



SAYFC AGRI & RURAL AFFAIRS

STUDY TOUR 2016: NEW ZEALAND

26th November to 12th December 2016



INTRODUCTION

One of the biggest challenges that is facing young people farming in Scotland, and indeed the Scottish farming industry as a whole is that of succession - a three pronged issue:

- farm managers struggle to find a career path that doesn't stop at the management level
- new entrants struggle to get their first step on the farming ladder
- established businesses aren't implementing succession planning until the last possible chance

Our industry is full of bright, driven and dynamic young people- they are our biggest asset and they should be utilised as such.

This study tour to New Zealand focused on this issue, looking at how their farming businesses are modelled to allow young people to get a start in the industry. New Zealand has some of the most dynamic succession policies in the world, and the youngest age of farmer – this trip provided an opportunity to learn from them, and see how their subsidy reform played a part.

Enjoy the report

Sarah Allison

Agri & Rural Affairs Chairman



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SYNOPSIS

So after fourteen days and over 25 visits, what can be said that the group took away from their trip down under? Well firstly it must be said that each member of the group is almost guaranteed to have a different highlight or best experience than their eighteen other peers. Consensus however did prevail on quite a few topics and take home messages will be very similar in certain cases, not just from individual farming practices but also from the attitudes and approaches of the people and organisations they met and visited.



In terms of farming practices, in general most places that we visited operated on a much larger scale than in Scotland. Due to the climate the farms did not need to rely on the same fixed costs that a Scottish farmer would. For example, a dairy farmer did not need a large shed to house his cattle through the winter as in NZ as they stayed out all year round and often dried off their herds for several months over the winter. Similarly, arable units did not need large grain sheds with driers as their climate during harvest was warm enough that grain did not require drying. Whilst infrastructure similar to Scotland was not required because of the climate, they did have their own infrastructure required to farm in arid areas, the main of these being linked to irrigation of the land and sourcing water through pumps and channels.

Farming in general in New Zealand appeared to be very forage based not just through grass but from other crops that would be grown for grazing and finishing either beef cattle or fat lambs. Fodder beet was a prime example of this, many farmers grew vast areas of this and would then strip graze it often through the winter when grass growth was limited. There was not the same definition between a livestock farm and an arable farm that would be seen in Scotland. The group almost saw no field unfenced. The majority of farms could lend themselves to grazing or finishing meat animals of some kind. Even if the farmers were not breeders themselves they would buy in finishing stock, predominately dairy bull beef or fat lambs.

One of the most interesting and definitely the most topical issues given the current Brexit situation and possible removal from the European single market, was just how market orientated the whole of New Zealand's agricultural sector was. Partly this can be put down to their geographical location and the relative ease of getting their products into, specifically Asian, markets. However, it was stressed to the group that this had not always been the case and that it had only really been in the past thirty years that

New Zealand had gone out and looked for these markets and, most importantly listened to exactly what they wanted and provided these markets with that to the highest possible standard. A great example of this is that New Zealand exports over 90% of its dairy products abroad.

Away from the physical farming and marketing practices, easily the biggest thing that impressed the group was the positive attitude and approach that the people within New Zealand agriculture seem to have for what they do. The group experienced a wonderful how to attitude and a certain degree of fearlessness to go into a new sector or enterprise because there was money to be made in it and it would progress their business in the long run. There did not seem to be the same emotional attachment that often lead people in Scotland to be tied to mediocre farming systems all their lives because that is just they ways it's always been done. As well as this they heard from countless successful managers and farmers who hadn't come from an agricultural background but had a passion to progress within a new industry and ultimately had done so very successfully.

Overall the group will have definitely come away with a great deal of knowledge and a better understanding of how New Zealand agriculture operates. At times the sheer scale of some of the businesses they visited may have been hard for them to relate back to their home set ups, but without a doubt the aspiring attitudes of the men and women who they met will encourage them to look at what they're doing to see if things can be changed and act on those decisions, with the self-confidence and belief that they can make it a success.

David Lawrie

Study Tour Team Leader



BACK - Colin Ferguson (Machars YFC), James Orr (Bell Baxter ADS), Ross Wilson (Crossroads YFC), John Brown (Strichen YFC), William Moir (Strichen YFC), David Lawrie (Kinross JAC), Iain Livesey (Teviotdale YFC), Jonny Stewart (Durriss YFC), James Robertson (Bell Baxter ADS), Neil Bridgeford (Ross Sutherland YFC)

FRONT – Kevin Lawrie (Crossroads YFC), Gus Forbes (Nairn YFC), Rachel Mackellar (Lower Speyside YFC), Rachel Matheson (InverRoss YFC), Zoe Bryson (Avondale YFC), Catherine Sloan (Bankfoot JAC), Bruce Ingram (Udny YFC), Craig Simpson (East Lothian YFC) and Peter Moss (East Mainland JAC)

THE GROUP

All members of the group are involved in agriculture either by directly working in the sector or still in education, completing a relevant qualification that will support their future in the industry. Some are directly farming our land whilst others are in careers supporting those at grass root level such as agronomists, consultants and sales merchants. Between the group the member backgrounds cover sheep, dairy, beef, pigs, arable including vegetables, diversification and renewables.

All are members of the Scottish Association of Young Farmers, and represent a wide geographical spread of Scotland

Forename	Surname	Club / Details
Neil	Bridgeford	Ross Sutherland YFC
John	Brown	Strichen YFC
Zoe	Bryson	Avondale YFC
Colin	Ferguson	Machars YFC
Gus	Forbes	Nairn JAC
Bruce	Ingram	Udny JAC
Kevin	Lawrie	Crossroads YFC
David	Lawrie	Kinross YFC & Tour Team Leader
Iain	Livesey	Teviotdale YFC
Rachel	MacKellar	Lower Speyside YFC
Rachel	Matheson	InverRoss YFC
William	Moir	Strichen YFC
Peter	Moss	East Mainland YFC
James	Orr	Bell Baxter ADS
James	Robertson	Bell Baxter ADS
Craig	Simpson	East Lothian JAC
Catherine	Sloan	Bankfoot JAC
Jonathan	Stewart	Durriss YFC
Ross	Wilson	Crossroads YFC

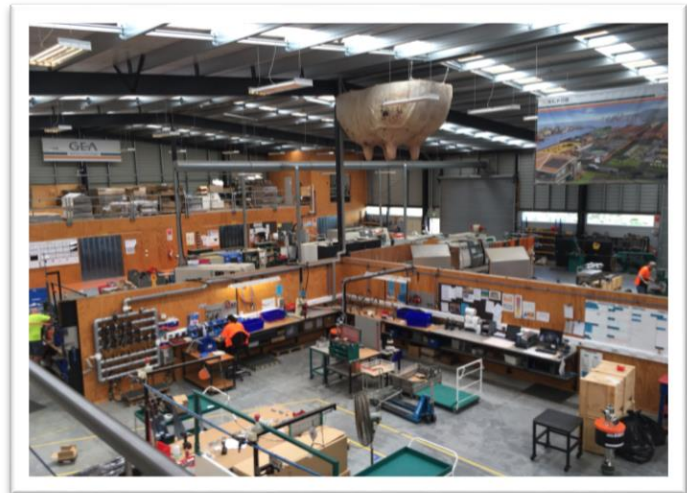
Throughout the trip the group used a dedicated blog to share their experiences, posting daily. As of the 1st January 2017 this had been viewed 7000 times. These posts were also shared via the associations social media pages (witter and facebook) which currently have over 10,000 followers collectively.

Day 1: Farm Technologies

Monday 28th November 2016 Writer – Craig Simpson (East Lothian JAC)

After arriving in Auckland, the group took a 2-hour bus trip south to Hamilton to visit an agricultural factory which designs and builds milking parlours. With 50 staff at the base in Hamilton and 380 staff throughout New Zealand, GEA are one of the leading farming technology companies in the country operating at this particular site since 2012. Despite the company's revenue sitting at over 4 billion euros in 2015, GEA has felt the consequence of the recent milk price crash with a decrease of production of parlours and staff cuts.

The young farmers group were given a tour round the research and development unit, with guides Jason and Paul explaining how GEA are taking original parlour systems and looking for improvements so that the new parlours are built to last a farmers lifetime. GEA have seen an increase in sales of rotary parlours over recent years, with the average dairy in New Zealand now consisting of 400 cows. Sales of traditional herringbone parlours only make up 30% of GEA parlour sales as New Zealand farmers are looking to become bigger and more efficient.



Following a tour round the factory the Young Farmers were taken to a local farm to see a GEA rotary parlour in practice, however this rotary parlour was built to milk dairy goats not cows. Peter, a 65 year old farmer had decided to stop farming cattle stating that the recent dry summers New Zealand he has experienced has contributed to his decision to diversify. Consequently, he has moved into a market which he has had no prior experience in. The startup cost of his project was over \$2 million New Zealand dollars as he invested in a 72 point rotary feed parlour built by GEA as well as purchasing 1000 milking goats and building sheds to house the animals.



Peter predicts that he can pay back his initial investment in 5 years by exporting his milk as powder to the Australian and Chinese markets. By milking the goats twice a day, one goat can produce a yield of up to 365kg of powder per year and Peter believes that the demand for the product will continue to grow.

Although the group had limited knowledge of goat farming Peter showed that even at 65, New Zealand farmers are always looking for innovative ideas and provided inspiration to the group that there are always markets evolving in agriculture if farmers are willing to take a chance.

Day 2: Abattoir and Meat Processing

Tuesday 29th November 2016 Writer – James Orr (Bell Baxter ADS)



Day 2 found us on a fantastic tour of Greenlea meat plant. This family owned and operated business was established in 1993 with the development of their first processing site at Hamilton. They later added a second site to the business in 1997 peaking at today's killing capacity of over 240,000 head of cattle per year, with over 400 employees. The Hamilton site we visited processes 140,000 per year with 50% cull dairy cows, 25% young bulls and 25% prime cattle.

The plant produces 6,000 cartons of meat everyday using both chilled boning and hot boning systems where the carcass is processed immediately after slaughter (in under 20 mins) before being aged in packet for 14 days at 0 degrees celsius. The plant's major exports are the USA and China with a small percentage for domestic sale.

The plant look for carcasses which match the criteria set out by the customers i.e. 500kg live weight bulls with a kill out percentage of 55%, primarily for export to China. The plant uses halal butchery methods to maximise the potential market exposure globally.

