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DAIRY BUSINESS
OF THE YEAR



Dairy Business of the Year National Supporters Event 2016

Rex and Sharon Butterworth

The 2015 Waikato Best Farm Performance Winners

And Business Resilience – Finalist with the Lowest Cost of Production /kgMS Winners

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Summary of Key Performance Indicators

Physical and Financial

Key Performance Indicators	2011/12 (Pre Herd Homes)	2013/14	2014/15	2015/16 (Preliminary)
Profitability and Resilience				
Milk Price (\$/kgMS)	\$6.40	\$8.37	\$4.36	\$3.90
Return on Capital (%)	5.90%	10.90%	3.80%	2.20%
Operating Profit Margin (%)	43.20%	60.20%	32.70%	21.30%
Operating Profit per Hectare (\$)	\$4,923.00	\$10,344.00	\$3,774.00	\$2,155.00
Gross Operating Revenue per Hectare (\$)	\$11,395.00	\$17,195.00	\$11,546.00	\$10,140.00
Gross Operating Expenses per Hectare (\$)	\$6,472.00	\$6,852.00	\$7,773.00	\$7,985.00
Cost of Production per kgMS	\$3.68	\$3.13	\$2.78	\$3.06
Operating Expenses per kgMS (FWE+Adjst)	\$4.02	\$3.59	\$3.50	\$3.57
Livestock and Milk Production				
Peak Milking Cow Numbers	440	450	480	480
Core Costs per Cow (\$)	\$562.00	\$640.00	\$652.00	\$661.00
Stocking Rate (Cows/ha) (Kg/ha)	4.16	4.26	4.54	4.54
Milk Production per Cow (kgMS)	387	447	489	492
Milk Production as % of LW	80.60%	93.20%	101.90%	102.60%
Milk Production per Hectare (kgMS)	1611	1906	2223	2236
Feed Management				
Pasture Harvested (tDM/ha)	13.40	14.80	15.30	14.50
Pasture as % of Diet	70.40%	68.90%	61.40%	58.20%
Core Costs per ha per tDM PH (\$)	\$80.00	\$72.00	\$68.00	\$73.00
Total Consumed Per Cow (estimated tDM)	4.70	5.02	5.35	5.40
Pasture Consumed Per Cow (est. tDM)	3.16	3.40	3.24	3.08
Forage Consumed Per Cow (est. tDM)	1.53	1.12	1.34	1.56
Concentrate Consumed Per Cow (est. tAF)	0.01	0.55	0.86	0.84
Average Cost of All Consumed Feed (/tDM)	\$334.00	\$286.00	\$311.00	\$332.00
Pasture Cost (/ tDM Consumed)	\$314.00	\$270.00	\$302.00	\$334.00
Forage Cost (/tDM Consumed incl.wastage)	\$377.00	\$301.00	\$303.00	\$328.00
Concentrate Cost (/tDM Cons. incl. waste)	\$1,035.00	\$359.00	\$357.00	\$336.00

Environmental Management

Key Performance Indicators		2013/14	2014/15
	Effluent Pond	Lined or Verified as Sealed	Lined or Verified as Sealed
Effluent	% of Farm Irrigated with Effluent	57	32
	N Loading on Effluent Area (kg/ha)	67	136
Nitrogen	N Leached (kg/ha)	25	26
	N Conversion Efficiency (%)	64	62
	Soluble N Use (kg/ha)	109	106
Phosphorus	P Loss (kg/ha)	1.3	1.4
	Olsen P Levels	Above optimum and decreasing	Above optimum and decreasing
Soil Protection	Winter Cropping % of Farm	0	0
	Winter Soil Management	Cows stood off on in covered herd home	Cows stood off on in covered herd home
Overall Score	Score out of 15 points	12	11

People Management

Key Performance Indicators		2013/14	2014/15
Labour Utilisation	Staff Costs per Cow (\$)	318	322
	Cows per Full Time Equivalent (50hr FTE)	213	277
Training Spend	Training spend per FTE in Dollars (\$)	785	826
	Training spend per FTE in Time (hrs)	2.69	2.48
Unplanned Costs	Costs per FTE (\$)	47	-
	Unbudgeted Days Lost per FTE	1.45	0.62
Labour Turnover	Labour Turnover - Management Staff (%)	0%	0%
	Labour Turnover - Non Management Staff (%)	0%	0%
Overall Score	Out of 15 points	11	13



History and Key Philosophies

Farm and Personal History

- Rex began farming 28 years ago in Te Pahu as an assistant manager, whilst also completing the first year of correspondence for a Bachelor of Agriculture at both Massey and Lincoln (he couldn't decide on which one he wanted to attend).
- After 12 months Rex ended up leaving NZ to begin a three year OE. His time away confirmed what he already knew, "I wanted to be a dairy farmer".
- He came back to NZ to take up a lower order share-milking position on the home farm, followed by 50/50 share-milking. During that time he was fortunate to obtain a second share-milking position on a neighbouring property, which enabled him to oversee them both with relative ease.
- After meeting Sharon 17 years ago, they moved to Walton and formed a partnership with his parents on their existing farm. In 2007 they purchased the runoff and started shaping their current system.

Farm Philosophy and Systems

- Animal welfare is a high priority for Rex and Sharon. They gain satisfaction from farming happy healthy cows. "They pay you back 10 fold - it's really a no brainer" says Rex. However it's not something that they could always achieve, hence the decision to build the Herd Homes. They focus on prevention not cure, and maintenance not repair. They try to keep an open mind to new ideas and technology but focus heavily on the basics such as pasture management, making high ME supplements, fully growing young stock, cow condition and the transition cow from pre to post calving. "Get those things right and the rest is easy".
- Their system is kept relatively simple. They feed pasture, maize silage, grass silage and PKE. The amount and combination is dependent on availability, economics and the time of year. All supplements are fed in the Herd Homes. The cows come inside if the weather is not ideal or if they have grazed down to the desired pasture residuals.
- All Herd Home effluent is exported off farm onto the maize ground at the runoff. Growing a high yielding, high ME maize crop is essential to our system. The difference in cost between a 22tDM or a 26tDM crop is minimal, but the economic gains/losses are huge.
- **If something is worth doing, it's worth doing properly**. Rex and Sharon make a point of employing the services of leading advisors to help them achieve their goals.

Key Points Driving Success on this Farm

- Having a resilient system that does not need to be altered to survive pay-out reductions. With a continuous aim of maintaining a low cost of production this business is extremely resilient. With a high level of production the Butterworth's are not "missing out" in high pay-out years as a low COP allows for a greater profit margin.
- A high level of attention to pasture and supplement management, ensuring good utilisation and focusing on quality
- Attention to detail; planning and animal welfare are key values to the Butterworths. Detailed budgeting including both feed and cash flow.

Profitability and Resilience

Profit and Resilience Key Performance Indicators Table

Key Performance Indicators	2011/12 (Pre Herd Homes)	2013/14	2014/15	2015/16 (Preliminary)
Milk Price (\$/kgMS)	\$6.40	\$8.37	\$4.36	\$3.90
Return on Capital (%)	5.90%	10.90%	3.80%	2.20%
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Operating Expenses per kgMS (FWE+Adjst)	\$4.02	\$3.59	\$3.50	\$3.57

Key Concepts of Profitability

- Rex believes the first step to profitability is to grow as much grass as possible using sustainable methods, maintain quality, and fully utilise that grass.
- Matching feed supply with demand - unfortunately the Waikato climate is too fickle to rely on grass alone. Supplements provide certainty of milk production. Keeping control of the costs and quality of those supplements is imperative.
- Have well-conditioned cows capable of fully utilising the feed that they are offered.
- Being prepared to spend money to make money.
- The use of benchmarking

