46-aside herringbone and 24-aside herringbone to be replaced with central 54-bail rotary.



Corrigan Sowman and Ruth Guthrie – new central dairy will use automation to reduce labour and provide data.

Collecting and analysing data during their first season back on the home farm is providing Corrigan Sowman and fiancee Ruth Guthrie with powerful information.

It’s knowledge they’re using to drive some significant changes aimed at achieving their goal of operating a profitable and enjoyable family business.

Corrigan is a former Dexcel (now DairyNZ) and FarmRight consultant while Ruth has an academic background in ecology and recently submitted her PhD thesis.

At this year’s South Island Dairy Event (SIDE), held at Lincoln, Corrigan shared some of their lessons after 18 months on the 270 effective ha Sowman Golden Bay family farm near Takaka.

Its area and layout are products of 30 years of “haphazard growth” of its boundaries as Corrigan’s grandparents George and Rona, and then his parents Brian and Glenda, steadily bought neighbouring blocks. More recently that’s included a neighbouring property that came with a 24-aside herringbone dairy.

“Because of that haphazard growth we’d ended up with a wide range in paddock sizes, from 2ha to 7ha, and the extra dairy meant we now had a three-herd system,” Corrigan said.

Difficult

The farm had become complex and labour intensive as well as difficult for successive managers to run, although it had always been a top performer in production, Ruth said.

“The idea when we came home was not to roar in and change any major component for the first season.”

The couple’s first priority was to graze to better residuals and start monitoring and collecting information so they knew exactly what they were dealing with.

Both know the value of monitoring – they laughingly refer to themselves as “data girl and gadget boy” – and Corrigan’s experience of working closely with the management team at the Lincoln University Dairy Farm (LUDF) meant he was keenly aware of the key factors they needed to record.

They immediately began monitoring pasture covers using a rising platemeter, walking the whole farm weekly on a set route. It took one of them six hours but was worth every minute as the information was downloaded into the Pasture Coach computer program, providing them with actual and projected feed wedge graphs.

For Corrigan, the ability to adjust assumptions and produce a predicted wedge made it a powerful tool, used repeatedly in making decisions on feed allocation, rotation speed and use or conservation of supplementary feeds.

Coping with an annual average rainfall of 2.1m means some of the heavier paddocks, though not pugged, have uneven surfaces. An invasion of giant buttercup in some paddocks created difficulties in accurately assessing covers.

Time pressure

Eventually, so too did the six hours a week of walking the farm, so they invested in a rapid pasture meter (RPM).

Towed behind the four-wheeler and following the same route each time, it assesses covers in just three hours.

The rough paddocks and giant buttercup still have to be taken into consideration and Corrigan has worked hard with one of the farm's consultants, Jeremy Savage from Macfarlane Rural Business, to calibrate the equation that converts pasture height to kg of dry matter (DM).

"It's very different from C-Dax's and Synlait's equation but we're confident the RPM is giving us fast, accurate information," he said.

C-Dax provides an equation and Synlait has developed its own for Canterbury irrigated pastures (*Dairy Exporter*, June 2008, page 116).

The couple also purchased FarmKeeper software, a farm mapping program that records numerous details down to paddock scale. Using information on when each paddock was grazed, how many cows grazed it and for how long, in graph form tallied over a season clearly showed the poorer producing areas.

Asking why

"From there we asked why those paddocks weren't performing," Corrigan said.

"Was it the soils, fertility, age of pastures, weeds, irrigation – what?"

Despite around 70 percent of the farm being regrassed or oversown with modern cultivars in the past six years, they found old pasture species had invaded many of the poorer paddocks because of previous inconsistent grazing residuals.

The data also caused them to question their irrigation system, so they had their pumps checked along with the volumes and pressures through the K-Line system, and the uniformity of application. They queried the timing of application and decided to install three Aquaflex soil moisture meters in the different soil types on the farm to improve irrigation decisions.

"We might have 2m of rainfall a year but that's not evenly spread," he said.