The methods the plant has adopted for quality monitoring and improving percentage of return from each carcass means that they record every single carcass weight with individual cuts being analysed, including individual trimming staff. Not only does this increase the plants returns but it has also allowed the management and procurement staff to scrutinise suppliers and variations in cattle quality.

Greenlea has successfully adapted through the years in production and grown to be one of the top 20 exporters in New Zealand, with a hugely successful business, and we all thank them gratefully for donating their time and expertise to give us a fantastic insight into the business.



Day 2: Kiwi Fruit Production including packing house

Tuesday 29th November 2016 Writer – Rachel Matheson (InverRoss YFC)

We spent the afternoon of our second day visiting a kiwi fruit orchard and packing plant in Te Puke in the Bay of Plenty. The land around the region is light, free draining soil and humid weather, with an average rainfall of 100" per annum – perfect for growing kiwis! The orchard, run by Steve and Rose Virco grows 4.5ha of kiwi fruit.

The vircos grow 2 varieties of kiwi with 3.5 ha of green Hayward kiwis, and 1ha Gold G3 kiwis. The family sell their kiwis directly to Zespri, the cooperative group which controls all New Zealand's kiwi fruit sales, most of which are exported to Europe and Asia. Steve walked us through the orchards explaining the growing process. Fruits are grown on vines which are closely pruned and supported by wires. He has both male and female plants in the orchard, and hires bees to fertilise the flowers of female plants in order to produce the plants. He hires the bees for approximately 3 weeks in the spring, requiring 10 hives per Ha with a cost of \$170 USD per hive.



He is restricted to applying only 2 fungicides to the vines each season which are to combat PSA bacterial infection, which caused major devastation across the NZ kiwi industry wiping out the main variety of gold kiwis a few years ago. He also applies 2 insecticides for leaf roller caterpillar and mites.



Steve's growing costs are approx \$35000/ha, with the bulk of this being on labour, requiring a gang of 30 seasonal workers to harvest his crop over a 4 day period in March. His returns were approx \$55000 – \$100000/ha dependant on variety. The cost to buy an established gold kiwi orchard, including the licence to grow them, is approx \$700,000/ha!!!

We also visited the Eastpack packing plant a few miles away from the farm. The plant is run by a farmer owned cooperative and packs millions of kiwi fruits per year. Farmers pay Eastpack to

pack their produce before selling onto Zespri. The plant employs around 1000 staff during peak periods, many of these coming from South Pacific islands under a government scheme. The majority of the kiwis are cooled down to 0 degrees c over a 30 day period and then shipped on demand during the post harvest months, taking 3 weeks to reach Japan and China, and 6 to reach Europe.

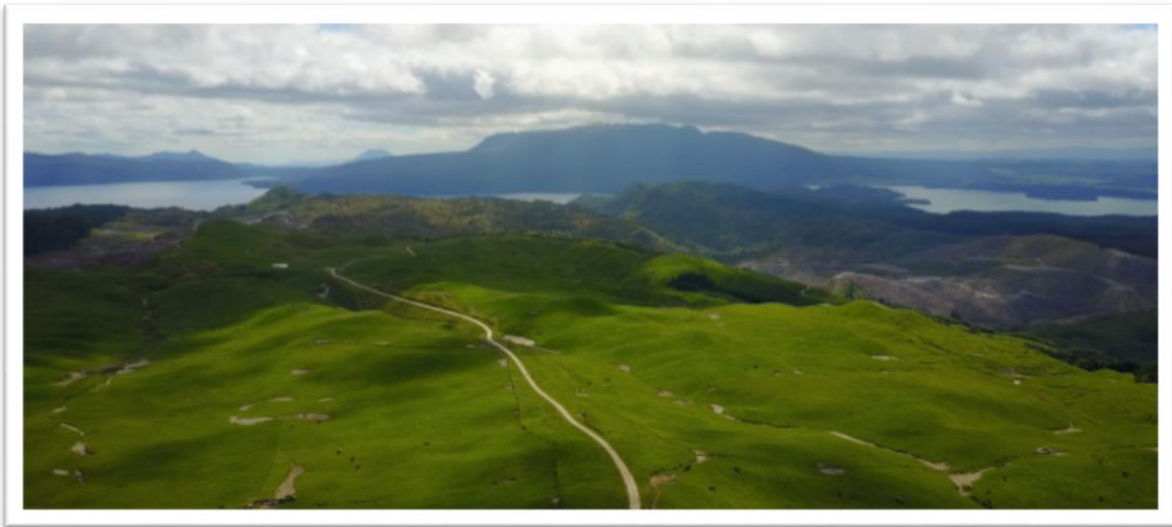
Day 2: Kiwi Fruit Production including packing house continued

We finished of the afternoon with some beers in the tranquility of the orchard courtesy of Steve and Rosie, until a group member sat on the precariously positioned cooler box knocking it, him and his beer to the ground in a crash – much hilarity!

Steve and Rosie and the team at Eastpack showed that farming can be profitable without subsidies if good relationships are built between growers and buyers, and there is give and take from both sides.

Day 3: Beef & Sheep Station with Environmental Focus

Wednesday 30th November 2016 Writer – Rachel MacKellar (Lower Speyside YFC)



John and Catherine Ford welcomed us to Highlands Station in Rotorua which covers 1,240ha and has been in the family for two generations. The farm has 920ha in grass with the rest in scrub. The farm is at 600ft above sea level on average but rises to 720ft.

The farm was taken on by the family in 1931 as a ballot block and when John and Catherine took on the farm from John's father it was split into 60 paddocks with Angus cows, 10,000 Romney ewes and red deer. The farm was "developed" in the 1930s/1940s which involved eradicating scrub and making the ground productive. Now, John has concentrated on intensifying the farm by splitting into 213 paddocks and putting into 15-20km of laneway. The family now concentrate on Fresian bull beef, Romney ewes and steers.

20% of the farm has ashy type soils with low levels of phosphate, potash and sulphur. Whereas the rest of the farm is covered by Rotomahana mud which is a sediment and poaches easily in the Winter. John argues there's no money in re-grassing, as weeds become such an issue. He states that well managed grass in temperate climate conditions can last forever.

With regards to the Fresian bull beef – the family buy the calves in at 100kgs direct from a dairy and have them at grass. The Bulls are kept for one Winter before they are put to the abattoir. The Bulls are grazed in a rotational paddock system with 4.5ha paddocks being split into smaller blocks for the main grazing season, and larger blocks for the rest of the season while being moved regularly. The average target daily



weight gain that John aspires to is 1.07kg/day, although he has not quite met this target yet. The carcass weight they aim for with the Bulls is 300kg on average although they have only got as high as 295kgs so far. The target weight for putting the Bulls off for slaughter is 580kgs live weight. Currently the family has 920 bulls in 30 mobs, the bulls finish better in small groups and stay happier, three stay eating. The return gained on these bulls varies from \$5 -\$5.50/kg. John feels the yearling bull system suits his farm best as the most efficient method for him is a small animal

growing fast, rather than bigger animals being maintained.

The family run 3,000 Romney ewes and 1,000 hoggets which are all put to the tup. The ewes are lambed from 15 September onwards. The typical ewe scan is 188%, with a tugging:weaning % of 158%. The lambs are weaned at 60 days and in 2016 weighed on average 23kgs on the day they were weaned. At weaning the lambs are drenched, given their 2nd vaccination and dipped using spray guns for fly strike. The family aims to finish all these lambs off grass to be put to abattoir Silverfilm Farms from January onwards. Depending on the summer, sometimes the lighter lambs are sold sore. The finished lambs kill out at \$16-\$17/kg for \$80/lamb. Recently, the family took on 170 eighteen month old steers to finish, which follow the Bulls to tidy up the grass.

The family won the Ballance Farm Environment Awards which are aimed at promoting sustainable profitable farming. The paddocks have only ever been cultivated once, to allow them to be able to be topped in summer. The paddocks that have been grazed by bulls are followed with steers/sheep. The fields are fertilised through aerial top dressing, by plane.

The main threat to the farm is the environmental movement, as they are in the catchment for Loch Tarawera and the focus is on ensuring clean water in the loch. John has taken the pro-active approach of gaining credibility with the local environmental groups and taking them on tours round the farm. He found this to be a successful way of addressing the concerns. The male cattle that John finishes have a lower nitrogen footprint than both female cattle and sheep. The farm also has several dams which prevent soil erosion and stop nitrogen and phosphate leaching into the lake, maintaining water quality and reducing algae bloom.

The family is part of a local bench marking group and looks at Economic Farm Surplus (EFS), which is the cash profit/ha. In 2016 the EFS was \$688, with the ten year average being \$509/ha from 2005 to 2015.

The family have an active succession plan as the previous generation had a difficult experience. John and Catherine have 3 children, none of whom are direct interested in being farmers but will be welcomed onto the board of directors. They are sent a newsletter every 3 months and are actively involved in the business side of things. The parents have been focused on building up their off farm assets to offer some flexibility and give themselves the ability to use these assets to distribute rather than having to sell the farm. The family utilise trusts and companies to ensure the assets are not in their own name and to prevent succession issues in the long run.

Day 3: Large Scale Operations - Beef & Sheep Station

Wednesday 30th November 2016 Writer – William Moir (Strichen YFC)

Following on from our morning at the highland station we made our way south on a cheerful bus run to the Tarawera and Gwavas stations. The stations are owned by the Te Awahohonu Forest Trust, which is run by a group of 1800 shareholders, and farms a staggering 52,000 acres. The farm ranges from 400-720m



above sea level, and is an expansive area of rolling hill country. Between the two stations they run a large 15,500 strong highlander ewe flock, which was being crossed with the hardy Primera Rams to breed the ideal export lamb. The ewes scanned out at a 195% pre-lambing percentage with roughly 22,000 lambs making it to the docking stage, which constitutes a lambing percentage of 141%. The percentage difference shows the potential implications of a low maintenance system, however, there are obvious benefits with greatly reduced labour costs etc. The stations were both very well equipped in terms of their handling systems being able to wean over 3000 lambs per day.

The farm sells 10% of their lambs as stores then finishes the remaining 90% in house, rearing purely on an Italian rye and clover grassland.

