Relishing the challenge

Anne Calcinai

Consistency and quality are the driving forces on Mike and Sharon Barton's Lake Taupo farm. Building Taupo Beef has taught them more about the relationship between farming practices and what consumers want, plus how to produce quality meat.

"Now I know that if the animal goes hungry it will impact the quality of the meat," Mike says.

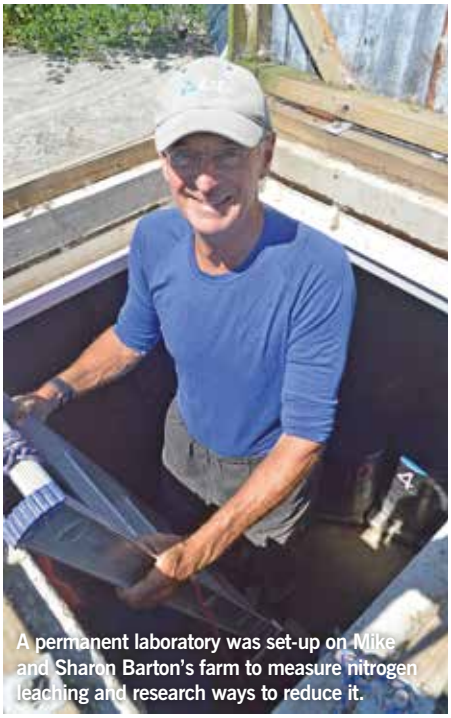
When growth is checked, animals run down fat stores resulting in smaller primal cuts and less marbling. The Bartons have learnt from chefs that a lack of consistency is a huge frustration in the restaurant trade.

"They would rather have meat that's 85% of perfect all the time than 100% sometimes and less at other times."

In the challenging Lake Taupo climate continuous growth is not easy. After a long, cold winter grass growth doesn't match consumption needs until October 20. Haylage made onfarm gets them through winter and is a good way to help manage surplus feed in a good season.

The farm is well-subdivided for easy, stress-free shifts with no need for working dogs. Cattle are used to being shifted and respond to Sharon's call, which they get to know after about eight weeks on the farm.

The Bartons prefer to use just one livestock transporter because that company has good drivers and equipment.



A permanent laboratory was set-up on Mike and Sharon Barton's farm to measure nitrogen leaching and research ways to reduce it.

"What we can do has an impact, but who you work with impacts the quality of the meat."

Mike and Sharon have built relationships with beef breeders and stock agents for sourcing the type of weaner cattle they prefer. They have settled on Angus-Charolais as their preferred cross for early finishing, big primal cuts and good marbling. Angus cows are also treated by Overseer as the lowest nitrogen leaching beef breed.

When Mike and Sharon bought the farm in 2004, they ran breeding cows, finishing the progeny and extra trading stock.

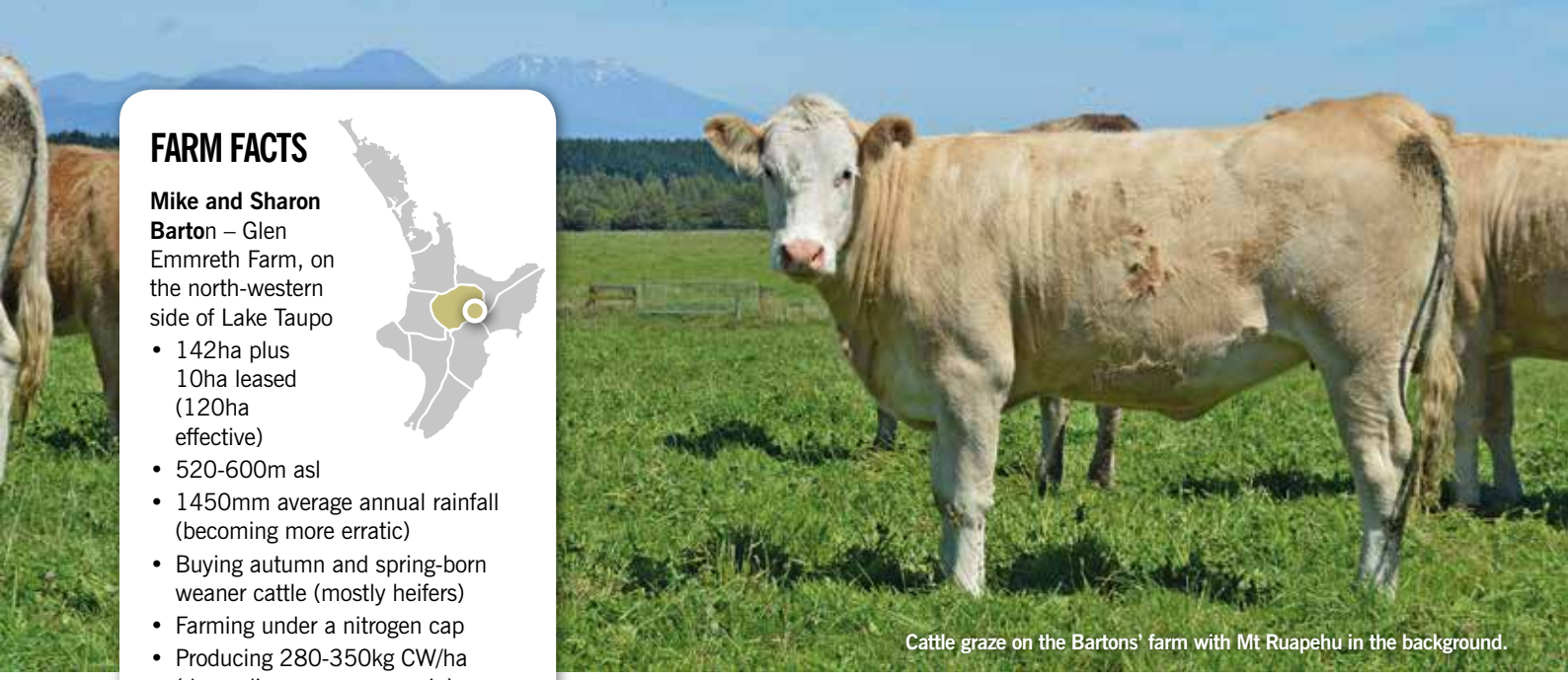
"We have to run our farming business on the basis of dollar profit per kilogram of nitrogen leached and breeding cows producing one calf per year didn't cut it," Mike says.