Resilience - Cost Control Techniques

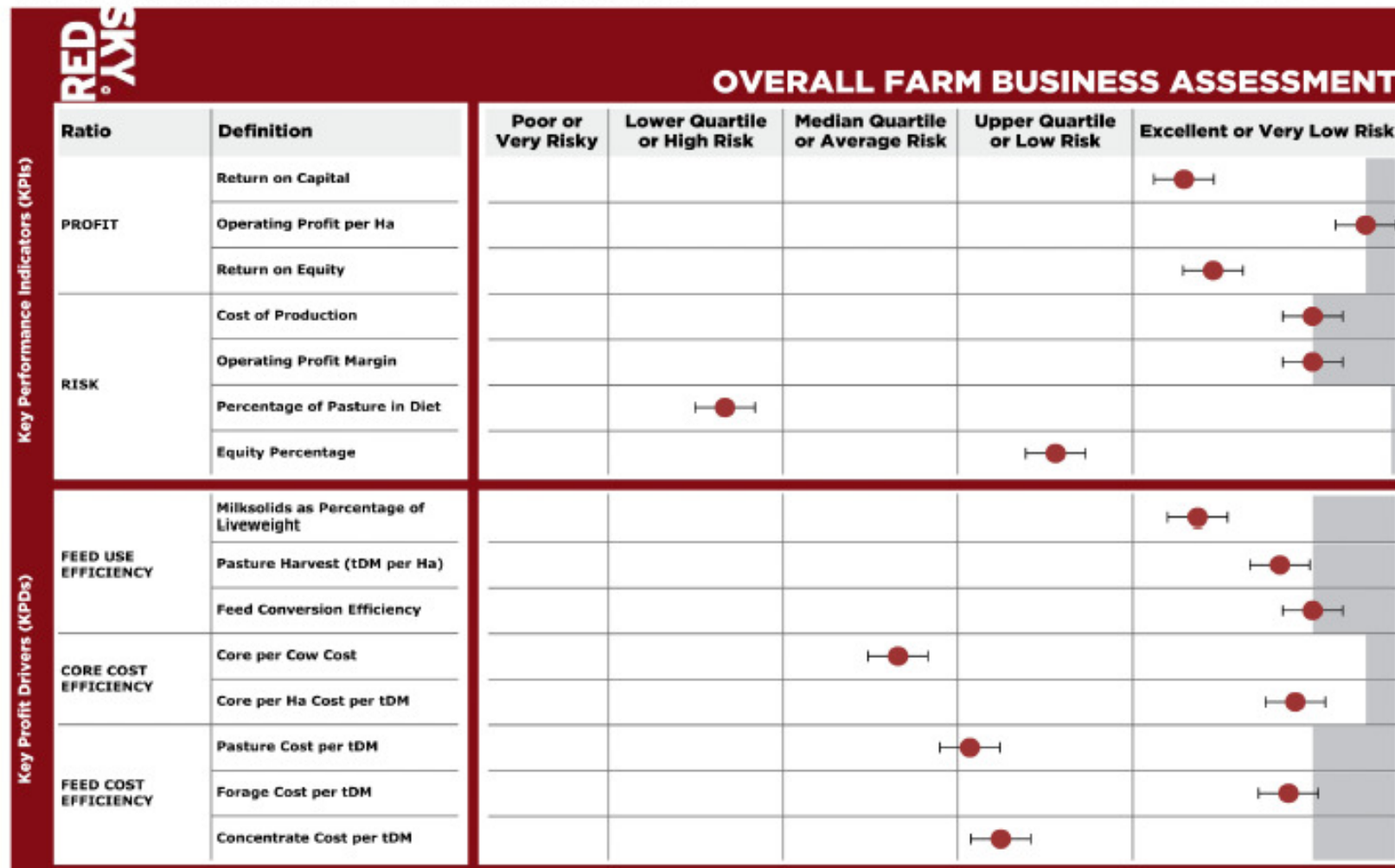
- Financial and feed budgeting plays a big role. It helps them identify possible shortfalls before they eventuate. By being proactive and not reactive has allowed time to put strategies in place to avoid or minimise losses.
- Planning feed requirements months ahead lessens the likelihood of having to buy in feed on the spot market often at times of high demand and therefore high prices. Repeatedly using supplements to dig yourself out of a feed hole created by poor management is often uneconomic.
- Using specialist independent consultants to help identify and correct or fine tune weaknesses within the business.
- Rex focuses on diluting costs by lifting income through higher production achieved by good feed utilisation. This driving the cost of production/kgMS.
- Being aware of day to day expenditure as it is easy to become complacent.
- Spend time and money once by doing a job properly the first time. Short cuts and band aids are false economy that will add expense and frustration.

¹ See Appendices – Definitions – Milk Revenue – Page 17

Red Sky Financial 2014/15 Scorecard

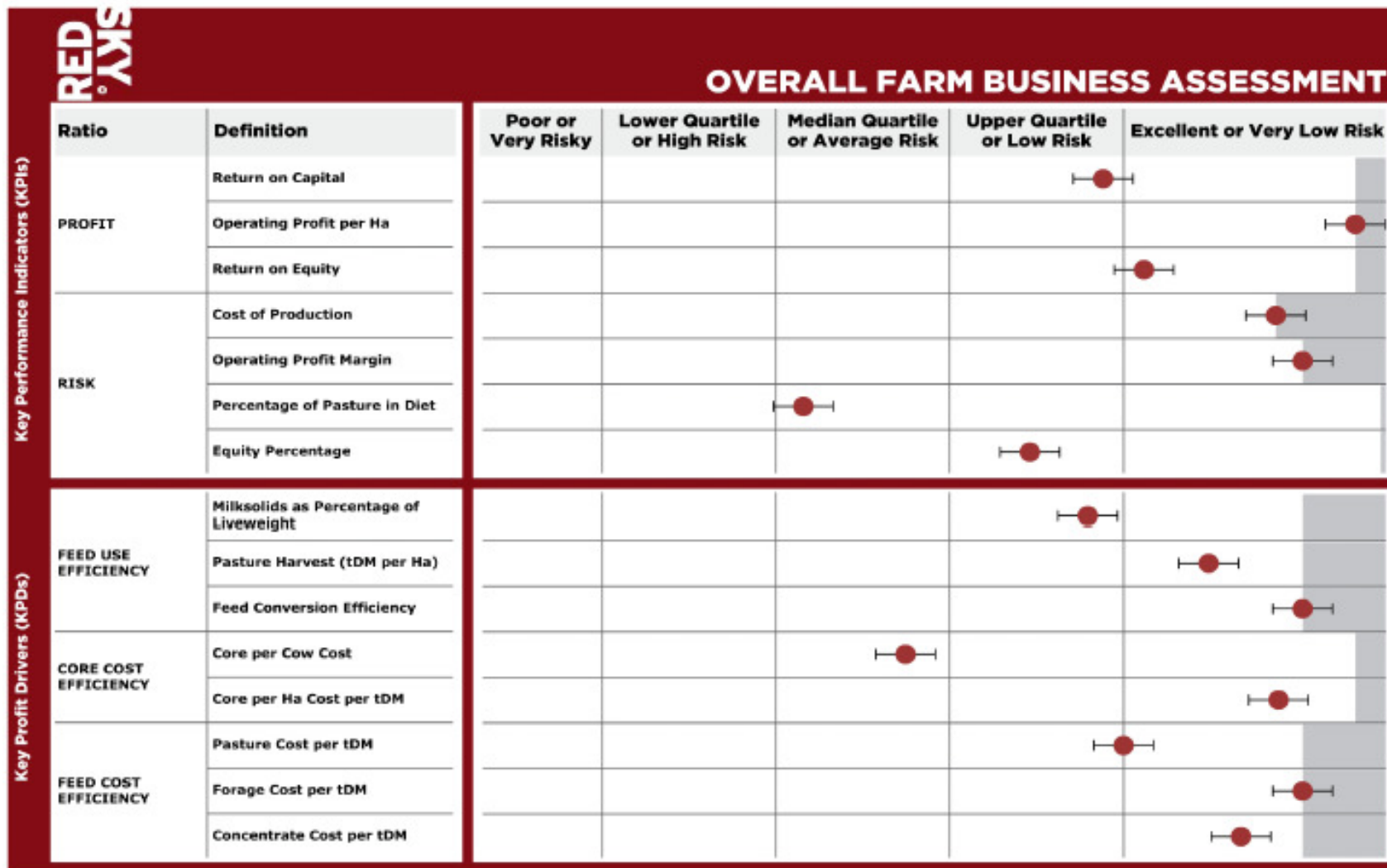
Rex and Sharon Butterworth
Butterworth Enterprises #77021
2014/15 Butterworth DBOY Vs Waikato Benchmark

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Red Sky Financial 2013/14 Scorecard

Rex and Sharon Butterworth
Butterworth Enterprises #77021
2013/14 Butterworth Vs Waikato Benchmark





