S·M·A·S·H Smaller Milk and Supply Herds

Field Day

Spotlight on the System

We are visiting sharemilkers **Mark** and **Lisa Turnwald** who, alongside **Christopher** and **Jonah Vila** (DIA Dairy Manager of the Year 2021), milk 350 - 360 cows in a System 3/4, with a composting barn, in-shed feeding, and ACR, on a 103 ha milking platform. At this event we are finding out about their operation, the unique farm ownership structure they have set up, and also:

Making the most of your system

Mark's system is very profitable, with an EBIT of $9148/ha (the Waikato average is $4,894/ha). In this session we are looking into which systems are the most profitable and why. **Sarah Brown**, DairyNZ, has analysed the top performing farmers in DairyBase over a number of years and identified the features of those who do well every season, regardless of the payout or the weather. She is sharing her findings, and alongside **Frank Portegys**, DairyNZ, discussing whether system choice affects profitability, and the key areas high achievers focus on for maximum advantage.

Tailored approach to managing SCC

SCC and mastitis issues are a real headache for many farmers and the drying off process needs to take antibiotic resistance into account. **Steve Cranefield**, Agrihealth, is talking about: identifying the key factors that increase the mastitis risk on your farm, the milking machine and its influence on mastitis, practical ways to reduce mastitis, and gaining the best results at drying off.

Why a composting barn?

We are taking a look at Mark's composting barn, finding out why he built it, and the practicalities of operating it to make the most of it.

This farm

Mark and Lisa Turnwald's farm has been in the family for 150 years. The farm is owned by a family trust. Mark and Lisa, along with Christopher and Jonah Vila, have set up a sharemilking company which 50/50 sharemilks the farm. Chris has been on farm for the past 12 years and now has a 30% stake in the sharemilking business.

Mark is committed to long-term sustainability and profitability, however, the combination of challenging soils (Hamilton clay and consolidated peat) and wet winters can cause significant pasture damage and limits productivity. Mark built two SmartShelters in 2024 as a sustainable solution to protect his land and animal welfare, and take public perception into account.

- 104 ha (effective) milking platform with 42 ha support block. Fully self-contained.
- Peak milking 357 cows
- 28 aside herringbone shed with in-shed feeding system.
- Two 180 cow SmartShelters.

Herd

- PW 280/82.
- BW 220/67.
- 99% ancestry.
- The cows weigh 490 kg on average. They are aiming to have an F12 herd. Mark believes the cows have become more even since the SmartShelters have been introduced.
- 3 digit herd code, 50-60 years of breeding history. They have had bulls in the LIC bull team in the past.
- For the past 25 years they have bred on BW and culled on PW.

Mating

- Planned start of calving is 23rd July, this date was moved forward by five days after the barns were built.
- 6 weeks replacement AB to nominated LIC genetics.
- 2 sexed semen straws per day.
- 3 weeks Hereford bulls. Ten bulls on a 5 on, 5 off rotation.
- No mating technology used.
- 6 week in-calf rate 70%, and empty rate of 14% (2024/25).
- Carry over best PW cows for second chance at getting in calf.
- Calves are reared on farm by the farm team and go to the support block at weaning, calves are fed on milk powder. 76 replacements reared with 30 lower BW calves sold in 2024/25.

Feed

- 550 t DM brought in feed, 1.5t DM/cow, 5.3tDM/ha.
- Imported feed consists of: whey, canola, DDG, PKE, tapioca, Megalac, maize and grass silage.
- 4 ha of maize also grown on platform.
- Pasture and crop eaten 14.3 t/ha.
- 129 kg N applied/ha, purchased N surplus of 117 kg N/ha.

Financial Summary

	Year	24/25	New Zealand - 23/24	23/24 Waikato Median
Headlands Profit Summary				
Income				
Milk Income (net)	NZD / kg MS	10.17	7.79	7.79
Milk Dividends/Quota	NZD / kg MS	0.40	0.53	0.52
Livestock Trading Profit	NZD / kg MS	1.77	0.46	0.54
Other Farm Income	NZD / kg MS	0.00	0.06	0.07
Gross Farm Income	NZD / kg MS	**12.33**	**8.76**	**8.70**
Variable Costs				
Herd Costs	NZD / kg MS	0.73	0.59	0.65
Shed Costs	NZD / kg MS	0.18	0.23	0.23
Homegrown Feed	NZD / kg MS	1.18	1.15	1.11
Purchased Feed	NZD / kg MS	1.58	1.80	1.91
Feed Water & Fertiliser Inv. Change	NZD / kg MS	-0.04	-0.02	-0.04
Total Feed Costs	NZD / kg MS	**2.72**	**2.75**	**2.42**
Total Variable Costs	NZD / kg MS	**3.64**	**3.55**	**3.54**
GROSS MARGIN	NZD / kg MS	**8.70**	**5.34**	**5.51**
Overhead Costs				
Employed Labour Cost	NZD / kg MS	1.89	1.11	1.06
Farm Insurance	NZD / kg MS	0.10	0.12	0.14
Repairs & Maintenance	NZD / kg MS	0.60	0.42	0.48
Motor Vehicles	NZD / kg MS	0.11	0.14	0.14
Other Overhead Costs	NZD / kg MS	0.42	0.27	0.29
Imputed Labour Cost	NZD / kg MS		0.20	0.39
Total depreciation & Amortisation	NZD / kg MS	0.20	0.38	0.50
Total Overhead Costs	NZD / kg MS	**3.32**	**3.06**	**3.44**
TOTAL OPERATING COSTS (Variable & Overhead)	NZD / kg MS	**6.96**	**6.74**	**7.24**
EARNINGS BEFORE INTEREST & TAX (EBIT)	NZD / kg MS	**5.37**	**2.35**	**2.27**
COP - EXCLUDING INVENTORY CHANGE	NZD / kg MS	**7.00**	**6.72**	**6.97**
Livestock Inventory Change less Purchases	NZD / kg MS	-1.20	0.13	0.07
Feed, & Fertiliser Inventory Change	NZD / kg MS	-0.04	-0.02	-0.04
COP - INCLUDING INVENTORY CHANGE	NZD / kg MS	**5.76**	**6.81**	**7.37**
Profitability				
Milk sales	NZD / kg MS	**10.23**	**7.84**	**7.85**
Total Assets Managed	NZD / ha	**103,069**	**55,497**	**74,296**
Total farm operating expense	NZD / ha	**11,844**	**7,464**	**7,646**
EBIT	NZD / ha	**9,148**	**2,641**	**2,600**
Return on total assets	%	**8.9**	**4.3**	**3.4**

Provided by Chris Pike, Headlands Consultancy using RedSky

Note, benchmark figures are for 2023-24 season

Average Waikato Operating Profits for Waikato Owner Operators in DairyBase for the 2024-25 season is $4,894/ha and $2,760/ha for 2023-24

Your season in review

Your milk helps feed people all around the world - thanks for all your hard work to make this happen.

YOUR CO-OPERATIVE DIFFERENCE ACHIEVEMENT:

Te Puku (L2)

AND THE QUALITY OF YOUR MILK WAS KEY - YOU ACHIEVED:

225
Excellence Days

YOUR FARM'S MILESTONES FOR THE PAST YEAR WERE:

Grade Free

Lowest 25% for Emissions (Intensity, regionally)

Top 25% Production (per kg of Liveweight, regionally)

Homegrown feed

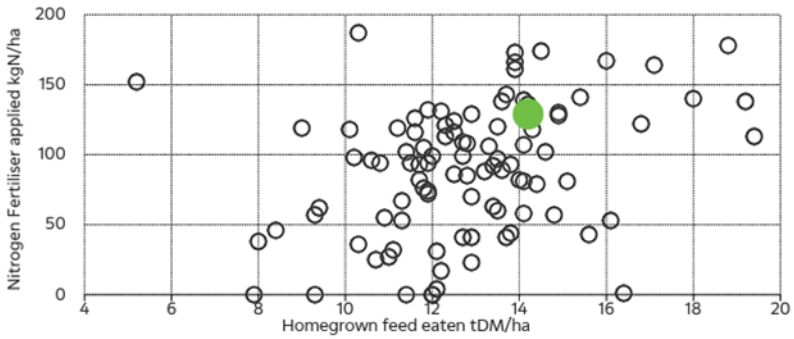
Improving homegrown feed can increase your productivity from the same imported feed and nitrogen inputs, or maintain your productivity from fewer imported feed and nitrogen inputs.

Your farm's homegrown feed eaten and fertiliser use compared to others.

This data shows an estimate of the amount of feed eaten and how much nitrogen fertiliser applied per effective dairy hectare.

● Your farm (actual)

○ Farms near you (10km radius)



What's your opportunity?

