

Owl Farm



Providing knowledge

St Peter's School/Lincoln University
Demonstration Dairy Farm



ST PETER'S • CAMBRIDGE
NEW ZEALAND



Lincoln University
Te Whare Wānaka o Aoraki

AOTEAROA • NEW ZEALAND

New Zealand's specialist land-based university

Farm Focus Day

Wednesday 17 June
10.15am – 1.00pm

Staff:

Doug Dibley - Demonstration Manager

Frank Keoghan - Farm Manager

Chris Sclater (from 20 April) - Assistant Manager

April Jones-Needham - Farm Assistant

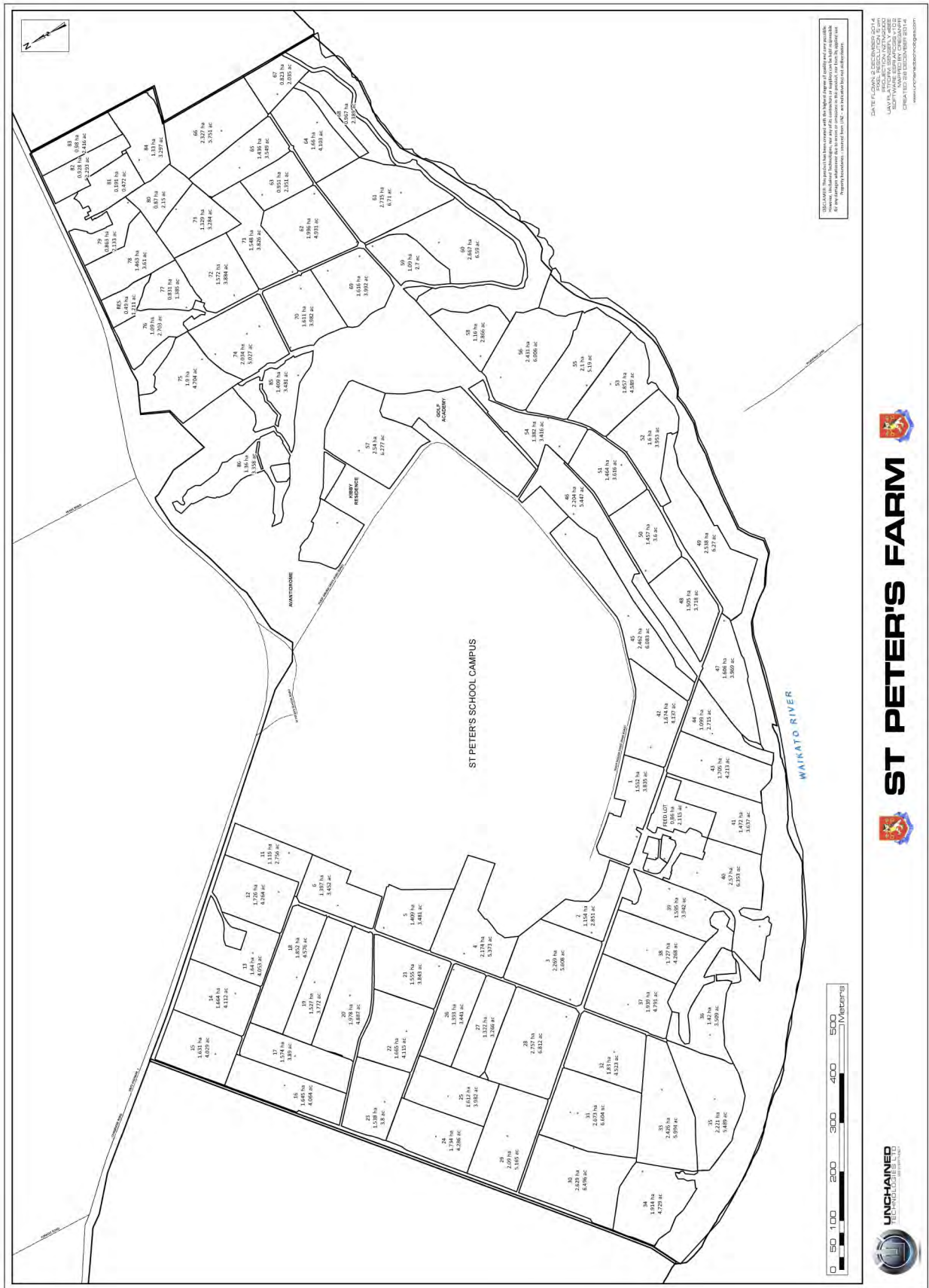
St Peter's Hazards Notifications:

1. Children are the responsibility of their parent or guardian
2. Normal hazards associated with a dairy farm
3. Other vehicle traffic on farm roads and races
4. Races may be slippery



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ST PETER'S FARM



St Peter's School/Lincoln University
Demonstration Dairy Farm



ST PETER'S SCHOOL LINCOLN UNIVERSITY

DEMONSTRATION DAIRY FARM

Goal

To apply proven research, utilising good on farm practice and scientific monitoring for the farm to become an exemplar in dairy production, economic performance and environmental footprint.

Strategic Objectives

Work in collaboration with the wider dairy industry and community to maximise sustainable profit embracing the whole farm system by:

- Increasing productivity;
- Achieving an acceptable farm environmental footprint;
- Meeting or exceeding animal welfare targets;
- Providing leadership to dairy farmers by demonstrating practices that can be achieved by progressive farmers;
- Demonstrating career opportunities to students;
- Provide educational opportunities for students.

Farm Development Stages

The development of farming systems and demonstration activities of the farm will proceed in two stages:

Stage 1

Establish credibility by addressing current issues and performance, whilst setting up the farm for future development (Years 1-3; 2014/15-2016/17).

Specific objectives during stage 1.

- To establish the St Peter's School Lincoln University Dairy Farm so as to develop and demonstrate good practice in pasture based dairy farming systems and to transfer them to dairy farms
- To generate profit through tight control management with appropriate reinvestment
- To appoint a Farm Demonstration Manager
- To delineate areas of farm assigned to milking platform, dairy support and wintering
- To include the farms full environmental footprint, land requirement and resource efficiency in system decision making and reporting
- To use good environmental management systems in the development and implementation of farm practices that achieve sustainable growth and profit and protect the wider environment
- To engage with WRC and WRA staff to accelerate progress towards their goals relating to the environment and Waikato River.
- To develop a communications plan (including photos of the journey to establish and develop the demo farm).
- To implement optimal use of all nutrients on farm including, effluent, fertilizer, nutrient imported from supplements.
- To implement nutrient recycling so that there is no significant contamination of water and that the farm meets all resource consents.
- To show leadership in establishment of biodiversity management practices relevant to the Waikato.
- To implement a staff training matrix.
- To implement a Health & Safety plan.
- To implement a time and motion study for staff with associated rosters.
- To optimise pasture growth and pasture management so that cows consume as much metabolisable energy as practical from grazed pastures and supplements.
- To achieve industry targets for mating performance with a 10 week mating period, including a 6 week in calf rate of 78% and 10 week in calf rate of greater than 90% (empty rate < 10%).
- To assist St Peter's school and Lincoln University to attract top quality domestic and international students into their organisation and into the New Zealand Primary Sector.