As well as the large flock of breeding ewes the station also runs 1500 commercial calving cows. These cows are mainly Stabiliser cross Angus cows and are put to a Stabiliser bull. Run as very much an easy care calving herd, with minimal, but mainly no, human intervention required during calving. Cows start calving on the 15th of October for 45 days following a tight bulling period earlier in the year. The calves are weaned at approx. 250kg and are also kept and finished on the farm, following which they are sold onto the local processing operation where the majority are slaughtered for sale into foreign markets, such as the USA and Asia.

Day 3: Large Scale Operations: Beef & Sheep Station continued



The farm was split into 562 paddocks of rich grassland, with the area receiving an average rainfall of 960mm per annum. All the land received roughly 30kg of fertiliser, applied by ariel spreading from a plane. The Trust employ 6 full time members of staff who run the enterprise for the shareholders. The farm is making \$418 nzd/ha in profit, which equates to £102/ac.

The afternoon continued with a whole load of fun! We just made it to Napier for the night after a ropey run with John the bus driver at the helm, who was determined to complete the 45 minute

journey in half an hour to allow us to get to the swimming pool in time. I managed to don my dookers for an early evening splash in the pool with the the rest of the crew. The team found themselves engaged in a extremely competitive game of 'donkey' with a group of kiwi bairns, with resulted in a historic away win for the Scotland team, however the already shallow pool had only a few pails of water left in it when we clambered out like prunes.! The group also endured several Buchan dialect lessons from myself and now have a strong grip on the term 'it's a sare chav for a half chan bap'. Who knows what tomorrow's lesson will be!

Day 4: Deer & Collaboration

Thursday 1st December 2016 Writer – Iain Livesey (Teviotdale YFC)

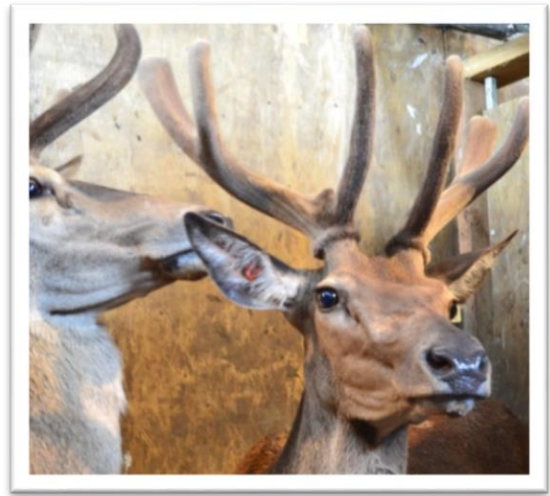
Angus Irvine of first light produce explained how the meat retailing company had a contract with producers to market and retail venison and wagyu for export as well as some domestic usage through supermarkets. It's a simple contract where a price per kilogram is set annually for the producer.

We visited 2 studs producing venison on a contract. The first was a family business with 600 breeding hinds and also buying in some young deer bought in at 60kgs, growing them to 100kgs for slaughter with 55-60kg carcass, supplying mainly Marks and Spencer and Waitrose in the UK, and other European retailers.

The hinds would faun in November and weekly supply of venison would have to be supplied throughout the year. The old cull hinds and stags would be slaughtered and exported to Germany for European processed meat trade. The price usually fluctuates between 4.5-6\$/kg .

They explained the flighty nature of the deer due to just being farmed for 40 years. But have made vast improvements to temperament with selective genetics and improved facilities. The hinds are all electronically identified with ear tags and eye muscle scanned to collect data required to improve breeding and efficiency.

The family also produce beef for first light with bought in wagyu cross Friesian Bobby calves from dairy herds bought in for a significant premium at 100kg live weight. These calves are then finished on a grass fed system rotationally grazed in cell paddocks.



This family have received multiple awards in recent years such as Marks and Spencer producer award 2016, and Hawkes bay farmers of the year award in 2010.

The 2nd farm we visited was a high country holding, 500m above sea level. It was a 250ha farm with 700 breeding hinds and they were also shareholders in first light doing a similar contracted supply chain of venison as previous. This farm had an average 1800ml/year rainfall and described as summer safe although can occasionally suffer from droughts in the dry windy summers. Aside from the deer enterprise the grew 35ha barley this year yielding 9.5T/ha.

They also grazed lambs on lower lying paddocks for other famers. Where they are paid \$2.15/kg live weight gain, weighed on and off the farm in the Lorry over a weigh bridge.

When mating, mobs of 300-350 hinds would be run with 1 stag to 60 hinds in April. Each hind would rear an average 10 fauns in her life.

This farm would also harvest velvet from the stags which was something new and interesting for the group to learn about.

Velvet can be cut once a year. And the animals are sedated for the process which involves cutting with a saw. Each stag would typically yield 5kgs velvet trading at \$120/kg. the demand coming from Asia, mainly China for medicinal purposes as its full of minerals and has health benefits.

The hospitality was excellent as the group were all well fed and watered with home grown venison, homemade lemonade and tray bakes while Pete flew his drone over the farm getting some excellent camera footage of the landscape as well as checking on a field of fauning hinds over 2km away.

Day 4: Mixed Farming Enterprise

Thursday 1st December 2016 Writer – Peter Moss (East Mainland YFC)

We arrived at Brownrigg Agriculture's yard and immediately the scale of the operation they are running became apparent with a yard full of vehicles and large sheds dedicated to maintaining their fleet of machinery.

Brownrigg Agriculture is one of the largest agri-businesses in New Zealand producing a range of produce to supply markets around the world. The business is privately owned by brothers David and Jonathan Brownrigg who farm over 10,000 hectares over 12 different farms and is a mixture of freehold and leasehold land with tenancies of varying durations.

Brownrigg Agriculture also have developed a share farming program to work with other farmers who have suitable finishing land. They will supply livestock and the partner farmer will supply the land and carry out the finishing work and get paid for it.

We met Hayden who is the manager of the livestock enterprise at Brownrigg and for a young guy he had a huge responsibility with the business finishing 150,000 lambs, running 5,000 bulls to be sold store and finished and also running a Wagyu breeding program with some of the best Wagyu genetics outside Japan.



Brownrigg has over 120 full time staff and also takes in extra staff during busy periods. There are 30 staff in the livestock part of the business (including 3 full time fencers), 10 in the cropping part and 80 in the packing plant for the veg.

We started looking at the lamb enterprise and Hayden explained they buy lambs from across the country with a variety of breeds but they aim to buy them around 30kg live weight.

Forage crops grown on the farm include kale, fodder beet, plantain and currently they are trialling lucerne. We walked around a field of plantain and the growth rates the lambs were achieving on the plantain clover mix were extremely impressive with Hayden telling us the lambs were achieving 500g of live weight gain per day, which they ran a comparison trial with Rye grass and the lambs were achieving 200g more lwg per day on the plantain clover mix. They found that Plantain was at it's most productive for the first 3 years so they are incorporating it into their rotation.

It is interesting to see plantain is being trailed in Scotland and if it will manage in wetter areas as it would be a very productive way to grow animals.

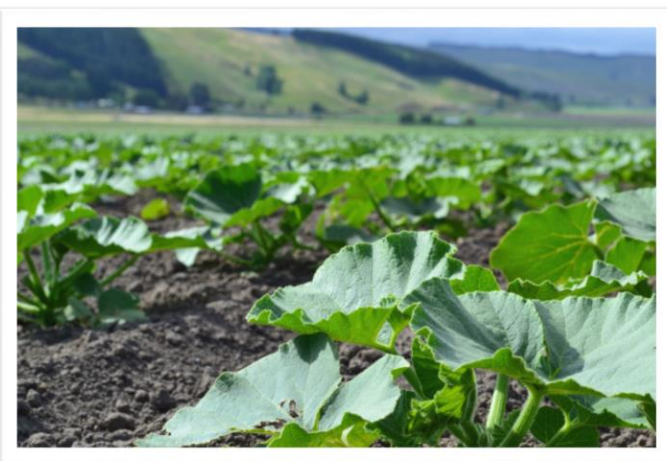
Day 4: Mixed Farming Enterprise continued

The volume of available forage is assessed by eye by all the staff and the amounts are fed in to the Farmax feed budgeting program to plan out available feed amounts, something that will be vital with that many stock to feed.

They also use the program to carry out financial budgets for the livestock which helps assess the likely costs that may be faced in the coming season. The program can also help you compare how you are performing to other farmers in the program and this realtime bench marking system allows the farm to see how they are performing in the real world against real people. This feature is very interesting and the ability to share info like this is helping develop the industry.

Feed budgeting programs are popular over here with nearly all the livestock farmers we have met using some system to keep an eye on the business and many business decisions are made using this data. By doing this many farmers are able to plan ahead for the future and make smarter decisions and react to unforeseen scenarios with greater confidence.

Next we visited the Wagyu finishing shed, it was an impressive set up with the bulls being grain fed, something we have not seen so much of so far in New Zealand. The automated feeding system blows



the grain to the animals in the shed and the bulls are finished at 3.5 years with a target weight of 350 to 380kgs and were going to Korea, China and Japan. They currently supply Firstlight Agriculture who export Wagyu and Deere products around the world with a large amount going to Asian markets.

Next we met Sam who was managing cropping on the farm. We looked at Squash growing in the field. Brownrigg Agriculture grows approximately 1,500ha of Squash producing over 22,000 tonnes.

Brownrigg have been one of the leaders in the Squash industry being involved since 1988 and using innovation to get the most from the crop making their own squash harvesters by dismantling and adapting other machinery. The squash operation was very impressive with everything being farmed with the precision agriculture approach. The company also have a dedicated packing house for processing the Squash produced on the farm and this allows them to guarantee the product is handled well so that the end product meets their high standards and it is close to the nearby port of Napier so it can be exported around the world.

The scale that the business is operating was mind boggling and it is amazing to think it is still a private family run business. The limited time we had to visit struggled to do the farm justice with there being a huge amount of other parts to the business we could have seen but it was great to see a pro-active approach to new ways to feed animals and also a willingness to try new products to meet new markets. This willingness to grow new products and enter new markets is something that has been apparent during our visits to farms across New Zealand and by doing this many farms are making better margins supplying items that are in higher demand than sticking to more traditional products.