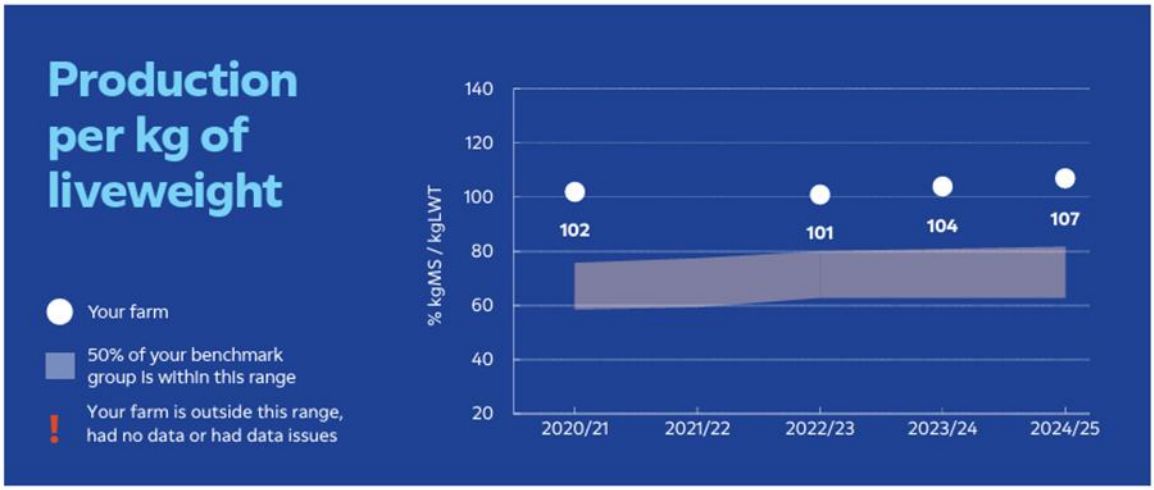
- Grow more feed?
- Improve quality and amount eaten?
- Same feed from less nitrogen?

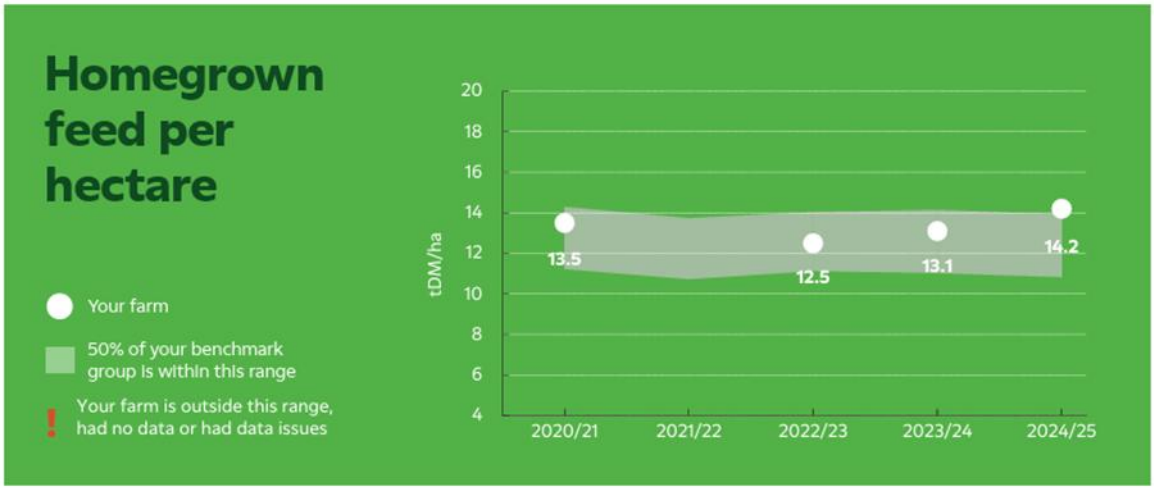
	Your farm	Farms near you		Waikato region	
		Average	Top 20%	Average	Top 20%
Homegrown feed eaten (tDM/ha)	**14.2**	13.0	16.6	12.4	15.8
Nitrogen fertiliser used to grow this homegrown feed (kgN/ha)	**129**	90	111	88	106
Imported feed eaten (incl winter grazing) (tDM/ha)	**4.0**	3.2	3.0	2.6	2.8

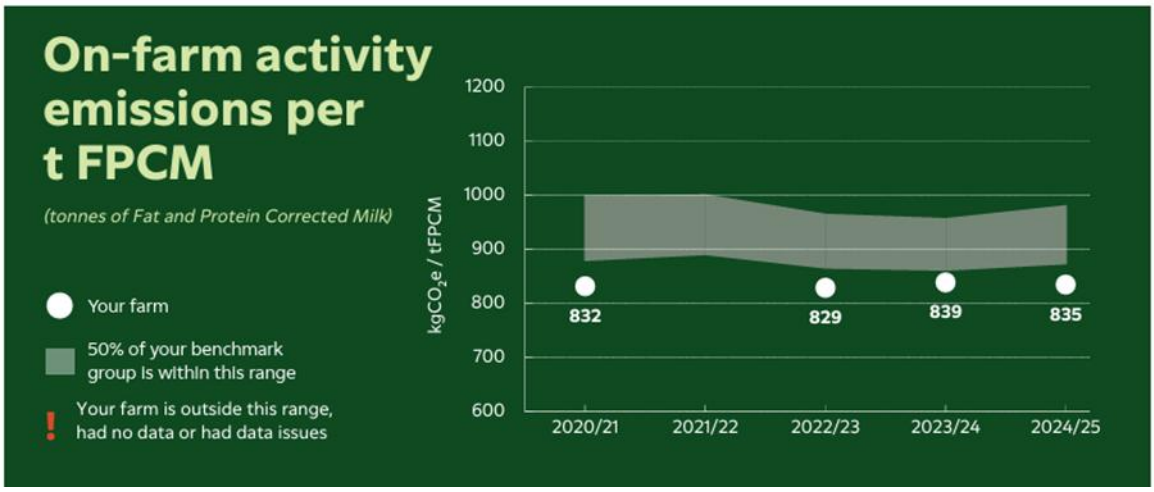
Top 20% represents the farms with the highest homegrown feed on your closest 100 farms and your region.

Increasing your homegrown feed eaten by

0.5 tDM/ha could result in ↑ 20 kgMS/cow


Production per kg of liveweight
Your farm
50% of your benchmark group is within this range
Your farm is outside this range, had no data or had data issues
% kgMS / kgLWT
140
120
100
80
60
40
20
102
101
104
107
2020/21
2021/22
2022/23
2023/24
2024/25


Homegrown feed per hectare
Your farm
50% of your benchmark group is within this range
Your farm is outside this range, had no data or had data issues
tDM/ha
20
18
16
14
12
10
8
6
4
13.5
12.5
13.1
14.2
2020/21
2021/22
2022/23
2023/24
2024/25


On-farm activity emissions per t FPCM
(tonnes of Fat and Protein Corrected Milk)
Your farm
50% of your benchmark group is within this range
Your farm is outside this range, had no data or had data issues
kgCO2e / tFPCM
1200
1100
1000
900
800
700
600
832
829
839
835
2020/21
2021/22
2022/23
2023/24
2024/25

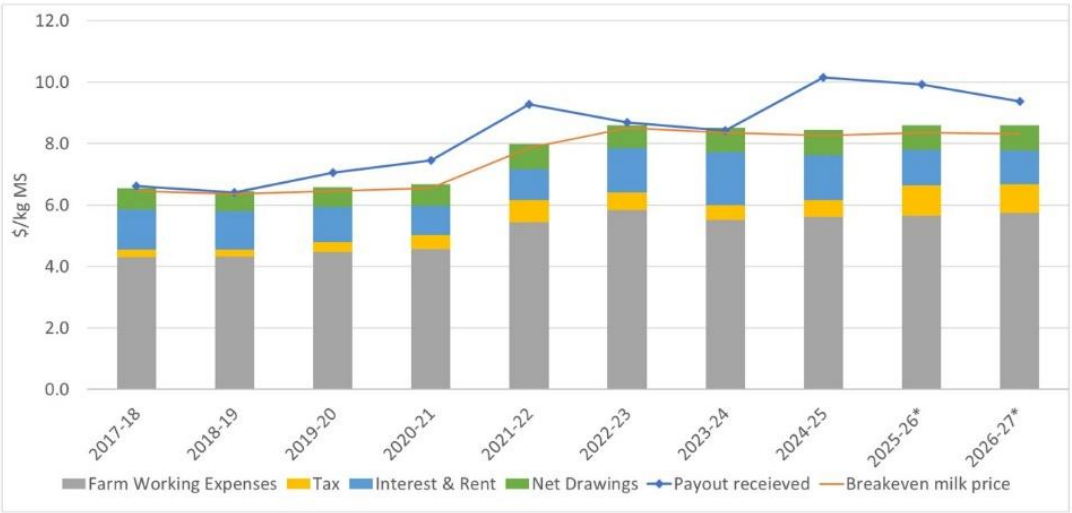
DairyNZ

Making the Most of Your System

Sarah Brown

9 March 2026

Breakeven milk price vs avg. payout received ($/kgMS)



