

A REPORT OF THE FINDINGS OF HCC SCHOLARSHIP

SUSTAINABLE INTENSIFICATION –

MORE STOCK, LESS COSTS

BASED ON A STUDY TOUR TO NEW ZEALAND –

4th FEBRUARY – 12th MARCH 2012

ROBERT POWELL



Contents

- 1 Introduction – Think Global!
- 2 Background – My Farming System
- 3 Scholarship Aims
- 4 Methodology
- 5 Farm Visits
- 6 Key Findings
- 7 Conclusions
- 8 Challenges Ahead
- 9 Acknowledgements



1 Introduction – Think Global

Recent reports including Foresight Report (2010) and Food Futures (2009) highlight the key challenges to the global food production system during the first half of the 21st century; these include:

- Global population which is expected to reach 9 billion by 2050 and will be a key driver of increasing food demand.
- The rising affluence of populations in developing countries which is expected to bring about a shift in consumption patterns away from traditional staples to meat, dairy and processed foods, a phenomenon known as the 'nutrition transition'.
- Rising energy costs and the degree of dependency on energy of modern agricultural systems which are predicted to result in continuing high energy input costs.
- The potential diversion of food commodities into biofuel production which, it is predicted, is also likely to put a strain on global food supplies when the area of cultivated land per capita is falling and the greater part of the world's most productive land is already employed in agricultural production.
- Increased water stress is expected, with 54% of the world's freshwater supply currently used for human consumption of which 70% is used in agricultural production (abstraction levels are predicted to increase to 90% by 2025).
- The effect of climate change which is expected to result in an overall global decline in food production of 16% by 2020 with developing countries most severely disrupted.
- Globally, the trend of continuing urbanisation resulting in a reduced rural workforce.

The Foresight report identifies that these challenges cannot be addressed by the continuation of existing approaches to increasing food production alone. Global food supply, it is argued, will need to increase without the use of substantially more land and with less impact on the environment through the development of new technologies and their application to agriculture.

The Report proposes sustainable intensification as a means of addressing future challenges. Sustainable intensification involves simultaneously raising yields, increasing the efficiency of input use, whilst reducing the negative environmental effects of food production. But what does this mean in practice and how can we, as farmers, in Wales move along a path towards sustainable intensification?

2 Background – My Farming System

Blaenbwch Farm, Builth Wells, Powys is an upland sheep farm extending to 370 acres with a grazing licence on Mynydd Epynt (MOD Sennybridge Army Training Area). We also farm Rhosferig Farm, a 320 acre farm, 6 miles from Blaenbwch which was purchased in 2008.

Livestock consists of 200-250 Welsh Black sired cattle purchased annually as stores and finished at Rhosferig on home grown rations. The cattle are supplied to Waitrose through the Wye & Towy Valley Welsh Black Beef Marketing Group which was established through a Farming Connect Agrisgop project in 2009.

We also run 1,800 ewes split into three flocks, consisting:

- 300 home reared Welsh mules crossed to Texel rams
- 600 Speckled ewes (Epynt type) bred pure and crossed to Suffolk rams
- 900 Brecknock Hill Cheviots bred pure and crossed to Bluefaced Leicester Rams and also, for the first time in 2011, to Aberdale rams

Cropping consists annually of 40 acres spring barley; 30 acres of arable silage – peas and barley; 70 acres of forage crops – swedes and stubble turnips with the forage crops followed by 'Welsh Black Ley' - a High Sugar Grass/Red Clover Mix.

I farm with my wife Tracy and young son Alun and we employ two full time staff. Our farming system, over many years, has emphasised best environmental practice with my late father awarded the RWAS/CCW Agri-Environment Award in 1999. This work has continued and Blaenbwch is currently in a Tir Gofal Transitional Agreement and Blaenbwch and Rhosferig entered Glastir All Wales Element Contract from 1st January 2012.

The key objectives for the business can be defined as follows:

- To maximise output from home-grown crops and forage
- To control costs
- To improve ground, particularly at Rhosferig

3 Scholarship Aims

My own farming system emphasises effective forage management to reduce costs and the key challenge, in line with sustainable intensification goals, is to increase output whilst keeping inputs (and therefore costs) to a minimum.

New Zealand farmers are renowned worldwide for their pastoral systems and the aim of my HCC scholarship was to visit New Zealand to observe their farming systems and to see what lessons we can learn from them.

