

NZ HEREFORDS

The power of the beef cow Hauhungaroa Station, Kuratau

WEDNESDAY 6 MAY, 2015

B+LNZ FARMING FOR PROFIT IN CONJUNCTION WITH NZ HEREFORD ASSOCIATION

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Special thanks to

Hauhungaroa Partnership and Committee Lance Aldridge, Manager, Hauhungaroa Station

Programme

10.15am	Woolshed	Morning tea to start
10.30am	Start Woolshed	Welcome <i>Alex Riachrdson</i> Overview for day <i>Darren McNae</i> Farm background <i>Lance Aldridge</i>
11.00am	Farm Tour	
11.30am	Stop 1 Northern corner of farm	Cow breeding programme—aims/objectives and performance <i>Lance Aldridge</i>
12.15pm	Stop 2 (Lunch) High point looking to south	Hereford Association (Colin Corney) Breeding for hybrid vigour <i>Bob Thomson, AgFirst</i>
1.40pm	Stop 3 Bottom of farm	Overall system performance—summary and discussion panel <i>All presenters</i> Beef cow implications for N leaching
2.35pm	Wrap up Woolshed	Final points
3.00pm	Finish	

Health and safety

In the spirit of the Occupation, Health and Safety Act, the owners have taken all reasonable care in making your visit to the property as safe as possible. They clearly point out that you enter the property at your own risk. The owners will accept no responsibility for any accident or injury to any person or property that takes place while you are visiting their property. Please abide at all times to the instructions given by farm owners, managers and field day organisers.

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Farm details

Background

Hauhungaroa Partnership operates a diverse farming business located at Kuratau on the shores of Lake Taupo. The Partnership was formed through the amalgamation of the Hauhungaroa 1D2 and 1D3B blocks. A total land holding of 2795ha includes the sheep and beef farm, dairy farm and large tracts of native bush. The focus today is on the sheep and beef farm and in particular the beef cow policy to gain an understanding of how Hauhungaroa achieves its current level of performance.

Locality and climate

Area: 1,700ha effective

Altitude: 396-853m above sea level

Rainfall: 1400-1800mm average—large variation from the top to the bottom country

Soils: Light pumice soils—good for winter but dry out quickly in summer.

Summary: Long cold winters, limited growing season, significant variation across the farm

Management and staffing

Hauhungaroa is governed by an eight member Committee of Management who oversee all of the various enterprises the partnership operates.

Staff consist of five permanent members, including the Manager, Lance Aldridge who has farmed here for 30 years.

Infrastructure and development

Stock Handling—Main woolshed near the top of the farm. Satellite Yards across the property to aid stock work and minimise movements.

Fencing and Subdivision—A total of 182 paddocks (118 five years ago) and an on-going subdivision programme to further improve this network.

Water-Gravity fed to all paddocks.

Access—The length of the farm makes the operation a challenge—from the bottom woolshed to the top woolshed is a 9km journey, aided by a strong network of access tracks and laneways. The challenge in the middle of this is SH32 which cuts the farm in half and means stock movements must be very planned.

Cropping—75 - 100ha per annum of Swede and Kale. Regrassing post this is a ryegrass/clover/chicory mix for finishing stock.

Fertiliser—Annual maintenance dressing of 300kg/ha of potash sulphur super (+ cobalt). Soil fertility increases are targeted at the cropping areas where heavy applications of lime and super phosphate are aimed at optimising soil fertility and ensure reliable crops.

Feed management

Strict pasture cover targets pre winter must be hit to ensure adequate feed supplies for winter growth rates can be typically 0-9kg DM/ha/day for three months.

Silage—approximately 80 ha of pit silage made per annum. Fed from June to late October.

Hay—600 large rounds made annually and fed as above.

Winter Crops (as above) fed from June to August to finishing cattle.

Nitrogen still used strategically when required.

Environmental

Caring for the environment and the land is the first priority for Hauhungaroa Partnership. Which is why the stream fencing and retirement programme began nearly 33 years ago. Like most farms in the Taupo Catchment, extensive fencing off of waterways (some 375ha) under the Waikato Valley Authority many years before has meant that sediment and nutrient runoff into Lake Taupo has been greatly reduced.