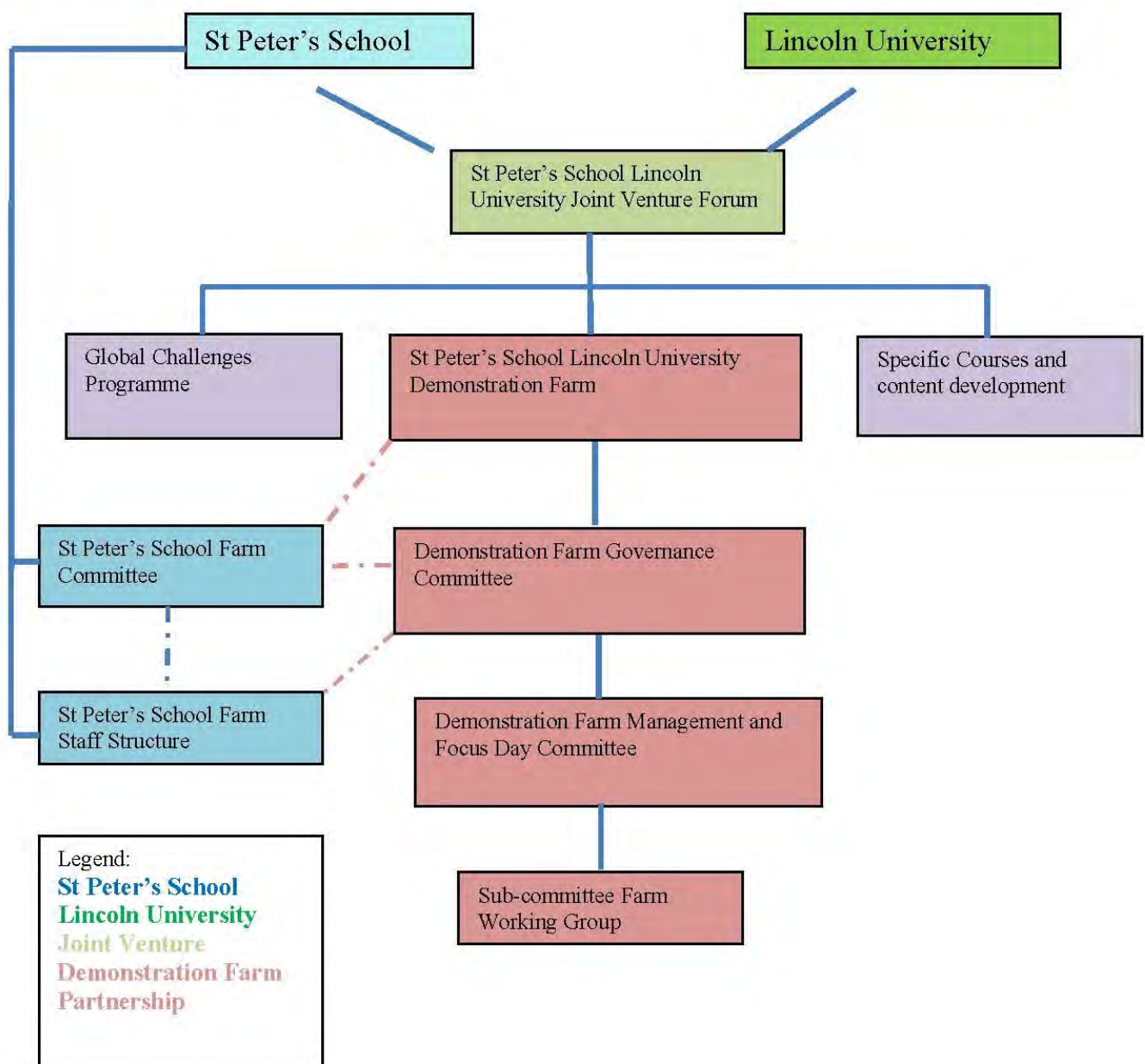
Stage 2

Develop in conjunction with partners, higher risk strategies to lead sustainable profit (Years 4-6; 2017/18-2020-2021). The farm system will be developed over years 1-3 and reflect demonstration requirements of industry that are relevant and appropriate at that time point.

Specific objectives during stage 2

- To push boundaries of sustainable profit through increasing productivity without increasing the farms environment foot print.

STRUCTURE



OWL FARM DETAILS

Objectives of year One and Two

The objective is to maximise our current system and dramatically improve both our economic and environmental sustainability. It is also about getting accurate baseline data so that we can benchmark for the property for future management and comparison.

| | | |
|--------------|----------------|------------------------|
| Area: | Milking | 160 hectares effective |
| | Free hold land | 137 hectares |
| | Lease land | 32 hectares |

The area that has been available has varied from year to year depending mainly on availability of lease land from the McGrath block. Ultimately, the area will be set in concrete so that we have a fixed base and this will be the freehold area Owned by St Peters.

Soils: Vary dramatically from heavy clays to light sands and the topography is of flat contour over three terraces. The farm is long and narrow with 3.4 kilometres bounding the Waikato River.

| <u>Soil type definition</u> | <u>Found in what area of the farm</u> |
|-----------------------------|---------------------------------------|
| Otorohanga deep clay | SHI, river and centre north. |
| Pukehina deep sand | north of farm |
| Kainui deep silt clay | behind the kahikatea's |
| Turangi deep sand | deer block |
| Rotokauri deep clay loam | school grounds |
| Kaipaki deep peat | gully below velodrome |

| | | |
|-------------------|------------|-----|
| Fertility: | pH average | 6.0 |
| | Phosphate | 53 |
| | Potassium | 9 |
| | Sulphur | 15 |
| | Magnesium | 122 |

Nitrogen: 150kgN/ha is being budgeted for the coming season but soil testing in September will still determine what final amount is applied.

Production:

| | 2011/12 | 2012/13 | 2013/14 | 2014/15 |
|------------------------|----------------|----------------|----------------|----------------|
| Production kgMS | 181,625 | 153,049 | 158,207 | 201,000 |
| Cows Milked | 465 | 453 | 446 | 453 |
| Calves reared | 174 | 171 | 158 | 150 |
| Heifer grazed | 100 | 102 | 112 | 104 |
| Production/ha | 1,094 | 945 | 993 | 1,256 |

Stock:

BW 147/48 PW 196/69

Historically there has been a lot of AB mating using DNA semen and mating all the yearlings to AB with herd now in the top 3% in NZ. The objective has been to rear as many heifer replacement animals as possible and sell surplus usually February.

There has been six weeks AB followed by a further 10 weeks use of the bulls.

Calving Date: 28 June 2015

Cowshed: 36 bale rotary shed with cup removers, built in 1970 and the plant is Waikato. Need to run two herds as yard has only capacity to hold 400 cows.

Effluent: Effluent holding pond used when conditions don't suit application otherwise effluent applied directly when suitable over 36 hectares using a cobra – travelling raingun.

Staff: Farm Manager, Assistant Farm Manager and Farm Assistant (3 FTE).

Cropping: 12 ha of chicory and potentially 3-5ha of maize to come onto the milking platform. This will work in with a planned pasture regeneration plan given little cultivation has occurred on farm over the past 10 years.

Supplement: The farm has made between 100 to 200 tonnes of grass silage a year in the past, with regular pasture metering and the ability to be able to identify surplus in advance we think it will be somewhere between 150-200 tonnes this coming season, weather and season dependent.
170t of Maize silage was feed late in the season and still feeding over winter.
170-200t of Maize expected again this season.
300t of PKE has been contracted for the 2015/16 season.

A season to be above average...



From the last three seasons of DairyBase analysis what makes up the difference in farm profit between the Waikato average and the top 20% and what would this mean when applied to the 2015/16 season? When compared to the average the top 20% farm generated:

Additional income

- Milk +10-20 cents/kgMS
- Stock +5-15 cents/kgMS

Operating Expenses:

- Stock expenses -0-10 cents/kgMS
- Feed +10-15 cents/kgMS (paid 5 cents less per kgDM)
- Fertiliser -0-10 cents/kgMS
- Labour -10-20 cents/kgMS

Total Operating Expenses: 10% lower operating costs/kgMS

Production: 30% more MS/ha and 15% more MS/cow

Imported feed: 60% more feed imported

Pasture & Crop eaten: 12% more feed eaten from the farm

Stocking Rate: 12% higher stocking rate (kg Liveweight/ha)

Forecasting forward, what does this mean for the 2015/16 season and the possible implications over the next 3-5 years?