Livestock and Milk Production

Livestock and Milk Production Key Performance Indicators Table

Key Performance Indicators	2011/12 (Pre Herd Homes)	2013/14	2014/15	2015/16 (Preliminary)
Peak Milking Cow Numbers	440	450	480	480
Core Costs per Cow (\$)	\$562.00	\$640.00	\$652.00	\$661.00
Stocking Rate (Cows/ha) (Kg/ha)	4.16	4.26	4.54	4.54
Milk Production per Cow (kgMS)	387	447	489	492
Milk Production as % of LW	80.60%	93.20%	101.90%	102.60%
Milk Production per Hectare (kgMS)	1611	1906	2223	2236

Cow Management

- Aim for **“more from less”** by breeding from those cows that are the best converters of feed to milk and that don’t require special attention, while minimising the performance range between the top and bottom cow.
- The Herd Home has a unique ventilation system and shade sails which lower the temperature during summer to reduce heat stress. Reducing the amount of heat stress has resulted in the cows consuming more dry matter per day; they also drink a lot more water because the animals have easy access to water.
- The Herd Home provides a warm dry environment in the winter. Mastitis at calving time has halved largely due to udder cleanliness as they can be taken off the paddocks in wet and sometimes muddy conditions. The clear roof allows sunlight through, killing light sensitive bacteria and drying the floor. Maintaining a dry floor plays a big part in successful Herd Home management.
- Rely heavily on cow condition for milk production and fertility; healthy well feed cows pretty much take care of themselves.
- Due to the Herd Home system, lactation length is not as heavily influenced by cow condition, pasture cover or the weather. They have far more control and use days in milk as the main guide to determining dry off date.
- Little focus on breeding status – currently BW 124 PW 147 The herd is LIC bull of the day. It’s the old story of 80% feeding and 20% breeding. There is still plenty of potential left in these cows yet.
- Mating 11 weeks – 4 weeks AB then finishing using 8 Bulls.
- No Cidr intervention – due to not wanting to breed in infertility. Interested in breeding only from low maintenance high producing cows.
- The 6 week in-calf rate which includes the heifers, was 83% as calculated on actual calving’s and not pregnancy test results.
- Empty rate over the last few years has been 8%. Rex sees this as a concern and a waste of cows. He believes that it is achievable to get back to 4.5 to 5.0% where they have historically been, and would ideally like to see it lower than that. They only carry over empty cows if Rex believes it is related to management – e.g. feeding, condition score.

Young Stock Management

- 15-20% replacement rate (never any more than 20%). Rearing young stock is expensive, so making sure they are properly grown avoids further unnecessary expense when cows reach maturity. Achieving a low empty rate means there is more room to cull uneconomic and undesirable cows.
- The calves go to the runoff the day they are weaned where they have no competition from older stock, and stay there until 1st of May. Removing the calves off the milking platform ASAP helps maintain pasture quality. There is no compromising between calf growth rates and the herd's milk production. The heifers are grazed off from 1st May till pre-calving.
- Growing young stock to their full potential is critical. Heifers that are still growing in their first lactation will produce less milk and are more likely to end up late calvers or empty. Rex says this is one of the areas that they are concentrating on improving.



Feed Management

Feed Management Key Performance Indicators Table

Key Performance Indicators	2011/12 (Pre Herd Homes)	2013/14	2014/15	2015/16 (Preliminary)
Pasture Harvested (tDM/ha)	13.40	14.80	15.30	14.50
Pasture as % of Diet	70.40%	68.90%	61.40%	58.20%
Core Costs per ha per tDM PH (\$)	\$80.00	\$72.00	\$68.00	\$73.00
Total Consumed Per Cow (estimated tDM)	4.70	5.02	5.35	5.40
Pasture Consumed Per Cow (est. tDM)	3.16	3.40	3.24	3.08
Forage Consumed Per Cow (est. tDM)	1.53	1.12	1.34	1.56
Concentrate Consumed Per Cow (est. tAF)	0.01	0.55	0.86	0.84
Average Cost of All Consumed Feed (/tDM)	\$334.00	\$286.00	\$311.00	\$332.00
Pasture Cost (/ tDM Consumed)	\$314.00	\$270.00	\$302.00	\$334.00
Forage Cost (/tDM Consumed incl.wastage)	\$377.00	\$301.00	\$303.00	\$328.00
Concentrate Costs	\$1,035.00	\$359.00	\$357.00	\$336.00

Pasture Management

- The Butterworths believe that one of the main purpose of a Herd Home is to increase pasture production, and allows for the opportunity to greatly reduce pasture damage during wet or dry periods.
- Pasture is considered the Butterworths most important feed and they place a lot of effort into pasture management. Milk production takes an almost instant dive when they get it wrong. Over grazing, poor utilisation and losing control of pasture quality all have a big impact on profitability.
- Pre graze topping occurs during the spring and summer months to maintain quality. Topping helps to avoid over grazing in some areas and leaving poor quality clumps in others. Topping commences as soon as any clumping becomes visible, normally around the third week of September. Topping residuals vary depending on the clover height, the emerging ryegrass seed head, and the weather.

Supplement Management

- Supplements make up close to 40% of their cows diet. This is an area that the Butterworths have to monitor closely; the potential to lose control of our costs is significant. It is also equally important to ensure that we make high quality maize and grass silage.
- Grass silage is made from quality nitrogen boosted leafy pasture.
- The maize hybrids are selected on grain yield and digestibility and not silage yield. Herd Home effluent is used to fertilise the maize crop. Not taking any short cuts has resulted in good maize yields each season.



Environmental Performance

Environmental Key Performance Indicators Table

Key Performance Indicators		2013/14	2014/15
Effluent	Effluent Pond	Lined or Verified as Sealed	Lined or Verified as Sealed
	% of Farm Irrigated with Effluent	57	32
	N Loading on Effluent Area (kg/ha)	67	136
Nitrogen	N Leached (kg/ha)	25	26
	N Conversion Efficiency (%)	64	62
	Soluble N Use (kg/ha)	109	106
Phosphorus	P Loss (kg/ha)	1.3	1.4
	Olsen P Levels	Above optimum and decreasing	Above optimum and decreasing
Soil Protection	Winter Cropping % of Farm	0	0
	Winter Soil Management	Cows stood off on in covered herd home	Cows stood off on in covered herd home
Overall Score	Score out of 15 points	12	11

Environmental Key Concepts

- Rex acknowledges that unfortunately he has not always been as environmentally aware as he is now. He, like many, once saw effluent as a problem and costly to get rid of. Now they recognise it as one of their most valuable resources, and hope to one day operate a balanced closed system that efficiently recycles all nutrients with minimal leaching.
- The Butterworths believe that, as an operator of an intensive dairy farm with the potential to be a major polluter, they have to demonstrate that they can and do operate responsibly.
- For the Butterworths there were two reasons of equal importance for building the Herd Homes; the first was environmental sustainability, and the other was economics. They are very pleased to say the Herd Homes have delivered on both fronts. They have taken the stress out of their farming operation for both themselves and their stock.
- Their farm has a far lower environmental footprint than most conventionally operated dairy operations and is well below the industry average. This proves that more profit does not have to mean more pollution.