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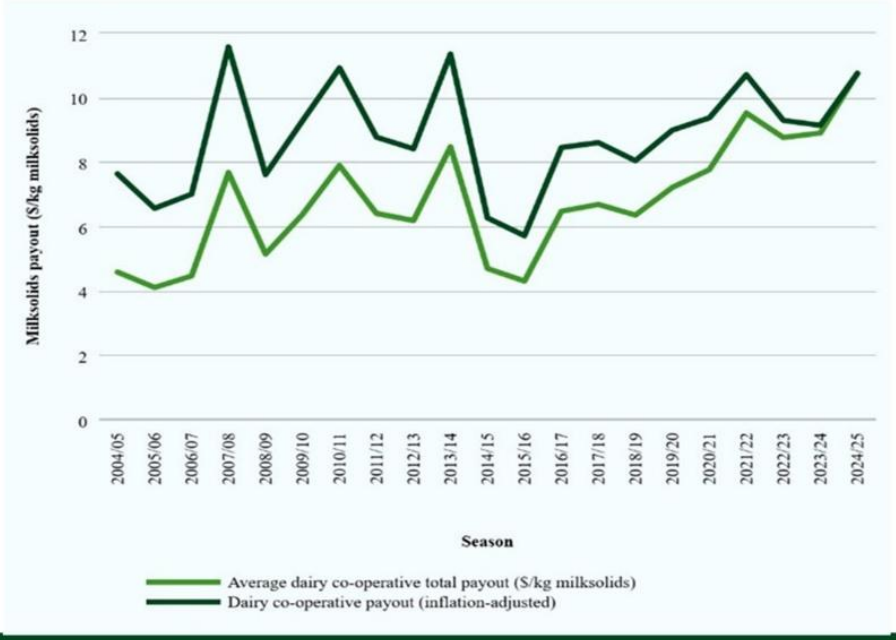
Milk Price



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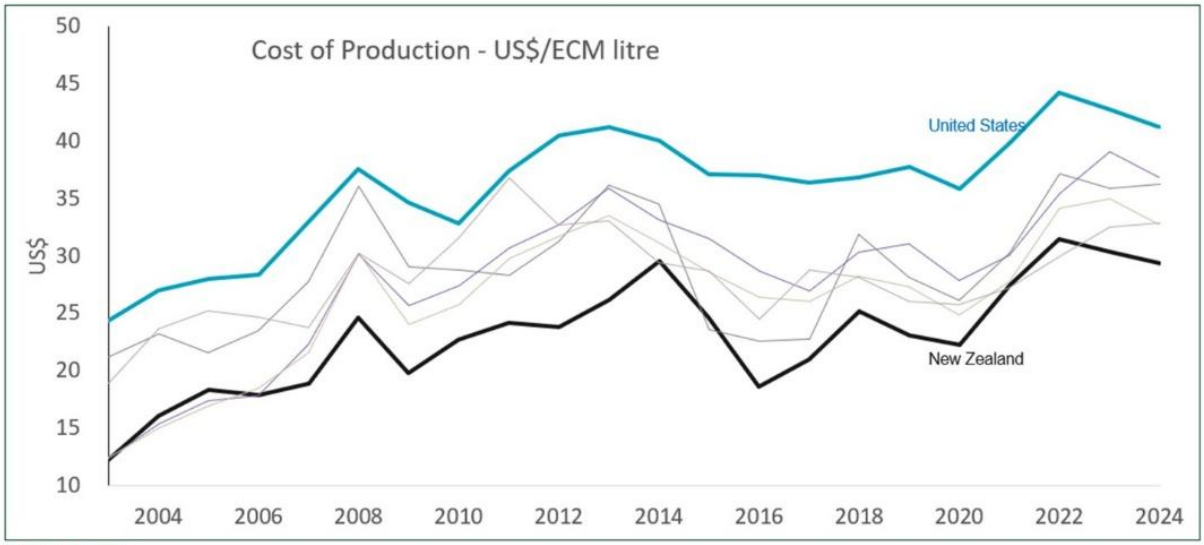
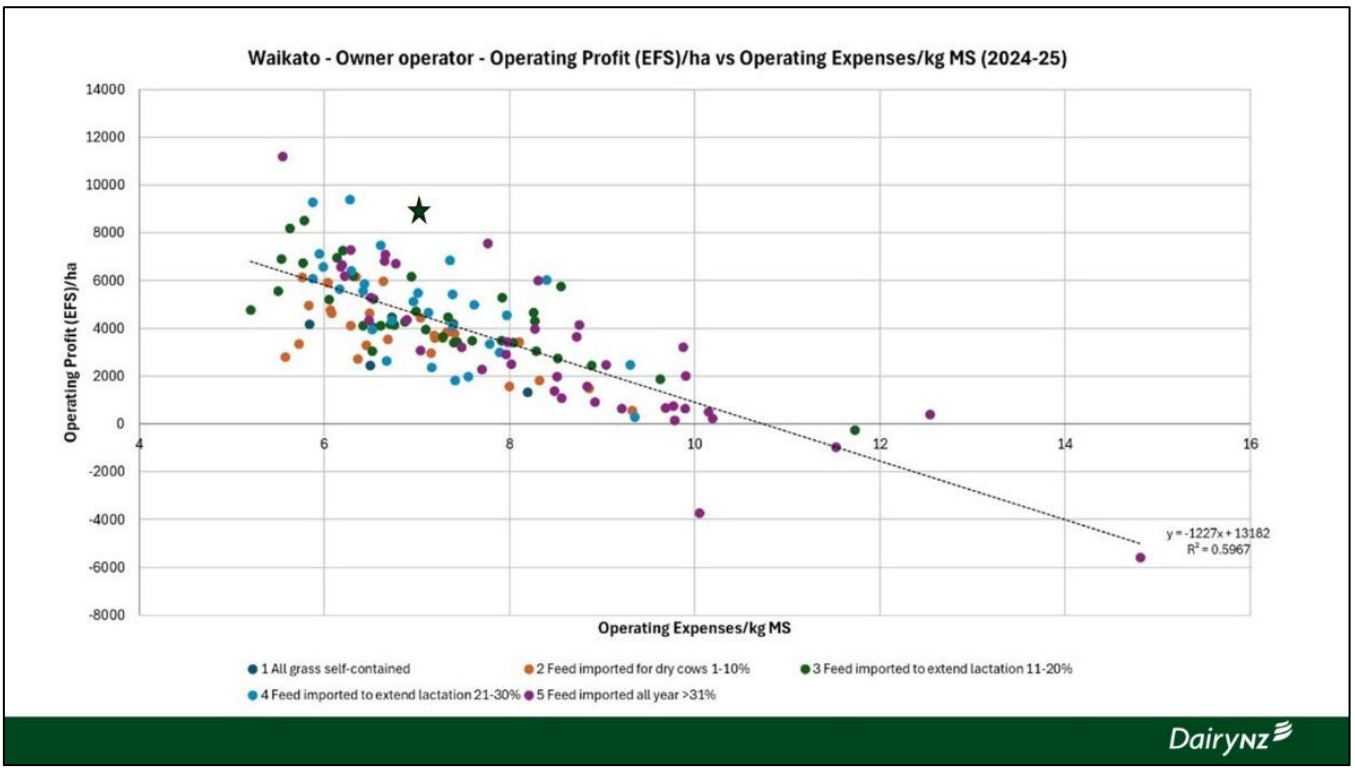
New Zealand dairy: The Lowest Cost Producer



