OWL FARM

Providing knowledge.

ST PETER'S SCHOOL & LINCOLN UNIVERSITY
DEMONSTRATION DAIRY FARM

St. Peter's
CAMBRIDGE N. Z.

LINCOLN UNIVERSITY
TE WHARE WĀNAKA O AORAKI

FARM FOCUS DAY: 21 MAY 2025

Ballance agri-nutrients

DairyNZ

NEW ZEALAND FARM SOURCE
Fonterra
Dairy for life

PGG Wrightson Seeds

AGENDA

Time	Topic
10.30am	Introductions
10.45am	Global view of the season ahead – Jo Faber Sustainable Finance Loans
11.20am	Walk to planting areas Planting with a purpose – Adam Thompson
12.15pm	Post-drought recovery
1.00pm	LUNCH

Owl Farm

APC

2413 kg DM/ha

Round length

61 days (3 day avg.)

Growth rate

43 kg DM/ha/d

v.1.2.2.

Halter

Grow & harvest more grass

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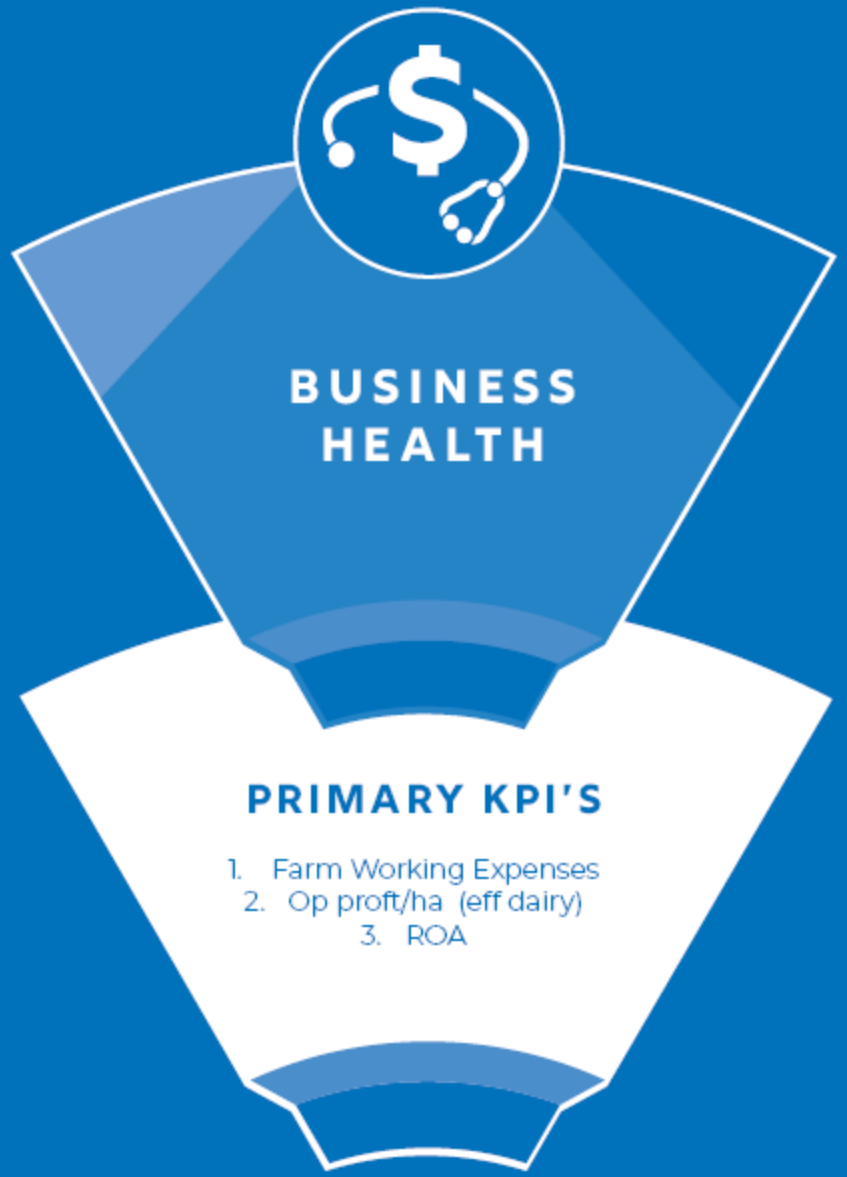


Tariffs and Impact to the Agri Sector

Jo Faber

Head of Insights and Research – Westpac Agribusiness

May 2025

Introduction

Myself

Topic

- Risks, specifically US tariffs

Rolling with the punches

2025 has started pretty well.