Environmental 2013/14 Scorecard

Headlands Environmental Impact Assessment								
Waikato Scorecard								
Butterworth Enterprises #77021								
Category	Best Management Practice Criteria	High Risk	Med-high Risk	Medium Risk	Med-Low Risk	Low Risk	Your Result	Your Score ²
Effluent	Lined/sealed effluent pond					■	Lined or Verified as Sealed	5
	% of farm irrigated with effluent					■	57	5
	N loading on the effluent area _{kgN/ha}				■		67	4
Nitrogen	KgMS/ha per kgN Loss/ha			■			76	3
	KgN Leached/ha ¹				■		25	4
	N Conversion Efficiency ¹ %					■	64	5
	Soluble N Use ¹ _{kgN/ha}			■			109	3
Phosphorus	P Loss per ha ¹			■			1.3	3
	Olsen P Levels			■			Above optimum and decreasing	3
Soil Protection	Winter Cropping Area ¹					■	0	5
	Winter Soil Management					■	Cows stood off on sealed area when wet	5
							Your Total Score (out of 65)	45
							Your weighted DBOY Score (out of 15)	12

¹ As defined by Overseer V6.1.4 ² Refer to appendices for criteria

Environmental 2014/15 Scorecard

Headlands Environmental Impact Assessment								
Waikato / Central Plateau Scorecard								
Butterworth Enterprises #77021								
Category	Best Management Practice Criteria	High Risk	Med-high Risk	Medium Risk	Med-Low Risk	Low Risk	Your Result	Your Score ²
Effluent	Lined/sealed effluent pond					■	Lined or Verified as Sealed	5
	% of farm irrigated with effluent				■		32	4
	N loading on the effluent area _{kgN/ha}		■				136	2
Nitrogen	KgMS/ha per kgN Loss/ha				■		86	4
	KgN Leached/ha ¹				■		26	4
	N Conversion Efficiency ¹ %					■	62	5
	Soluble N Use ¹ _{kgN/ha}			■			106	3
Phosphorus	P Loss per ha ¹		■				1.4	2
	Olsen P Levels			■			Above optimum and decreasing	3
Soil Protection	Winter Cropping Area ¹					■	0	5
	Winter Soil Management					■	Herd home, feed pad or winter stand off yard	5
Your Total Score (out of 65)							42	
Your weighted DBOY Score (out of 15)							11	

¹ As defined by Overseer V6.1.4 ² Refer to appendices for criteria

People Leadership and Productivity


People Productivity Key Performance Indicators Table

Key Performance Indicators		2013/14	2014/15
Labour Utilisation	Staff Costs per Cow (\$)	318	322
	Cows per Full Time Equivalent (50hr FTE)	213	277
Training Spend	Training spend per FTE in Dollars (\$)	785	826
	Training spend per FTE in Time (hrs)	2.69	2.48
Unplanned Costs	Costs per FTE (\$)	47	-
	Unbudgeted Days Lost per FTE	1.45	0.62
Labour Turnover	Labour Turnover - Management Staff (%)	0%	0%
	Labour Turnover - Non Management Staff (%)	0%	0%
Overall Score	Out of 15 points	11	13

People Management Philosophies

- The Butterworths only employ people that they respect and like. They expect them to share in their vision and in their successes. Rex and Sharon want their employees to be part of the business and they value their input.
- Over the years Rex and Sharon have learnt a lot from their staff and enjoy having them around. Rex tries to involve them in the discussion of most key decisions. Rex believes that if you treat people the way you would like to be treated yourself, lead by example, and don't expect them do what you wouldn't do, then hopefully you should maintain a good working relationship.
- Rex and Sharon are thankful for Vern and Barb. "Their contribution has been outstanding and we couldn't be happier with their efforts. They should be, and have every right to be, proud of what they have helped us achieve. Thank you both very much".

People Productivity 2013/14 Scorecard

<div> <h1>HUMAN RESOURCES METRICS</h1> <p>BUTTERWORTH PARTNERSHIP - Rex & Sharon Butterworth</p> <div>  <p>rural recruitment & people performance</p> </div> </div>									
SECTIONS	MEASURED BY	Some Risk		Median	Good performance		Your Farm Results	Group Average	Your Score
LABOUR UTILISATION / COSTS	Staff Costs per Cow				■		\$318.00	\$437.97	0.4
	Cows per FTE				■		213.00	150.80	2.5
TRAINING SPEND	Training spend per FTE in \$\$					■	\$785.12	\$255.31	1.2
	Training spend per FTE in Time		■				2.69	3.59	0.7
UNPLANNED COSTS	Costs per FTE (milk co fines, employment disputes costs etc)					■	\$46.66	\$305.25	1.2
	Unbudgeted Days Lost per FTE (i.e. sick / grievance/ suspension / breavement)				■		1.45	3.20	0.8
LABOUR TURNOVER	Management Staff - three year average					■	0%	6%	1.3
	Non Management Staff - three year average					■	0%	27%	1.3
OVERALL SCORE (out of 15)							11.1		

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People Productivity 2014/15 Scorecard

HUMAN RESOURCES METRICS							No.8 HR		
BUTTERWORTH PARTNERSHIP - Rex & Sharon Butterworth									
SECTIONS	MEASURED BY	Some Risk		Median	Good performance		Your Farm Results	Group Average	Your Score
LABOUR UTILISATION / COSTS	Staff Costs per Cow			■			\$322.00	\$391.55	2.0
	Cows per FTE				■		227.00	170.00	2.4
TRAINING SPEND	Training spend per FTE in \$\$					■	\$826.45	\$271.31	1.2
	Training spend per FTE in Time		■				2.48	3.52	0.7
UNPLANNED COSTS	Costs per FTE (milk co fines, employment disputes costs etc)					■	\$0.00	\$301.50	2.5
	Unbudgeted Days Lost per FTE (i.e. sick / grievance/ suspension / breavement)					■	0.62	4.49	1.9
LABOUR TURNOVER	Management Staff - three year average					■	0%	9%	1.3
	Non Management Staff - three year average					■	0%	29%	1.3
							OVERALL SCORE (out of 15)		13.1

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Current and Future Strategies

- Keep it Simple!
- The Butterworths see the Herd Homes as a great tool to help them stay in control of their business; more control of pasture and supplement, more control with their cows, more control in adverse climatic conditions, both hot/dry and cold/wet.
- The only change the Butterworths have made in light of the lower pay-out is a reduction on planned capital expenditure of about 50%.
- It has been the mistakes made and learning from those mistakes that has guided the system to where it is now. It is very important to learn from mistakes and always be looking for new and improved methods to ensure you have considered all your options.
- The Butterworths aim is to continue to refine their current system as there are always areas that can be improved. Rex states that the Red Sky analysis plays a vital roll in identifying those areas requiring improvement. Rex has always been interested in technology and expects that to play a part in future development of their business.
- Interested in winter milking but wants to perfect the current system before making any major changes.
- Wants to remove or reduce bought in feed and become a closed system where all feed is made on the runoff or harvested from the milking block. This will reduce reliance on the external markets. Possibilities of more maize, or the use of lucerne (or chicory/plantain that also have a deep tap root) to help with summer dry periods could be beneficial. He hasn't quite worked out what path yet and how this will fit into his system. He accepts that it could turn out to be unrealistic but wants to keep an open mind and explore the options.

Appendices

Definitions

Milk Revenue in Red Sky is the money paid for the milk produced in that season and doesn't include deferred payments. It is calculated by the kilograms of milksolids times by the average price paid for that milk. This is specific to each farm as it is adjusted for demerits and bonuses.

Farm Working Expenses, Operating Expenses and Cost of Production per kilogram of Milk Solid - Understanding the differences;

- FWE/kgMS: is all the expenses physically paid expenses (real cash payments).
- OE/kgMS: is the FWE +/- non cash adjustments including depreciation, imputed labour.
- COP/kgMS: is the OE less non milk revenue to give the cost to produce the milk solids alone.

Return on Capital (ROC) is the operating profit divided by the total assets under management (owned and leased - includes support blocks). This percentage measure of profitability records the return on total assets employed in the business, and is arguably the most important measure of business performance. Furthermore it is comparable between different types and sizes of farm systems.

Effective Milking Hectares is the true area over which the milking cows graze. When young stock graze even briefly on farm, this grass they consume is no longer available for milking cows, hence the milking platform is effectively reduced. This makes the KPIs comparable between farms that graze heifers on farm and those who graze off.

Operating Profit Margin is the percentage of revenue that is retained after operating expenses are removed. Once debt serving and tax are paid from this, the remaining money is considered true profit.

Operating Profit is calculated as the gross revenue less gross expenses. This is a measure of profit and can be used for comparative farm analysis when divided by farm area (OP/ha). Note it needs to be interpreted in light of the wide variation in land capabilities and therefore values.

Gross Revenue is the total operating revenue plus livestock value adjustment and other revenue adjustments. See Milk Revenue

Gross Expenses is the total operating expenses adjusted for feed/supplements on hand at opening and closing of season, imputed (unpaid) labour and management, depreciation and other expenses adjustments. This does not include financing costs.

Pasture, Concentrate & Forage Cost includes direct purchase (or making) costs, variable expenses (the costs associated to feeding out including RnM on gear) and capital cost (the cost of owning land and any infrastructure such as silage pits, in-shed feeding or herd homes. This calculation is also adjusted for wastage of feed during storage and feeding.