4 Methodology

I travelled to New Zealand for the period 4th February - 12th March 2012 and visited the South Island followed by the North Island visiting the following places, which had been arranged in advance of the Study Tour:

South Island

- Five Star Beef Feedlot, Ashburton
- Andrew Watson, Arable Farmer, Ashburton
- Temuka Sale Yard, Temuka
- John McKerchar, Shrimptons Hill, Cave, Temuka
- Bill & Sheila Wright, Cave, Temuka
- Stephen Mavors, Western, Omerau
- Charles Reed, Dunedin
- Peter & Geraldine MacDougall, Minzion, Central Otago
- Southern Field Day, Gore
- Andrew Taylor, Gore
- Ian Ferguson, Agronomist, Ashburton
- Canterbury Meat Packers (CMP), Ashburton
- Grant Ludemann, Winslow Farm, Ashburton and Challenge Farm, Omerau
- Beef & Lamb New Zealand Open Day, Ashburton

North Island

- Bayden Wilson, Focus Genetics, Napier
- John Heald, Operations Manager, Pohuetal Farms
- Bryan Bendall, Seven Hills Angus, Eketahuna
- Mike Poulton, Totara Road

5 Farm Visits

Five Star Beef Feedlot, Ashburton - Simon Langley

I visited the Five Star Beef feedlot which was jointly owned by a Japanese company and Anzco Foods. In 2011 they fattened 35,000 cattle and could accommodate up to 19,000 cattle at any one time. There were 15,000 cattle there the day I visited and they were using 250 tons of feed per day. Some of the cattle were fattened for the home market but the majority were exported to Japan.



- The majority of the cattle were Aberdeen Angus for export and some Hereford cattle for the home market.
- They mainly purchased steers at 350-420kg paying \$2.40 per kilo (2012) which were kept on farm for 240 days.
- Any heifers were usually kept on farm for 90 days for the home market.
- The cattle were weighed on arrival and then sorted into pens. They were looking to set up a new EID system.
- Each pen would hold between 180-240 cattle and were cleaned out twice a year.
- All the cattle within a pen would be slaughtered at the same time. They would not select cattle from different pens.
- All cattle were fed maize, wheat, barley, molasses and straw for the fatteners.
- The growers had 65% maize silage and the fatteners had 20% maize.
- The diet consisted of mostly 65% dry matter.
- There were four silage pits each containing 9,000 tons of maize. Most of the maize was contracted in by dedicated farmers but some was home grown.
- All wheat and barley was contract grown currently costing them \$400 a ton.
- The liveweight gain for cattle would vary from 1.2 kilos per day up to 2 kilos per day with 2.3 kilos per day being the best recorded increase.
- Dirty water was used to irrigate their own land.
- The dry muck would go to the farmers free of charge to grow the maize.
- Five Star Beef employed approximately 26 people including office staff.
- All cattle were TB tested before being brought onto the farm.
- The cattle did not have passports.

The system worked very well with the local farmers as they were contracted to grow maize and the muck from the unit would be used on these farms. They also had a good supply base of cattle coming from the same farms most years.

Andrew Watson, Arable Farm, Ashburton

Andrew Watson was farming 900 hectares, growing wheat, maize, radishes and grass for seed.

The maize was grown on contract for Five Star Beef and he received the muck from them which worked well.

The wheat was forward sold on contract for \$420 which was a good deal as the price had dropped to \$350. The wheat yielded 10 - 11 ton per hectare and the straw was chopped up back into the ground as this was worth more in fertiliser than selling it.

Mr Watson grew grass seed and the best varieties yielded approximately 3 ton to the hectare and these were sold for \$2 per kilo, grossing \$6,000 per hectare. He also cleaned the grass seeds on farm which added more value. The grass seed was drilled in March, then the ground was leased out to hill farmers for grazing until the

end of November. They also irrigated the land. Andrew Watson said that some farmers in the Ashburton area were growing the High Sugar Aberystwyth varieties for grass seed. Some of the farmers were receiving up to \$2.80 per kilo as these were not such good yielding crops.

Mr Watson also grew clover for seed and this was producing 500 kilos per hectare. They did sell an early crop of silage off it together with 81 hectares of potatoes on contract to McDonalds which was one field! These were irrigated and it took 4 days to put 34ml of water all over the field!

Andrew Watson, his father and two other full time staff worked on the farm. They employed temporary staff for the grass seed cleaning.