Physical Farm Performance

| | Avg Farm | Top 20% |
|------------------------------|----------|---------|
| Ha's | 122 | 122 |
| Cows | 350 | 375 |
| Production | 124,000 | 160,000 |
| MS/ha | 1016 | 1311 |
| MS/cow | 354 | 427 |
| P & C Eaten tDM/ha | 12.9 | 14.5 |
| Supplements & Grazing tDM/ha | 0.8 | 1.3 |

Financial Farm Performance

| | Avg Farm | Total | Top 20% | Total |
|-----------------------------|----------------|-------------------|----------------|-------------------|
| Milk Income | \$4.15 | \$514,600 | \$4.25 | \$680,000 |
| Dividend | \$0.25 | \$31,000 | \$0.25 | \$40,000 |
| Stock | \$0.38 | \$47,120 | \$0.48 | \$76,800 |
| Total Income | \$4.78 | \$592,720 | \$4.98 | \$796,800 |
| Cash Expenses | \$3.91 | \$484,840 | \$3.60 | \$576,000 |
| Other Expenses* | \$2.70 | \$334,800 | \$2.20 | \$352,000 |
| Total Expenses | \$6.61 | \$819,640 | \$5.80 | \$928,000 |
| Cash Surplus/Deficit | -\$1.83 | -\$226,920 | -\$0.82 | -\$131,200 |

*Other expenses = Debt Servicing, Tax, Drawings, Capital

If the loss from each farm was capitalised into term debt to be repaid over 5 years there needs to be a significant increase in Milk Price for the average farm to recover from the current low. Knowing your position will help to identify opportunities to improve a limit the future effect of a lower milk price.

| | Avg Farm | Top 20% |
|-------------------------------|---------------|---------------|
| Capitalised loss | -\$226,920 | -\$131,200 |
| Repayment period - yrs | 5 | 5 |
| Interest Rate | 6.00% | 6.00% |
| Annual Repayments | -\$52,668 | -\$30,396 |
| Loss + Repayments/kgMS | \$2.25 | \$1.01 |

How can you go about making the necessary changes?

1. Benchmark your business performance to identify opportunities to increase productivity from your farm or compare to other high performing farmers.
<http://www.dairynz.co.nz/farm/dairybase/benchmarking/>
2. Attend Farm Discussion Groups, Tactics for Tight Times events, Cashflow budgeting workshops or open days that profile farm business performance.
3. Use support from your trusted advisors to challenge you budget and farm performance. These people could be Bankers, Farm Consultants, Accountant's and other farmers.
4. Use Case Studies or Scenario farms to compare e.g. St Peters.
5. Visit www.dairynz.co.nz for other support tools and resources.

Waikato Tactics for Tight Times Host Farmers



Farmers: Josh Eales, farm manager; Graeme and Karen Bonnar, farm owners

Location: Gordonton

Area: 130ha (effective)

Peak cows milked: 370

System: 3.5

Staff: 3



Farmers: Andrew McGiven and Graham Wallace

Roles: Owner and contract milker

Location: Waihou, North Waikato

System: 4.5

Farm area: 140ha

Stock: 550

Staff: 3 (Andrew, Graham and farm worker)



Farmers: Bryce and Rosemarie Costar

Role: Sharemilkers

Location: Onewhero, North Waikato

System: 3

Farm area: 115ha (effective)

Stock: 320 (peak)

Staff: 1 milking assistant, Bryce (FT), Rosemarie (PT)



Farmers: Roger and Kathy Duff

Role: Equity owners with Craig and Jo Young

Location: Hamilton

Area (ha): 128

Stock: 400 (peak cows milked)

Number of staff: 2 FTE + partners + casual

System: 3



Farmers: Alan and Briar Rogers
Role: Farm owners
Location: Otorohanga, South Waikato
System: 3
Farm area: 195ha
Peak cows milked: 627
Staff: 2 full time



Farmer: Mike White
Role: Manager
Location: Putaruru, South Waikato
System: 4
Farm area: 112ha
Stock: 375

Upcoming Tactics for Tight Times events in the Waikato

24th June, North Waikato farmers Bryce & Rosemarie Costar

5:30 pm - 8:30 pm, Campbell Tyson, 1 Wesley St, Pukekohe.

Cashflow building seminars

23rd June - Morrinsville, 10.30am-2.30pm

24th June – Putaruru, 10am-2.30pm

Learn how to:

- Build your budgeting skills
- Gain clarity on your cash position
- Develop practical techniques for managing cashflow during a challenging season.

This interactive four hour session, free to all dairy farmers, will provide you with information to calculate expected milk income and forecast expenditure for your business, allowing you to better understand your monthly cash surplus or deficit position.

Register to attend at www.dairynz.co.nz/events



Operating Profit Per Cow - Dairy Owl Farms



| | 2013/14 Owl Farms Baseline | 2013/14 Waikato Average | 2013/14 Waikato Top 10% | 2012/13 Owl Farms Baseline |
|---|-------------------------------|----------------------------|----------------------------|-------------------------------|
| REVENUE | | | | |
| Manufacturing Milk Sales | \$2,844.00 | \$3,158.00 | \$3,554.00 | \$1,861.00 |
| Quota/Contract/Dividends for Milk | \$112.00 | \$32.00 | \$35.00 | \$135.00 |
| Livestock Revenue | \$158.00 | \$192.00 | \$209.00 | \$243.00 |
| Other Revenue | \$1.00 | \$23.00 | \$14.00 | \$17.00 |
| Gross Revenue | \$3,115.00 | \$3,405.00 | \$3,812.00 | \$2,256.00 |
| EXPENSES | | | | |
| Administration | \$35.00 | \$38.00 | \$32.00 | \$62.00 |
| Animal Health | \$84.00 | \$102.00 | \$97.00 | \$89.00 |
| Breeding & Herd Testing | \$113.00 | \$54.00 | \$52.00 | \$93.00 |
| Dairy Shed Expenses | \$67.00 | \$25.00 | \$25.00 | \$19.00 |
| Electricity | \$11.00 | \$41.00 | \$40.00 | \$14.00 |
| Feeds / Supplements (Total) | \$519.00 | \$733.00 | \$722.00 | \$379.00 |
| - Grazing / Support Area | \$110.00 | \$224.00 | \$198.00 | \$97.00 |
| - Cropping (green feed) | \$0.00 | \$12.00 | \$11.00 | \$0.00 |
| - Grains, Pellets & Concentrates | \$385.00 | \$216.00 | \$216.00 | \$237.00 |
| - Forages (incl. hay, silages, byproducts) | \$24.00 | \$281.00 | \$298.00 | \$44.00 |
| Fertiliser (Total) | \$244.00 | \$184.00 | \$178.00 | \$203.00 |
| - Nitrogen | \$173.00 | \$91.00 | \$86.00 | \$145.00 |
| - Phosphate & All Other Fertiliser | \$71.00 | \$94.00 | \$93.00 | \$58.00 |
| Freight | \$3.00 | \$11.00 | \$10.00 | \$2.00 |
| Irrigation | \$54.00 | \$15.00 | \$21.00 | \$36.00 |
| Other Expenses | \$0.00 | \$6.00 | \$6.00 | \$3.00 |
| Pasture Maintenance & Renovation | \$65.00 | \$35.00 | \$32.00 | \$3.00 |
| Repairs & Maintenance | \$173.00 | \$101.00 | \$93.00 | \$71.00 |
| Standing charges | \$34.00 | \$72.00 | \$68.00 | \$40.00 |
| Vehicle Expenses (including fuel & oil) | \$16.00 | \$76.00 | \$73.00 | \$20.00 |
| Management & Staff Expenses | \$347.00 | \$420.00 | \$360.00 | \$398.00 |
| - Wages, Salaries & Employment Exp. | \$347.00 | \$289.00 | \$230.00 | \$398.00 |
| - Imputed Labour & Management | \$0.00 | \$131.00 | \$130.00 | \$0.00 |
| Depreciation | \$57.00 | \$146.00 | \$116.00 | \$38.00 |
| Gross Expenses | \$1,824.00 | \$2,059.00 | \$1,925.00 | \$1,470.00 |
| Gross Exp excl. Imputed Labour/Mgmt & Dep'n | \$1,767.00 | \$1,782.00 | \$1,679.00 | \$1,432.00 |
| Core per Cow Cost | \$526.00 | \$662.00 | \$604.00 | \$397.00 |
| OPERATING PROFIT (LOSS) | \$1,290.00 | \$1,346.00 | \$1,887.00 | \$786.00 |