The farm operates under Variation 5 which means it has a "nitrogen cap" and must operate within this every year. This means submitting an annual nitrogen management plan to give the Waikato Regional Council the assurance that the farm will operate below its cap. This includes details of stock numbers, cropping and supplement plans and nitrogen applied.

While indirectly stock numbers are restricted under this policy there is a large opportunity to increase the per head performance of stock and this, by default, drives a high level of efficiency in farming operations.



Sheep policy

Aim

The target is for a strong Romney based flock lambing at 140% and finishing all lambs

Mating programme

- Lambing date: 30 August for terminal and 2ths /15 September for main flock
- Mating plan:
 - Two tooth's and previously twin bearing MA ewes—to Romney
 - Five year and previously single bearing ewes—to Terminal
 - Hoggets—not mated
- Rams:
 - Maternal—Romney ex Gleniti (South Wairarapa
 - Terminal—South Suffolk(Shian, Taumarunui and Maungahina, Masterton)
 - Ratio of 1:50
 - Hoggets not mated



Performance

Lambing 2014/15 season

	Ewes to ram/ numbers of lambs docked
Two-tooths	132%
Terminal ewes	138%
Mixed-age ewes	147%
Overall lambing	140%
Total lambs weaned 2014	8,500
Sales	Consistently killing lambs at 19kg CW average for past three years (through Alliance)

Sheep management (key details)

- Strong emphasis on feed ewes well and flushing over mating
- Three day shifts during winter
- Ewes set stocked one week before lambing
- Weaning late November/early December
- First lambs drafted at weaning but not sold until early January
- Replacement lambs only selected from twins.

Animal health

- Toxo and Campy always done (as two-tooths)
- All ewes get a Bionic and 5 n 1 pre lambing
- Lambs drenched on a 21day rotation
- Mineral blocks used for ewes over lambing
- Shearing
- 2ths—February and October
- MA Ewes—December and June.

Cattle policy

Aim

To run a predominantly Hereford/ Angus Cross herd maximising hybrid vigour and overall performance with flexibility to deal with the seasons.

Mating programme

Calving Date—25 September (17 December bulls in for three cycles). First 1.5 cycles with new genetics

- Mating plan
 - Angus—over first calvers and Hereford cows
 - Hereford-over Angus cows
 - Red Charolais—put over the seven year old cows or those not "liked"
- Bulls
 - Angus-Shian (Taumarunui)
 - Hereford—Maungahina (Masterton)
 - Red Charolais—Maungahina (Masterton)
 - Ratio of 1:40
 - Heifers not mated until 27 months of age
- Bull Selection Criteria
 - Key criteria are general conformation, structural soundness, good carcass and free moving.
 - EBV's come after the above but are an important part of the selection process.

Cow management (key details)

- Cows are generally on clean up duties over the winter—grazing the rank pastures that have "exploded" during the limited growing season. This is where the cows come into their own—very few other classes of stock could clean up the pastures over winter time and it is difficult to make money out of trading stock purchased in the spring to consume the rapid growth.
- Cows are set stocked for calving at 1-2 per hectare
- Cows go back in grazing mobs after calf marking (December)
- Small calves are drafted off by eye at calf marking and then the mother identified as a poor performer. Cow and calf are removed from the main mob and the dam will go to a terminal sire next mating if they are not killed this season.
- Approximately 50% of the male calves are left entire and the top bulls pulled out into the 18 month cattle to push these along
- Weaning takes place in April and cows and calves separated by the deer fence (settles them quicker)
- Replacement heifers are not selected until they are 18 months old (a chance to see the type of animal clearly). The balance moved into a trade mob.



Sale cattle management

- Weaners are break fed behind a hot wire on grass for their first winter
- All progeny are kept for finishing
- All cattle spend their second winter on the Swede and Kale crop before being finished at 30 months
- Cattle start to be weighted in December (26 months)—their first weighing and are separated into sale lines. From here sales occur between January and April
- There is a close working relationship with Greenlea Meats that dictates the sales pattern based on optimal value. This includes clear calculations in January based on projected stock growth rate and schedule shifts to ensure the right decisions on sale timing are made.