Temuka Sale Yard, Temuka

Temuka has one of the biggest sale yards in the South Island. It regularly sold a thousand store cattle and a lot of sheep.

Good fat bullocks were making \$2 per kilo which had dropped over 30 cents in the past fortnight. Good barren cows were making \$1.57 cents per kilo. They sold every type of animal, varying in quality.

There was also a breeding sheep sale taking place. Good quality three year old ewes were making \$125. These were back from the autumn fair breeding sales by approximately \$80. They were also selling store lambs. Poorer lambs weighing 25-30 kilos made \$91 and good lambs (Suffolk cross) also made \$91. There were some nice ewe lambs which made \$90. I wish I could've bought them to take home!

They employed a funny system of selling animals with four different lots of auctioneers involved. The farmer got to choose which firm of auctioneers he wanted to use! The auctioneers could change for every different pen! They were altogether ready to switch at any moment. Some of the auctioneers also acted as agents for some farmers and could be buying lambs from their own auctioneers. Commission in total was about 8 ½ %.



John McKerchar, Shrimptons Hill, Cave

John McKerchar had a 600 hectare farm with a flock of Border Leicesters which had been in the family for 150 years. He also had a herd of 550 pure Hereford cattle.

He sold 200 bulls to dairy farmers at a sale in October and 45 bulls were sold in May, mainly for pedigree beef breeders. All bulls would be recorded along with EBV information. They had the best recorded bulls in Australasia.

His main aim was to reduce the gestation period which he had achieved by 6 - 8 days. This made a difference to the dairy cattle as they would be back producing milk quicker and increased the profit by \$100 per cow in the dairy herd. There was also significant animal welfare benefits achieved with less dairy farmers inducing calving in their herds.

In 2010 John McKerchar sold 5,000 straws for AI, this increased to 50,000 straws in 2011 and he hoped to sell 100,000 in 2012.

It was interesting to talk to John McKerchar as a lot of farmers had a negative outlook on the dairy industry but the dairy industry had really helped his farming system. There were seven pure Hereford herds neighbouring his farm.

They had a low cost system for the cows after weaning which I found interesting whereby they were turned out to 450 hectares of hill ground, up to 3,500ft where they received no food, just rock salt.

The young bulls were kept on steep ground to help them keep fit and they were fed on the grass which had been saved from the summer and swedes.

Bill & Sheila Wright, Cave

Bill & Sheila Wright had a 380 hectare farm with 1,000 sheep and 550 cattle. The ewes were 160% lambing selling them all fat. 1600 lambs were produced with 200 lambs sold directly off their mothers before weaning. The rest were fattened off 70 hectares of Lucerne. They planted Lucerne as it grew well in dry weather and, in that area, they only had 24 inches of rain a year.

The lambs were going around the fields on a 35 day cycle with a stock rate of 30 lambs per hectare. Bill Wright had picked out 160 lambs the day I was there and these were ranging from 42 - 50 kgs. They started lambing at the beginning of September. Bill Wright also bought in some store lambs.

Over half of his lambs were sold on a contract called Lamb Plan, whereby they were paid at Christmas for a 32 kg lamb and the rest when they went to the abattoir.



They ran 130 dairy heifers under contract for Dairy farmers. The cattle were on farm from weaning for two winters. The target weight was 420kg, anything above this weight was a \$1/kilo extra and any cattle underweight resulted in a \$1/kilo penalty. They were receiving \$5.50 a week for the first year and \$7.50 a week for the second year. The heifers were bulled on farm and would go back to the dairy unit approximately two weeks before they calved in July. Bill Wright would have 260 heifers on farm. They also bought bobby bull Friesian calves and these were run on the farm until they were 20-24 months and sold for fat. They were implanting a growth hormone into the bull calves ear.

All the cattle were wintered outside on 30 hectares of kale. The dry matter in the 30 hectares of kale was approximately 14,000 tons. They were also having straw and silage. There were another 200 Friesian bull dairy calves ranging from 6 - 24 months.

Bill Wright used goats for thistle control! They would eat the top of the thistle which helped to keep them down. Most of the paddocks were split into 3 hectares. He bought 170 hectares four years ago which was 14 fields, now they have been split into 45 fields to manage grass growth more easily.

He grew 25 hectares of spring barley and wheat which he sold but kept the straw.