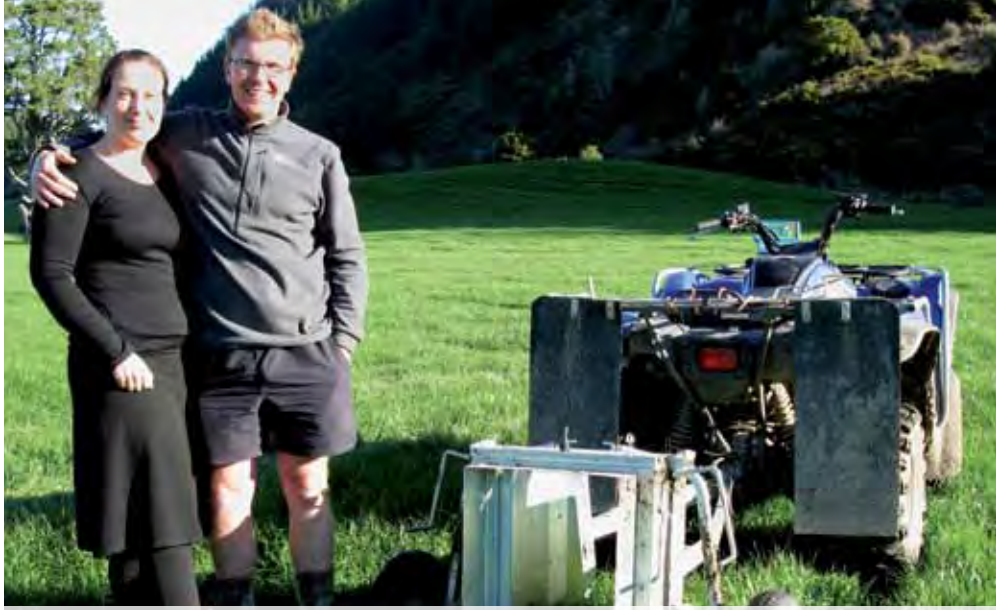
"We can get 200mm in one night and then have a drought, like this past season. The Aquaflex lets us manage that and takes the guesswork out of it because we can see where soil moisture levels are at."

So after a full season, what has all this data collection told them?

"We know we grow an average 13t DM/ha/year but the range is from 8-18t. We've calculated we harvest 10.5t DM/ha [80 percent] which is good, but it's not surprising when we've had a stocking rate of 3.5cows/ha.

"We know the wet spring meant the soils were at field capacity for almost 80 days and that's why we struggled to grow grass then and struggled to eat it. But we also know soil temperature was at 25° C for three weeks in the summer, which was why we struggled to grow grass then.

"We know which paddocks are performing well and which aren't. The best are giving us 1100 cow grazing days/ha and the worst give us just 350.



The C-Dax rapid pasture meter, towed behind the four-wheeler, has halved the time spent collecting the information.

> "The infrastructural changes haven't come cheaply, but the additional debt serves as another motivator to strive for profitability rather than production."

Return interval

"And we found our irrigation return interval for our soil type is too long at 12 days."

They've also found that running two dairies unnecessarily complicates operations.

Their solution involves a two-pronged approach. Infrastructure changes will reduce labour and create a simpler operation, while the system change involves reducing the stocking rate to lower the reliance on expensive bought-in feed and improving profitability.

A central 54-bail rotary farm dairy is under construction with Milfos Intelscan Plus technology that includes electronic identification of cows, milk meters set up to measure yield and conductivity as an indicator of somatic cell counts (SCC) or other health issues, automatic cup removers and automatic drafting.

The system's ability to interface with MINDA was a big drawcard and the ability to monitor individual cows remotely will give the data-hungry pair more information to base decisions on. It will also free them from the tie of milking.

In-dairy feed

An in-dairy feeding system will be used in the early spring when high rainfall reduces feed utilisation in the paddock.

"We expect to feed about 20 percent of our supplements in the dairy, at a cost of up to 40c/kg DM fed," Corrigan said.

"The other 80 percent will be grass silage grown on our own runoff that costs us 12c/kg DM before it's fed out. That means that, at a $4.50/kg milksolids (MS) payout, our supplement costs will be within that five percent of payout target."

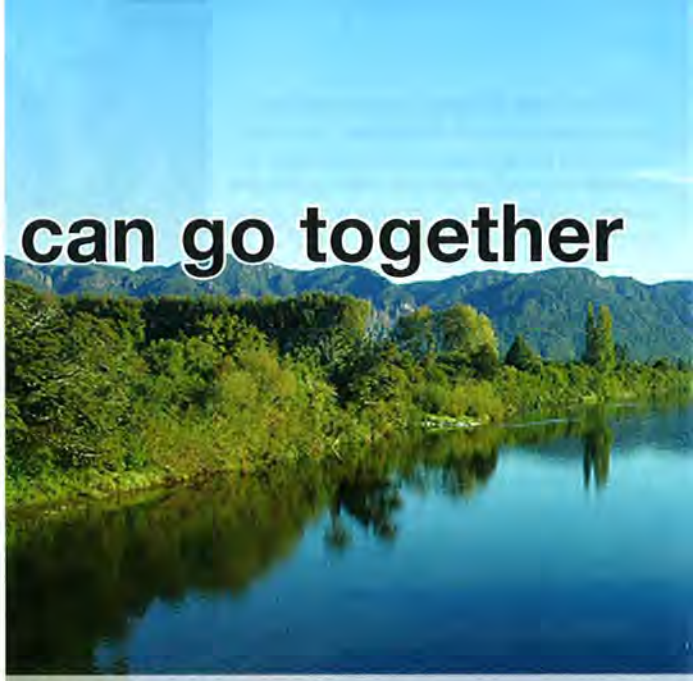
Having one central dairy with technology that will allow one person to milk after mating will simplify rosters, reduce labour and allow a two-herd system. New lanes have been put in with gravel from the farm reducing the cost. Many paddocks have also been re-fenced to give more even paddock sizes as the couple carries out what is essentially a mini-reconversion.