Source: RedSky

DairyNZ

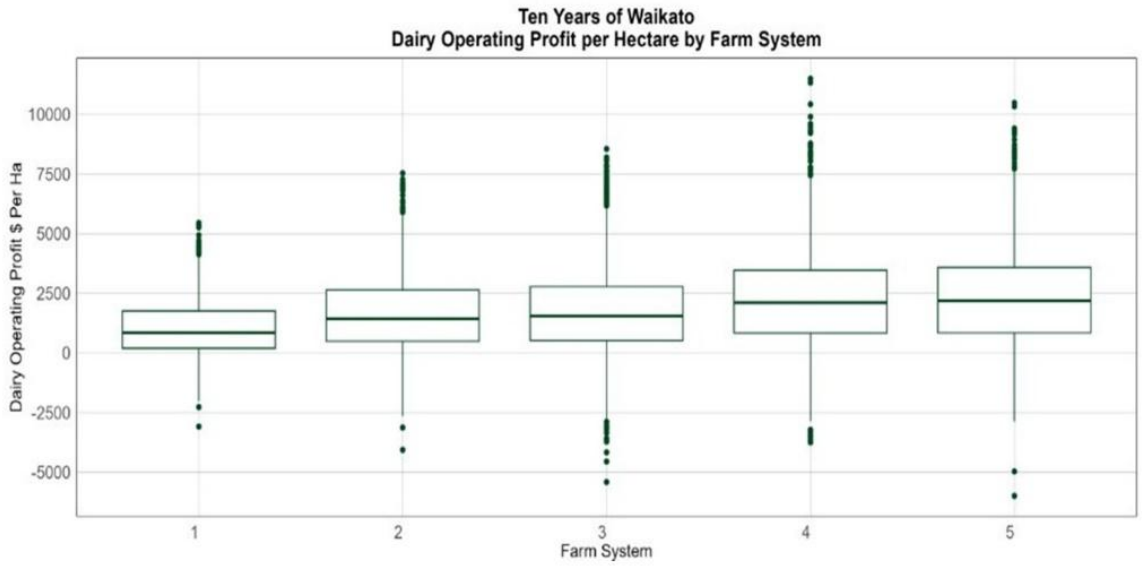


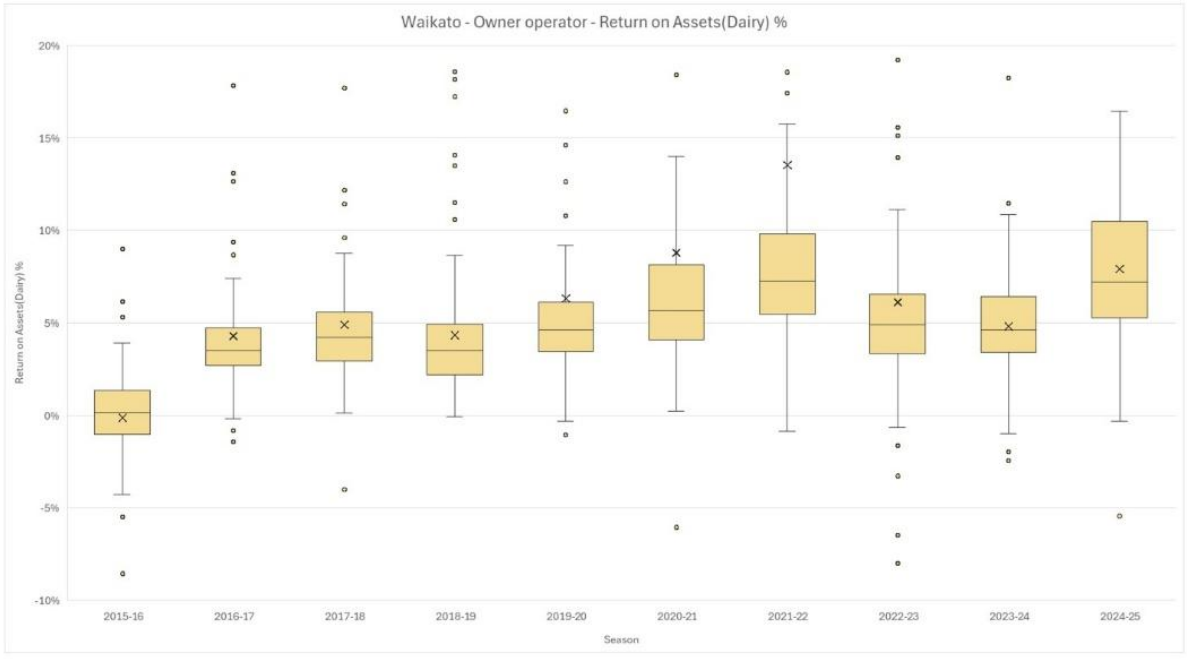
DairyNZ

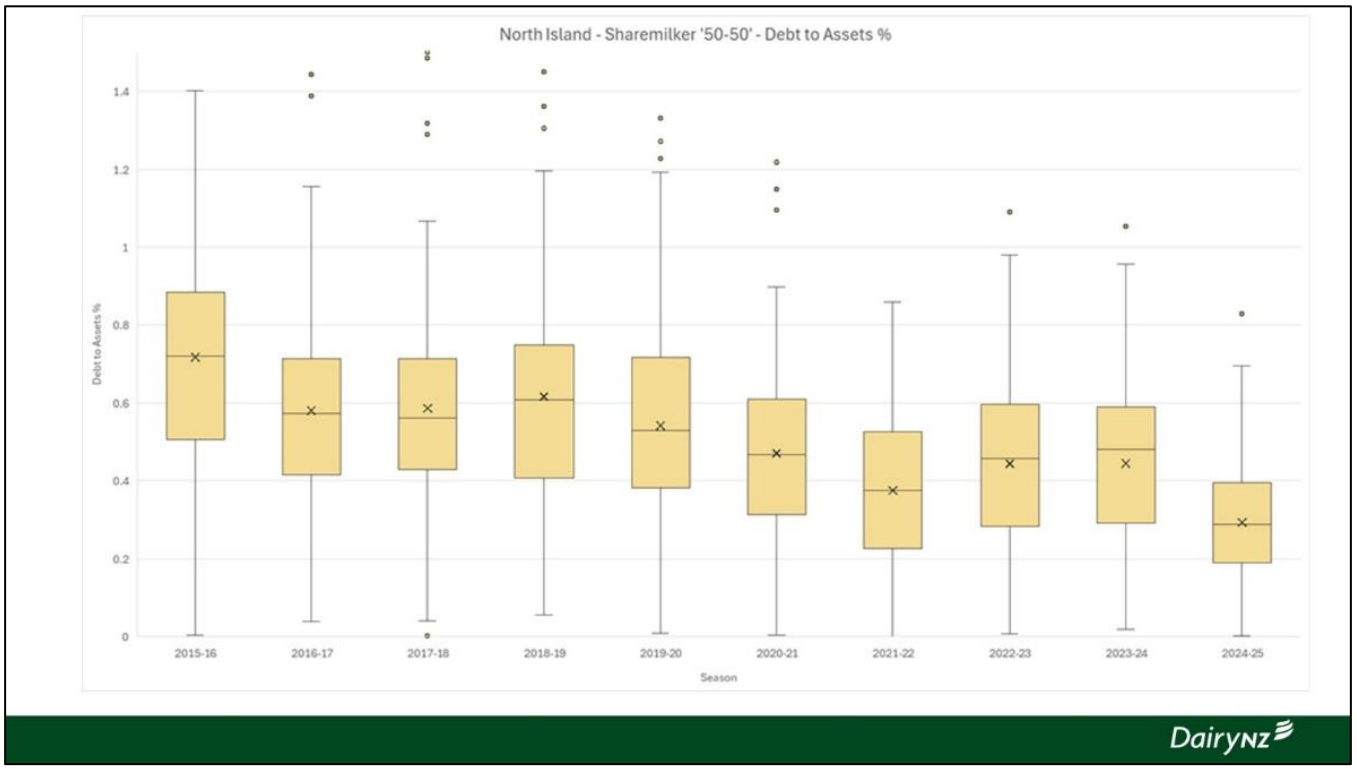
Comparison Table Turnwald Farm vs Waikato Average