Animal health

- Calves receive an oral drench and B12 at calf marking, an injection drench and at weaning
- Yearling cattle are given another injection drench and copper
- The final drench is not until the autumn when conditions are wetter and the worm burden higher
- Magnesium salt blocks are put out for cows during winter to stimulate their digestive system
- Finishing cattle get a copper or multi-mineral block
- Heifers vaccinated for BVD
- TB Status C6 (annual testing).

The value of beef cow genetics

Presented by RD (Bob) Thomson, AgFirst NZ

Points covered in address:

- Have you got the right breed(s)?
- Are you buying bulls from the right bull breeder?
- Have we forgotten about the NZ Beef Breed Evaluation Trials?
- In 1972 MAF commenced an experiment to compare beef sire breeds for carcass production.
- In phase I of this large trial 1908 cattle were evaluated from 11 breeds, across five birth years and 161 sires. The results are shown in the table below.

Rank by Carcass we	ight 20-m onths					
	Calf Survival	Carcass weight		Carcase Productivity		
Breed of sire	Birth to weaning	kg	Relative	Rank	kg	Relative
Charolais	85.6	224	109	1	191	99
Maine Anjou	89.9	222	108	2	199	103
Simmental - German	93.0	222	108	3	206	106
Simmental - French	94.0	221	108	4	208	107
Blonde d' Aquitaine	93.1	221	108	5	206	106
Simmental - Austrian	86.7	219	107	6	190	98
Chianina	91.3	218	106	7	199	103
Friesian	95.8	217	106	8	208	107
South Dev on	93.5	216	105	9	202	104
Simmental - Sw iss	91.8	215	105	10	197	102
Limous in	92.9	211	103	11	196	101
Hereford	94.4	205	100	12	194	100
Angus	93.4	190	93	13	178	93
Jersey	96.1	189	92	14	182	94
Reletive to a value of 1	100 for Hereford x Ang	us cattle				

The difference in ranking between 'Carcass weight' (the relative carcass weight) and 'Carcass Productivity' (the relative carcass weight based on survival to slaughter) relates to calf survival from birth to weaning as shown in the first column above. At the time of this experiment it must be remembered that NZ cattle had not been heavily influenced by the introduction of American genetics.

Cow Liveweight and Efficiency Rankings of Crossbred Females by Locations							
	Cow	Liveweigh	ts 1yr+	Efficiency 2yr+			
Breed	Goudies	Tokanui	Templeton	Goudies	Goudies Rank	Tokanui	Templeton
Friesian	112	108	113	142	1	124	125
Jersey	100	100	102	138	2	117	139
Hereford-Angus	107	106	112	117	3	100	107
Maine Anjou	113	115	118	113	4	100	111
South Devon	114	112	114	113	5	100	121
Angus	100	100	100	100	6=	100	100
Simmental	110	109	113	100	6=	117	118
Charolais	114	110	113	96	8=	93	107
Limous in	105	102	113	96	8=	107	111
Blonde d' Aquitaine	109	112	114	92	10	100	114
Chianina	110	113	110	83	11	87	96
Angus are straight-bred all others are crosses with Angus or Hereford							

In phase II the cross-bred 'sisters' of these finishing cattle were evaluated for maternal attributes and the results are shown in the table below.

The results show the relative difference between the breed crosses when compared to straight-bred Angus. In the pink section of the Table the relative cow weights are shown from 1-year of age onwards. In the blue section of the Table the results from 3 different locations are shown. Goudies was deemed to be a harsh environment, Tokanui an easy environment and Templeton an intermediate environment.

The main finding was that dairy x beef cows (Hereford (or Angus) x Friesian (or Jersey) were by far the most productive cows based on efficiency of production (weight of calf weaned per cow joined). Also of interest is that Hereford x Angus are also very productive. The advantage of the dairy x beef cows is that replacements are purchased from the dairy industry and all cows can be mated to high carcass merit bulls whereas the Hereford x Angus would require replacement to be bred. One of the main lessons from these experiments was that there are big difference between breeds in their capacity to perform as a carcass breed versus a maternal breed. This is not surprising as the requirements for a small efficient cow herd versus high growth high and carcass merit finishing cattle create a conflict in selection for genetic merit. The old saying that 'you cannot roll all your beef requirements into one breed' still holds true

Is hybrid vigor a "free lunch"?