- The drivers of the recovery remain the same.
  - Constraints on supply have meant that commodity export prices have remained strong.
  - Interest rate cuts have been significant and are increasingly flowing through to households and businesses.
- The Government continues to signal a commitment to consolidate the Budget.
- Battle between two trade titans, the US and China, evolves.
- Global growth looks weaker and the patterns of trade will shift to reflect the new rules of the global trading system.
- Risk that New Zealand's recovery proceeds more slowly, so that the unemployment rate peaks closer to 6%.
- For now it's likely the RBNZ takes a methodical data-dependent approach and moves the OCR to 3% in coming months. Policy is now stimulatory and will drive the recovery once the punches stop.

Liberation Day tariffs

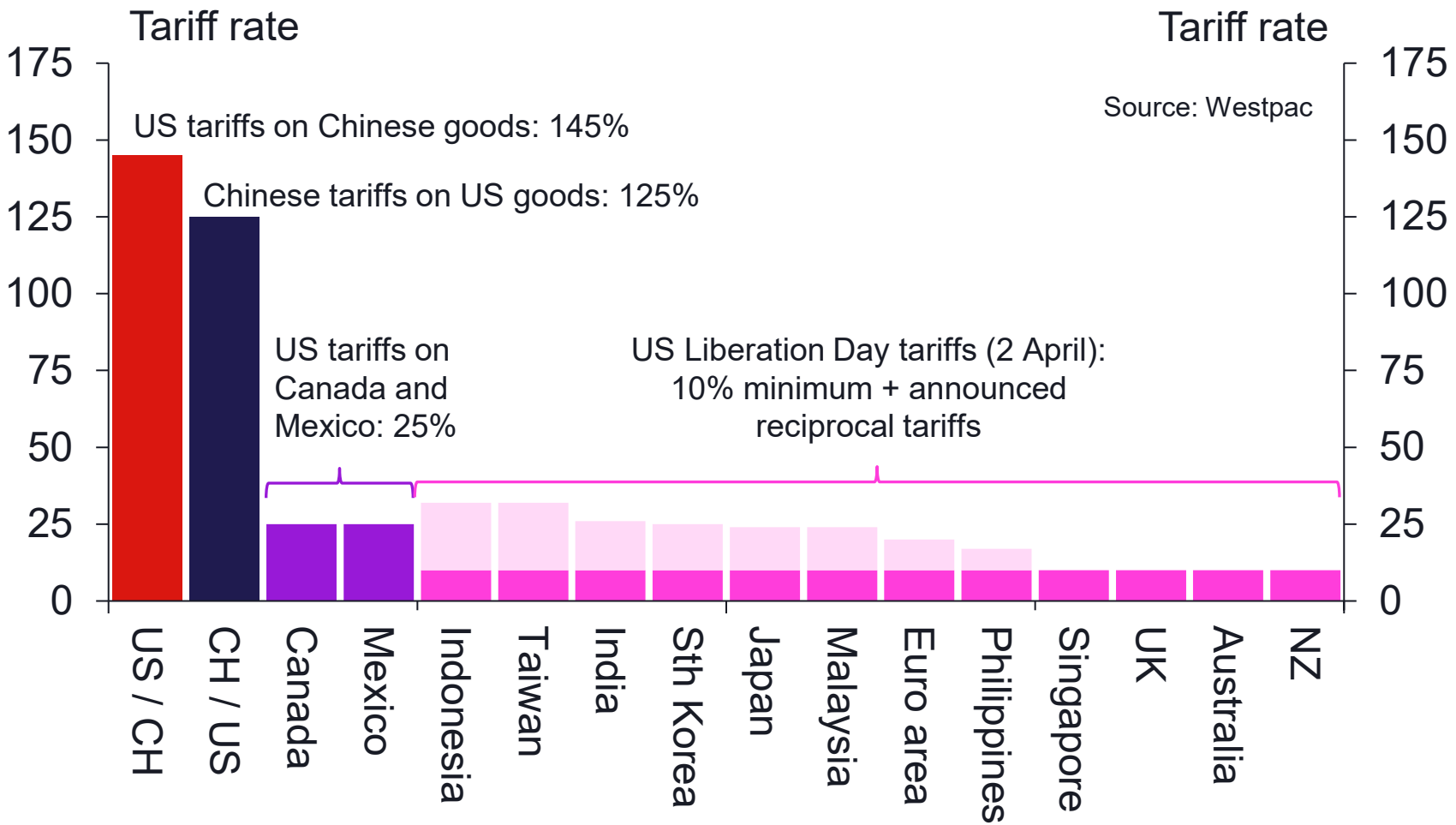
Direct impacts limited, indirect impacts more significant.