Stephen Mavors, Weston, Omerau

Stephen Mavors farmed in partnership with his dad. They owned 290 hectares and rented 330 hectares costing \$70,000 per year. The rent was determined by the number of sheep or cattle units it could carry. He was running 2,500 Coopworth ewes which were Border Leicester cross Romneys. Lambing percentage was 160%.

He bought in 2,000 store lambs and he sold 1,000 lambs off the ewes, again through Lamb Plan, to CMP and headed for Waitrose. Again, a good choice to be on contract. All lambs were finished off grass with no concentrates fed. Big bale silage was fed to the ewes.

Stephen Mavors bought weaned calves, Aberdeen Angus steers. One thousand of these arrived at the end of March which were run in bunches of 100, approximately 5 to the hectare on kale, grass & rape and some big bale silage. These were all sold to Five Star Beef from the end of October onwards as their farm was mostly like a desert by January!

However, the weather for the last two years had been exceptional as they had had a very good growing season with wet summers. Stephen Mavors' dad told him to take a photo as it took 40 years to have a good damp summer! In 2011 the price schedule went up all year which had not happened for a long time but in 2012 it was going down at an alarming rate.

An irrigating system was installed four years ago at a cost of \$2,500 per hectare and \$25 per hectare per year afterwards. But on a dry summer it cost \$80,000 in electric charges! However, if he was to install the same system now, it would cost \$13,000 per hectare and also \$750 per hectare annual payment.



A lot of family farms around the area had been lost to the dairy industry with 30 sold to co-operatives who appointed managers to run the dairy farms.

Mr Mavors was a member of a local Agriscope Group which consisted of 18 members when it was set up five years ago. This number has now reduced to four members who met up a couple of times a year and went to the pub! Beef & Lamb New Zealand had held a lamb fattening event locally to Mr Mavors and over 600 farmers had turned up!

300kgs of fertiliser per hectare was used on the irrigated ground. The leys were changed approximately every 5 - 8 years. It was difficult to keep them any longer as the native species grew back into them. He was trying to grow 14,000 tons of dry matter grass per hectare per year.

Charles Reed, Dunedin

Charles Reed's station was 6,000 hectares, 1,400ft rising to 2,000ft. Rainfall was 24 inches to 36 inches. He ran 20,000 ewes and 3,000 ewe lambs along with 1,100 deer. The flock was mainly Perendale ewes and Romneydale ewes. Most were kept pure, some went to Suffolk x Texel. Most of the lambs were sold fat to Alliance and some went to Silver Ferns.



Mr Reed had 800 Aberdeen Angus cows. 600 went to pure Angus bulls and the rest to Charolais and Hereford bulls. He liked the Hereford horned bulls. Most of the bullocks and heifers were fattened on farm. Approximately 150 steers were sold to Five Star Beef and he used approximately 80 heifers for replacements. All the cows were kept out on grass and tussock grasses. Some of the young weaned calves were having kale and swedes. All the cattle looked tremendously well.

He grew approximately 400 hectares of kale and swedes which were direct drilled. A lot of the new leys were the Aberdart and Abermagic varieties, which he liked very much. No irrigation was used and it was pleasing to see a low cost system.

Staffing comprised of 10 or 11 people including Charles, his brother and 3 sons. I have never opened so many gates during a drive around the farm! There were 900 yearlings in first field and 1,900 in the next field! Fields were split into 10 hectares and 15 hectares.

There were two big shearing sheds and eight different sheep handling systems set up around the farm. They had recently installed an underpass to go under the main road which had cost £350,000 to install, but the Highways Department now maintained it.

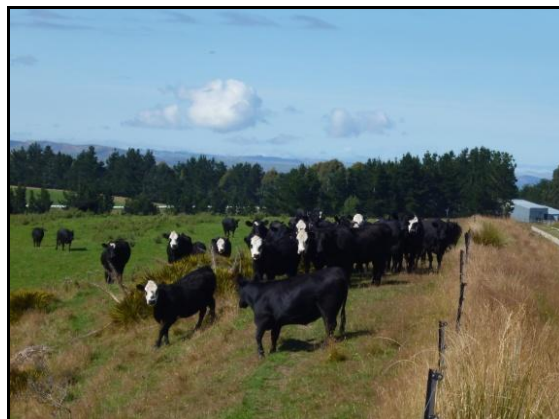
Peter & Geraldine MacDougall, Minzion, Central Otago

Peter & Geraldine MacDougall farmed 14,500 acres. They bought the farm in 1977 and purchased another three farms to increase it to the size it is today. The farm runs 12,000 ewes and 1,000 cattle and they achieved 150% lambing. Staffing on the farm included Peter, his son Dougal and four other staff.