Red Sky Reports

Summary	2011/12 Butterworth	2013/14 Butterworth	2014/15 Butterworth DBOY	2015/16 Butterworth Draft	2014/15 Waikato Average	2014/15 Waikato Top 10%
PHYSICAL PARAMETERS						
Peak Milking Cow Numbers	440	450	480	480	459	479
Total Effective Dairy Hectares	106.00	106.00	106.00	106.00	139.70	132.50
Effective Milking Hectares	105.70	105.60	105.70	105.70	137.70	129.30
Cows per Milking Hectare	4.16	4.26	4.54	4.54	3.33	3.70
Milksolids per Cow	387	447	489	492	394	444
Milksolids per Milking Hectare	1611	1906	2223	2236	1312	1645
Milksolids Price (\$/kgMS)	\$6.40	\$8.37	\$4.36	\$3.90	\$4.40	\$4.40
Pasture Dry Matter Harvested (tDM/Ha)	13.40	14.80	15.30	14.50	12.30	14.70
REVENUE						
Milk Sales	\$1,147,269.00	\$1,722,549.00	\$1,052,494.00	\$949,990.00	\$831,277.00	\$977,780.00
Total Operating Revenue (TOR)	\$1,195,492.00	\$1,833,600.00	\$1,173,971.00	\$1,071,467.00	\$919,746.00	\$1,069,972.00
GROSS REVENUE (GR)	\$1,203,992.00	\$1,815,900.00	\$1,219,971.00	\$1,071,467.00	\$936,399.00	\$1,091,389.00
Gross Revenue per Hectare	\$11,395.00	\$17,195.00	\$11,546.00	\$10,140.00	\$6,798.00	\$8,440.00
Gross Revenue per Cow	\$2,736.00	\$4,035.00	\$2,542.00	\$2,232.00	\$2,040.00	\$2,278.00
EXPENSES						
Total Operating Expenses (TOE)	\$487,129.00	\$604,380.00	\$698,675.00	\$634,654.00	\$712,100.00	\$721,426.00
GROSS OPERATING EXPENSES (GOE)	\$683,805.00	\$723,566.00	\$821,265.00	\$843,740.00	\$911,077.00	\$895,722.00
Gross Operating Expenses per Hectare	\$6,472.00	\$6,852.00	\$7,773.00	\$7,985.00	\$6,614.00	\$6,927.00
Gross Operating Expenses per Cow	\$1,554.00	\$1,608.00	\$1,711.00	\$1,758.00	\$1,985.00	\$1,870.00
KEY PERFORMANCE INDICATORS						
OPERATING PROFIT (GR - GOE)	\$520,187.00	\$1,092,334.00	\$398,706.00	\$227,727.00	\$25,321.00	\$195,667.00
Operating Profit per Hectare	\$4,923.00	\$10,344.00	\$3,774.00	\$2,155.00	\$184.00	\$1,513.00
Operating Profit per Cow	\$1,182.00	\$2,427.00	\$831.00	\$474.00	\$55.00	\$408.00
Total Assets per Ha at Start of Year (4-Yr Av Values)	\$91,853.00	\$99,668.00	\$114,175.00	\$120,235.00	\$72,766.00	\$73,470.00
Total Assets per Ha at Start of Year (Market Values)	\$91,853.00	\$99,668.00	\$114,175.00	\$120,235.00	\$73,614.00	\$74,191.00
Total Assets at End of Year at 4-Yr Av Values	\$9,789,338.00	\$12,099,335.00	\$12,744,867.00	\$12,723,867.00	\$9,218,033.00	\$8,817,017.00
RETURN ON CAPITAL (ROC) at 4-Yr Av Values	5.90%	10.90%	3.80%	2.20%	0.90%	2.50%
Return on Assets (ROA) at 4-Yr Av Values	5.90%	10.90%	3.80%	2.20%	0.80%	2.40%
ROA including Capital Gain at 4-Yr Av Values	8.10%	26.90%	8.70%	2.10%	-7.60%	-6.00%
OPERATING PROFIT MARGIN	43.20%	60.20%	32.70%	21.30%	2.70%	17.90%
Cost of Production per kg Milksolids	\$3.68	\$3.13	\$2.78	\$3.06	\$4.46	\$3.68
Total Operating Expenses as % Gross Revenue	40.50%	33.30%	57.30%	59.20%	76.10%	66.10%
Core per Cow Cost	\$562.00	\$640.00	\$652.00	\$661.00	\$667.00	\$612.00
Core per Hectare Cost	\$1,074.00	\$1,066.00	\$1,043.00	\$1,059.00	\$1,225.00	\$1,256.00
Core per Hectare Cost per tDM Pasture Harvest	\$80.00	\$72.00	\$68.00	\$73.00	\$99.00	\$86.00
Management + Staff Costs per Cow	\$321.00	\$318.00	\$322.00	\$322.00	\$421.00	\$361.00
Cows per Full Time Staff Equivalent	209	213	227	227	152	181
Total Feed/Supplement Costs per Cow	\$552.00	\$604.00	\$789.00	\$823.00	\$699.00	\$691.00
Pasture as % of Total Consumed	70.40%	68.90%	61.40%	58.20%	74.60%	73.50%
Average Cost of All Consumed Feed (/tDM)	\$334.00	\$286.00	\$311.00	\$332.00	\$351.00	\$313.00
Pasture Cost (Per tDM)	\$314.00	\$270.00	\$302.00	\$334.00	\$326.00	\$285.00
Forage Cost (/tDM Consumed incl.wastage)	\$377.00	\$301.00	\$303.00	\$328.00	\$446.00	\$407.00
Concentrate Cost (/tDM Consumed incl.wastage)	\$1,035.00	\$359.00	\$357.00	\$336.00	\$395.00	\$364.00