St Peter's School/Lincoln University
Demonstration Dairy Farm





Physical Summary - Dairy Owl Farms



| | 2013/14 Owl Farms Baseline | 2013/14 Waikato Average | 2013/14 Waikato Top 10% | 2012/13 Owl Farms Baseline |
|---|-------------------------------|----------------------------|----------------------------|-------------------------------|
| PHYSICAL PARAMETERS | | | | |
| Peak Milking Cow Numbers | 460 | 452 | 473 | 472 |
| Effective Milking Hectares | 159.30 | 135.80 | 127.00 | 162.00 |
| Cows per Milking Hectare | 2.89 | 3.33 | 3.72 | 2.91 |
| Cow Liveweight per Milking Hectare | 1328 | 1605 | 1814 | 1340 |
| Milksolids Price (\$/kgMS) | \$8.27 | \$8.32 | \$8.32 | \$5.74 |
| Total Milksolids (Milkfat + Protein) | 158207 | 171572 | 202045 | 153049 |
| Milksolids per Cow | 344 | 380 | 427 | 324 |
| Milksolids as Percent of Cow Liveweight | 74.80% | 78.80% | 87.70% | 70.50% |
| Milksolids per Milking Hectare | 993 | 1264 | 1591 | 945 |
| Milkfat Percentage | 5.31% | 4.98% | 4.95% | 5.28% |
| Protein Percentage | 3.87% | 3.74% | 3.79% | 3.87% |
| Protein as a Percentage of Milkfat | 72.90% | 75.10% | 76.60% | 73.30% |
| PASTURE & SUPPLEMENTS | | | | |
| Pasture Dry Matter Harvested (tDM/Ha) | 11.50 | 12.10 | 14.40 | 11.40 |
| Estimated Dryland Pasture Harvest (tDM/Ha) | 11.50 | 12.10 | 14.40 | 11.40 |
| Estimated Irrigated Pasture Harvest (tDM/Ha) | 0.00 | 12.70 | 15.10 | 0.00 |
| Nitrogen Applied per Hectare | 177.00 | 163.10 | 198.80 | 183.00 |
| Pasture as % of Total Consumed | 87.30% | 74.80% | 73.40% | 87.20% |
| Supplement as % of Total Consumed | 12.70% | 25.20% | 26.60% | 12.80% |
| - Forage as % of Total Consumed | -0.30% | 14.60% | 16.10% | 1.30% |
| - Concentrate as % of Total Consumed | 13.00% | 10.60% | 10.50% | 11.50% |
| Pasture Consumed Per Cow (estimated tDM) | 3.81 | 3.48 | 3.68 | 3.68 |
| Forage Consumed Per Cow (estimated tDM) | (0.02) | 0.79 | 0.94 | 0.06 |
| Concentrate Consumed Per Cow (estimated tAF) | 0.56 | 0.48 | 0.51 | 0.48 |
| Total Consumed Per Cow (estimated tDM) | 4.29 | 4.71 | 5.09 | 4.17 |
| Feed Conversion Efficiency (kgsDM/kgMS) | 12.33 | 12.00 | 11.48 | 12.64 |
| Total Feed/Supplement Costs per Cow | \$519.00 | \$733.00 | \$722.00 | \$379.00 |
| Average Cost of All Consumed Feed (tDM) | \$400.00 | \$364.00 | \$324.00 | \$342.00 |
| Pasture Cost (Per tDM) | \$368.00 | \$331.00 | \$288.00 | \$328.00 |
| - Direct Pasture Cost (Per tDM) | \$83.00 | \$69.00 | \$65.00 | \$59.00 |
| - Variable Pasture Cost (Per tDM) | \$63.00 | \$56.00 | \$45.00 | \$45.00 |
| - Capital Pasture Cost (Per tDM) | \$222.00 | \$206.00 | \$178.00 | \$224.00 |
| Average Cost of All Supplements (tDM Consumed) | \$623.00 | \$482.00 | \$423.00 | \$435.00 |
| Forage Cost (tDM Consumed incl.wastage) | \$329.00 | \$461.00 | \$416.00 | \$338.00 |
| - Purchased Forage Cost (Per tDM) | \$224.00 | \$303.00 | \$283.00 | \$237.00 |
| - Variable Forage Cost (Per tDM) | \$40.00 | \$52.00 | \$42.00 | \$35.00 |
| - Capital Forage Cost (Per tDM) | \$8.00 | \$34.00 | \$26.00 | \$6.00 |
| Concentrate Cost (tDM Consumed incl.wastage) | \$616.00 | \$465.00 | \$434.00 | \$446.00 |
| - Purchased Concentrate Cost (Per tDM) | \$419.00 | \$423.00 | \$396.00 | \$304.00 |
| - Variable Concentrate Cost (Per tDM) | \$10.00 | \$13.00 | \$10.00 | \$7.00 |
| - Capital Concentrate Cost (Per tDM) | \$1.00 | \$8.00 | \$7.00 | \$1.00 |
| Pasture Cost (Cents Per MJ ME) | 3.34 | 3.01 | 2.62 | 2.98 |
| Forage Cost (Cents Per MJ ME Consumed) | 3.14 | 4.38 | 3.99 | 3.22 |
| Concentrate Cost (Cents Per MJ ME Consumed) | 5.13 | 3.87 | 3.61 | 3.72 |



St Peter's School/Lincoln University
Demonstration Dairy Farm





Summary Farm Performance - Dairy Owl Farms



| | 2013/14 Owl Farms Baseline | 2013/14 Waikato Average | 2013/14 Waikato Top 10% | 2012/13 Owl Farms Baseline |
|---|-------------------------------|----------------------------|----------------------------|-------------------------------|
| PHYSICAL PARAMETERS | | | | |
| Peak Milking Cow Numbers | 460 | 452 | 473 | 472 |
| Total Effective Dairy Hectares | 187.50 | 137.70 | 130.10 | 187.50 |
| Effective Milking Hectares | 159.30 | 135.80 | 127.00 | 162.00 |
| Cows per Milking Hectare | 2.89 | 3.33 | 3.72 | 2.91 |
| Milksolids per Cow | 344 | 380 | 427 | 324 |
| Milksolids per Milking Hectare | 993 | 1264 | 1591 | 945 |
| Milksolids Price (\$/kgMS) | \$8.27 | \$8.32 | \$8.32 | \$5.74 |
| Pasture Dry Matter Harvested (tDM/Ha) | 11.50 | 12.10 | 14.40 | 11.40 |
| KEY PERFORMANCE INDICATORS | | | | |
| Operating Profit per Hectare | \$3,727.00 | \$4,480.00 | \$7,030.00 | \$2,290.00 |
| Operating Profit per Cow | \$1,290.00 | \$1,346.00 | \$1,887.00 | \$786.00 |
| Total Assets per Ha at Start of Year (4-Yr Av Values) | \$66,317.00 | \$68,406.00 | \$69,388.00 | \$65,769.00 |
| EQUITY % at 4-Yr Av Values | 100.00% | 66.80% | 68.60% | 100.00% |
| RETURN ON CAPITAL (ROC) at 4-Yr Av Values | 5.20% | 7.20% | 10.40% | 3.40% |
| Return on Assets (ROA) at 4-Yr Av Values | 5.80% | 7.20% | 10.50% | 3.50% |
| ROA including Capital Gain at 4-Yr Av Values | 6.40% | 13.90% | 18.20% | 4.50% |
| RETURN ON EQUITY (ROE) at 4-Yr Av Values | 5.80% | 6.10% | 11.20% | 3.50% |
| ROE including Capital Gain at 4-Yr Av Values | 6.40% | 16.40% | 23.10% | 4.50% |
| OPERATING PROFIT MARGIN | 41.40% | 39.50% | 49.50% | 34.80% |
| Cost of Production per kg Milksolids | \$4.84 | \$4.86 | \$3.98 | \$3.73 |
| Financing Costs per kg Milksolids | \$0.40 | \$1.85 | \$1.50 | \$0.43 |
| Cost of Prod'n + Financing Cost per kgMS | \$4.92 | \$6.31 | \$5.24 | \$3.87 |
| Total Operating Expenses as % Gross Revenue | 53.30% | 49.30% | 42.40% | 58.30% |
| Financing Costs as % Gross Revenue | 4.40% | 20.60% | 16.80% | 6.20% |
| Core per Cow Cost | \$526.00 | \$662.00 | \$604.00 | \$397.00 |
| Core per Hectare Cost | \$910.00 | \$1,283.00 | \$1,314.00 | \$617.00 |
| Core per Hectare Cost per tDM Pasture Harvest | \$79.00 | \$106.00 | \$91.00 | \$54.00 |
| Management + Staff Costs per Cow | \$347.00 | \$420.00 | \$360.00 | \$398.00 |
| Cows per Full Time Staff Equivalent | 245 | 150 | 179 | 251 |
| Total Feed/Supplement Costs per Cow | \$519.00 | \$733.00 | \$722.00 | \$379.00 |
| Pasture as % of Total Consumed | 87.30% | 74.80% | 73.40% | 87.20% |
| Average Cost of All Consumed Feed (/tDM) | \$400.00 | \$364.00 | \$324.00 | \$342.00 |
| Pasture Cost (Per tDM) | \$368.00 | \$331.00 | \$288.00 | \$328.00 |
| Forage Cost (/tDM Consumed incl.wastage) | \$329.00 | \$461.00 | \$416.00 | \$338.00 |
| Concentrate Cost (/tDM Consumed incl.wastage) | \$616.00 | \$465.00 | \$434.00 | \$446.00 |