- “Liberation Day” saw confirmation that New Zealand will be subject to a 10% tariff on all products into the US.
- The magnitude of tariffs imposed on NZ is at the lower end of the scale compared to that imposed on other countries

- The indirect impacts of US tariffs are difficult to quantify at this stage, but are likely to be much more significant, especially given tit-for-tat actions between China and the US.

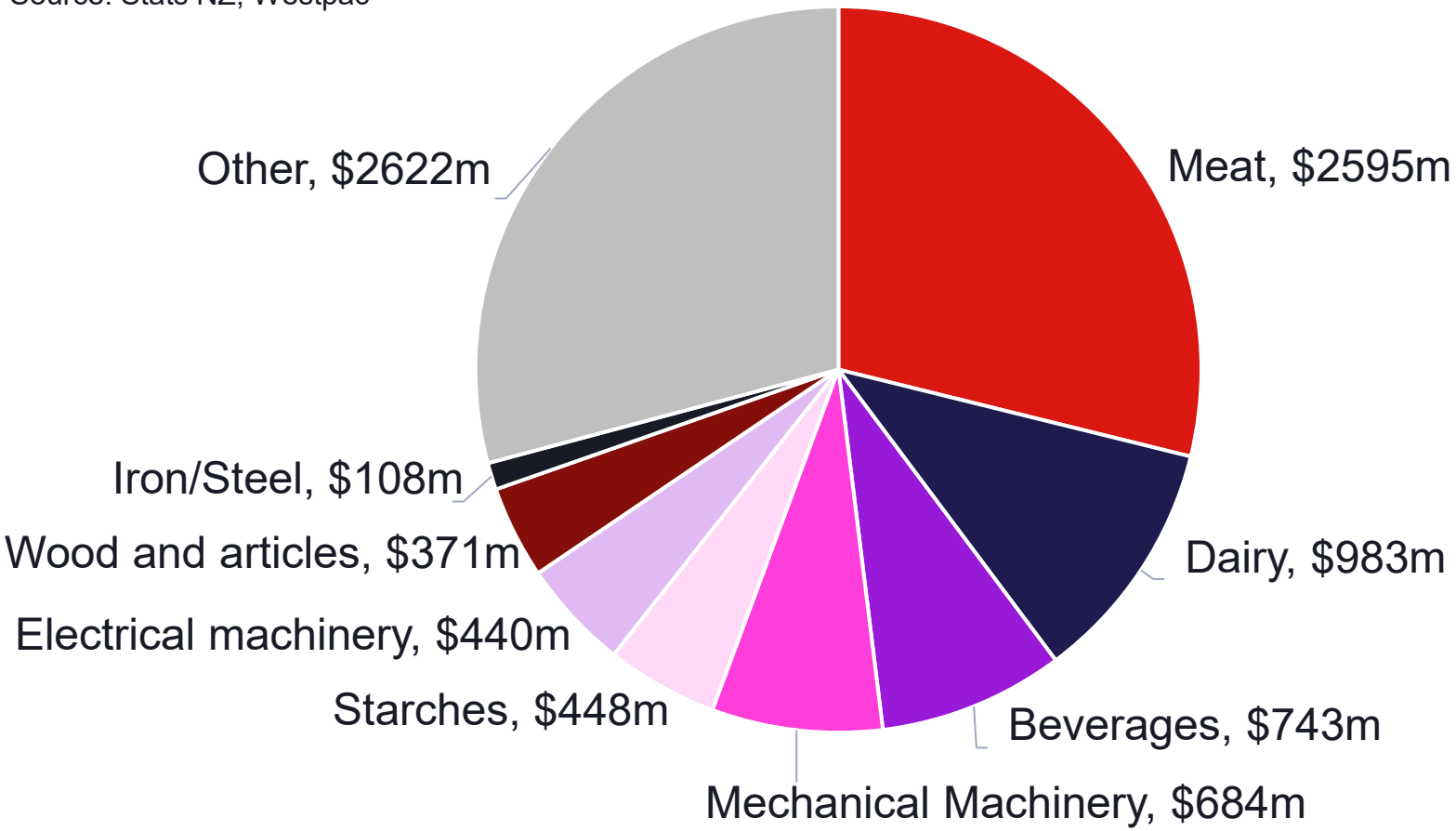
- Tariffs are likely to weaken global demand and that could dampen prices for agricultural products. They will also change trade flows, creating opportunities for and threats to our agricultural exports.