Day 5: Pig Production

Friday 2nd December 2016 Writer – Neil Bridgeford (Ross Sutherland YFC)

Owner Neil runs 750 to 800 dry sows in two units with 100% AI insemination. He averages 25 to 30 farrows per week. His average weighing weight is 6.5 to 7kg with litter sizes of 12.5. He takes them off the sows at three weeks where they are then transferred to the businesses second unit located a few miles up the road.

He has 600ha of arable and finishes 25,000 lamb, and this was their primary business until they incorporated the pig business which is today the largest enterprise on the farm.

He takes the pigs from 7kg to 100kg at the second unit. Feed is based on bi-products such as dog biscuits and cheese which would have otherwise been disposed off. He used a large amount of bread, receiving two deliveries per day costing the business just the haulage. These bi-products are combined with barley and soya bean, milled using the on-site unit.



A gas plant is used for powering the piggery, fuelled by the slurry. The piglets are kept on heat pads and heat bulbs for three days after farrowing so this gas plant is saving the business considerable costs.

All pigs are housed and managed by four staff in one unit (dry) and three in unit two. He also has a tractor operator and has recently passed on his business to his son.

The demand for pigs in New Zealand is so high that the abattoir pays for his haulage, ensuring they receive supply to fulfil their demand.

Whilst the business was quite similar to operations in Scotland, the New Zealand unit has far more opportunities to take advantage of bi-products lowering costs and increasing production.

Day 5: Livestock Market & Precision Farming

Friday 2nd December 2016 Writer – Jonathan Stewart (Durriss JAC)

We arrived at the largest livestock market in the country, Fielding Market where they had a sale of store and prime sheep and cattle. Spirits were high and the bidding commenced with store lambs selling to a high of \$83 per head. There were multiple auctioneers from different companies selling the vast lots of sheep at a steady pace.



The market was outdoors with cattle sold inside. Trade was fierce on the high with a fat price increase. For interest the first batch was a pen of 11 Charolais X stots averaging 665kg making \$2.87 per kilo. Cattle were in short supply after the dairy price slump in 2013 leading to less calves on the land. Trade continued to be fierce with Aberdeen Angus making a breed premium driven by the MacDonalds burger market. I thought the hammer landed on myself when 21 Aberdeen Angus X stots at 520kg made \$3.129 per kilo but to my relief it was the guy sitting behind me.



From then we travelled on the bus to a unit run by brothers Roger and Hugh, fourth generation farmers running 4000ha covering a vast expanse of sub-enterprises. This consisted of 1000ha of crop including maize, peas, potatoes, onions, squash, malting barley, fodder crops, fodder beat and newly introduced lettuce. The farm also carries 1400 head of dairy cattle being milked through a 50 rotary system, 2500 steers fed on an intensive feed lot and 1400 at grass. They also export 14,000 dairy heifers throughout the year, and take on 25,000 to

50,000 lambs depending on the year to tidy up the rotation and cover crops.

The main aims of the business is to be efficient in every way producing a high quality produce. The farm continues to be innovative and reclaiming land increasing their value from \$5000 to \$25,000 per ha. Irrigation is utilised to its maximum to improve efficiency, and urea is combined with irrigating.

Day 5: Livestock Market and Precision Farming continued



The farm forage based system was managed by dry matter percentage with staff incentives/bonuses on live weighed gains. These percentages were worked out over head per animal so that each animals had the right amount of grazing per day in order to meet the business targets. Cattle were also sold per dry matter (one to get your head round) with returns of 30 to 35 cents per percentage of dry matter.

Succession plans were in place with Roger commenting. “The sooner you get the cheque

book the better, and you only learn by making mistakes but don’t make the same mistake twice”.

A key business man who uses all the latest technology and benchmarking across every aspect of the farm with high level attention to detail which was inspiring albeit a little overwhelming. He was some guy with numbers to say the least! We headed back to fielding for a beer and burger and a taste of the night life.

Day 6: Veterinary

Saturday 3rd December 2016 Writer – Ross Wilson (Crossroads YFC)

A quick journey to Totally Vets on Friday morning was much appreciated after some team bonding the night before. A few road beers and a couple of games in the “Broken Chair” Motel meant a there were a couple of sore heads but we were all pretty excited to meet Trevor Cook. Trevor is firstly a vet at Totally Vets but also a world renowned veterinary consultant in beef and sheep production. He is now working with QMS in Scotland to bring Kiwi ideas to our industry. Trevor has been hugely involved in organising our visits so it was great to finally meet him.



We started off with a presentation from CEO Chris Carter who gave us a run down of the business. Totally Vets is a medium sized, privately owned vet business operating over 5 centres covering the lower North Island. They provide a complete service with small animal, equine and large animal departments supported by 42 vets in total, 30 of which work on the farm side.

Day 6: Veterinary continued

Chris explained how the veterinary model has changed in New Zealand. Originally farmers grouped together and employed their own vet, these were known as “Club Practices”. These then developed into practices more like what we know in the UK but, now corporate companies are coming in to buy up practices. The original farmer group that started Totally Vets is now just one of their many clients.

The business is constantly trying to seek out new revenue avenues including consultancy and retail. Chris was very open with us and revealed that clinical work could only just cover costs of running the business and they had to rely heavily on retail. The vet surgery had an impressive front of house shop selling everything from sheep wormer to dog beds. Their unique selling point is reliable advice to back up product selection on farms.

It was a great opportunity to find about animal health in the country. Trevor emphasised that antibiotic usage was becoming a hot topic, much like in the UK. Critical antimicrobials are going to become vet only and currently farmers need to obtain a prescription before treating any animal with an antibiotic. However 95% of stock in New Zealand are killed having never had an antibiotic in their life!!



We went on to speak about disease with the group being particularly interested in BVD, Johnes and TB. There is very little BVD control in the country, dairies are starting to see the benefits of eradication but it seems to be a hard sell with the beef industry. Johnes control is still very sporadic but again the dairies are starting to test using milk and blood samples. New Zealand has done a fantastic job eradicating Bovine TB and is almost free of the disease. It was originally introduced with Australian possums. The Kiwis see the possum as an imposter and a pest so the public are totally behind wildlife control to protect their industry. Chris explained that possum control has been vital to the success of the control programme...a lesson to be learned there if you ask me.

Trevor emphasised the importance of succession in the industry and how they are always conscious that they need to keep the figures realistic in order to make it possible for vets to buy into the business. One way they have achieved this is by approaching a group of farmers to invest who now own all the buildings Totally Vets operate from. This has reduced asset in the business and therefore new entrants have a more achievable capital investment to make. By using this model, Totally Vets are securing a succession structure and continuing to grow while their competitors struggle to find vets willing to or capable of buying into their practices.

It was a great opportunity to hear Trevor’s views on production first hand. He explained the most efficient farmers in the country were utilising more than 85% of their grass. Monitoring is a key component of success here, finding out where you are at present and setting targets to improve, adapting your system in the process if need be. He believes health and nutrition are the biggest factors governing the expression of growth potential. He finished, “High performance with efficient use of pasture is the perfect recipe for profit.”

Day 6: Livestock Share Farming Agreements

Saturday 3rd December 2016 Writer – John Brown (Strichen YFC)

Following our time at Totally Vets we jumped on the bus and headed to Whole Meads Farming, where we met Zane one of the shareholders of the business. His brother in law and himself had just been partners in the business for 6 months after being approached by the owner of the business. The owner decided to go into share farming once his children had decided not to come into agricultural but the family didn't want to sell the farm.

To do this they got the business valued and then Zane and his brother in law bought equal equity shares in the business but not ownership of the land. The 3 partners have all the same say in the business and sit on the board of director's together. They have an independent person available to come to board meetings if needed. All profits are then reinvested and each partner takes out the same salary no matter if the business is in profit or loss for that year but their salary may be reviewed every year. The farm also employs one full time staff member and one seasonal.

They farm 4 farms one owned which is 1000ha and classed as the breeding farm and the other 3 are rented. They run 368 Hereford cross Friesian which they cross with the Simmental bull as heifers and



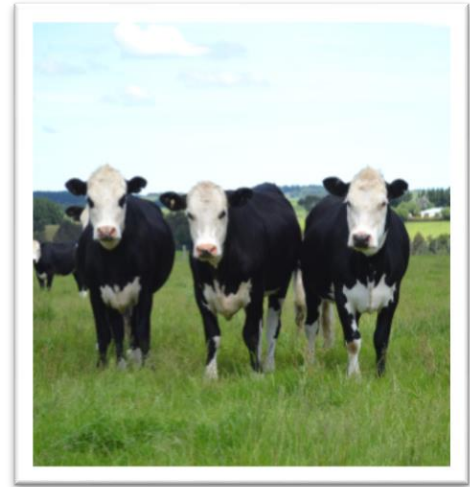
second calvers followed by the charolais from then on. They often top the local market with the charolais cross calves at 5 months old aiming to weigh 300kg. Replacement heifers are bought in as weaned calves and bulled at 400kg plus at 15 months old of which they had a 99% scanning last year. The cows are kept till they have had 8 to 9 calves before they are replaced.

They start early lambing the 1st week in August to try and hit the high prices before Xmas. Lambing 8654 ewes this year mainly poll Dorset cross Romney ewes to the Dorset down ram. They aim to wean there lambs at 90days old with the best of them going straight to slaughter averaging 18.5kg dead weight.

Day 6: Share Farming Agreements continued

The ewes scanned this year at 150% and lambs docked at 130%. They are now wanting to focus on increasing the productivity of the ewe flock by lambing more ewe lambs. They currently only lamb the ewe lambs off the early lambing flock but are aiming to give all the ewe lambs a chance of a Kelso Ranger ram.

Also to increase productivity they are wanting to split the paddocks into 5ha blocks. Which will then be paddock grazed, of which 5ha paddocks should graze 50 cows. They also have a grass rotation on the lower easier accessed ground, which is grass followed by Hybrid turnip pasture crop for Finnish ingredients lambs and then some paddocks will be planted into plantain and clover mixed sward again to finish lambs on aiming for growth rates of 200grms per day.



After meeting Zane he took us up the farm tracks to see the lay of the farm. We got to see hoggets with lambs at foot, before stopping at two fields of cattle. One containing bulling heifers with a sim bull running with them, the other was heifers with sim cross calves at foot. Although they have yet to be introduced to a bull.

Following the farm visit we all headed to a local park for lunch where we enjoyed sandwiches and ice-cream and made the most of the good weather before heading back to the vets for another talk.