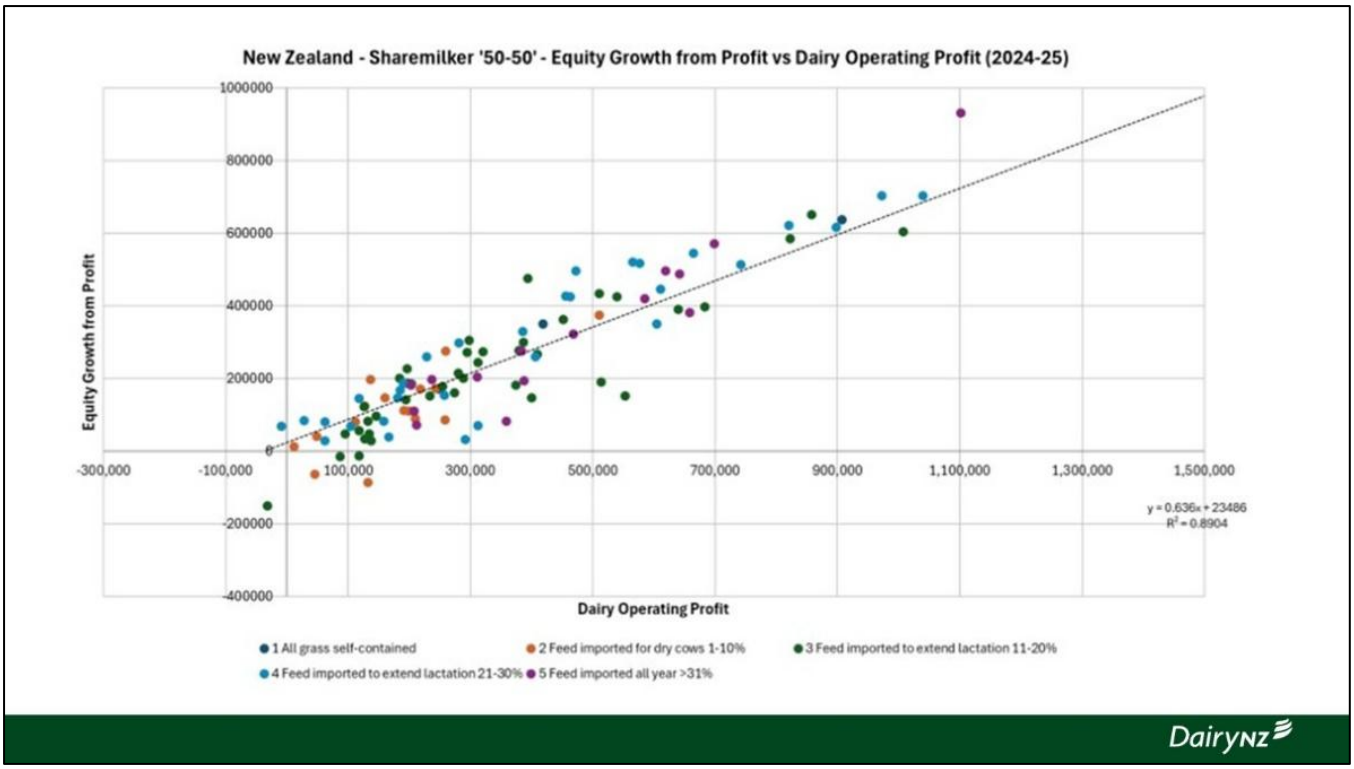
Metric	Turnwald Farm	Waikato Average
Stocking rate (cows/ha)	**3.46**	**2.98**
Production (kgMS/cow)	**492**	**427**
Production (kgMS/ha)	**1,702**	**1,344**
Gross Farm Revenue ($/kgMS)	**$12.33**	**$8.70**
Operating Expenses ($/kgMS)	**$6.96**	**$7.24**
EBIT ($/ha)	**$9,148**	**$2,600**
Return on Assets (%)	**8.9%**	**3.4%**

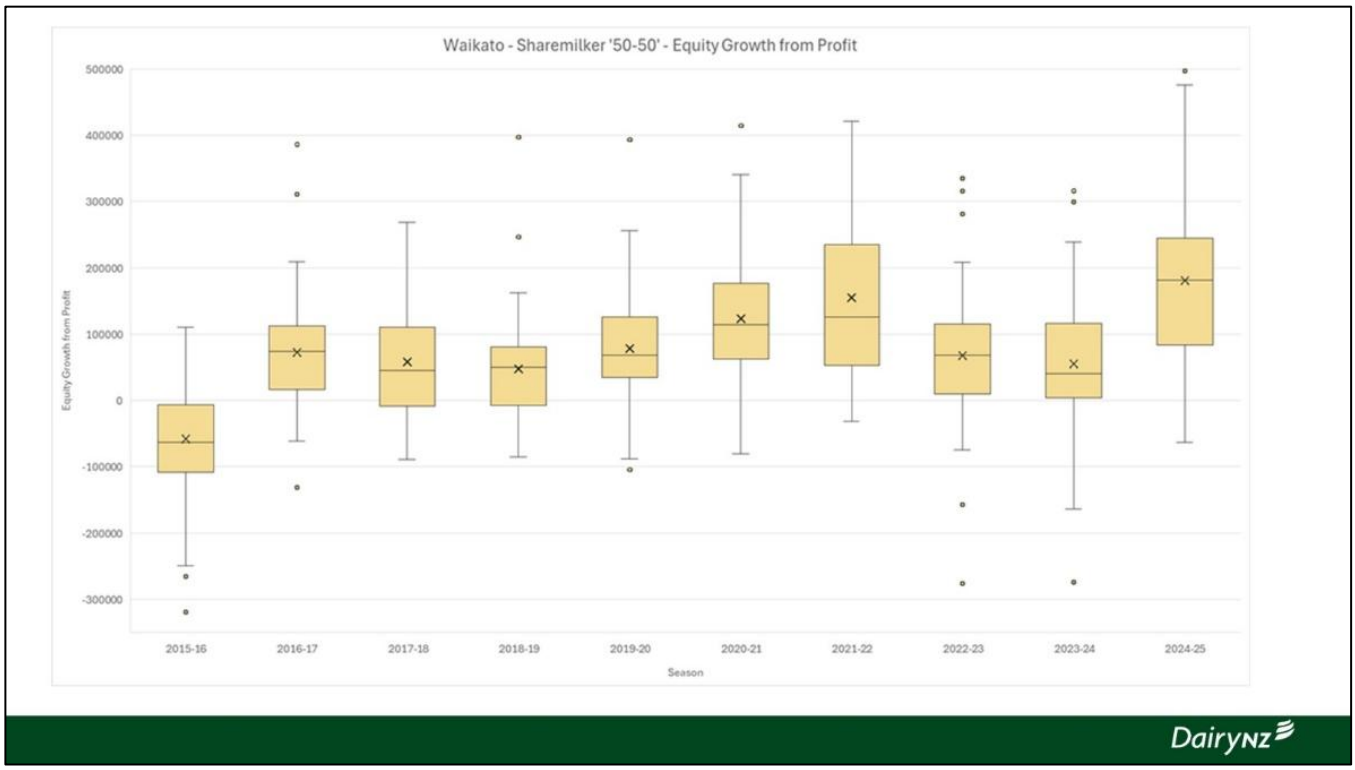
DairyNZ

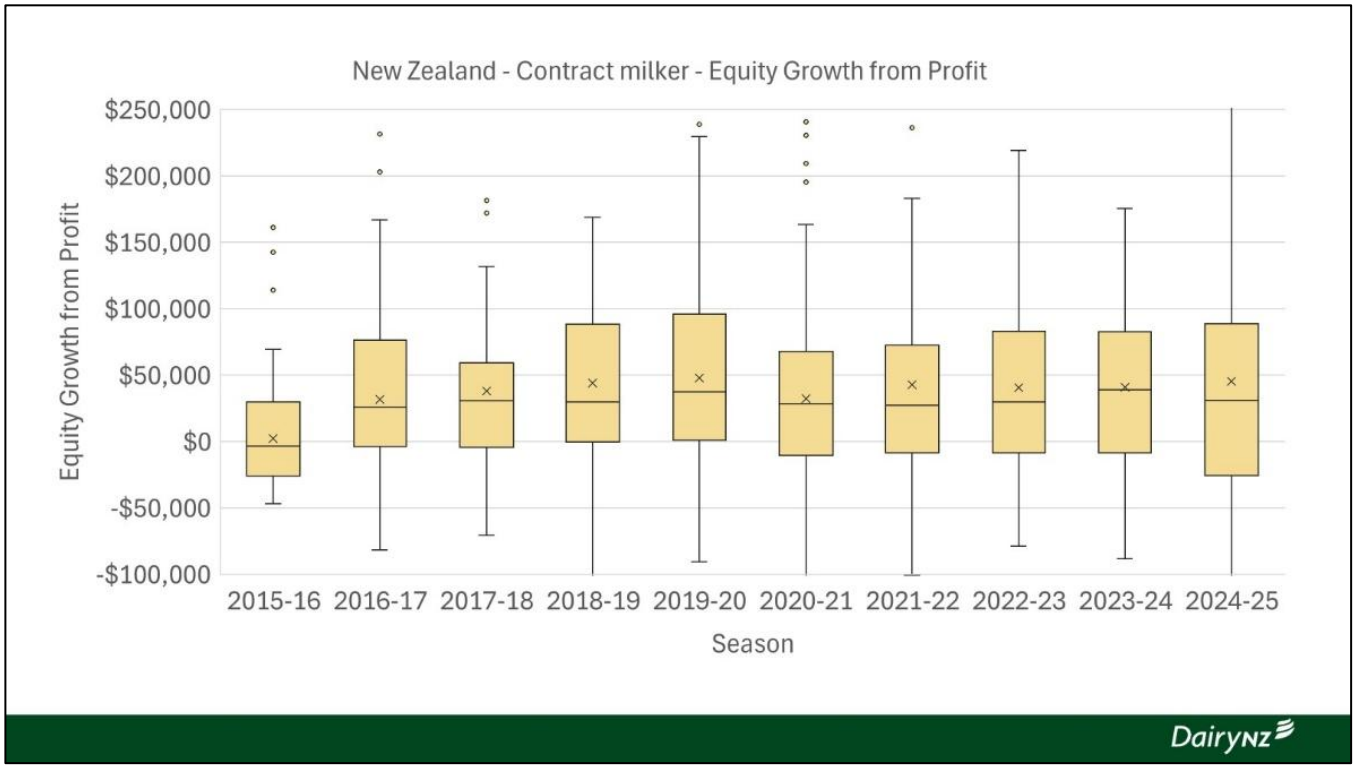

Ten Years of Waikato
Dairy Operating Profit per Hectare by Farm System
Dairy Operating Profit $ Per Ha
10000
7500
5000
2500
0
-2500
-5000
1
2
3
4
5
Farm System