There is much talk about hybrid vigour and the notion that it's a "free lunch". All things being equal that is the case but the end result also depends on the genetic merit of the two parent breeds. The old saying "rubbish-in rubbishout" holds true for crossbreeding too. Expected levels of hybrid vigour (or heterosis).

Hybrid vigour gains are highest for lowly inherited traits (reproduction rate) and highest for moderate to highly inherited traits (growth rate).

First-cross cattle growth rate increases by 10% through hybrid-vigour and for maternal production (calf production) first-cross cows gain 23% through hybrid vigour. The retention of hybrid vigour varies according to the crossbreeding system as follow:

- Rotation of two breed hybrids retains 67% of F1 heterosis.
- A four breed composite retains 75% of the F1 heterosis.
- Breeding F1's to F1's or F1's to Straight breed only retains 50%.

Whatever crossbreeding system is chosen it is advisable to choose maternal breeds for beef cow herds as illustrated in the Beef Breed Evaluation Trials as shown in the previous section.

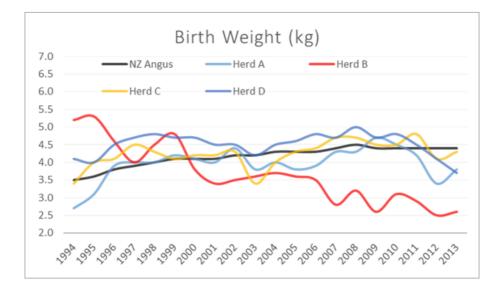
Choosing the right bull breeder

There are very strong opinions on what bull you should buy when you're at a bull auction. However, it is strongly contented that you should spend more time selecting the bull breeder than the actual bull. The reasons for this are illustrated in the following genetic trend graphs.

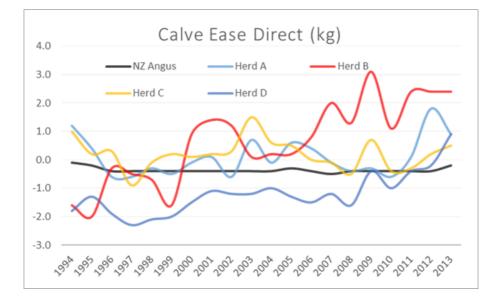
During the course of the actual presentation of this paper emphasis will be placed on what traits should be selected and for what purpose. Suffice to say the there are considerable difference between herds and while the example relates to Angus cattle it is suggested that the same situation relates to other breeds including Hereford.

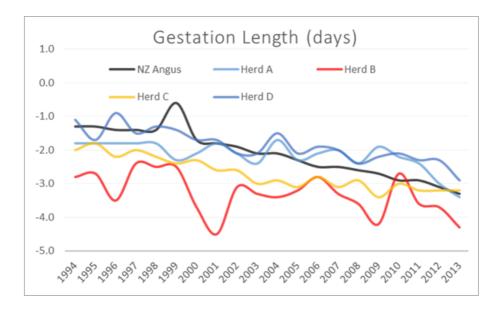
Group Breedplan is the way you compare herds and your bull breeder needs to be able to demonstrate that his genetic trend line is favourable to you as a commercial herd operator.

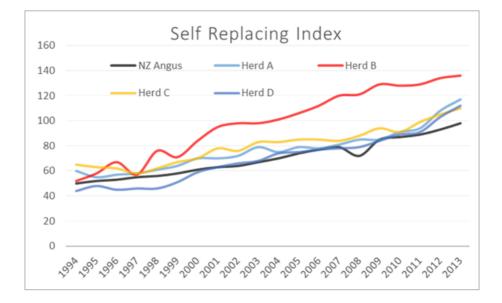
For each of the graphs shown below you are invited to consider which herd you would select to purchase your bulls.