Physical	2011/12 Butterworth	2013/14 Butterworth	2014/15 Butterworth DBOY	2015/16 Butterworth Draft	2014/15 Waikato Average	2014/15 Waikato Top 10%
PHYSICAL PARAMETERS						
Peak Milking Cow Numbers	440	450	480	480	459	479
Effective Milking Hectares	105.70	105.60	105.70	105.70	137.70	129.30
Cows per Milking Hectare	4.16	4.26	4.54	4.54	3.33	3.70
Cow Liveweight per Milking Hectare	1999	2045	2181	2180	1606	1804
Comparative Stocking Rate (Red Sky)	151.80	121.40	117.00	122.20	122.30	117.30
Comparative Stocking Rate (DairyNZ)	113.90	93.90	91.90	96.10	94.00	95.60
Milksolids Price (\$/kgMS)	\$6.40	\$8.37	\$4.36	\$3.90	\$4.40	\$4.40
Total Milksolids (Milkfat + Protein)	170176	201332	234887	236309	180692	212691
Milksolids per Cow	387	447	489	492	394	444
Milksolids as Percent of Cow Liveweight	80.60%	93.20%	101.90%	102.60%	81.70%	91.20%
Milksolids per Milking Hectare	1611	1906	2223	2236	1312	1645
Milkfat Percentage	4.84%	5.11%	5.22%	5.08%	4.97%	4.94%
Protein Percentage	3.74%	3.77%	3.82%	3.77%	3.73%	3.78%
Protein as a Percentage of Milkfat	77.30%	73.80%	73.20%	74.20%	75.10%	76.50%
PRODUCTIVITY MEASURE						
Red Sky Dairy Productivity Ratio	0.70	0.74	0.76	0.71	0.73	0.90
PASTURE & SUPPLEMENTS						
Pasture Dry Matter Harvested (tDM/Ha)	13.40	14.80	15.30	14.50	12.30	14.70
Estimated Dryland Pasture Harvest (tDM/Ha)	13.40	14.80	15.30	14.50	12.30	14.60
Estimated Irrigated Pasture Harvest (tDM/Ha)	0.00	0.00	0.00	0.00	12.90	15.30
Nitrogen Applied per Hectare	0.00	115.00	113.00	113.00	166.30	200.60
Pasture as % of Total Consumed	70.40%	68.90%	61.40%	58.20%	74.60%	73.50%
Supplement as % of Total Consumed	29.60%	31.10%	38.60%	41.80%	25.40%	26.50%
- Forage as % of Total Consumed	29.40%	19.60%	21.90%	25.50%	15.00%	16.30%
- Concentrate as % of Total Consumed	0.20%	11.50%	16.70%	16.30%	10.40%	10.20%
Pasture Consumed Per Cow (estimated tDM)	3.16	3.40	3.24	3.08	3.55	3.77
Forage Consumed Per Cow (estimated tDM)	1.53	1.12	1.34	1.56	0.83	0.97
Concentrate Consumed Per Cow (estimated tAF)	0.01	0.55	0.86	0.84	0.48	0.51
Total Consumed Per Cow (estimated tDM)	4.70	5.02	5.35	5.40	4.81	5.21
Feed Conversion Efficiency (kgsDM/kgMS)	11.43	10.87	10.60	10.58	11.83	11.32
Total Feed/Supplement Costs per Cow	\$552.00	\$604.00	\$789.00	\$823.00	\$699.00	\$691.00
Average Cost of All Consumed Feed (/tDM)	\$334.00	\$286.00	\$311.00	\$332.00	\$351.00	\$313.00
Pasture Cost (Per tDM)	\$314.00	\$270.00	\$302.00	\$334.00	\$326.00	\$285.00
- Direct Pasture Cost (Per tDM)	\$52.00	\$33.00	\$28.00	\$30.00	\$56.00	\$55.00
- Variable Pasture Cost (Per tDM)	\$48.00	\$40.00	\$35.00	\$37.00	\$48.00	\$38.00
- Capital Pasture Cost (Per tDM)	\$214.00	\$196.00	\$238.00	\$267.00	\$222.00	\$192.00
Average Cost of All Supplements (/tDM Consumed)	\$382.00	\$322.00	\$326.00	\$331.00	\$425.00	\$390.00
Forage Cost (/tDM Consumed incl.wastage)	\$377.00	\$301.00	\$303.00	\$328.00	\$446.00	\$407.00
- Purchased Forage Cost (Per tDM)	\$260.00	\$202.00	\$207.00	\$231.00	\$292.00	\$275.00
- Variable Forage Cost (Per tDM)	\$39.00	\$37.00	\$34.00	\$34.00	\$48.00	\$38.00
- Capital Forage Cost (Per tDM)	\$14.00	\$30.00	\$31.00	\$30.00	\$37.00	\$29.00
Home Produced Forage as Percent of Total	92.50%	93.90%	84.60%	100.00%	33.10%	44.40%
Concentrate Cost (/tDM Consumed incl.wastage)	\$1,035.00	\$359.00	\$357.00	\$336.00	\$395.00	\$364.00
- Purchased Concentrate Cost (Per tDM)	\$1,000.00	\$315.00	\$318.00	\$296.00	\$358.00	\$331.00
- Variable Concentrate Cost (Per tDM)	\$11.00	\$8.00	\$7.00	\$8.00	\$11.00	\$9.00
- Capital Concentrate Cost (Per tDM)	\$3.00	\$17.00	\$14.00	\$15.00	\$8.00	\$7.00
Pasture Cost (Cents Per MJ ME)	2.86	2.45	2.75	3.03	2.96	2.59
Forage Cost (Cents Per MJ ME Consumed)	3.63	2.92	2.88	3.15	4.24	3.90
Concentrate Cost (Cents Per MJ ME Consumed)	8.63	3.26	3.25	3.05	3.29	3.03
Pasture Dry Matter Harvested / Megalitre (tDM)	0.00	0.00	0.00	0.00	1.30	1.40
Megalitres Used per Hectare	0.00	0.00	0.00	0.00	10.30	10.70
MANAGEMENT & STAFF						
Total 50-Hour Week Equivalent Full Time Staff	2.20	2.20	2.20	2.20	3.20	2.90
Cows per Full Time Staff Equivalent	209	213	227	227	152	181
Management + Staff Costs per Cow	\$321.00	\$318.00	\$322.00	\$322.00	\$421.00	\$361.00
Revenue per Full Time Staff Equivalent	\$547,269.00	\$825,409.00	\$554,532.00	\$487,031.00	\$289,450.00	\$381,765.00
Revenue per \$1 of Employment Expense	\$8.52	\$12.71	\$7.89	\$6.93	\$4.82	\$6.29
Total Hours Worked per Week	110.00	110.00	110.00	110.00	161.80	142.90
Total Imputed Labour & Management	\$65,160.00	\$65,880.00	\$68,040.00	\$68,040.00	\$59,901.00	\$61,505.00

Operating Profit Per Hectare - Dairy

	2011/12 Butterworth	2013/14 Butterworth	2014/15 Butterworth DBOY	2015/16 Butterworth Draft	2014/15 Waikato Average	2014/15 Waikato Top 10%
REVENUE						
Manufacturing Milk Sales	\$10,308.00	\$15,957.00	\$9,693.00	\$8,722.00	\$5,772.00	\$7,237.00
Quota/Contract/Dividends for Milk	\$550.00	\$354.00	\$269.00	\$269.00	\$263.00	\$324.00
Livestock Revenue	\$499.00	\$800.00	\$1,471.00	\$1,036.00	\$658.00	\$792.00
Other Revenue	\$38.00	\$84.00	\$114.00	\$114.00	\$105.00	\$86.00
Gross Revenue	\$11,395.00	\$17,195.00	\$11,546.00	\$10,140.00	\$6,798.00	\$8,440.00
EXPENSES						
Administration	\$66.00	\$84.00	\$83.00	\$83.00	\$131.00	\$123.00
Animal Health	\$427.00	\$437.00	\$404.00	\$404.00	\$340.00	\$361.00
Breeding & Herd Testing	\$163.00	\$228.00	\$250.00	\$250.00	\$196.00	\$211.00
Dairy Shed Expenses	\$116.00	\$129.00	\$84.00	\$109.00	\$78.00	\$83.00
Electricity	\$155.00	\$175.00	\$142.00	\$142.00	\$136.00	\$147.00
Feeds / Supplements (Total)	\$2,299.00	\$2,572.00	\$3,583.00	\$3,738.00	\$2,330.00	\$2,559.00
- Grazing / Support Area	\$863.00	\$1,059.00	\$1,399.00	\$1,400.00	\$741.00	\$732.00
- Cropping (green feed)	\$0.00	\$11.00	\$0.00	\$0.00	\$43.00	\$44.00
- Grains, Pellets & Concentrates	\$43.00	\$820.00	\$1,365.00	\$1,248.00	\$607.00	\$669.00
- Forages (incl. hay, silages, byproducts)	\$1,393.00	\$682.00	\$818.00	\$1,090.00	\$939.00	\$1,114.00
Fertiliser (Total)	\$641.00	\$428.00	\$400.00	\$400.00	\$461.00	\$540.00
- Nitrogen	\$284.00	\$204.00	\$122.00	\$122.00	\$204.00	\$250.00
- Phosphate & All Other Fertiliser	\$357.00	\$225.00	\$279.00	\$279.00	\$257.00	\$290.00
Freight	\$37.00	\$37.00	\$31.00	\$31.00	\$46.00	\$49.00
Irrigation	\$0.00	\$0.00	\$0.00	\$0.00	\$48.00	\$77.00
Other Expenses	\$15.00	\$21.00	\$27.00	\$27.00	\$27.00	\$28.00
Pasture Maintenance & Renovation	\$65.00	\$84.00	\$57.00	\$57.00	\$102.00	\$107.00
Repairs & Maintenance	\$359.00	\$311.00	\$290.00	\$324.00	\$240.00	\$241.00
Standing charges	\$234.00	\$272.00	\$185.00	\$185.00	\$254.00	\$266.00
Vehicle Expenses (including fuel & oil)	\$185.00	\$223.00	\$184.00	\$184.00	\$255.00	\$274.00
Management & Staff Expenses	\$1,337.00	\$1,353.00	\$1,463.00	\$1,463.00	\$1,403.00	\$1,337.00
- Wages, Salaries & Employment Exp.	\$720.00	\$729.00	\$819.00	\$819.00	\$968.00	\$862.00
- Imputed Labour & Management	\$617.00	\$624.00	\$644.00	\$644.00	\$435.00	\$476.00
Depreciation	\$373.00	\$497.00	\$589.00	\$587.00	\$569.00	\$525.00
Gross Expenses	\$6,472.00	\$6,852.00	\$7,773.00	\$7,985.00	\$6,614.00	\$6,927.00
Gross Exp excl. Imputed Labour/Mgmt & Dep'n	\$5,482.00	\$5,730.00	\$6,539.00	\$6,755.00	\$5,611.00	\$5,927.00
Core per Hectare Cost	\$1,074.00	\$1,066.00	\$1,043.00	\$1,059.00	\$1,225.00	\$1,256.00
OPERATING PROFIT (LOSS)	\$4,923.00	\$10,344.00	\$3,774.00	\$2,155.00	\$184.00	\$1,513.00