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Demonstration Dairy Farm





Summary Farm Performance - Dairy Owl Farms



| | 2013/14 Owl Farms Baseline @\$6/kgMS | 2013/14 Waikato Avg \$6/kgMS | 2013/14 Waikato T10 \$6/kgMS |
|---|---|---------------------------------|---------------------------------|
| PHYSICAL PARAMETERS | | | |
| Peak Milking Cow Numbers | 460 | 452 | 473 |
| Total Effective Dairy Hectares | 187.50 | 137.70 | 130.10 |
| Effective Milking Hectares | 159.30 | 135.80 | 127.00 |
| Cows per Milking Hectare | 2.89 | 3.33 | 3.72 |
| Milksolids per Cow | 344 | 380 | 427 |
| Milksolids per Milking Hectare | 993 | 1264 | 1591 |
| Milksolids Price (\$/kgMS) | \$6.00 | \$6.00 | \$6.00 |
| Pasture Dry Matter Harvested (tDM/Ha) | 11.50 | 12.10 | 14.40 |
| KEY PERFORMANCE INDICATORS | | | |
| Operating Profit per Hectare | \$1,472.00 | \$1,548.00 | \$3,338.00 |
| Operating Profit per Cow | \$510.00 | \$465.00 | \$896.00 |
| Total Assets per Ha at Start of Year (4-Yr Av Values) | \$66,317.00 | \$68,406.00 | \$69,388.00 |
| EQUITY % at 4-Yr Av Values | 100.00 % | 66.80 % | 68.60 % |
| RETURN ON CAPITAL (ROC) at 4-Yr Av Values | 2.30 % | 3.00 % | 5.20 % |
| Return on Assets (ROA) at 4-Yr Av Values | 2.20 % | 2.90 % | 5.20 % |
| ROA including Capital Gain at 4-Yr Av Values | 2.80 % | 9.50 % | 12.90 % |
| RETURN ON EQUITY (ROE) at 4-Yr Av Values | 2.20 % | -0.70 % | 3.00 % |
| ROE including Capital Gain at 4-Yr Av Values | 2.80 % | 9.60 % | 14.90 % |
| OPERATING PROFIT MARGIN | 21.80 % | 18.40 % | 31.80 % |
| Cost of Production per kg Milksolids | \$4.84 | \$4.86 | \$3.98 |
| Financing Costs per kg Milksolids | \$0.40 | \$1.85 | \$1.50 |
| Cost of Prod'n + Financing Cost per kgMS | \$4.92 | \$6.31 | \$5.24 |
| Total Operating Expenses as % Gross Revenue | 71.10 % | 66.50 % | 57.20 % |
| Financing Costs as % Gross Revenue | 5.90 % | 27.80 % | 22.70 % |
| Core per Cow Cost | \$526.00 | \$662.00 | \$604.00 |
| Core per Hectare Cost | \$910.00 | \$1,283.00 | \$1,314.00 |
| Core per Hectare Cost per tDM Pasture Harvest | \$79.00 | \$106.00 | \$91.00 |
| Management + Staff Costs per Cow | \$347.00 | \$420.00 | \$360.00 |
| Cows per Full Time Staff Equivalent | 245 | 150 | 179 |
| Total Feed/Supplement Costs per Cow | \$619.00 | \$733.00 | \$722.00 |
| Pasture as % of Total Consumed | 87.30 % | 74.80 % | 73.40 % |
| Average Cost of All Consumed Feed (tDM) | \$400.00 | \$364.00 | \$324.00 |
| Pasture Cost (Per tDM) | \$368.00 | \$331.00 | \$288.00 |
| Forage Cost (tDM Consumed incl.wastage) | \$329.00 | \$461.00 | \$416.00 |
| Concentrate Cost (tDM Consumed incl.wastage) | \$616.00 | \$465.00 | \$434.00 |



St Peter's School/Lincoln University
Demonstration Dairy Farm



Owl Farm 2014/15 Actuals (June – April) vs. Provisional 2015/16 Budget

| | 2014-2015 (June –April – 11 months) | 2015-2016 Budget | Variance |
|---|--|------------------|----------------|
| Revenue | | | |
| Milk Sales | 1,069,849 | 1,102,500 | +32,651 |
| Dividend | 38,750 | 37,200 | -1550 |
| Livestock Revenue | 73,979 | 77,700 | +3721 |
| Other Revenue | 42,382 | 12,194 | -30,188 |
| Gross Revenue | 1,224,960 | 1,229,594 | +4,634 |
| Expenses | | | |
| Administration | 43,158 | 61,075 | +17,917 |
| Animal Health | 53,531 | 38,600 | -14,931 |
| Breeding and Herd Testing | 39,628 | 26,223 | -13,405 |
| Dairy Shed Expenses | 7,284 | 9,400 | +2,116 |
| Electricity | 12,000 | 16,450 | +4,450 |
| Feeds/Supplements (total) | 264,115 | 243,500 | -20,615 |
| Grazing/support area | 56,244 | 101,800 | +45,556 |
| Grass silage | 9,710 | 15,000 | +5,290 |
| Maize and PKE | 171,224 | 117,100 | -54,124 |
| Chicory | 26,937 | 9,600 | -17,337 |
| Fertiliser | 52,222 | 75,000 | +22,778 |
| Giberillin | | 6,240 | +6240 |
| Freight and cartage | 13,229 | 16,000 | +2771 |
| Other Expenses | 24,193 | 48,760 | +24,567 |
| Pasture Maintenance and Ren- ovation | 10,212 | 7,200 | -3012 |
| Repairs and Maintenance | 85,993 | 50,000 | -35,993 |
| Standing Charges | 2,827 | 3,000 | +173 |
| Vehicle Expense | 7,450 | 12,000 | +4550 |
| Staff and Management Ex- penses | 184,851 | 168,168 | -16,683 |
| Depreciation | 41,800 | 52,979 | +11,179 |
| Gross Expenses | 842,493 | 834,595 | -7,898 |
| Operating Profit | 382,467 | 394,999 | +12,532 |
| | | | |