All the sheep were Perendale. 6,000 were kept pure and 6,000 went to high index Texel tups. At lambing time, sheep were set stocked in paddocks and left to get on with it. They did not get seen until marking time, three weeks to a month after lambing. They did scan but only for barrens and lates.

Peter MacDougall liked to sell as many lambs as possible off the ewes as these were the best paying lambs. He started selling in early December supplying 600 lambs a week to Alliance. They were not on contract but he had a set place to supply 600 lambs a week to Alliance, looking for an 18kg lamb. In March & April the supply could rise to 1,200 lambs a week. They also bought store lambs if there was spare grass. All lambs were fattened on grass, chicory and some rape. After weaning the ewes were sent to the higher ground, up to 3,200ft. This was 30km from the farmhouse which was at 260ft! The lambs were weighed every 28 days.

The cattle were mainly Aberdeen Angus cross Hereford. They also had some pure Aberdeen Angus and pure Hereford cattle. The cattle were all fattened on farm, kept for two winters and sold to Alliance. He also bought in some store cattle, again depending on grass supply. After weaning the cattle were sent to the tussock fields and survived there all winter with no extra feed. Again, cows were set stocked and left to calve on their own. The calves were weaned around April time. He liked horned Hereford bulls as they were hardier than polled bulls. The young cattle were kept on kale, oats and haylage which he mixed in a mixer wagon. The weaned calves had a bale of wholecrop, bale of lucerne and two bales of silage in the mix. He made 3,000 bales of silage and grew 30 - 40 acres of oats. The yearling stock were kept outside on a mix of oats, kale and some rape and silage. They also received two bales of wholecrop, one of lucerne and one of silage.



The farm had been improved from all tussock grass to new pastures. To improve tussock ground they would graze it tight with stock, sow fertiliser, lime and clover. This would be continued for a few years before adding ryegrass. Eventually they would plough it. The tussock ground was 4.5-5.1 pH and calcium 2 - 3. It took approximately 5 tons of lime to improve the ground.

Andrew Taylor, Gore

The farm was 3,000 acres which ranged from 400ft to 1,200ft. The annual rainfall was 40 inches. There were three paid workmen.

There were 5,000 ewes consisting of 3,000 Coopworths and 2,000 Perendales. The Perendales went to Texel and Dorset rams and the Coopworths went to Longthorn rams. They were a composite breed to supply Waitrose. The majority of the lambs were sold to Waitrose through CMP, averaging about 18.5kg deadweight. The Perendales were kept out all winter on the hill with no feed at all. The Coopworths were kept on the swedes. All the lambs were sold off grass.

There were 200 suckler cows on the farm, mainly Aberdeen Angus and some Herefords which were weaned in May. The young calves would be kept out on grass then feed swedes. The cattle would be sold to Five Star Beef at 19 months weighing approximately 500kg. The yearling cattle would be housed in winter and fed silage and wholecrop.

Andrew Taylor grew 200 acres of grain, 80 acres of winter wheat and 120 acres of spring barley. Most of the grain was sold on contract to Dairy farmers at \$400 per ton in 2012. Some of the grain was kept for the yearling cattle.

It was quite a unique farm as it was the first one I had seen with a concrete silage pit, a shed for wintering cattle and a slurry pit. There was no irrigation on the farm. The hill ground was fertilised by aeroplane with applications of Superphosphate every other year.

Ian Ferguson, Agronomist, Ashburton

I enjoyed a very interesting day travelling around lots of different farms with agronomist Ian Ferguson. The morning was spent looking at carrots and New Zealand was responsible for producing 40% of the carrot seed grown in the world. They also grew a lot of carrots to go into juice. The carrots were worth \$150 per ton when cleaned. A good crop could yield 150 tons per hectare and they mostly averaged 110 - 120 tons per hectare.

In the afternoon we looked at fodder beet, swedes and kale. I saw some good crops of fodder beet. We took some measurements and these were producing 15 tons of dry matter per hectare and hopefully with 'the wind blowing in the right direction' they should achieve 30 - 32 tons per hectare. I also saw some good fields of kale. These would produce 15 tons of dry matter per hectare. We measured some swedes which yielded 8 tons of dry matter per hectare at the moment but should produce 15 - 16 tons per hectare. They should have been a bit better but they had been sown a month late.