Operating Profit Per Cow - Dairy

	2011/12 Butterworth	2013/14 Butterworth	2014/15 Butterworth DBOY	2015/16 Butterworth Draft	2014/15 Waikato Average	2014/15 Waikato Top 10%
REVENUE						
Manufacturing Milk Sales	\$2,475.00	\$3,745.00	\$2,134.00	\$1,920.00	\$1,732.00	\$1,954.00
Quota/Contract/Dividends for Milk	\$132.00	\$83.00	\$59.00	\$59.00	\$79.00	\$88.00
Livestock Revenue	\$120.00	\$188.00	\$324.00	\$228.00	\$198.00	\$214.00
Other Revenue	\$9.00	\$20.00	\$25.00	\$25.00	\$32.00	\$23.00
Gross Revenue	\$2,736.00	\$4,035.00	\$2,542.00	\$2,232.00	\$2,040.00	\$2,278.00
EXPENSES						
Administration	\$16.00	\$20.00	\$18.00	\$18.00	\$39.00	\$33.00
Animal Health	\$103.00	\$102.00	\$89.00	\$89.00	\$102.00	\$98.00
Breeding & Herd Testing	\$39.00	\$53.00	\$55.00	\$55.00	\$59.00	\$57.00
Dairy Shed Expenses	\$28.00	\$30.00	\$18.00	\$24.00	\$23.00	\$22.00
Electricity	\$37.00	\$41.00	\$31.00	\$31.00	\$41.00	\$40.00
Feeds / Supplements (Total)	\$552.00	\$604.00	\$789.00	\$823.00	\$699.00	\$691.00
- Grazing / Support Area	\$207.00	\$248.00	\$308.00	\$308.00	\$222.00	\$198.00
- Cropping (green feed)	\$0.00	\$3.00	\$0.00	\$0.00	\$13.00	\$12.00
- Grains, Pellets & Concentrates	\$10.00	\$192.00	\$300.00	\$275.00	\$182.00	\$181.00
- Forages (incl. hay, silages, byproducts)	\$335.00	\$160.00	\$180.00	\$240.00	\$282.00	\$301.00
Fertiliser (Total)	\$154.00	\$101.00	\$88.00	\$88.00	\$138.00	\$146.00
- Nitrogen	\$68.00	\$48.00	\$27.00	\$27.00	\$61.00	\$68.00
- Phosphate & All Other Fertiliser	\$86.00	\$53.00	\$61.00	\$61.00	\$77.00	\$78.00
Freight	\$9.00	\$9.00	\$7.00	\$7.00	\$14.00	\$13.00
Irrigation	\$0.00	\$0.00	\$0.00	\$0.00	\$15.00	\$21.00
Other Expenses	\$4.00	\$5.00	\$6.00	\$6.00	\$8.00	\$8.00
Pasture Maintenance & Renovation	\$16.00	\$20.00	\$13.00	\$13.00	\$31.00	\$29.00
Repairs & Maintenance	\$86.00	\$73.00	\$64.00	\$71.00	\$72.00	\$65.00
Standing charges	\$56.00	\$64.00	\$41.00	\$41.00	\$76.00	\$72.00
Vehicle Expenses (including fuel & oil)	\$44.00	\$52.00	\$41.00	\$41.00	\$76.00	\$74.00
Management & Staff Expenses	\$321.00	\$318.00	\$322.00	\$322.00	\$421.00	\$361.00
- Wages, Salaries & Employment Exp.	\$173.00	\$171.00	\$180.00	\$180.00	\$290.00	\$233.00
- Imputed Labour & Management	\$148.00	\$146.00	\$142.00	\$142.00	\$131.00	\$128.00
Depreciation	\$89.00	\$117.00	\$130.00	\$129.00	\$171.00	\$142.00
Gross Expenses	\$1,554.00	\$1,608.00	\$1,711.00	\$1,758.00	\$1,985.00	\$1,870.00
Gross Exp excl. Imputed Labour/Mgmt & Dep'n	\$1,317.00	\$1,345.00	\$1,439.00	\$1,487.00	\$1,684.00	\$1,600.00
Core per Cow Cost	\$562.00	\$640.00	\$652.00	\$661.00	\$667.00	\$612.00
OPERATING PROFIT (LOSS)	\$1,182.00	\$2,427.00	\$831.00	\$474.00	\$55.00	\$408.00

Operating Profit Per MilkSolids						
	2011/12 Butterworth	2013/14 Butterworth	2014/15 Butterworth DBOY	2015/16 Butterworth Draft	2014/15 Waikato Average	2014/15 Waikato Top 10%
REVENUE						
Manufacturing Milk Sales	\$6.40	\$8.37	\$4.36	\$3.90	\$4.40	\$4.40
Quota/Contract/Dividends for Milk	\$0.34	\$0.19	\$0.12	\$0.12	\$0.20	\$0.20
Livestock Revenue	\$0.31	\$0.42	\$0.66	\$0.46	\$0.50	\$0.48
Other Revenue	\$0.02	\$0.04	\$0.05	\$0.05	\$0.08	\$0.05
Gross Revenue	\$7.08	\$9.02	\$5.19	\$4.53	\$5.18	\$5.13
EXPENSES						
Administration	\$0.04	\$0.04	\$0.04	\$0.04	\$0.10	\$0.07
Animal Health	\$0.27	\$0.23	\$0.18	\$0.18	\$0.26	\$0.22
Breeding & Herd Testing	\$0.10	\$0.12	\$0.11	\$0.11	\$0.15	\$0.13
Dairy Shed Expenses	\$0.07	\$0.07	\$0.04	\$0.05	\$0.06	\$0.05
Electricity	\$0.10	\$0.09	\$0.06	\$0.06	\$0.10	\$0.09
Feeds / Supplements (Total)	\$1.43	\$1.35	\$1.61	\$1.67	\$1.78	\$1.56
- Grazing / Support Area	\$0.54	\$0.56	\$0.63	\$0.63	\$0.56	\$0.45
- Cropping (green feed)	\$0.00	\$0.01	\$0.00	\$0.00	\$0.03	\$0.03
- Grains, Pellets & Concentrates	\$0.03	\$0.43	\$0.61	\$0.56	\$0.46	\$0.41
- Forages (incl. hay, silages, byproducts)	\$0.87	\$0.36	\$0.37	\$0.49	\$0.72	\$0.68
Fertiliser (Total)	\$0.40	\$0.22	\$0.18	\$0.18	\$0.35	\$0.33
- Nitrogen	\$0.18	\$0.11	\$0.05	\$0.05	\$0.16	\$0.15
- Phosphate & All Other Fertiliser	\$0.22	\$0.12	\$0.13	\$0.12	\$0.20	\$0.18
Freight	\$0.02	\$0.02	\$0.01	\$0.01	\$0.04	\$0.03
Irrigation	\$0.00	\$0.00	\$0.00	\$0.00	\$0.04	\$0.05
Other Expenses	\$0.01	\$0.01	\$0.01	\$0.01	\$0.02	\$0.02
Pasture Maintenance & Renovation	\$0.04	\$0.04	\$0.03	\$0.03	\$0.08	\$0.06
Repairs & Maintenance	\$0.22	\$0.16	\$0.13	\$0.15	\$0.18	\$0.15
Standing charges	\$0.15	\$0.14	\$0.08	\$0.08	\$0.19	\$0.16
Vehicle Expenses (including fuel & oil)	\$0.11	\$0.12	\$0.08	\$0.08	\$0.19	\$0.17
Management & Staff Expenses	\$0.83	\$0.71	\$0.66	\$0.65	\$1.07	\$0.81
- Wages, Salaries & Employment Exp.	\$0.45	\$0.38	\$0.37	\$0.37	\$0.74	\$0.52
- Imputed Labour & Management	\$0.38	\$0.33	\$0.29	\$0.29	\$0.33	\$0.29
Depreciation	\$0.23	\$0.26	\$0.27	\$0.26	\$0.43	\$0.32
Gross Expenses	\$4.02	\$3.59	\$3.50	\$3.57	\$5.04	\$4.21
Gross Exp excl. Imputed Labour/Mgmt & Dep'n	\$3.40	\$3.01	\$2.94	\$3.02	\$4.28	\$3.60
Core Cost Structure per kg Milksolid	\$2.95	\$2.70	\$2.46	\$2.47	\$3.67	\$2.93
OPERATING PROFIT (LOSS)	\$3.06	\$5.43	\$1.70	\$0.96	\$0.14	\$0.92