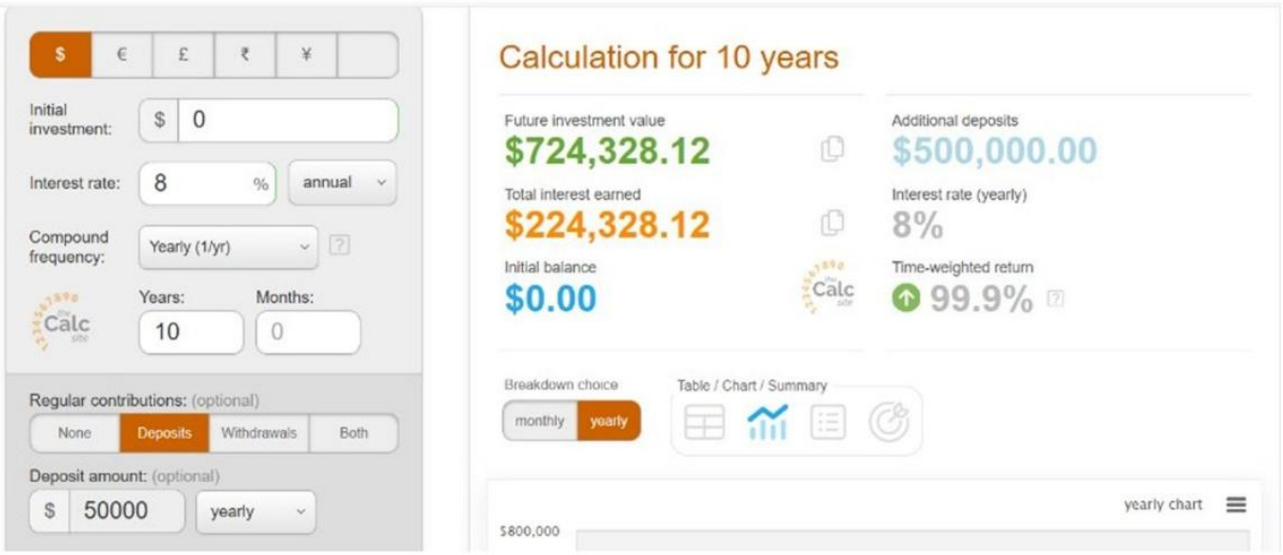

Waikato - Owner operator - Return on Assets(Dairy) %
Return on Assets(Dairy) %
20%
15%
10%
5%
0%
-5%
-10%
2015-16
2016-17
2017-18
2018-19
2019-20
2020-21
2021-22
2022-23
2023-24
2024-25
Season


North Island - Sharemilker '50-50' - Debt to Assets %
Debt to Assets %
1.4
1.2
1
0.8
0.6
0.4
0.2
0
2015-16
2016-17
2017-18
2018-19
2019-20
2020-21
2021-22
2022-23
2023-24
2024-25
Season
DairyNZ


New Zealand - Sharemilker '50-50' - Equity Growth from Profit vs Dairy Operating Profit (2024-25)
Equity Growth from Profit
1000000
800000
600000
400000
200000
0
-200000
-400000
-300,000
-100,000
100,000
300,000
500,000
700,000
900,000
1,100,000
1,300,000
1,500,000
Dairy Operating Profit
y = 0.636x + 23486
R² = 0.8904
1 All grass self-contained
2 Feed imported for dry cows 1-10%
3 Feed imported to extend lactation 11-20%
4 Feed imported to extend lactation 21-30%
5 Feed imported all year >31%
DairyNZ

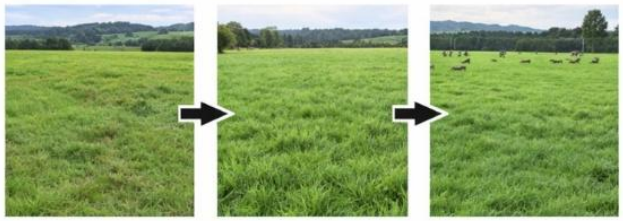

Waikato - Sharemilker '50-50' - Equity Growth from Profit
Equity Growth from Profit
500000
400000
300000
200000
100000
0
-100000
-200000
-300000
2015-16
2016-17
2017-18
2018-19
2019-20
2020-21
2021-22
2022-23
2023-24
2024-25
Season
DairyNZ


New Zealand - Contract milker - Equity Growth from Profit
Equity Growth from Profit
$250,000
$200,000
$150,000
$100,000
$50,000
$0
-$50,000
-$100,000
2015-16
2016-17
2017-18
2018-19
2019-20
2020-21
2021-22
2022-23
2023-24
2024-25
Season
DairyNZ



DairyNZ

Copy what works



Average system | Improved system | Top-performing system

Top farmers don't reinvent the system – they refine it

- Learn from what already works
- Copy high-performing systems
- Improve it to suit your farm

Henry Ford

Didn't invent the car – improved the system

McDonald's

Didn't invent fast food – *perfected the model*

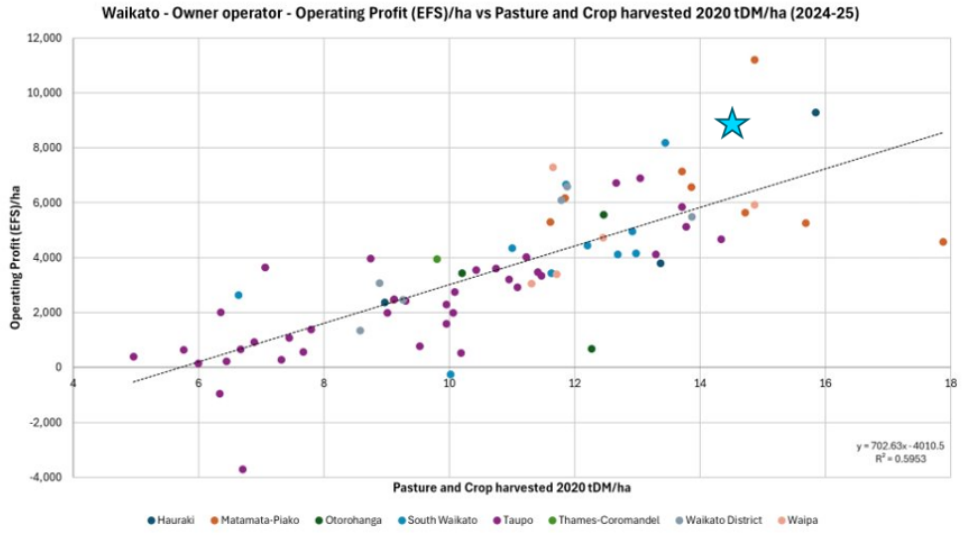
Compounding

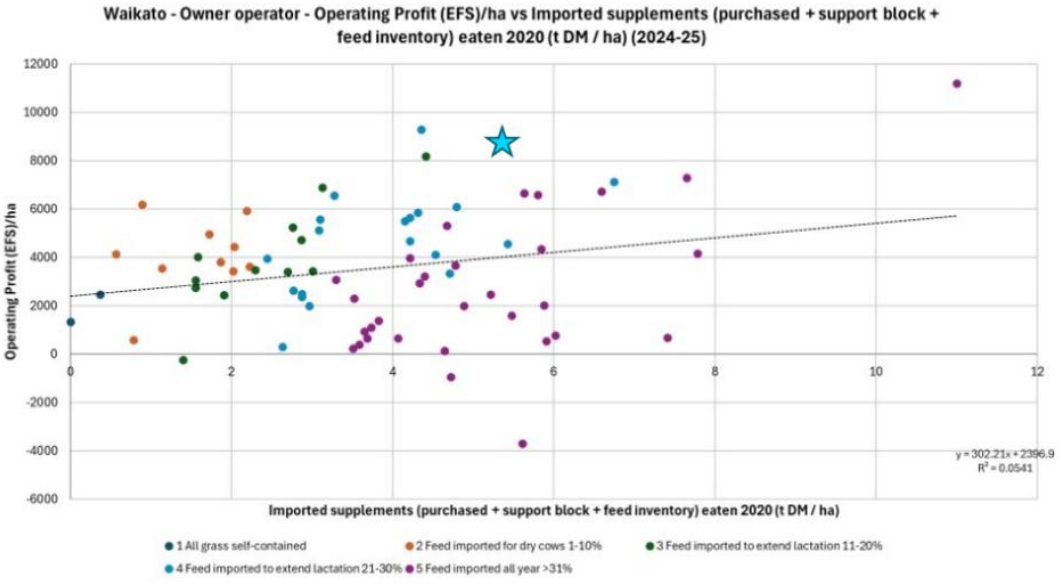
Top 25% connect daily decisions with long term wealth creation