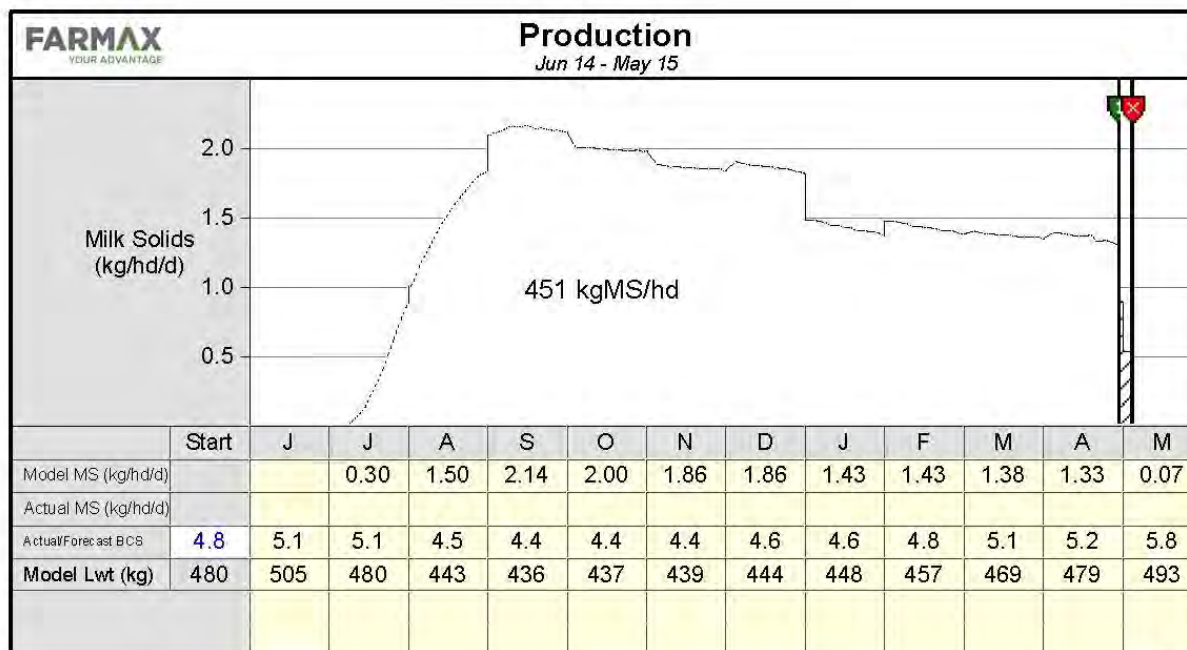
Detailed Farm Working Expenses for 2015/16 Owl Farm Budget

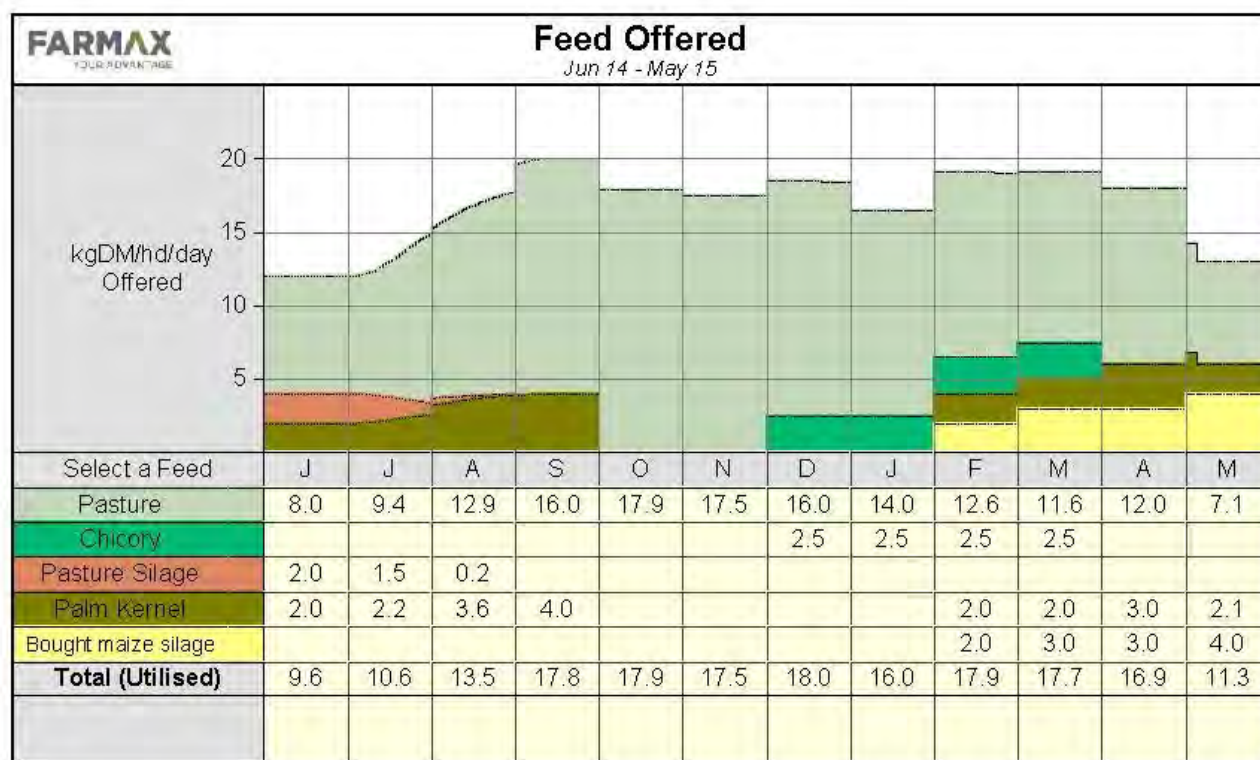
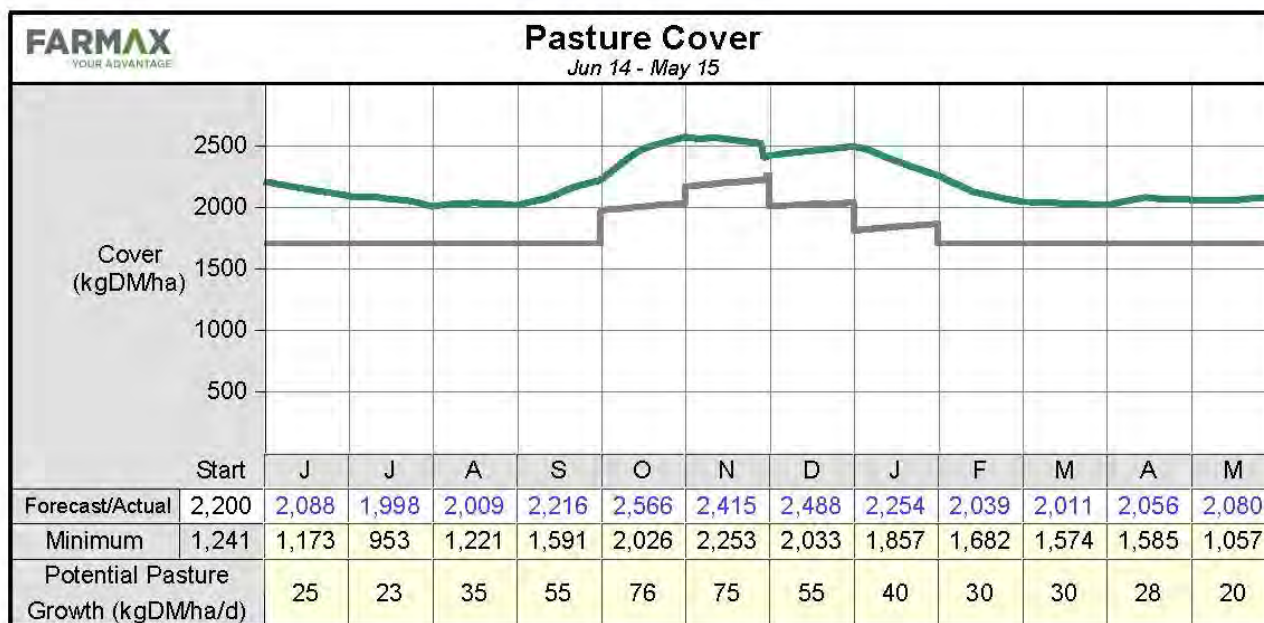
| ST PETERS SCHOOL/LINCOLN UNIVERSITY – OWL FARM | | | |
|--|---------------------|---------------|-------------|
| FARM WORKING EXPENSES – DETAIL | | | |
| | 2015/16 budget (\$) | \$/Cow | \$/kgMS |
| EXPENSES | | | |
| <i>Farm Working Expenses(\$/yr)</i> | | | |
| | | | |
| Staff | | | |
| Wages | 168,168 | | |
| Total staff | 168,168 | 357.80 | 0.80 |
| | | | |
| Cow Costs | | | |
| Animal Health | 37,600 | 80.00 | 0.17 |
| Calf rearing | 1,000 | 2.10 | 0.004 |
| Breeding expenses (incl herd testing) | 20,723 | 44.09 | 0.10 |
| Service bulls | 5,500 | 11.70 | 0.03 |
| Total Cow costs | 64,823 | 137.92 | 0.30 |
| | | | |
| Feed | | | |
| PKE | 74,100 | 157.66 | 0.35 |
| Grass silage harvested | 15,000 | 31.91 | 0.07 |
| Maize | 40,000 | 85.11 | 0.19 |
| Chicory | 9,600 | 20.43 | 0.05 |
| Nitrogen | 75,000 | 159.58 | 0.36 |
| Fertiliser and lime | | | |
| re-grassing | 7,200 | 15.32 | 0.03 |
| Giberillin | 6,240 | 13.27 | 0.03 |
| Calf meal | 3,000 | 6.38 | 0.01 |
| Total Feed | 230,140 | 489.66 | 1.10 |
| | | | |
| Grazing | | | |
| Lease land on milking platform | 30,000 | 63.83 | 0.14 |
| Replacement Heifers and Calves | 71,800 | 152.77 | 0.34 |
| Total Grazing | 101,800 | 216.60 | 0.48 |
| | | | |
| General | | | |
| Shed expenses excl. power | 9,400 | 20.00 | 0.04 |
| Electricity | 16,450 | 35.00 | 0.08 |
| Water charge | 3,000 | 6.38 | 0.01 |
| Freight - stock | 2,000 | 4.26 | 0.01 |
| Cartage - fertiliser | 4,000 | 8.51 | 0.02 |
| Spreading – Fertiliser | 10,000 | 21.28 | 0.05 |
| Pumping effluent pond | 4,000 | 8.51 | 0.02 |