They were top dressing some kale at 100 units per hectare by helicopter at the one farm we visited. The crops we saw would be fed to milking cows, store lambs or beef cattle.



Canterbury Meat Packers Abattoir (CMP), Ashburton

The majority of staff were from the Cook Islands as Ashburton had a 1% unemployment rate and that 1% were unemployable!! They had a very strict drugs policy and staff were tested regularly. I was welcomed by the flying of the Welsh flag when I arrived!



Cattle

CMP kill 90,000 beef animals per year with 34,000 for Five Star Beef. CMP also had facilities for cutting up and packing. They did not have space to hang the carcasses whole so they were cut up the day after they were slaughtered. The meat was chilled after being cut up.

Sheep

8,000 lambs could be slaughtered per day in a 20 hour day. They could kill 1,000 lambs every 2 hours. They killed lambs for UK retailers Waitrose, Tesco and Marks & Spencer. Lambs were left to hang overnight and then cut up the next day. It would take six minutes from start of cutting up to being boxed at the other end.

They were finding it hard to source early lambs as the increase in dairy farms on the lower ground had pushed the sheep farmers further into the hills resulting in later lambing. I was quite surprised at how lean the lambs were. The schedule had gone from 8 dollars early December down to 6 dollars and it looked as if it would fall further still. This was mainly due to the strong NZ dollar.

Grant Ludemann, Winslow Farm, Ashburton

Winslow Farm was a fattening unit for lambs owned by Grant Ludemann. It consisted of 210 hectares split into 4 hectare fields with the capacity to fatten 37,000 - 45,000 lambs per year, plus 10,000 ewes. Mr Chris Mears was the farm manager for Winslow Farm and four other farms. There was also three other full time staff.

Mr Ludemann also owned six large dairy farms in the South Island and one 12,000 acre station at Millers Flat also in the South Island which was used to run dry dairy cattle and breeding ewes. He had also undertaken to improve the ground at Millers Flat by sowing 500 acres of swedes, 500 acres of kale and 500 acres of grass every year. The first year he took over, he used 8,000 tons of lime. The aeroplane carried 1 ton of lime at a time! The day I visited the farm in Millers Flat, they were silaging at 2,400ft.

When I visited Winslow Farm he had 10,000 lambs on the farm all fed on grass. All the ground was irrigated. They bought approximately 60% of stock from the market and 40% off farm but he would prefer to buy more off farm. They had bought some lambs on contract with farmers in 2011 but quite a few of the farmers had withdrawn as the lamb price had gone up. They had just started to tag some lambs in each bunch with EID tags to see how lambs were performing. Grant Ludemann said that 'high numbers of lambs = low margins.' Last year he fattened 250,000 lambs across all his farms. They weighed the lambs every 21 days. The lambs would be split into three different bunches decided by weight using a 3-way weighing scales. All lambs were shorn and all lambs were sold to Alliance.

The farm was split up into 10 acre fields with approximately 500 lambs per field. Using very little nitrogen, he relied on clover growth but struggled that year as clover beetle was eating the clover. They were reseeding about 15 - 20% every year by burning off and direct drilling. Some fields with lots of weeds were sown in Italian rye grasses so they could be sprayed regular.

Beef & Lamb New Zealand Open Day - 'Farming for Profit'

Held at Winslow Farm, it was one of 6 projects Beef & Lamb NZ undertook with farmers. Approximately 150 people attended the event.



An independent expert on worming lambs gave a talk at the Open Day which was quite interesting and gave a different outlook on worming to what we have in the UK. He challenged conventional thinking and did not agree with drenching when the worm count was high using an egg faecal machine. He said it was better to drench every 32 days and when drenching lambs, not to put them onto clean pasture like latimath or a new ley, but to put them back on to old pastures for 7 - 10 days. If they went straight on to clean grass they would just put out worms which were resistant to the drench. He talked on worm resistance hotspots as being latimath, swedes and new leys. He recommended that when drenching ewes to leave 20% of the best ewes in a bunch untreated.

There was also a speaker from the Alliance who talked on how much more yield of meat was on a good quality lamb compared to a poor one and also how much they lost on an over fat lamb.

I had an interesting couple of hours back at the farm after the Open Day had finished where they were trying to get the EID to work but they were not having much luck!