Around 44ha has been resown using diploid ryegrasses that they've found cope better with the wet and cow trampling.

Their irrigation review led to a reconfiguration of their pumps to achieve a more even distribution of water across the farm, creating

Continued on page 40

Mussels, cheese can go together



The beautiful Aorere River – ongoing care needed.

In 2005, few would have thought a defensive and somewhat hostile group of Golden Bay dairy farmers and local shellfish farmers would three years later be found convivially sharing a chowder and fine cheese lunch.

The event, late last year, was a celebration of local water quality improvement and recognised the work and investment made by dairy farmers of the isolated Aorere community at the northern tip of the South Island.

Their efforts and the support of the local community have lifted the total allowable shellfish harvest days/year from just 28 to 80 percent.

The results show much can be done when people come together, and problems are identified on the basis of data.

It's testament to the effective farmer-driven New Zealand Landcare Trust-supported catchment group model.

At this year's South Island Dairy Event (SIDE), leader Sue Brown took participants on a journey through her picturesque but once troubled valley, sharing the aspects of the project that helped drive its success.

Trigger event

"It all started with a trigger event, a bit of a scare and things got pretty testy," she said.

Back in 2005, the $15m/year shellfish industry at the top of Golden Bay was facing closure, with tighter regulations and repeated high Escherichia coli (E. coli) levels, even in times of low river flows.

Rainfall in the Aorere River catchment ranges from 2.5-5m/year and can rouse the normally sedate, crystal-clear Aorere River into a powerful torrent. It floods through farmland and out to sea. Empty creek beds become rushing rivers within hours.

The Aorere valley is home to around 13,500 cows on 33 dairy farms but, unlike many other regions, numbers haven't increased dramatically in recent times. Most farms are intergenerational owner-operated units.

Tension was high at that first meeting when land farmers, shellfish farmers, Fonterra, the Tasman District Council (TDC)

Continued on page 42

Continued from page 39

some surplus water which then allowed them to increase the number of K-Lines. That's reduced the return interval to 10 days and will improve pasture production further. Longer term, the goal is eight day returns.

In terms of system changes, the data has shown lowering the stocking rate will give a better return than chasing production records.

"We need to build a cost structure and business approach around a realistic production level, based on the pasture that we grow," Corrigan said.

They plan to drop cow numbers to 850 and re-balance feed demand with supply.

Last season they used 621kg DM/cow in supplements including grass silage, maize silage and palm kernel, but this season aim to reduce that to 400kg DM/cow, which they will largely grow themselves.

The infrastructural changes haven't come cheaply, but the additional debt serves as another motivator to strive for profitability rather than production.

Farm working expenses (FWE) have to come back to $3.00/kg MS and every operating cost is scrutinised.

Their first season has thrown most things at them – a disastrously wet spring followed by a severe summer drought, all topped off with a plummeting payout.

It meant all younger cows were dried off in February which, together with early culling, dropped the 930-cow herd back to 630 which was then put on once-a-day (OAD) milking until the end of the season.

Total production suffered but when adjustments were made for the number of cows milking and days in milk, thanks to supplements, production /cow still reached an acceptable 374kg.

Excess shares

The drop in total production means the farm holds excess Fonterra shares and, because the family plans to make a permanent shift away from a high stocking rate, it can benefit from cashing them in at $5.57/share.

As well as their data collection, Corrigan and Ruth have used two consultants, Jeremy Savage and Brent Boyce from FarmWise, and listened to the sage advice of Corrigan's parents.

It's been a tough introduction to practical farming, but they've drawn strength and confidence from the knowledge they've gained through monitoring. They now feel the decisions being made are based on facts, and will set the operation up to be an enduring, fun, and profitable family business. **D**