Day 6: Organic Dairy with Added Value

Saturday 3rd December 2016 **Writer – Kevin Lawrie (Crossroads YFC)**

Saturday afternoons visit to Jamie and Cathy Tait-Jamieson Bio Farm started off with a talk from the self-proclaimed 70's 'Hippies' who believed that everything in the cosmos was seen as well as ordered whole – the sun, rain, moon and stars seemed to run the world. At this point we wondered what sort of farm we had come to! Once we got them back on track though we found out that they were an organic farm producing a Natural Yoghurt under the Bio Farm brand.



'Adding value to your product' is a phrase Jamie used more than once and is a very topical subject at the moment. This business adds value to the 2000 litres of organic milk produced by making 2000 litres of yoghurt every day.

Day 6: Organic Dairy with Added Value continued

The farm went cold turkey in 1986 when it was officially certified as organic. They are a low input system with no bought in feed, all feed comes from the farm. They milk all year round which is very unusual for New Zealand producing an average of 2000 litres a day from 100 cows. Their cows are averaging 6000 litres of milk per lactation at 4% fat and 3.5% protein, or as they talk about over here 450kgs milk solid per year.

They also ran a very strange system where they left the calf with the cow. Cathy stressed that you can't underestimate animal welfare and public perception. The calf is behind a gate where the mother can see it, lick it, lie with it but can't feed it. Once the cow can see that Cathy will care for the calf they take it away. This came around when Cathy had children and realised what it would be like if someone took your kid away.

The farm doesn't have a re-seeding policy with some of the lays being down for 50 or more years. It was interesting to see but I will be sticking with my 7 year crop rotation and re-seeding policy. Jamie doesn't



do anything for weed management, two cuts of silage a year keeps the pasture clean. The use of antibiotics has been a huge talking point on this trip and as far as organic farming goes it is a big no, no. If all other options have been exhausted and the cow is suffering, antibiotics can be used in line with a prescription from the vet. The treated cow will then be removed off the farm as it no longer complied with the organic regulations. New Zealand organic policy is the same as the European Policies which is a very well regulated industry.

As far as breeding goes Jamie wants everything to become polled so he is using polled bulls, he believes this is more humane on the calves. He also breeds for longevity. He is calving heifers in at 3 years old but one of his future targets is to drop this calving age to 2.5 years old.

The business is making money as they are selling their yoghurt as a premium product. This allows them to pay the farm \$20 per kg of milk solids which is huge when you think that Fonterra, the main milk company in New Zealand are only paying customers \$6 per kg. As they calf all year round their "bobby" (bull) calves are in high demand so they can achieve a price of \$300 at a week old whereas the block calving boys only get paid \$30 as they are flooding the markets at calving time.

In conclusion it was a very interesting visit to a well run organic unit with two very eccentric people at the helm. They have 100% bought into the organic lifestyle and are reaping the rewards with a fantastic value adding product. We all boarded the bus with great enthusiasm knowing the next stop would be Wellington and as we drove off into the sunset you couldn't help but wonder what the two hippies would get up to that evening.

Day 7: Farm Resilience

Sunday 4th December 2016 Writer – Gus Forbes (Nairn JAC)

After experiencing the sights and sounds Wellington nightlife had to offer, we jumped on the morning ferry and made our way down to the south island. Today we had the pleasure of visiting Bonavaree Farm, Overlooking the dominion salt facility at Lake Grasmere, 34 klm south of Blenheim. It was there that we met Doug Avery, whom along with his family, runs the sheep, beef, dairy support and arable holding.

The farm itself was bought by the family just under a century ago and has grown from 206 Ha to 2400 Ha. Now run by Dougs son, the farm is home to 16,000 stock units. This includes Angus cattle and high performance ewes which are in the top 5% of the New Zealand market. The farm also buys in dry dairy cows from all over New Zealand to put back into calf and sell on to the industry, making on average \$1,000 per head.



There has been a complete change in the farm over the last 20 years. Doug converted from rearing Hereford to Angus and began growing lucerne grass. As expensive as lucerne is compared to other products, Doug believes lucerne is making land better and is double the value per ml of rain fall. The farm also grows 26 ha of foeder beat which is becoming more popular all over New Zealand. Doug describes it as ‘a champion of photosynthesis’ due to its good return and high performance.

For the majority of the group, the highlight of the visit wasn’t the farm itself but the farmer. Doug is regarded as one of the most resilient and influential farmers in New Zealand, and throughout our very short stay it was clear to see why. In 1998 Bonavaree was hit with severe drought which left Doug with a destroyed farm, destroyed bank account and a destroyed sense of hope. Unable to move due to finances, in the years that followed Doug went through constant mental stress and depression, a problem that is sadly a growing concern amongst our agri-sector today.



After rebuilding both the farm and himself, natural disaster struck again. During a two week period, they were hit by 220 klm/h winds and earthquakes up to 6.8 magnitude. The epicentre of these just 2.4 klm away. This resulted in both stock and crop destruction, land rising by over 2 metres and several buildings being destroyed or deemed unsafe for use. However as Doug said himself ‘Adversity is the greatest time to learn. Bounce forward from tragedy, not back ‘.

Day 7: Farm Resilience continued

With all the challenges that the Avery family have to deal with, the farm still continues to grow when others around them are giving in to fear. In 1998 Bonavaree turned over \$320,000. In 2016 that's risen to well over \$2.2 million. Doug believes there is huge reward in successful farming, but this can only be achieved through the 3 pillars of resilience. Emotional, Social and Financial. The property is a leader in environmental thinking and it has a social sound base to build into the future. Doug now finds himself giving presentations, creating videos and writing books all about his and his family's story.

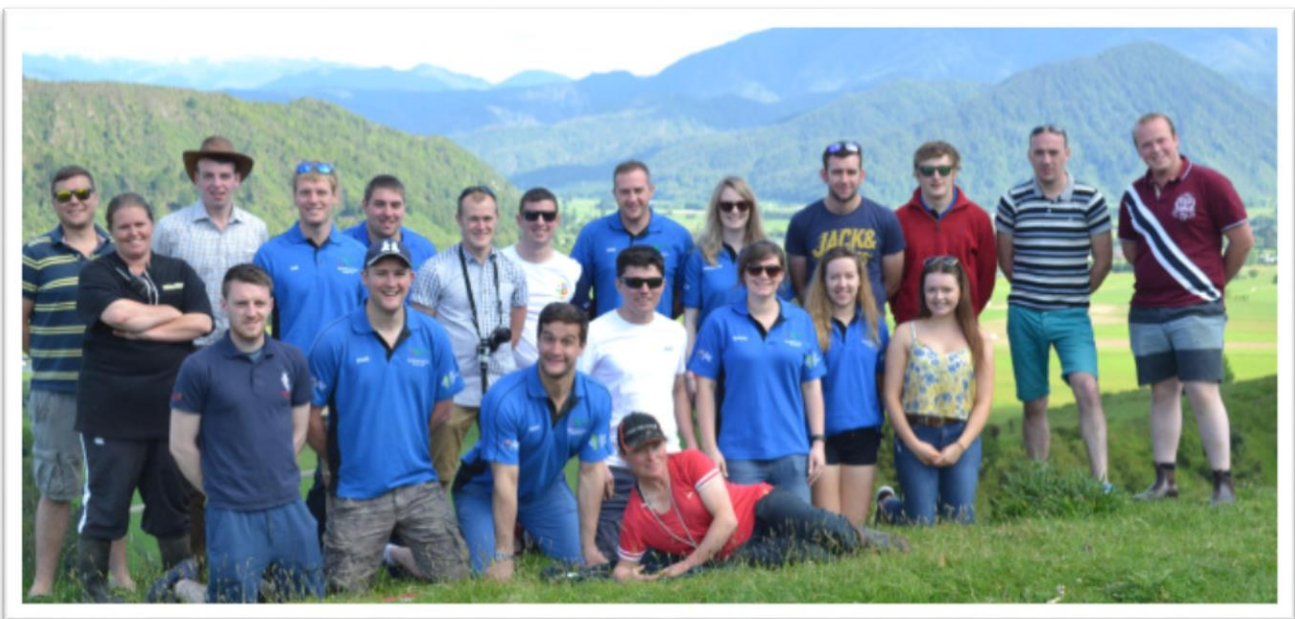
The group definitely benefited from listening to Doug and hearing how he overcame so much by changing his mind set and thinking of himself as 'Special'. Not an hour after the visit we even got our first experience of an earthquake! Well, a little one.

Day 8: Dairy

Monday 5th December 2016 **Writer – Zoe Bryson (Avondale YFC)**

The first night in the South Island was spent in a small village called Murchison, where the following morning we travelled 5 minutes out the village to 'Matai Farm' owned by 'Thomas Holdings'. It is a family dairy farm which has been in the Thomas family for 4 generations and is currently run by Marion, with her parents still involved in helping out.

The farm is a dairy farm milking 635 jersey cows through a 50 point rotary in a grass-based system. There are 2 milking's a day with the full herd milked in the morning and only 500 in the afternoon. 135 are only milked once a day as they are problematic cows suffering from the likes of lameness; tend to be low yielding or are known for kicking the clusters off in the parlour. However as of January the full herd will go to once a day for part of the season. The average milk yield is only 16 litres which seems quite low compared to yields in Scotland however Marion stated she does not put a big emphasis on milk yields as they are paid by milk quality over quantity so quality is key. There is an average protein content of 4% and fat of 5.35% in the jersey milk.



Day 8: Dairy continued

The herd is Spring calving with the heifers starting calving around the 27th of July, cows the 4th of August and aim for everything to be finished calving by the 4th of October. The cows are then put back in calf at the end of October. All cows on the farm are artificially inseminated using the 'Bull of the Day' recommended by a company called Livestock Improvement. However if any do not hold then home bred jersey Bulls are put in with the cows to give the cows a second attempt of getting in calf. The use of Bulls is carefully monitored to try and prevent in-breeding among the herd and if blood lines are becoming too close together then certain Bulls shall not be used. The Bulls have 3 days with the cows then 6 days off to try and maximise their success rates. In previous years heifers have followed the same routine of AI and the use of home bred yearling Bulls however last year they were not artificially inseminated and the number of in-calf heifers was down. The herd is then blood tested to determine whether they are in calf and if after 2 attempts they are still not in calf then they shall then be sent to slaughter. Marion does not feel the use of seeders or intervening any further is necessary.