Mature cows were leaching a lot of nitrogen relative to income earned – $44 net profit/kg of nitrogen leached. The

Environmental effects

Mike and Sharon Barton's Taupo farm is still a base for research into reducing the environmental effect of farming. A permanent laboratory, set-up for measuring nitrogen leaching is at present being used for lucerne research.

Nitrogen leaching from lucerne cut-and-carry crops has been tested by Landcare Research and entered into the Overseer farm model at 5kg N/ha on the light, free-draining pumice soils. Nitrogen losses from lucerne were previously set at 19kg N/ha, too high to fit into the Barton's system. The next trial will test leaching from animals grazing lucerne.



Cattle graze on the Bartons' farm with Mt Ruapehu in the background.

FARM FACTS

Mike and Sharon Barton – Glen Emmreth Farm, on the north-western side of Lake Taupo

- 142ha plus 10ha leased (120ha effective)
- 520-600m asl
- 1450mm average annual rainfall (becoming more erratic)
- Buying autumn and spring-born weaner cattle (mostly heifers)
- Farming under a nitrogen cap
- Producing 280-350kg CW/ha (depending on summer rain)
- Finishing 250-300 cattle a year at 220-280kg CW

farm is better set-up for cattle although they initially planned to finish trade lambs.

"In the years when we had surplus feed I did the analysis and lambs didn't stack up."

The nitrogen cap was introduced in 2012. Mike and Sharon had been exploring what it would mean for them since 2007.

They stopped farming breeding cows and started buying-in weaner cattle to grow as fast as possible. The Overseer farm plan determines how many and what classes of stock they can carry, and what time of year they can be on the farm.

A six-month-old weaner urinates about 15 times each day in small amounts. A cow urinates 6-9 times, but at larger volumes with a larger concentration of nitrogen.

Most of the paddocks are 3-16ha, except for a 15ha block that has been divided into trial plots for nitrate leaching research. This area is still divided into 0.4ha paddocks, which are great for finishing cattle.

At their current stocking rate and policy, the cattle are using their full nitrogen discharge allowance. Cultivation for crops or new grass could exceed the allowance. Instead, the Barton's graze and fertilise in a way to encourage growth of preferred existing species such as white clover, cocksfoot and ryegrass. Some plantain has been oversown and red clover undersown.

"I felt we were getting real progress until the brown top started coming back in the drought years," Mike says.

They try to keep residuals at a minimum of 1200kg drymatter (DM)/ha – it goes lower in winter – and no

The farm is well set-up for easy, stress-free shifting and the cattle quickly learn to respond to Sharon Barton's call.

About 320 bales of haylage were made this summer.

Soil testing helps dietermine the Bartons' fertiliser applications.

Full-time farming was a learning curve for Sharon Barton, but she is dedicated and passionate about growing quality beef.

higher than 2700kg DM/ha. In wet summers like this year, the Bartons can't easily buy extra mouths to match surplus feed. Instead, they harvested what extra growth they could into haylage and pulled all the cattle off the hills to control grass on the flats.

"That should allow the hills to reseed – that's our response to unprecedented grass growth and limited stock numbers."

Fertiliser is based on soil and herbage tests. Nitrogen leaching is highest during winter.

When grass is growing it absorbs nitrogen, so fertiliser is only applied after October 15.

Depending on the season, 450-650kg/ha of Sulphur Super 30 is applied. Minerals and trace elements are added if liver tests indicate a need.

Last year 2.5 tonnes/ha of lime was applied to lift calcium and pH levels and to help promote worm activity. Olsen P levels have lifted from 8-12 to 35. Mike thinks that's spot-on for their farm, with grass quality and metabolisable energy at good levels.

No nitrogen fertiliser is applied. The Bartons' Overseer modelling calculates they are adding 250-300kg nitrogen/ha each year through clover growth, but that would be less in a drought year.

Mike Barton in the five-year-old trial plot of lucerne used for cut and carry research into nitrogen leaching. A new lucerne crop will be used for a grazing trial.

Consistent performers

Mike and Sharon Barton's farm is small, but profitable. They benchmark by providing data to the Beef + Lamb New Zealand Economic Service. They are consistently in the top 5% in this programme for carcaseweight per hectare and the top quintile for profitability per hectare. One of their main measurements of farm profitability is income per kilogram of nitrogen leached, currently $66 on their cattle finishing policy. Earnings before interest and taxes (Ebit) in 2014 – when they won the Waikato Farm Environment Awards' supreme award – were $915/ha.

"We've wrung all the performance gains we can out of each animal," Mike says.

There is a cost to supplying their Taupo Beef business.

"The nitrogen cap has taken a chunk out of our Ebit, and supplying year-round we need to develop a brand and a premium that will at least match costs. If we just played the market we could add another 20% to our Ebit but we wouldn't be able to develop a brand."

Taupo Beef won the restorative impact category and supreme award in last year's Sustainable Business Awards.