| | | | |
|--|----------------|----------------|-------------|
| Repairs and maintenance: Land and Buildings | 40,000 | 85.11 | 0.19 |
| Repairs and maintenance: Plant and equipment | 10,000 | 21.28 | 0.05 |
| Vehicle operating expenses | 12,000 | 25.53 | 0.06 |
| Fuel | 12,000 | 25.53 | 0.06 |
| Weed and pest control | 15,000 | 31.91 | 0.07 |
| Consultant | 10,000 | 21.28 | 0.05 |
| Other expenses | 5,000 | 10.64 | 0.02 |
| Shelter trees | 1200 | 2.55 | 0.01 |
| Wet weather allowance | 1,560 | 3.32 | 0.01 |
| Total General | 155,610 | 331.09 | 0.74 |
| | | | |
| Overhead | | | |
| Administration | 2,500 | 5.32 | 0.01 |
| Insurance | 21,000 | 44.68 | 0.10 |
| Rates | 16,377 | 34.84 | 0.08 |
| ACC | 7550 | 16.49 | 0.04 |
| MindaPro | 2,121 | 4.51 | 0.01 |
| Farmax | 1,800 | 3.83 | 0.01 |
| Kiwisaver | 6,727 | 14.31 | 0.03 |
| Staff training | 3,000 | 6.38 | 0.01 |
| Total Overheads | 61,075 | 129.95 | 0.29 |
| | | | |
| Total farm working expenses | 781,616 | 1663.01 | 3.72 |

| FARMAX <small>YOUR ADVANTAGE</small> | | | |
|--|--|---------|---------------------|
| Physical Summary for St Peters Scenario 1 <i>Jun 14 - May 15</i> | | | |
| Category | Description | Value | Units |
| Farm | Effective Area | 159 | ha |
| | Stocking Rate | 2.9 | cows/ha |
| | Comparative Stocking Rate | 70.6 | kg Lwt/t DM offered |
| | Potential Pasture Growth | 15.0 | t DM/ha |
| | Nitrogen Use | 163 | kg N/ha |
| | Feed Conversion Efficiency (offered) | 13.5 | kg DM offered/kg MS |
| Herd | Cow Numbers (1st July) | 470 | cows |
| | Peak Cows Milked | 468 | cows |
| | Days in Milk | 268 | days |
| | Avg. BCS at calving | 5.3 | BCS |
| | Liveweight | 1,254 | kg/ha |
| | | | |
| Production (to Factory) | Milk Solids total | 209,288 | kg |
| | Milk Solids per ha | 1,316 | kg/ha |
| | Milk Solids per cow | 447 | kg/cow |
| | Peak Milk Solids production | 2.13 | kg/cow/day |
| | Milk Solids as % of live weight | 105.0 | % |
| | | | |
| Feeding | Pasture Offered per cow * | 4.6 | t DM/cow |
| | Supplements Offered per cow * | 1.4 | t DM/cow |
| | Off-farm Grazing Offered per cow * | 0.1 | t DM/cow |
| | Total Feed Offered per cow * | 6.0 | t DM/cow |
| | Pasture Offered per ha | 13.6 | t DM/ha |
| | Supplements Offered per ha | 4.4 | t DM/ha |
| | Off-farm Grazing Offered per ha | 1.5 | t DM/ha |
| | Total Feed Offered per ha | 19.5 | t DM/ha |
| | Supplements and Grazing / Feed Offered * | 23.8 | % |
| | Bought Feed / Feed Offered * | 16.2 | % |
| | | | |
| | | | |

(*) feed offered to females > 20 months old / peak cows milked





Working out Comparative Stocking Rate (kgLWT/tDM)

Use this calculator in conjunction with Farm Facts 1-4a and 1-4b which define and explain the calculation.

Step One: Calculate LWT/ha

| | | |
|-------------------------------------|-----|-----|
| Total number of cows milked at peak | 470 | (a) |
| Farm Area (effective area) | 160 | (b) |
| Cow liveweight (average) | 460 | (c) |

Estimate Herd LWT from Herd BV Lwt

| | |
|-------------------------------|---------|
| Enter Average Herd BV for Lwt | 40 |
| Estimate of Herd Liveweight | (c) 516 |

$$a \div b \times c = \text{kgLWT/ha} \quad \mathbf{1351 \quad (A)}$$

Step Two: Calculate tDM available/ha

Pasture grown

| | | |
|--|-------------------------|--------------------|
| Region | Waikato & Bay of Plenty | |
| District | Ohaupo | |
| Estimate of Pasture Grown excluding Nitrogen | 15000 kg DM/ha | |
| Farm Producing at | 95% | % of its potential |

or Pasture Grown excluding N - override estimate

13000 kg DM/ha

Pasture produced on milking area

12350 kgDM/Ha

Nitrogen Fertiliser Used

| | | | | |
|-----|----------------|----|---------------|--------------|
| 150 | kg N/ha used x | 10 | kg DM/kg N/ha | 1500 kgDM/Ha |
|-----|----------------|----|---------------|--------------|

Total Pasture Grown (effective area)