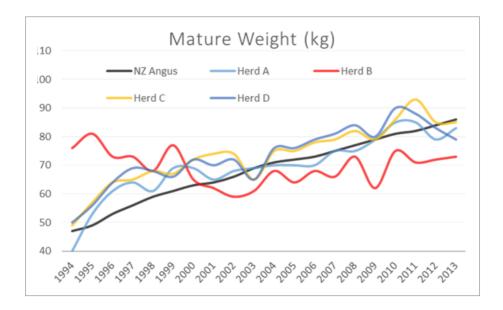


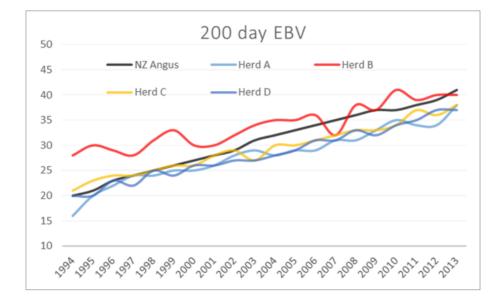
Genetic Trends from Actual Herds compared to Breed Average (1994 to 2013)

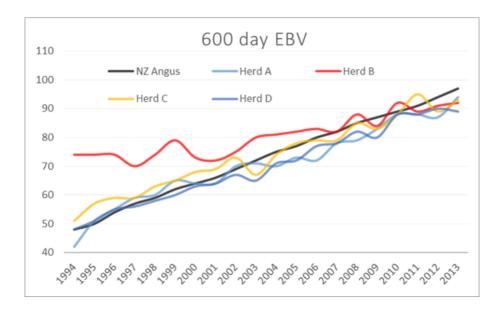












Summary and conclusions

- 1. It is often said that it's 80% feeding and 20% breeding—the strong suggestion it's not breeding or feeding but both!
- Crossbred cow herds are the very best option—you just need to work out what breed-cross and what system you'd like for your farm. Clearly purchasing-in replacements allows you to make sure you have an efficient maternal herd AND be able to use a high carcass merit sire—the best of both worlds.
- 3. There are large genetic differences between bull breeder's herds and the bull breeder needs to be able to demonstrate that the bulls on offer are the best for you. To do that the bull breeder will need to be on Group Breedplan and have adequate between herd genetic linkages.
- 4. Good breeding and good farming!



Farming under a nitrogen cap Key lessons from the B+LNZ Lake Taupo monitor farm programme

Background

The Beef+Lamb New Zealand Lake Taupo Monitor Farm Programme (LTMFP) commenced in July 2008 after an approach to the then Meat and Wool New Zealand from the Taupo Lake Care Group. The Taupo programme presented a unique challenge to the typical model of the programme due to the very specific issue that the Lake Taupo catchment and its farmers were dealing with. namely the implementation of the Waikato Regional Councils "Variation 5". This Variation to the regional plan imposes strict caps on nutrient outputs from farming in the Lake Taupo Catchment.

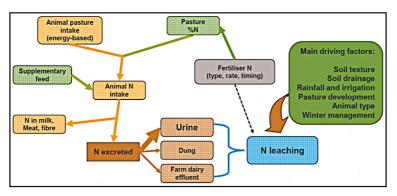
Nitrogen Losses

Remember:

- Nitrogen generally flows down through the soil (in the water) to get lost to water
- Phosphate flows across the top attached to soil particles

It is important to remember that Nitrogen (N) is the issue for Taupo, not Phosphorus (P). This is primarily due to the work that has been done in the past by the previous catchment board in land retirement and the reduction in runoff directly into streams in the catchment.

The below diagram highlights the key drivers of nitrogen losses to water. This is a diagram that all farmers should understand, most notably those in nitrogen sensitive catchments.



Key drivers of nitrogen loss (Source: AgResearch)



The key "danger period" is from May to July—this is when nitrogen leaching potential is at its highest due to the high volumes of water moving through the soil. Also compounding this is a period of slower pasture growth and therefore lower uptake of nitrogen by pasture plants. It is therefore during this period that the greatest advantage can be gained from changes in management or systems.

Overseer[™]—how does it really work?

The programme effectively balances the nitrogen inputs and outputs in a given farming system based on current science and gives a theoretical nitrogen leaching figure based on nitrogen that cannot be accounted for in the outputs. The below table gives a summary of comparable leaching intensity in its basic form that needs to be understood by all farmers in New Zealand

Stock	Feed system	Time of year	Leaching intensity
Female cattle	Winter crops	Winter	High
Male cattle	Summer crops	Autumn	Medium
Deer	Nitrogen applications	Spring	medium
Sheep		Summer	Low

The relatives between stock classes and type are crucial in allowing farmers to forward plan for what their farming system might look like in the future when regulation will begin to restrict their business.