John Heald, Operations Manager, Pohuetal Farms

The farm was 2,440 hectares with 13,000 ewes and 450 cattle. The farm ranged from 300ft - 1,000ft with 40" of rain. There were seven full time staff including John Heald.

All the sheep were Highlanders with 1,800 being the nucleus flock for Focus Genetics. They received \$25 per head for each ewe in the nucleus flock and \$175 per tup lamb. For the remaining 11,000 sheep, 9,000 went to Primera and 2,000 went for replacements - Highlanders. The nucleus flocks were DNA recorded by taking a sample of blood at docking time instead of tagging them when they were born. The samples were sent away to be processed and recorded. In 2011 they had 97% which was a good year and no stray tups had got in! This year they were back to 92%. The recording was costing approximately \$17 per sample. The DNA sampling was still a lot more effective than tagging lambs at birth and matching up numbers with their mothers. It was also less work as none of the sheep were looked at during lambing time. They did check on the ewes having triplets. In 2011 the percentage of survival rate for triplets was 230%. This year it was 210%. All the sheep were grass fed only, no concentrates.

The 9,000 ewes that went to a Primera tup, John had 120 of the best tups to try from Focus Genetics. 15% from each tup of the 120 when slaughtered, were weighed for meat yield, forequarter, middle and back leg. This had been going on for 10 years and the graph was still moving upwards rapidly. Some of these would be producing 1½ kg more meat yield than the ordinary tups that he used. At \$7 per kilos, it soon mounts up! The lambing average at marking time was a 145%.

John Heald was growing 160 hectares of crops to finish his fat lambs. This was mainly hunter, a rape cross turnip crop. This was costing him \$116 per hectare but this also took into account the new grass for the following year. This year he had grown plantain and rape. The lambs sold off the plantain died out at 46% whilst the others were 43%. The plantain would last up to three years if managed correctly. I asked why he did not grow chicory and he said he would like to but they had a lot of trouble with thistles and he could use spray with plantain.

He had the best sheep handling set up that I had seen during my visits. He had a sheep weighing scales with a five weigh parting and could weigh 650 lambs per hour. He had signed a contract for \$7 with Silver Ferns which looked good at the time as the price of lambs was going down to \$6.20. Having said that, it was 20 cents more than the South Island were getting!



Half of the ground was suitable for ploughing and the rest was steep ground and fertilised by a helicopter. He had one 350 metre irrigator which could cover 35 hectares but it was moveable so they could irrigate 70 hectares but it took five hours to dismantle it in order to move it! They hadn't had to use it this year and they had so much grass that they left some paddocks go long for winter keep for the cows.

They run 300 red Aberdeen Angus cattle and these were a nucleus flock for Focus Genetics. All the Aberdeen Angus calves would go to Focus Genetics at about 9 months old and then the heifers were returned to the farm once they had been bulled at about 18 months old. The best bull calves would be kept for breeding by Focus Genetics. They also had a 100 commercial cows for themselves and kept Friesian bulls on contract for McDonalds. The Friesian calves would arrive at about 100 kilos and they were paid \$1.50 per kilo liveweight gain up to 250 kilos and then from 250 kilos to finishing weight \$1.70. They were weighed every couple of months and this was a good regular income as every fortnight McDonalds paid them for the weight gain. McDonalds owned the calves so the farm did not have to spend money on purchasing them so it was a good paying contract. They had approx 450 calves for McDonalds.

The cows were kept on the rough patches on the hill ground all winter. The Friesian bulls were kept outside on kale, hay and silage. His commercial cattle went to Silver Ferns. He crossed the commercial cattle with a Simmental bull and sold them fat.

He had quite a good plan as the farm only actually owned the Commercial Cattle and the 11,000 ewes. They had a good regular income by farming stock for other companies.

Bryan Bendall, Seven Hills Angus, Eketahuna

Bryan Bendall farmed 4,000 acres running 5,000 ewes and achieved a 125% lambing. He had one workman on the farm and one casual labourer. Seven Hills was a very steep farm.

Bryan Bendall sold some of the sheep fat and some as stores depending on the amount of grass available. The sheep were kept in two mobs, A & B. The best ones, mob A went to a Perendale tup to produce replacements. Mob B went to a crossbred tup. He grew some plantain to fatten the lambs so that he didn't have to sell too many stores if the ground went dry. But this year he had an abundance of grass. He used very little fertiliser but was testing the farm now to improve the pH level to 6 which would stop the scrub coming back so bad. The soil sampling was done free of charge and mapped by the local council.