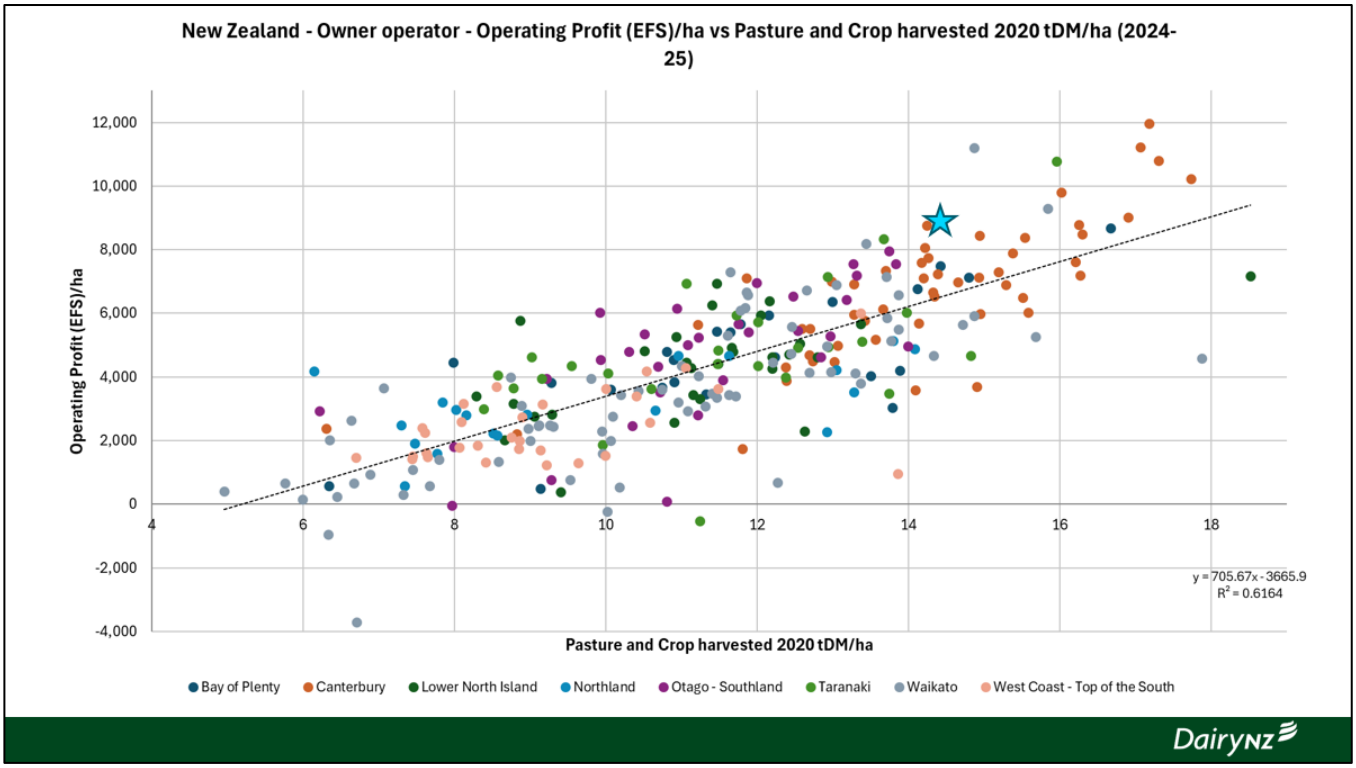
$20,000 lower capital cost
@ 10% for 40 years = $900,000

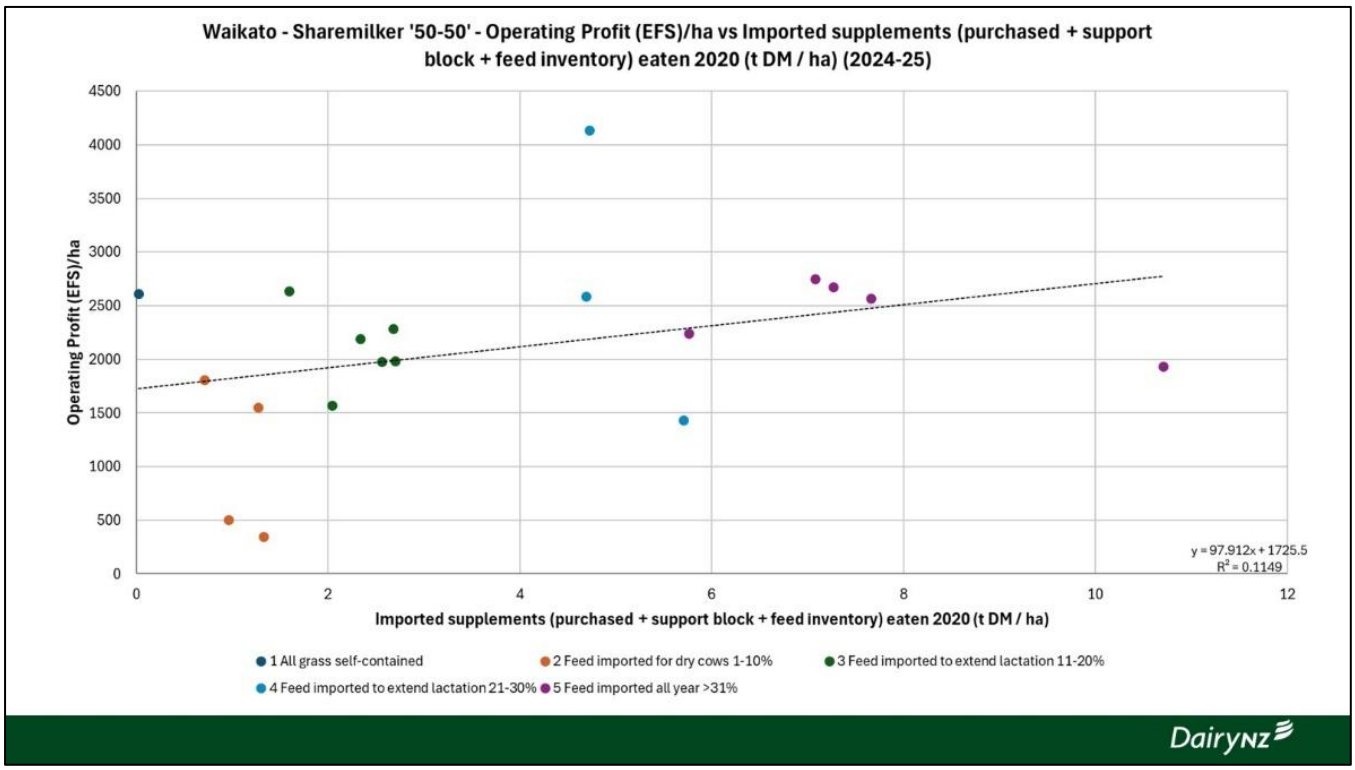
$10/day X 365 days = $1,825/yr
@ 10% for 40 years = $1.6mill