13850 kgDM/Ha

13.9 tDM/ha

Imported Supplement -Fed on the effective area for the season

| | | | | | | | |
|---------------------|-------------------------------|-----|------------|----|-----------------------------|------|--------------|
| 170 | t DM maize silage | | | | | 1063 | kgDM/ha |
| 200 | t DM pit silage | | | | | 1250 | kgDM/ha |
| | t DM cereal silage | | | | | 0 | kgDM/ha |
| 0 | bales baleage x | 250 | kg DM/bale | | | 0 | kgDM/ha |
| 0 | bales hay x | 18 | kg DM/bale | | | 0 | kgDM/ha |
| 300 | t PKE | 90% | DM% | | | 1688 | kgDM/ha |
| 0 | t concentrate | 87% | DM% | | | 0 | kgDM/ha |
| 0 | t DM other | | | | | 0 | kgDM/ha |
| | t DM other | | | | | 0 | kgDM/ha |
| 0 | days grazing off x | 200 | cows x | 11 | kg DM/cow/day / farm area = | 0 | kgDM/ha |
| 0 | days grazing off x | 150 | cows x | 11 | kg DM/cow/day / farm area = | 0 | kgDM/ha |
| 0 | days grazing off x | 0 | cows x | 0 | kg DM/cow/day / farm area = | 0 | kgDM/ha |
| 0 | days grazing off x | 0 | cows x | 0 | kg DM/cow/day / farm area = | 0 | kgDM/ha |
| 0 | t DM Increase in Feed on Hand | | | | | 0 | kgDM/ha |
| 0 | t DM Decrease in Feed on Hand | | | | | 0 | kgDM/ha |
| Total Imported Feed | | | | | | | 4000 kgDM/ha |
| | | | | | | | 4.0 tDM/ha |

tDM available feed = (Total Pasture Grown + Imported Feed)/1000kg =

17.9 tDM/ha (B)



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Step Three: Young stock grazing on farm

| | | | | | | |
|-----|----------------|-----|-----------|---|--------------------|-----------|
| 100 | number calves | 5.0 | kgDM/day | 0 | days / farm area = | 0 kgDM/ha |
| 100 | number heifers | 8.0 | kg DM/day | 0 | days / farm area = | 0 kgDM/ha |

| | | |
|---|-------------------|------------|
| Young stock adjustment = Feed used by young stock / 1000kg = | 0.0 tDM/ha | (C) |
|---|-------------------|------------|

Step Four: Divide KgLWT/tDM

| | | |
|--|------|-----|
| Kg LWT/ha | 1351 | (A) |
| tDM available/ha | 17.9 | (B) |
| Young stock grazing on farm adjustment | 0.0 | (C) |
| Net feed for dairy production (B – C) | 17.9 | (D) |

Comparative Stocking Rate = (A ÷ D) 76 kgLWT/tDM

Disclaimer: DairyNZ ("DairyNZ", "we", "our") endeavours to ensure that the information in this publication is accurate and current. However, we do not accept liability for any error or omission. The information that appears in this publication is intended to provide the best possible farm management practises, systems and advice that DairyNZ has access to. It may however, be subject to change at any time without notice. DairyNZ takes no responsibility whatsoever for the currency and/or accuracy of this information, its completeness or fitness for purpose.

DairyNZ

Copy of comparative_stocking_rate_calculator



Agribusiness

Westpac Agribusiness Who we are

- Highly specialist business unit with experience in both practical farming and business banking
- Over 120 specialist Bankers
- Operate from Whangarei to Invercargill in 18 locations
- Over 13% of market share (by balances) to agriculture related business in New Zealand

It is our vision is **"To be the most Preferred Agribusiness Bank in New Zealand"**

We are achieving this by:

- Providing banking for sustainable pastoral, arable and horticultural based operations
- Being 100% customer focused with the right bankers in front of the right customers
- Having all of our customers on agreed 90 day care call programmes
- Having the best and most skilled bankers in the market who listen to clients needs and add value by helping clients achieve their goals
- Pricing appropriately for risk and adding value to our customers



Agribusiness



St Peter's School/Lincoln University
Demonstration Dairy Farm



CONTACT US

Early involvement by the Rural Support Trust can lessen the effects of issues before they become overwhelming. The Trust has a number of experienced coordinators throughout the region.

If you or someone you know in the rural community needs help call **0800 787 254** and our experienced secretary will take your call or in times of high demand will return your call – always, The Trust has experienced facilitators strategically located throughout the Waikato-Hauraki-Coromandel Regions. Our secretary is conversant with the experience and abilities of each, and will choose the facilitator best suited to assist in resolving your specific problems.

RuralSupport

WAIKATO-HAURAKI-COROMANDEL

Challenging times on the farm?

When circumstances beyond your control lead to a rural business crisis—be it financial, climatic or personal—the Waikato-Hauraki-Coromandel Rural Support Trust is ready to assist.

The Trust Coordinators are rural people with local knowledge and experience.

0800 787 254
waikato.rural-support.org.nz



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 Demonstration Dairy Farm



ABOUT US

The Waikato-Hauraki-Coromandel Rural Support Trust is a charitable organisation set up to work with the rural community when times are tough on the farm or in the family. They are also part of a nationwide network of Rural Support Trusts that can assist rural individuals and communities during and after extreme weather and other declared adverse events. They are able to access Government adverse event funding and utilise support from many Government agencies to help rural individuals and communities get back on their feet.

The Trust members are local rural people with a wide range of experience and knowledge in dealing with challenging rural situations. The Trust has a number of facilitators that will travel to where they are needed, contact is one-on-one at a place that suits you, and services are free and confidential.

The unique circumstances of rural life can only be truly understood by rural people who share the same challenges.

HOW WE CAN HELP

First and foremost the Waikato-Hauraki-Coromandel Rural Support Trust is about rural people helping rural individuals and communities to cope during difficult times whenever or whatever they might be.

The Trust and its facilitators are skilled in assisting rural people through adverse events such as flooding, drought, snowstorms, and also financial, animal welfare, and personal crises. The Trust is well connected with rural networks, rural professionals, Civil Defence, local and central government agencies, making the Trust well placed to get things done that might be difficult for individuals.

MORE SPECIFICALLY THE TRUST:

- **Support during personal, environmental, and/or financial difficulties:** The facilitators are trained to help find options to help to manage these types of rural challenges. Often all that's needed is someone to talk to and listen to your problems. They may facilitate a referral to appropriate professional help such as, financial and farm management, mentoring or counselling.
- **Can help during and following an adverse weather event:** The Trust is directly linked into local civil defence and can provide you with information and assist you in getting emergency or on-going help. This may include movement of stock, financial and/or family support, labour or other needs during or following an adverse event.
- **Can help facilitate:** The Trusts coordinators can help facilitate with financial organisations, government agencies, and farm management consultancies.

Services are free and confidential.



St Peter's School/Lincoln University
Demonstration Dairy Farm




Welcome to St Peter's Dairy Farm

The farm is a fully operational, commercial dairy farm with a number of potential hazards for both visitors and staff. Many of the potential hazards cannot be eliminated while also providing access to visitors therefore all staff and visitors **MUST** watch for potential hazards and act with caution.

Hazard Summary: Look, think, act.

The following chart provides a reminder of the types of hazards present. Watch for these and any other hazards that may be on farm today.

| | | |
|--|--|---|
| People: Uninformed / ill prepared visitors may be your greatest risk | Animals: You are in their space | Milking parlour: Moving Rotary platform Confined animals Chemicals |
| Eyes / Ears: Water / oil / milk / chemical splashes Welding flashes Loud machinery |  | Touch: hot / cold surfaces, hot water, chemical burns Electric fences – treat them as high voltage power sources |
| On farm machinery and tools Chainsaws, hand tools etc generate noise, fragments | Potential slips / trips: Uneven surfaces occur across the farm Fences Drains | Vehicles: Contractors and Farm equipment – act as though they can't see you – keep out of their way |

ARE YOU TRAINED FOR WHAT YOU ARE ABOUT TO DO? If not, STOP.

If you are uncertain how you should act or proceed stop and contact the farm manager, other farm staff or your host.

By entering this farm, you are acknowledging your receipt of this hazard summary, and your agreement to take personal responsibility to watch out for potential hazards, and act in such a manner as to protect your-self and any others also on-farm.

Owl Farm



Providing knowledge

St Peter's School/Lincoln University
Demonstration Dairy Farm



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NEW ZEALAND



Lincoln University
Te Whare Wānaka o Aoraki

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Next Farm Focus Day

Wednesday 16 September



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