He had 600 Aberdeen Angus cows which were all recorded. He sold approximately 140 bulls to beef and dairy herds at around 18 - 20 months. They were only fed grass. The ones that didn't make the grade would go as pure Angus for McDonalds at about 600 kgs. The cows were not as big as I had seen down the South Island, about 550 kilos. But if you saw where they lived you would know why! He was hoping to get them up to about 600 kilos now so he could sell them into the export market. All cattle were fed outside and followed the ewes around to 'top' the fields. He did have 50 hectares of nice flat ground which was mainly kept for his bulls.



Mike Poulton, Totara Road

Mike Poulton farmed 900 hectares of which 300 hectares was good ground, 300 steep ground and 300 very steep ground!

All the fertiliser was applied with planes and the airstrip was down by the house. The ground was in need of a lot of potash. As we left the yard, you could see where the old sea bed was as there were a lot of fossils in the rocks. The ground was about a metre of volcanic ash which had blown over it when the Lake Taupo volcano erupted years ago. There was a layer of rock under the ash.

The farmyard was at 300ft which rose to 2,000ft at the top. There was no need to go to Queenstown for an adrenalin rush, just get Mike Poulton to take you around the farm on the quad bike! Good job I am used to steep ground as I think 90% of people would have got off the bike after 5 minutes!



There were 4,000 ewes, which were Perendale cross Texel cross Friesian scanning at 180%, docking 130%, selling all lambs fat. He had some of the best lambs I had seen all trip. He had undertaken a lot of fencing, turning paddocks into 8 - 10 hectare blocks. This was done for better grassland management. The sheep were run in two mobs, A & B, younger ewes and older ewes. He lambed the ewes at three different times, beginning of September, end of September and middle of October and he lambed 1,000 hogget replacements. He was aiming for the tup lambs to achieve 44 kilos and they were sold to Alliance. He had a very good flock of sheep and farmed extremely well on a hard place.



They had approximately 160 cows, mainly Aberdeen Angus. He took them right through to fattening at about two years old. He started calving in November and he bought high performance recorded bulls.

6 Key Findings

The aim of my HCC scholarship visit to New Zealand was to observe their farming systems and to determine what lessons we can learn from them.

Much of what I observed in terms of grassland and cropping was in line with my own farming system which places emphasis on effective forage management to reduce costs.

I was particularly impressed by the following things in New Zealand:

- Lucerne
- Farmers fattened the majority of their stock off forage
- The majority of farmers bought rams on index figures rather than on their 'good looks.'

Farming systems in New Zealand are very different in terms of scale and farmers appeared more open and receptive to a range of contract agreements which we do not often consider or have available here in Wales.

7 Conclusion

I have learnt a lot during my visit to New Zealand and it has given me a different outlook on my own farming system.

I went to New Zealand to look into extended grazing for cattle but after the wet winter, I think we will look to out winter more sheep on swedes enabling us to undertake our new enterprise of rearing 200 plus Welsh Black sired dairy calves which will make use of the existing sheep sheds. This will then help us to secure supply and continue our partnership with Waitrose to supply them with Welsh Black cattle through Dovecote Park as I have found it increasingly difficult to source stores due to decreasing suckler cow numbers in Wales.

It is anticipated that there will also be animal health and welfare benefits of procuring in this way.

As a result of visiting New Zealand, I am now starting to grow 12 acres of Lucerne. This will be used to make good quality big bale silage to feed the calves through the first winter.

I was very impressed with the grassland management in New Zealand and the way they managed to finish so many lambs off forage.

I have decided to undertake more rotational grazing for the ewes and lambs and I am also undertaking a paddock grazing system to fatten the lambs. I am measuring grass growth on Rhosferig Farm which will allow us to identify the poorer performing fields.

8 Challenges Ahead

New Zealand are facing a lot of the same challenges as Welsh farmers including high fertiliser prices and high feed costs but they do have an additional significant cost which we don't, i.e the cost of electric for the irrigation systems and in the near future, they will be charged for the use of water as well.

I believe we need to sit down with New Zealand farmers and aim to achieve a good price for lamb for both parties rather than competing against each other.

9 Acknowledgements

I am grateful to HCC for supporting my scholarship visit to New Zealand. I would also like to place on record my grateful thanks to all those in New Zealand who were so welcoming and took the time to show me their farming systems and enterprises. Thanks must also go to my team at home who looked after things so well while I was away.