Overseer Reports

Farm Summary

Farm name: Butterworth 2013-14 (DBOY) (2013 - 14)

Farm Summary



	Units	Current Farm	Average NZ Farm
Nutrient loss indices (whole farm)			
Loss to water	kg N/ha/yr	26	24-42
	kg P/ha/yr	1.3	
Includes loss from effluent pond of:	kg N/ha/yr	0	
	kg P/ha/yr	0	
Production efficiency indices			
Farm N surplus (pastoral)	kg N/ha/yr	152	123-191
N conversion efficiency (pastoral)	%	64	27-35
Effluent - area of pastoral farm			
Currently receiving effluent	ha	60	
Required to achieve application rate of 150 kg N/ha/yr	ha	30	
Greenhouse gas emissions (CO₂ equivalents (CO₂e))			
Total greenhouse gas emissions	CO ₂ e/ha/yr	27351	

Farm name: Butterworth 2014-15_2 (2014 - 15)

Farm Summary



	Units	Current Farm	Average NZ Farm
Nutrient loss indices (whole farm)			
Loss to water	kg N/ha/yr	25	24-42
	kg P/ha/yr	1.4	
Includes loss from effluent pond of:	kg N/ha/yr	0	
	kg P/ha/yr	0	
Production efficiency indices			
Farm N surplus (pastoral)	kg N/ha/yr	171	123-191
N conversion efficiency (pastoral)	%	63	27-35
Effluent - area of pastoral farm			
Currently receiving effluent	ha	34	
Required to achieve application rate of 150 kg N/ha/yr	ha	30	
Greenhouse gas emissions (CO₂ equivalents (CO₂e))			
Total greenhouse gas emissions	CO ₂ e/ha/yr	25093	

Farm Nutrient Budget

Farm name: Butterworth 2013-14 (DBOY) (2013 - 14)

Farm Nutrient Budget - Whole farm



	N	P	K	S	Ca	Mg	Na
	(kg/ha/yr)						
Nutrients added							
Fertiliser, lime & other	109	0	1	0	446	5	0
Rain/clover N fixation	207	0	1	1	1	1	2
Irrigation	0	0	0	0	0	0	0
Supplements imported	107	21	68	16	9	11	7
Nutrients removed							
As products	124	21	30	7	28	3	8
Exported effluent	148	28	203	15	29	15	3
As supplements	0	0	0	0	0	0	0
To atmospheric	131	0	0	0	0	0	0
To water	26	1.3	58	11	86	27	59
Change in internal pools							
Plant material	0	0	0	0	0	0	0
Organic pool	-5	10	8	-10	1	1	1
Inorganic mineral	0	35	-9	0	143	-4	-20
Inorganic soil pool	0	-74	-219	0	169	-21	-42

Farm name: Butterworth 2014-15_2 (2014 - 15)

Farm Nutrient Budget - Whole farm



	N	P	K	S	Ca	Mg	Na
	(kg/ha/yr)						
Nutrients added							
Fertiliser, lime & other	106	0	0	11	170	2	0
Rain/clover N fixation	188	0	1	1	1	1	2
Irrigation	0	0	0	0	0	0	0
Supplements imported	171	34	107	25	13	18	11
Nutrients removed							
As products	140	24	34	8	30	3	10
Exported effluent	155	34	226	21	32	20	4
As supplements	0	0	0	0	0	0	0
To atmospheric	147	0	0	0	0	0	0
To water	25	1.4	41	11	84	26	54
Change in internal pools							
Plant material	0	0	0	0	0	0	0
Organic pool	0	11	9	4	1	2	1
Inorganic mineral	0	35	-9	0	22	-6	-20
Inorganic soil pool	0	-70	-193	0	15	-20	-36

Block Nitrogen

Farm name: Butterworth 2013-14 (DBOY) (2013 - 14)

Block Nitrogen



Block name	Total N lost (kg N/yr)	N lost to water (kg N/ha/yr)	N in drainage * (ppm)	N surplus (kg N/ha/yr)	Added N ** (kg N/ha/yr)
Effluent	1676	28	6.3	397	138
Farm	649	22	5.0	413	193
Lower Terrace	198	12	2.7	247	166
Trees and Scrub 1	15	3	N/A		
Other farm sources	375				
Whole farm	2913	26			
Less N removed in wetlands	0				
Farm output	2913	26			

Farm name: Butterworth 2014-15_2 (2014 - 15)

Block Nitrogen



Block name	Total N lost (kg N/yr)	N lost to water (kg N/ha/yr)	N in drainage * (ppm)	N surplus (kg N/ha/yr)	Added N ** (kg N/ha/yr)
Effluent	741	22	4.5	44	141
Farm	1418	26	5.4	21	163
Lower Terrace	218	13	2.8	20	164
Trees and Scrub 1	15	3	N/A		
Other farm sources	381				
Whole farm	2773	25			
Less N removed in wetlands	0				
Farm output	2773	25			

* Estimated N concentration in drainage water at the bottom of the root zone. Maximum recommended level for drinking water is 11.3 ppm (note that this is not an environmental water quality standard).

** Sum of fertiliser and external factory effluent inputs.

N/A: N in drainage not calculated for easy and steep pastoral blocks, or for tree and shrubs, riparian, wetland or house blocks.

Block Phosphorous

Farm name: Butterworth 2013-14 (DBOY) (2013 - 14)

Block Phosphorous



Block name	Total P (kg P/yr)	P lost (kg P/ha/yr)	P loss categories		
			Soil	Fertiliser	Effluent
Effluent	21	0.4	Low	n/a	Low
Farm	8	0.3	Low	n/a	n/a
Lower Terrace	19	1.1	Medium	n/a	n/a
Trees and Scrub 1	0	0.1	n/a	n/a	n/a
Other farm sources	103				
Whole farm	151	1.3			

Farm name: Butterworth 2014-15_2 (2014 - 15)

Block Phosphorous



Block name	Total P lost (kg P/yr)	P lost (kg P/ha/yr)	P loss categories		
			Soil	Fertiliser	Effluent
Effluent	14	0.4	Low	n/a	Medium
Farm	15	0.3	Low	n/a	n/a
Lower Terrace	19	1.1	Medium	n/a	n/a
Trees and Scrub 1	0	0.1	n/a	n/a	n/a
Other farm sources	108				
Whole farm	156	1.4			

Effluent

Farm name: Butterworth 2013-14 (2013 - 14)

Effluent Report

OVERSEER®

	Units	Current farm
Current effluent area		
Area of effluent blocks	ha	60
% of pastoral farm area	%	57
Area of farm to apply effluent to achieve rates of:		
150 kg N/ha/yr	ha	29
Maintenance K	ha	17
100 kg K/ha/yr	ha	45
Source of N applied to effluent blocks		
Average of N applied to effluent blocks	kg N/ha/yr	73
Effluent from farm dairy	%	100
Effluent from wintering pad	%	0
Effluent from feed pad	%	0
Average fertiliser N	kg N/ha/yr	64
Average other elements	kg N/ha/yr	0

Farm name: Butterworth 2014-15_2 (2014 - 15)

Effluent Report

OVERSEER®

	Units	Current farm
Current effluent area		
Area of effluent blocks	ha	34
% of pastoral farm area	%	32
Area of farm to apply effluent to achieve rates of:		
150 kg N/ha/yr	ha	30
Maintenance K	ha	19
100 kg K/ha/yr	ha	44
Source of N applied to effluent blocks		
Average of N applied to effluent blocks	kg N/ha/yr	137
Effluent from farm dairy	%	100
Effluent from wintering pad	%	0
Effluent from feed pad	%	0
Average fertiliser N	kg N/ha/yr	8
Average other elements	kg N/ha/yr	0