The herd is dried off in the middle of May with only 20% getting antibiotics here as Marion does not see the need to treat every cow when they do not all require it. The majority then move to 'run off' which is part of the land used for the likes off young stock, making haylage and for dry cows. During this period of wintering the cows are fed approximately 10 bales of haylage every 2 days to supplement grazing.

All calves sired by the home bred Bulls are not kept and are sent for slaughter at 4 days old, where there is a big market in New Zealand for these Bobby calves. AI heifer calves are raised and there is 25% heifer replacement rate. Approximately 20 bull calves are kept for breeding for the next few years however will all eventually be sent to slaughter. In total last year 140 calves were raised however the year before 250 were raised so the number is highly variable. The young stock is all raised at a run-off site.

The majority of the land is used for rotational grazing however some is used to grow turnips. This is used as supplementary feeding for the milkers and often graze on this for an hour after milking before being moved to grass . The land is irrigated during the summer months however due to the wet spring this year irrigation has not been needed this year yet. Unlike many irrigation systems in New Zealand it is not a Centre pivot system and so it requires the sprinklers to be moved manually a few times every day. Aside from dairying, Marion's brother also runs 350 deer hinds and a small beef unit which adds diversity and more stability to the business. There are also wild goats which in habit the land, in New Zealand the farmer is given 50\$ per wild goat caught.

Marion is the manager of the farm and there are 4 people who work underneath her supervision, 2 of which are females. This is encouraging for #womeninagriculture and to see females managing farms at the other side of the world. With regards to succession Marion has a son and a daughter aged 14 and 11 respectively. Her son enjoys helping out on the farm with the calf rearing however Marion felt very strongly about not forcing him, or her daughter into farming. She is just thinking of the farms current issues and won't begin to worry about succession until 20 years time if they choose not to go into the farming industry.

The farm visit was followed by an eventful bus journey south to Lake Ohau. We eventually arrived after 10 hours of sight seeing; SAYFC's biggest game of UNO; and an emergency pit stop after discovering the back door had swung open and our luggage was being deposited at 500m intervals along the road!

Day 9: Merino Sheep & Wool

Tuesday 6th December 2016 Writer – Catherine Sloan (Bankfoot JAC)

Coming from an arable farm, and now a trainee solicitor at Turcan Connell, I feel I have been on a pretty steep learning curve over the last 9 days when it comes to dairy, beef and sheep. However, with each business we have visited, there are parallels that can be drawn from each of them.

One parallel has been preservation and growth of the family business. We met Russel and Jeanette Emmerson who are the third generation to farm at Forest Range Station. Russel's family have produced Merino sheep wool at Forest Range for almost 100 years. The property is a staggering 18,500 hectares, which Russel and Jeanette farm with their son David. David owns 50% of the property and oversees most of the enterprise.



Together they run a low cost operation with no employees, and only one tractor, which is hardly ever used due to the scale of the operation. Instead, a helicopter is used for stock work. This saves labour and ensures fast and efficient movement. Contractors are used for shearing, fencing and spreading fertiliser.

The Emmerson family have engaged a geneticist in order to develop finer wool, demonstrating the ability of a family business to keep adapting and moving forward with the times in order to stay at the forefront of the Merino sheep wool industry. The wool of the flock currently has an average of 13.2 microns.

They have 20,000 Merino sheep which have to be able to withstand harsh conditions with no supplementary feed being used, while the temperature at Forest Range can be -20 degrees celcius in the winter and up to 30+ degrees celcius in the summer. As a result, the profitability of the enterprise is very dependent on weather conditions, something we can all relate to at home.

One of the biggest challenges the business has faced in the last 10 years is a deteriorating wool price. At its lowest, it averaged \$11-12/kg meanwhile the cost of production has been an average of \$41/kg over the last 10 years. Acknowledging that this was unsustainable, they have gone out and found new high-end markets and forged their own relationships with end users, predominantly in China, in order to prevent the erosion of profitability at the farm gate.



It was great to see a longstanding family business coming into its fifth generation that remains successful, in what is an increasingly niche industry, up against the development of manmade textiles. No doubt their continued success can be attributed to their willingness to embrace changes in how they market their product. We learnt a lot from their ability to innovate and focus on growth while maintaining a low cost operation, and thank the Emmerson family for sharing their story with us.

Day 10: Succession in Business

Wednesday 7th December 2016 Writer – Bruce Ingram (Udny JAC)

On the morning of the 7th we visited the Glenlapa Station, a 5200 hectare property situated in Wendonside, Northern Southland on the Matauara river. The station has been run by Charlie and Ems Small for the past 10 years. Previously the farm was run by Charlies mother and father but the ownership was passed over through a succession plan which involved selling a parcel of land to the east of the station in order to generate finance. Interestingly some of this land has since been purchased back by the business.

The farm consists of a mixture of hill and improved hill and then around 750ha of more productive flat lands. The station is home to a herd of 800 Herefords and also 10, 500 breeding ewes including 4000 stud headwater ewes along with 3000 ewe lambs which are lambed. The balance of hill and lowland land works very well for the business with forage crops being grown on the river flats for finishing stock and winter forage and the hill being used for maintenance of breeding animals at specific times of the year.



The farm ranges from 200-1000m above sea level and has an annual rainfall of around 1000-1100mm. One of the factors that Charlie is focusing on while developing hill land is the fertility, he has successfully managed to increase the PH levels from around 5 to 5.5 and the phosphate levels from 10 closer to 20. This is applied through the use of a helicopter.

The farm is fairly fortunate that it does not require irrigation and the hill land has sources of water through natural supplies. However, the flat land has 5 gravity fed supplies which were introduced just over 10 years ago. As it is in the Southland the climate can get colder in the winter there is an ongoing project of planting around 1km of trees annually to provide shelter for livestock.

Infrastructure of the farm is very good with a good network of tracks leading to paddocks and also strategically placed handling systems and a 7 stand wool shed. There is a well-designed roofed cattle handling system and a new static sheep handling facility which has been constructed further up the hill recently at the cost of around 50,000 NZ dollars.



Day 10: Succession in Business continued

The majority of the lambs produced on farm are sold as stores at around 30Kg. The headwater breed was introduced recently to the farm and they contain a mixture of Finn, Texel, Romney and Perendale genetics. with a scanning percentage of 179% and lambing of 141% this year. The headwater has been bred to have higher Omega fat marbling which makes it healthier with a lower cholesterol level than regular lamb and this is hopefully going to be marketed to Japan as part of a headwater breeding group consisting of around 50 producers.

On the suckler side the main output of the Hereford cattle is the bull calves which are left entire and sold at 1 year of age on a contract type system. These bull calves are bought by companies which supply dairy farmers with bulls. The bulls are reared on other farms until two years of age at which point they are often hired out for two seasons before being sold on. This works well for Glenlapa as it is adding value to their product without having to have the extra costs and workload of having to sell the bulls directly to individual farmers.

In all it was a very interesting visit which everyone thoroughly enjoyed and we were fortunate enough to see them loading some of the year old Hereford bulls. The land type was quite comparable to what many of us would be working with at home and I'm sure everyone learned something which could be applied to their own business. We were very grateful to Charlie and Ems for sparing the time to show us round.

Day 10: Largest Privately Owned Livestock Station

Wednesday 7th December 2016 Writer – Colin Ferguson (Machars YFC)

After Leaving Glenlapa Station and the post Queenstown blues still very much in the groups mind the silence was once again broken by Craig (the bus driver) local history lesson and the stories of his younger days working in the area much to our delight.

We eventually did arrive at the entrance to Mount Linton Genetics of which some of the bus held this brand in very high regard and spoke highly of what they did even before we had arrived. After travelling approximately 5km through farm tracks towards the 'High Cattle Yards' surrounded by tree covered hills, rolling green paddocks, Aberdeen Angus Cattle and the distinctive rolling damp looking clouds you could have forgiven us for thinking we had arrived back home to Scotland.



We disembarked the bus and were welcomed by Ceri Lewis the General Manager & Cattle Manager of this vast farming operation. Ceri who had been born and grown up in Wales before embarking on a new life in New Zealand, after causing some bother while in school had no farming background. He had just finished A'i'ing some the 800 performance recorded Aberdeen Angus Cattle.

Day 10: Largest Privately Owned Livestock Station continued

Ceri went on to explain the scale of the farming operation to which he had been head hunted to run after having built up a reputation through hard work and attention to detail in his previous farming work in New Zealand. The farm which extends to 13,000ha or for those of us old school that's around 31,850 acres running 107,000 stock units (a term widely used in this country). This accounted for the 800 performance recorded Aberdeen Angus cattle, a further 2500 commercial cow operation and 40,000 ewes of which none were housed. The land was used to its full potential and topographical merits to see the stock over the winter and push them to their full potential during the summer. He also explained they could achieve this through the low drought risk in the area.

These figures made Mount Linton the biggest privately owned farm in New Zealand by Stock Units. The farm has been owned by 2 families since 1903 and in 2002 50% of the business was sold to an investor for \$25million after demands to pay out members from the family, although Ceri explained that the current worth of the enterprise was nearer to \$75million. Ceri who was at the head of the day to day running of farm which employed 20 full time and 4 casual staff as well as a cook was answerable to the board of directors through monthly meetings both on and off farm where he was expected to keep the board well informed and up to date with the figures and performance of the business.

Although the vast size and area of the farm, they were still improving and developing the land. They were currently in a 4-year plan to redevelop 300 ha per year into improved pasture through spraying and reseeded of unusable hill brush, and although local permission for this was not needed currently Ceri still worked closely with the local community and the council to ensure he had them on side. This process was increasing the farming potential of the farm by 2000-3000 stock units per year and increasing the value of the land approximately returning a 38% increase in land value over the cost.



Although the figures and achievements of this impressive farming operation were obvious, it was clear to see it was the angus breeding program which excited Ceri and drove his passion in the industry, and the figures he quoted didn't lie. Mount Linton was breeding Aberdeen Angus cattle with the sole purpose of producing a carcass with high marbling score, it's been clear to see on this trip that meat quality is key for export markets and marbling is the buzz word for sales, something I feel Scotland is miles behind with. The average marbling score (IMF)

achieved in New Zealand being 1.4, Ceri stated that Mount Linton was nearer to 2.7 and this had opened up many markets in the USA with the main buyer being with Max Foods. This was providing good premium on sale of cattle of which they sell around 1600-1800 steers per year.