The tariff landscape, interest rates and FX

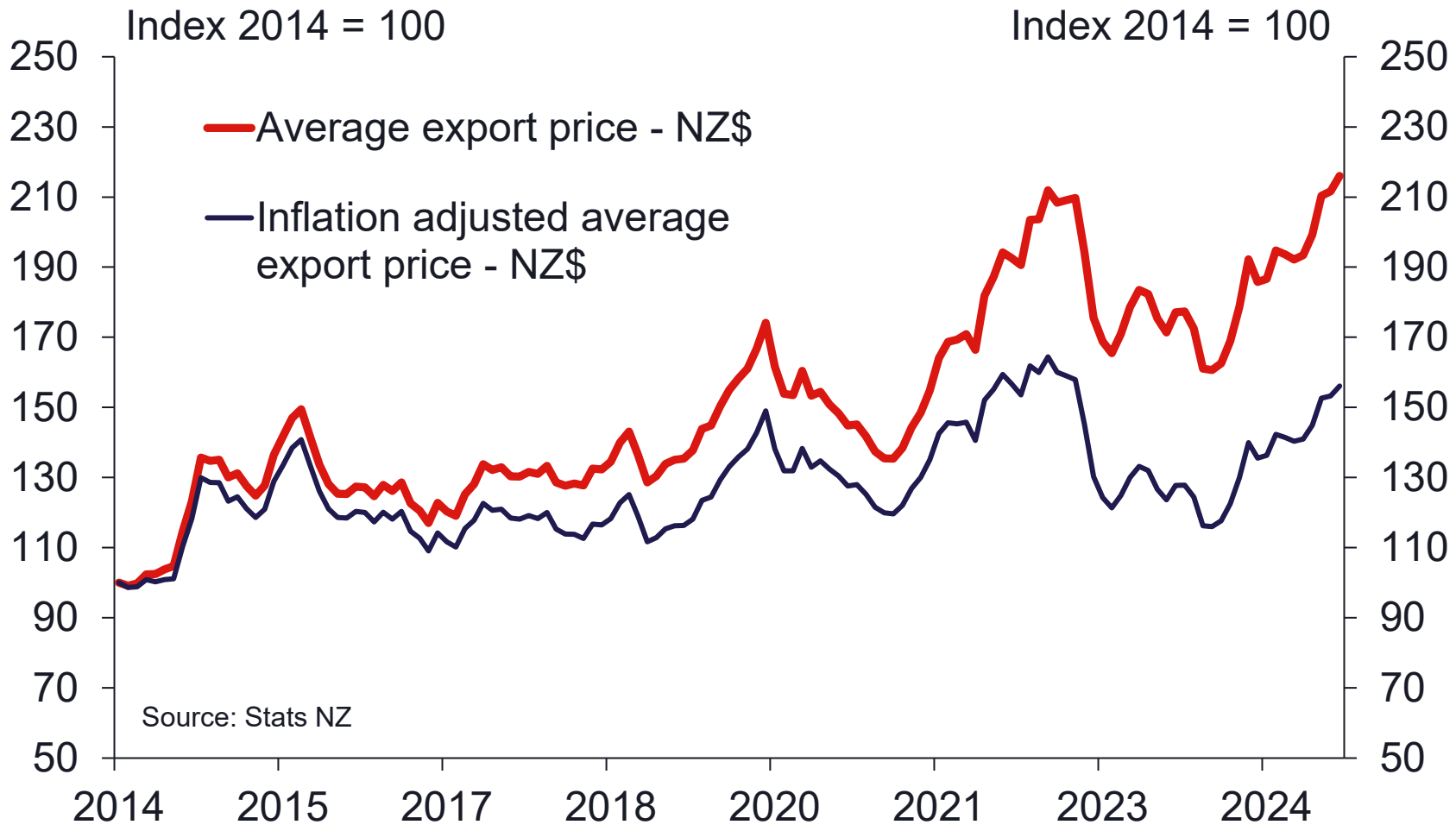


NZ’s direct export exposure to US tariffs – 2024 (NZ$)