Farm policy returns

Based on "medium term" average prices how do the current returns look. Prices used of:

	Lamb	Wool	Beef	Venison
Product price	\$5.50/kg	\$4.00/kg	\$4.85/kg	\$7.50/kg
	\$ GM/ha	c/kg DM	N Leached	\$ GM/kg N leached
Sheep				
Breeding ewes 120%	750	10.4	10	75
Breeding ewes 140%	825	11.2	10	83
Breeding ewes 160%	987	13.7	11	90
Cattle				
Breeding cow (standard)	736	10.2	17	39
Breeding cow (herd bulls)	893	12.4	17	46
18 month bulls	836	11.6	16	46
Trade steers	725	10.1	15	47
Trade heifers	723	10.0	14	50
Dairy grazers	806	11.2	16	57
Deer				
Breeding hinds	810	11.3	11	74
Finishing weaners	837	11.5	12	70

Key messages

- As an industry we must look closely at the levels of on farm performance that we are achieving
- Recent outcomes from the Red Meat Sector Strategy Report focused on the significant financial gains that we can make as an industry adopting best practice systems.
- The spin off from this is that if we are to adopt these principles, as an industry we can also significantly improve our product return/kg N leached.
- The pressures that are upon us, and will continue to increase, to reduce the environmental footprint of farming can be managed by ensuring a greater understanding of the drivers of N loss in our systems

Land use/stocking policies

Key issues

Most land in the Lake Taupo Catchment is farming below its potential. This means that ultimately a cap will limit this future production.

Where do you focus your discretionary dollar?

Do you keep developing your land or do you invest outside your current land holding?

Actions/considerations

Know your environmental footprint for all nutrients not just nitrogen and what mitigation options are out there. For nitrogen the easy answer is to cut stocking rate but this can be countered by increases in per head performance.

Know how far away from your lands potential you are in terms of:

- Soil fertility/Pasture production/ System efficiency
- The further your farm is away from this point the greater the impact of nutrient restrictions could be.

Know how your farm could be performing to establish how big the gap is and the likely development costs associated with maximising this potential. Know the key benchmarks that will drive your business. Previously this has just been based on:

- EBIT—Earnings before interest and tax
- EFS—Economic Farm Surplus
- ROI-Return on investment
- Now farmers must be aware of:
- \$/kg N leached
- \$/kg P lost
- Kg product/kg

Focus must be on improvement in farm performance and efficiency.

Maori farming in particular must assess their risk profile to determine the best areas for investment. This could very well be to areas outside of the farm gate.

More efficient farming practices from a productivity perspective will ultimately lead in most cases to a more efficient operation from a nutrient perspective.

Reductions in stocking rates may affect the main security held by lending institutions—consider this with your bank.

Key lessons for farmers in the Lake Taupo catchment

Know your 10/20 year plan. It is difficult to make decisions around best fit stock policies unless you know where you want to be in the future and how this relates to your NDA.

Use the nitrogen you have to maximse farm income.

Know the N leaching from every sector of your business. This will help you to fine tune your system in the future to ensure you are maximising your return per kg of N leached.

Ensure your on farm efficiency is high. This is where the biggest gains can be made especially in light of the "free gains" to improve stock sale liveweights.

Focus on \$/kg of N in your business. This is a driver that must be understood. This becomes even more imperative as you farm close to your cap—be it through planned farm development or just good seasons.

Key lessons for farmers out of the catchment

Set a long term direction for you farm. While nutrient restriction may still be coming to your catchment they are on their way. You need to know where you want to be to be in a position to truly assess their impact when they arrive. Confirm your development plans—know how these will relate to improved levels of per head performance which will aid both farm profitability and reduced, or managed, environmental footprint.

Know your land resource—understand the true returns from all classes of country on your farm to allow informed decisions to be made regarding land use change and retirement if this is deemed an option.

Set targets for all three legs of the stool—financial, environmental and social. Do not lose sight of the latter. This is fundamentally why we are all here.

Know your footprint—where are the high risk areas? Includes P as well as N

Gain an understanding of nutrient management principles—know what drives losses in your system, how you can manage these and how this relates to your long term direction for your farm.