We were also keen learn of his breeding and culling policy and it was clear to see that EBV's were vital to the Mount Linton breeding policy and that Genotype would win over Phenotype, the group could almost hear the disgust crossing William's face, a keen stock showman. But his results didn't lie and he went onto say that every year 800 heifers are kept to return to the herd and these are chosen through I muscle scoring for marbling alone which results in a 10-15% rejection rate.

Day 10: Largest Privately Owned Livestock Station continued

We finished the visit with a tour of the farm on its extensive road network of which Craig the driver negotiated with the skill and muster of a rally driver. The weather although was not on our side and the promise of views wasn't to be again securing the reputation the southern area of the south island suited Scottish travellers who seem to continually find the dreich weather. After the descent from the hill which accounted for 2/3 of the farm we stopped at the 12 stand wool shed which is the largest still operating in New Zealand and once was the location for the world shearing world record and was being used as a training base for the Invercargil World Championships next year.

In all its been clear to see the drive and business mindedness of New Zealand farmers something I feel is missing in Scotland. This could be put down the lack of Government Support here which means farms must survive and thrive or they cannot continue. This has allowed New Zealand to jump ahead of Scottish agriculture by many years both in efficient farming and seeking out markets all over the world, shaping their business to be able to fit within a niche providing high quality produce for the world market. Lessons here for the future of a Brexit nation at home where this mind-set will become vital, some would say Farm Subsidies in Scotland has made agriculture rest on its laurels and even become lazy.....

Day 11: Multi-Agri Business with Contract Farming

Thursday 8th December 2016 Writer – James Robertson (Bell Baxter ADS)

After a delayed bus journey, we finally made it to PYE Group. Once we arrived we were welcomed with great hospitality from Leighton and Michelle Pye, the owners of the business. The 2000 hectares is situated in South Canterbury and Rakala, the company is home to an extensive dairy enterprise as well as a contracting department and arable and veg growing. Along side this they are running 1400 hectares in Mid Canterbury which is owned with Leighton's father Allan.



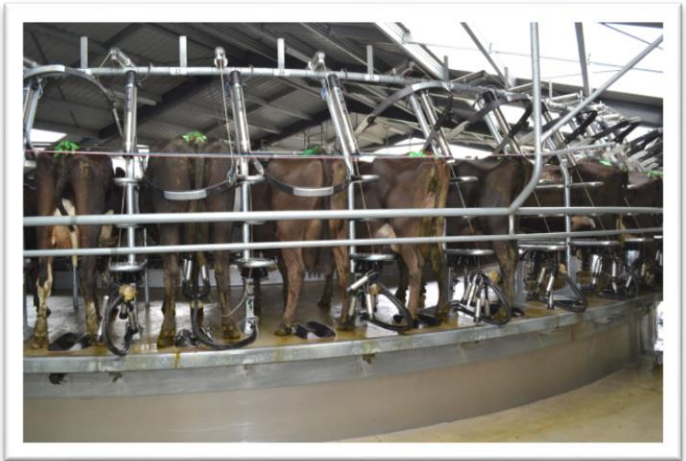
Starting with the dairies which are supplying Fonterra, the farms are home to 8000 dairy cows, 2000 r2 heifers and a further 2000 r1 heifers, run over 8 separate units with contract milkers. They are all fully irrigated systems with 60 point rotary parlours at each unit. There is a further 1200 cows at the Mid Canterbury site and all cows are milking for 10 months of the year.

They had a set model of converting low value sheep farms by adding pivot irrigation and having a central parlour shed surrounded by the grazing fields, which are all a similar size for rotational grazing, this method of converting farms gave them a tried and tested method off increasing value off the farms. The units were then made available on a fixed price contract milking arrangement where the client only has to provide a quad, pick up and labour, this means it is easy for a new entrant to enter the industry without needing much start up capital. The 8 milkers were all bench marked against each other which gave them the incentive to do well and share knowledge amongst each other this helped them get the best from their herds.

Day 11: Largest Privately Owned Livestock Station continued

The contracting company is home to 8 full time staff and 10 seasonal working with 6 balers, 3 wrappers, 2 sets of mowers, and fodder beat planting and harvesting equipment, 2 lorry fertiliser spreaders and 1 tractor spreader and a fleet of lorries.

The farm has invested in the Ravenston Application Processing Info Dashboard (RAPID) this system matches fertiliser requirements to the spreaders meaning that fertiliser can be spread with precision and records of all applications can be kept. This is matched with previous soil samples and yield mapping.



The spreaders are all linked to the central server and the operator only has to drive the vehicle with all spreading and dosage rates being controlled by the program, which means operator error has been completely eliminated and has reduced their fertiliser bills greatly.

The cropping enterprise consists of vegetables and cereals. Barley and wheat are grown for home use and milling along side growing process peas and grass seed. Kale and fodder beat are grown for winter grazing; 230 hectares of potatoes grown for chipping which are contracted to McCain with an average yield off 62 tonnes to the hectare. This was all being carried out with Grimme equipment, 2 destoners, and a 6 row planter and harvested in to lorries then stored. Along side this 15000 tonnes of carrots are grown, harvested and washed on farm before being sent to a juicing factory then exported to Japan they had an average yield of 105 tonnes per hectare and were grown in an 8 row bed.



To sum up this visit everyone was really impressed with the scale of the business with a large diverse range of businesses being run by the family. It is obvious that the PYE's have had to take massive risks but have been really successful through hard work, attention to detail and utilising innovative management tools such as the RAPID system and also through the use of contract farming to produce milk off their

farms, despite still being family owned. Their attention to detail was brilliant and was a really inspiring afternoon seeing how it is possible to be so successful!

Day 12: Fruit Processing

Friday 9th December 2016 Writer – Craig Simpson (East Lothian YFC)

On the morning of Friday the 9th of December the young farmers made the short journey north from Timaru to Geraldine. The group were handed 20 shot glasses upon arrival, but the first non-alcoholic shot of the tour did the trick waking up some of the tired bodies from the night before. The shot was unsweetened blackcurrant syrup produced by barkers the soft fruit processor who were kind enough to provide a talk to the group.

Originally a family farm, in 1969 the barker family identified that they needed to diversify or expand their farm to remain competitive. Fast forward to 2016, the barkers company is turning over \$60 million New Zealand dollars a year and has recently been taken over by French manufacturing giant Andros who also produced Bonne Mamon.

Producing 90 different products in their retail range, Barkers are market leaders producing their own range of jams, chutneys and syrups as well as providing fruit products for ice cream and yogurt companies. The young farmers were told how barkers source most of their fruit from within different regions of New Zealand, with the Canterbury region specialising in blackcurrant production. However due to production varying year on year, imports are sometimes required to match demand, with this considered barkers are moving towards making growers commit to contracts specifically for processing markets instead of buying second grade fruit originally intended to be sold fresh.

The rise of the company has seen 1000 tonnes of New Zealand fruit being processed in the South Island each year and although Barkers no longer farm in their own right, they emphasised the “family farm” aspect of their business has contributed to the marketing of their brand.

After a tasting session of a variety of Barkers products, the group had a game of rounder’s in their lunch break with the “good guys” running out 36-17 winners to round up a very enjoyable morning in Geraldine.



Day 12: Dry Milk Powder

Friday 9th December 2016 Writer – David Lawrie (Kinross JAC)

After an interesting morning at Barkers we grabbed some lunch in beautiful Geraldine and the group even felt energetic enough for a quick game of rounders' in the park to kill a bit of time before our next visit, unfortunately my team lost but we'll not go into that. So it was back on the bus for a relatively short bus journey north along highway one to the Synlait milk processing factory just outside the town of Rakaia. Luckily for us the factory was not hard for the bus driver find as its huge milk towers stood out for miles across the vast flat Canterbury plains.



From the outside we could have been forgiven to just regard this as a conventional, if indeed huge, milk processing factory. However, once we got inside and got speaking to our host David Williams, we soon found out that this place was far from conventional. Synlait's strap line is: "we combine expert farming, with state-of-the-art processing, to produce a range of nutritional milk products that provide genuine benefits for human health and wellbeing."

Essentially they dry milk and mix it with other ingredients to make predominately infant formula, adult nutritional powders and other specialist ingredients. They export 89% of their production to 52 countries across the world. In 2016 already they had processed almost 700 million litres of milk. They had 200 dedicated Canterbury suppliers and employed over 400 staff.

Established in 2005 the company spent the first few years building up a dedicated supplier base. By 2008 they were able to open their first milk drier. There was another two driers commissioned in 2009 and 2011 respectively. By 2014 they opened their own specialist canning plant and most recently in 2015 they opened another drier along with their own on site laboratory.

Unlike Fonterra, the country's largest milk company, Synlait is not a cooperative. However, the CEO and founder John Penno was still a partner in the business and the main man responsible for their astronomical growth over the past 10 years. They emphasised to the group how important strict high quality protocols were within the business. This started on farm and continued even after their products left the factory door. They realised that especially in ASIA these high standards were an essential requirement.

The group got a short tour around the factory but due to the high hygiene standards there was not a great deal of the factory we were physically able to access. We did get a good feeling of how big this business was and it didn't look like it was planning on stopping growing anytime soon.

Day 13: An adventure with Carrfields

Friday 10th December 2016

Writer – Rachel Mackellar (Lower Speyside YFC) & Rachel Matheson (InverRoss YFC)

Carrfields is a hugely successful business based around Ashburton in the Canterbury Plains of the South Island. The area comprises of some of the most productive arable land in the country which has seen a lot of conversion to dairy in the last 20 years, and a lot of Carrfields growth has been in relation to the dairy industry. Carrfields have several businesses including farm machinery, wool, irrigation, honey, livestock, seeds and other enterprises.

The business is owned by Greg Carr with his sons Craig and James both involved heavily, along with their sister. Each business has bi-monthly board meetings, with two external board members in attendance, as is common in New Zealand. The Carr's look to buying businesses at their low points and bringing in their own dynamics to improve them and make them successful.



One part of the Carrfields business is a one third ownership of Feilding Market (Elders NZ), which we previously visited with Trevor Cook. The market trades 1m NZD of livestock per day, 6% commission is charged and the livestock agent receives 70% of this, with the balance going to the market.