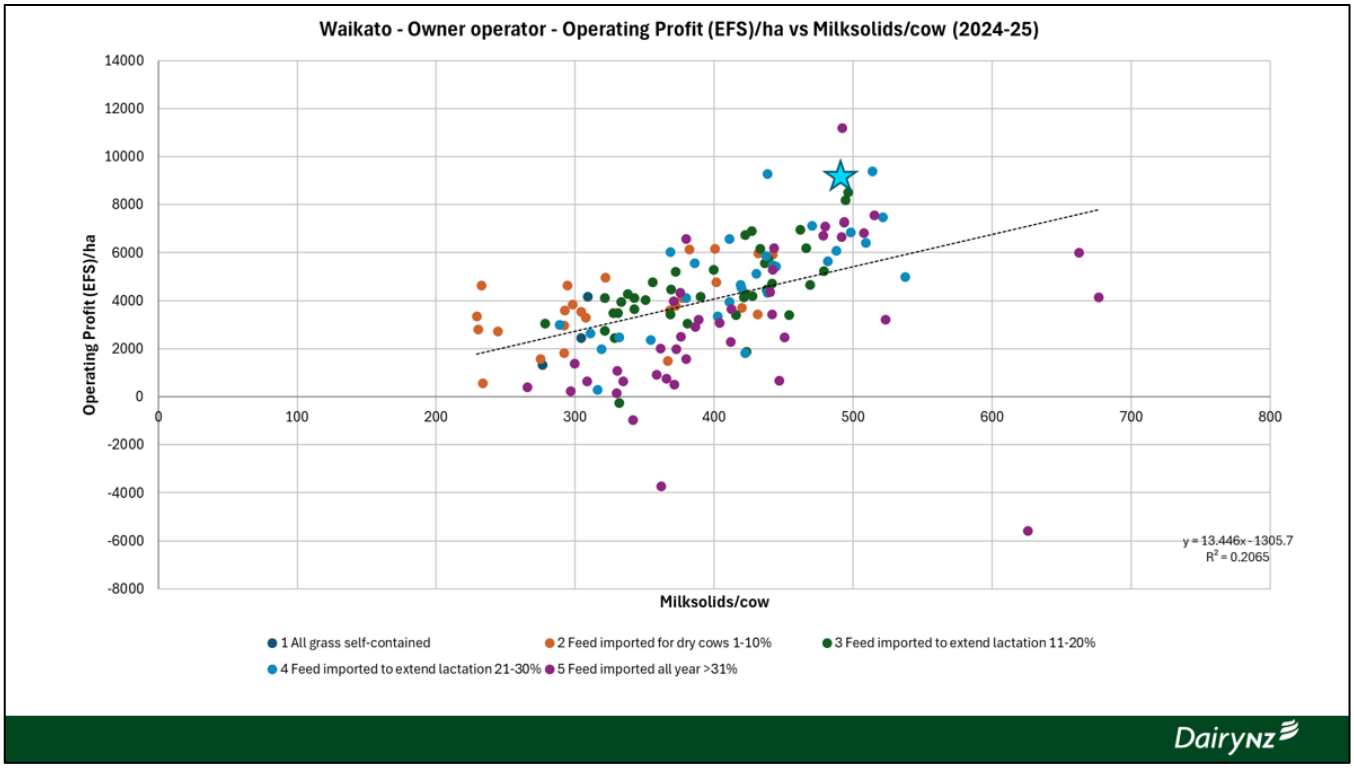
"Generate strong profit — and invest it wisely."

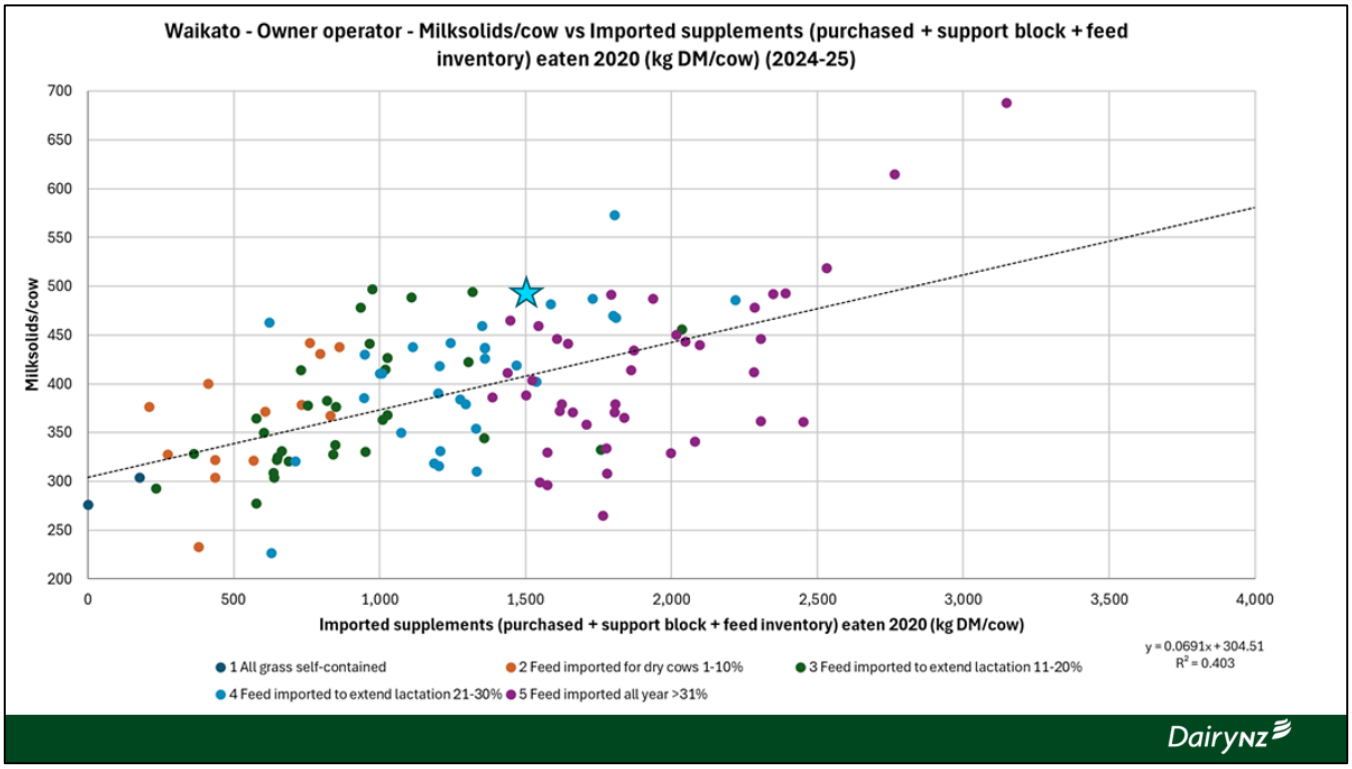

Waikato - Owner operator - Operating Profit (EFS)/ha vs Pasture and Crop harvested 2020 tDM/ha (2024-25)
Operating Profit (EFS)/ha
Pasture and Crop harvested 2020 tDM/ha
y = 702.63x - 4010.5
R² = 0.5953
Hauraki
Matamata-Piako
Otorohanga
South Waikato
Taupo
Thames-Coromandel
Waikato District
Waipa


Waikato - Owner operator - Operating Profit (EFS)/ha vs Imported supplements (purchased + support block + feed inventory) eaten 2020 (t DM / ha) (2024-25)
Operating Profit (EFS)/ha
Imported supplements (purchased + support block + feed inventory) eaten 2020 (t DM / ha)
y = 302.21x + 2396.9
R² = 0.0541
1 All grass self-contained
2 Feed imported for dry cows 1-10%
3 Feed imported to extend lactation 11-20%
4 Feed imported to extend lactation 21-30%
5 Feed imported all year >31%


New Zealand - Owner operator - Operating Profit (EFS)/ha vs Pasture and Crop harvested 2020 tDM/ha (2024-25)
Operating Profit (EFS)/ha
12,000
10,000
8,000
6,000
4,000
2,000
0
-2,000
-4,000
4
6
8
10
12
14
16
18
Pasture and Crop harvested 2020 tDM/ha
y = 705.67x - 3665.9
R² = 0.6164
Bay of Plenty
Canterbury
Lower North Island
Northland
Otago - Southland
Taranaki
Waikato
West Coast - Top of the South
DairyNZ


Waikato - Sharemilker '50-50' - Operating Profit (EFS)/ha vs Imported supplements (purchased + support block + feed inventory) eaten 2020 (t DM / ha) (2024-25)
Operating Profit (EFS)/ha
4500
4000
3500
3000
2500
2000
1500
1000
500
0
0
2
4
6
8
10
12
Imported supplements (purchased + support block + feed inventory) eaten 2020 (t DM / ha)
y = 97.912x + 1725.5
R² = 0.1149
1 All grass self-contained
2 Feed imported for dry cows 1-10%
3 Feed imported to extend lactation 11-20%
4 Feed imported to extend lactation 21-30%
5 Feed imported all year >31%
DairyNZ


Waikato - Owner operator - Operating Profit (EFS)/ha vs Milksolids/cow (2024-25)
Operating Profit (EFS)/ha
14000
12000
10000
8000
6000
4000
2000
0
-2000
-4000
-6000
-8000
0
100
200
300
400
500
600
700
800
Milksolids/cow
y = 13.446x - 1305.7
R² = 0.2065
1 All grass self-contained
2 Feed imported for dry cows 1-10%
3 Feed imported to extend lactation 11-20%
4 Feed imported to extend lactation 21-30%
5 Feed imported all year >31%
DairyNZ


Waikato - Owner operator - Milksolids/cow vs Imported supplements (purchased + support block + feed inventory) eaten 2020 (kg DM/cow) (2024-25)
Milksolids/cow
700
650
600
550
500
450
400
350
300
250
200
0
500
1,000
1,500
2,000
2,500
3,000
3,500
4,000
Imported supplements (purchased + support block + feed inventory) eaten 2020 (kg DM/cow)
y = 0.0691x + 304.51
R² = 0.403
1 All grass self-contained
2 Feed imported for dry cows 1-10%
3 Feed imported to extend lactation 11-20%
4 Feed imported to extend lactation 21-30%
5 Feed imported all year >31%
DairyNZ