Keep up to date with regulation. Know how water quality targets for your region and catchment could be managed in the future. It is all too easy in the farming sector to believe that "someone else" i.e. Federated Farmers are dealing with the issues. As every farmers operation and direction is different you must be able to directly relate any changes in regulation to your operation, your goals and your future.

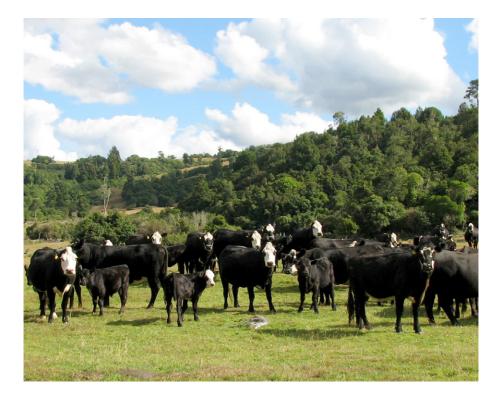
Key lessons for the beef cow farmer

Run poorly beef cows can be inefficient from a profitability perspective and nitrogen efficiency is no different

Focus on high levels of efficiency—high calving percentages, high growth rates in stock, culls sold early (no passengers), compact efficient producers (not the 700kg cow!)

Get them gone early—the second and third winters for any trade cattle is when they become high nitrogen emitters Winter is the danger period from a nitrogen perspective so get rid of culls before the end of April—need to be at your wintering numbers by then.

Above all else focus on what you need to do to make the old girls profitable and you will gain a more nitrogen efficient system.





Hereford Prime New Zealand

New Zealand Hereford Prime beef is hormone free and sourced from locally farmed grass-fed fully traceable cattle. Hereford Prime carcases are all individually assessed for quality eating traits to ensure a strict quality criteria is met, providing consumers with an exemplary dining experience.

Chiller assessment is undertaken for pH, fat colour, meat colour, marbling and rib eye size – all these are recorded for every carcase to ensure a consistent and unrivalled dining experience every time.

Each carcase must fall inside a weight range and within specified parameters for quality eating traits.

Only when every quality measurement is met is a carcase eligible to be sold with the Herford Prime brand.

Our consistency is proven in our track record – Hereford Prime beef has been a finalist every year (except one) in the Steak of Origin competition. As a brand we are dedicated to excellence and our beef and its brand is recognised as a mark of quality by chefs in some of New Zealand's most prestigious restaurants.

Hereford Prime beef is aged for a minimum of 21 days to enhance the already present natural tenderness and succulent flavour.

Our beef is sourced from pure bred Hereford or Hereford first cross genetics (minimum of 50% Hereford genetics). A Hereford will always leave a predominately white face – your guarantee of quality beef genetics.

Every farmer who supplies Hereford Prime is provided with a comprehensive feedback sheet, with all the quality measurements taken and recorded against individual animal ear tags, providing them with a great on-farm management tool.

We pride ourselves on our relationships not just with our supplying farmers but also our processing partners, all of whom are privately or family owned.

We are proud of our relationship with Magills Artisan Butchery in Te Awamutu and congratulate them on the development of their new Hereford Prime Pulled Beef product.

Magills Pulled Beef is an exciting development and once you're tired it, we're sure you'll agree it's superb.

www.herefordprime.co.nz www.facebook.com/herefordprimenz www.twitter.com/herefordprimenz NOTES

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B+LNZ Strategy

A confident and profitable sheep and beef industry

within communities



Help farmers make informed business decisions and promote their collective interests

PRIORITIES Supporting informed business decisions Know our farmers Investing in Research and Development that meets the needs of farmers and the sector TIZCIT Build partnerships to deliver Developing farm and farmer capability Delivering knowledge that drives farm By farmers. For farmers performance **Promoting collective interests** Attract and retain talent for the sector Supporting the sector's market opportunities Advocating for farmers ability to operate bee Building our sector's confidence and profile

Beef + Lamb New Zealand Ltd is the farmer owned industry organisation working for a confident and profitable sheep and beef industry. It works to help farmers make informed business decisions and promote their collective interests. Priorities include investing in research and development that meets the needs of farmers and the sector, developing farm and farmer capability and delivering knowledge that drives farm performance. It also works to attract and retain talent for the sector, supports the sector's market opportunities, advocates for farmers ability to operate and builds sector confidence and profile within communities.



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