Another part to the business is Five Star Beef. This is a beef feed lot which was founded 25 years ago and is now majority owned by a Japanese investment company. This is the only intensive feed lot in New Zealand and has a through put of over 40,000 cattle each year. The feed lot has a standing capacity of 20,000, and when we visited had 13,000 cattle in mobs of 250, with the number likely to increase to 16,000 in the Winter of 2017. Each pen is 0.36ha in size and there are between 70 and 80 pens, the mortality rate of the feed lot is less than 0.5%.

There are cattle kept for a range of timescales – short term for 75 days which go to the domestic NZ market and will be taken up to 670kg live weight, medium term which are kept for 100 days which are taken to 610kg live weight and kill out at 320kg minimum, these tend to be Aberdeen Angus' and the long term cattle which are kept on the feed lot for 200 days. The feed ration for the animals includes maize, grain, potato starch, molasses and ryegrass straw. This ration costs between 3 and 5 NZD per day. The cattle on the feed lot are mainly privately purchased, with only a few coming through the market. This feed lot is massive in scale compared to others in New Zealand which are more likely to turn over up to 4,000 cattle per year. There are no penalties at slaughter for cattle being over fat.

Day 13: An adventure with Carrfields



We were also shown around the Canterbury Seeds part of the business. Canterbury seeds is the largest exporter of pea seeds globally, with the biggest market for the company being India. The company has faced challenges in trying to ensure the quality of their product is still high on arrival at farms in India as often shipments can get caught up in ports and take many weeks to arrive at their destination. However, they have recently purchased a new drier which has helped prevent deterioration of the seed in transit and maintain new seed vigor. Along with peas they also produce barley, wheat, grass and vegetable seeds, all of which are grown by farmers on contract to the company. The group were shown around the Canterbury seeds warehouse/dressing plant, where we were quite surprised to see wheat and barley seed still being sold in 30kg bags, however, the trend is now moving towards 500kg bags, with 70% of the seed now being sold in these.

The Claas Harvest Centre is also owned by the Carr's and was set up in 1991 by Greg. The business took the decision to concentrate on arable farmers and contractors selling combines, foragers etc as this links to their seed and irrigation businesses. The business covers all of NZ for Claas combines, which isn't actually a huge market, with them selling approx. 20 new combines this year. The parts and servicing that they offer have helped to create the domination and success that they have experienced, as they offer a 7 day a week service at peak times of year, with staff working on a roster, and have all parts in stock to be able to repair their customers machines as soon as possible. This gives them a very high inventory cost but allows them to offer a second to none service to their customers. No other companies in New Zealand have offered this and the servicing has driven their success hugely. The main product sales are combines, quadrant balers, round balers, wrappers and foragers.



Day 13: An adventure with Carrfields



The farming part of the Carrfield group has recently been taken over in management by James Carr. The business farms 625ha of arable land and runs a lamb finishing unit. The farm grows a variety of arable crops including ryegrass, feed wheat, maize, peas and seed for Asian vegetables including pak choi and radishes. The farm purchased between 8,000 and 12,000 lambs to finish each year. They are purchased at 2.20 NZD/kg at 25-30kg live weight and go off to slaughter at 40-45kgs live weight. This is typical of an arable operation purchasing store lambs and will leave a 50-70 NZD margin in the 3-4 months the lambs are grazed.

The day was finished off with a social few drinks and discussion over the impressive set up and business sense we had seen throughout the day. Thanks must go to Craig Carr for the boxes of beer he gave us for the long journey to Christchurch, and well done boys on sneaking them past Craig the bus driver!!

Day 14: Arable Research

Saturday 11th December 2016 **Writer – James Orr (Bell Baxter ADS)**

Nearing the conclusion of our trip, we visited FAR (Foundation of Arable Research). This organisation is funded by farmers through a levy payment of all produce sold by arable farmers (0.08%/Tonne), with a turnover of \$7.5 Million and is used purely for research. The group doesn't take any payment from chemical companies or plant breeders, although they will include new varieties and commercially accessible chemicals, to give the widest and most informative pool of information to its farmer group.

The organisations includes trials on cereals including wheat, barley, rye grain, triticale, peas and maize with some Research and development into Potatoes being taken on, on behalf of Potatoes NZ. The site we visited is in the heart of the Canterbury plains, in the riverbed of the Kikai river, which is not only the centre of the main arable production unit in New Zealand, but also the most similar conditions to a UK/European climate. Most of the cereal area in the Canterbury plains required irrigation due to the low annual rainfall and the free draining soils, there for all of the trails are placed under irrigation to produce a simulation of the standard growing conditions.



Day 14: Arable Research

All of the varieties used in the trails have gone through a rigorous selection programme by the plant breeders companies, after careful genetic programming, some of these varieties have been imported from the European Union with the remainder being New Zealand bred varieties. Once they have passed into commercial viability the research organisation takes them into their trial plots and assesses each variety against the next to provide a selection of information to the farmer without providing a suggested choice as all farms and farmers are under different constraints and requirements.

One topic of conversation between the group was the fact that New Zealand farmers could not use Chlorinethanoil (commonly known as Bravo), which has become a staple diet in the UK in T1, T2 and T3 sprays. This means that they have had to do a lot of work to find a replacement without making the spray programme ridiculously expensive.



The topic of Nitrogen application and limits were also discussed. With the majority of Scotland's arable land being placed under NVZ limits (Nitrate vulnerable Zones) which caps our total application of Nitrogen around 220kg or below, the New Zealand farmers enjoy a much more relaxed approach to regulation, with a more self-administered programme where they must prove that they don't have excessive leaching of Nitrates into the water course and that all product applied is necessary for the crop growth. These regulations mean the farmers can apply up to and beyond 300kg of Nitrogen per hectare.

With these conditions listed above and the current yields of wheat being between 12-14 tonnes per hectare, the organisation has an objective to reach a 20 Tonnes per hectare crop by the year 2020. As they have worked towards this objective, they have used many variable factors including how early they sow the crop to give a good Autumn growth and coverage, right through to chemical programme and application of Nitrogen, sulphur and Phosphate. The rough cost of the production per hectare was placed around \$1500.

With the loss of chemicals and increasing scrutiny on chemical regulations the group have looked heavily into resistance levels of varieties and effectiveness of chemicals applied, looking at dose levels and cost per hectare against return. The loss of glyphosate in the EU has also caused the group to start preparing for a similar situation, looking at other burn down possibilities or instead of waiting for the crop to mature infield which is current practice they may have to move to in store drying facilities.

The organisation collected and collaborate an incredible valuable database of knowledge, which will be vital in the future of the arable sector in New Zealand. Scottish farmers enjoy having a similar organisation which we all value highly, which means we understand the importance of the work carried out, and I hope our databases can be linked closely to allowed the best future viability for both our arable sectors.

Day 14: No Till Arable

Saturday 11th December 2016 **Writer – Rachel Matheson (InverRoss YFC)**

Our 30th and final farm visit of the tour was spent with Tim and Nadine Porter and their family at their farm outside Ashburton. The Porters farm 250ha on the Canterbury plains, growing mainly arable crops, including wheat, barley, peas and grass seed, and also buy in store lambs.

They bought the farm in 1995, at which point the land was only partially irrigated. Since then, they have invested a considerable amount of money in putting in a new well and further irrigation systems which has transformed the yield of their crops, as the light soils struggle to hold water in the heat of summer. They also recently invested in building a large irrigation pond on site.

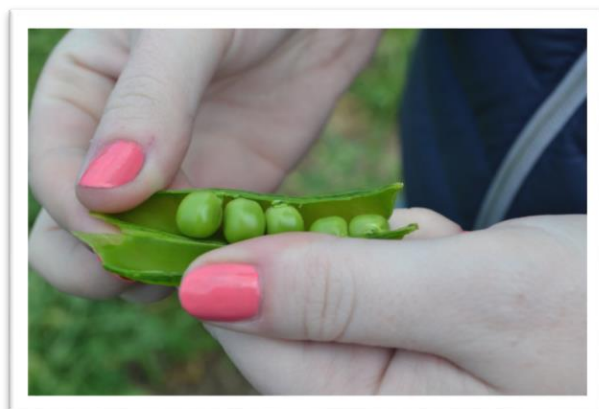


Tim was particularly enthusiastic about the system of tillage they are using on the farm and the benefits they have seen from this. He utilises a 'no-till' system using a 3 metre Cross slot combination pneumatic drill whenever possible. He uses this no till system on the majority of his crops but does cultivate land when required, such as for growing radish seed. Tim feels the no-till system has revolutionised what they are doing on the farm by increasing organic matter in the soil and improving the soils water holding capacity, therefore increasing yields, while also greatly reducing costs. It also allows his to get crops in earlier by saving time, and he reports it performs well in wet conditions, though I think his wet conditions are quite different from ours! He now runs only one tractor, and saves considerably on the cost of this.

When questioned on whether he felt there were any negatives to the no-till system Tim could not think of any, and reports his crop establishment has remained good since changing systems, and that last year his crops of feed wheat were yielding up to 14t/ha. However, he reported one of the main threats to the crop was slugs, but that he combatted this by using as much slug pellets as required, with there being no restriction on the amount of these a farmer can use!!! He was keen to emphasis though that he was not endorsing 'min-till' systems as felt these carried a variety of negative impacts as opposed to 'no-till'.

In terms of agronomy, Tim was using a preventative approach, rather than a curative one, which he reports some Kiwi farmers are still using. Pre-drilling he applies glyphosate, then through the season uses a comprehensive spray programme using chemistry with different modes of action to provide the best preventative coverage, and battle resistance. Tim showed us round a small trial site of about 15 plots of winter wheat which had different chemicals applied or missed out, including a control which had a very heavy Septoria burden. He also explained how Chlorothalonil (Bravo) is not licensed for use in NZ due to theories that residues may enter the food chain through either milk or meat if the grain is consumed by an animal, though we heard earlier in the day that the evidence to support this is theory is lacking.

We were also shown round and allowed to sample some processing peas which were about to be cut that day! The SAYFC team gorged themselves on these, and hopefully there weren't too many sore bellies later on! Overall, The Porters emphasis on research and innovation made it a very interesting trip. The take home message was to not be afraid to try something different, and to try to reduce costs, and spend, in the right places to increase profit margins.



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