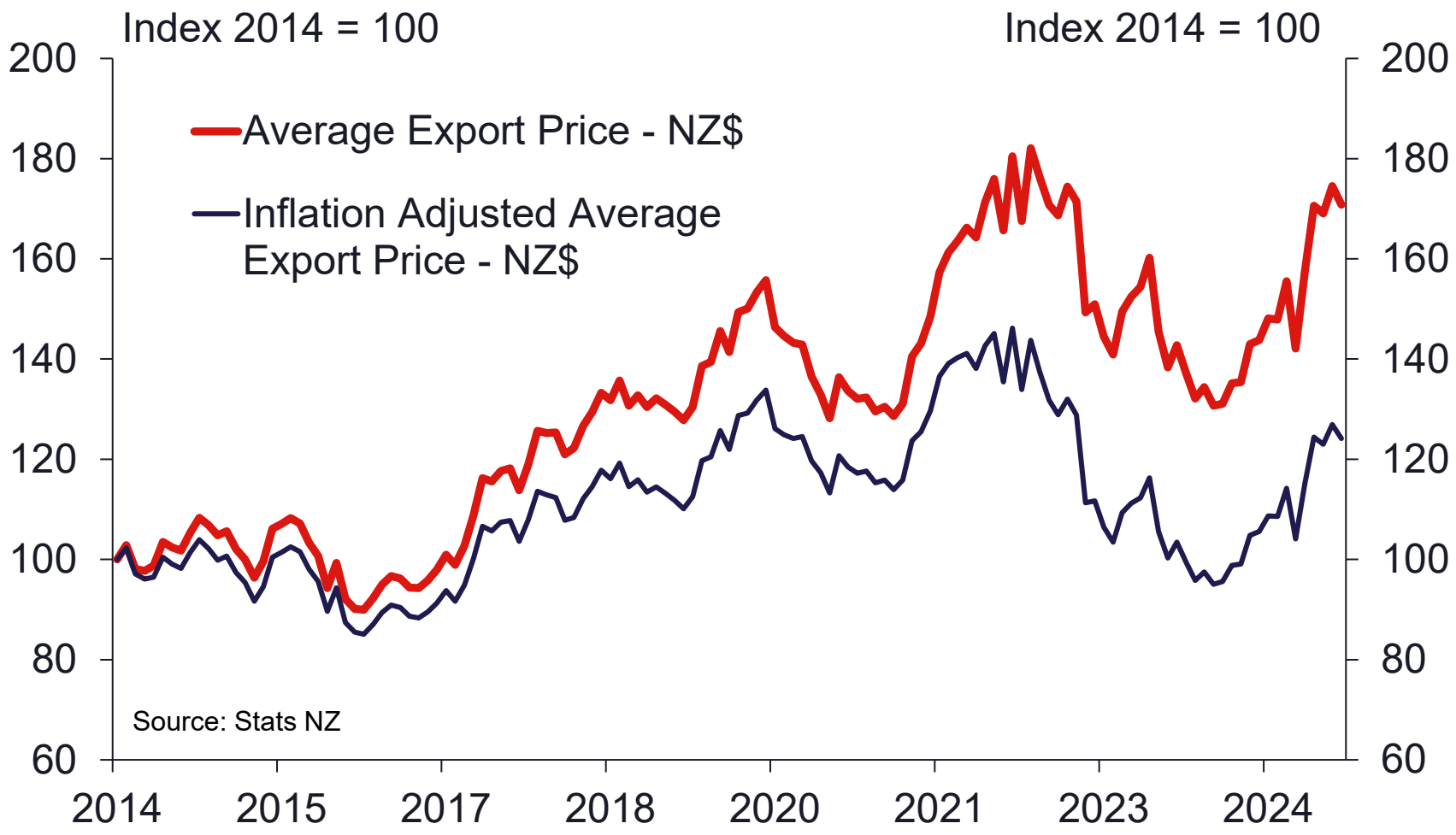
Source: Stats NZ, Westpac



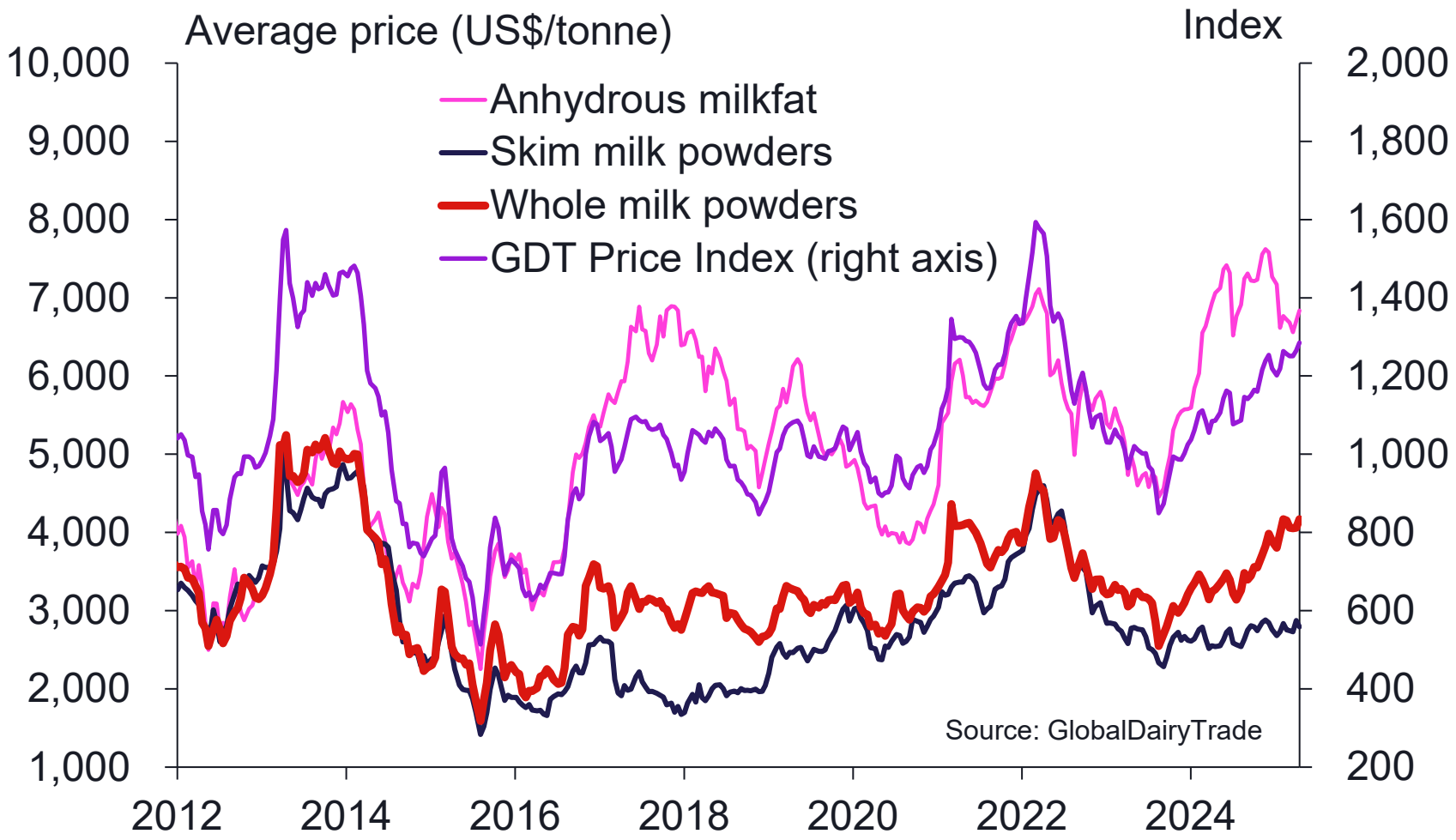
Average monthly beef export prices



Average export prices for lamb



GDT dairy prices



Conclusion

- **Direct impacts:**
  - Likely to be manageable

- **Indirect impacts:**
  - Less well defined and likely to be more substantial

Thank You

Sustainable Farm Loan

Jo Faber

May 2025

Westpac drivers for sustainable lending

Our Purpose	Best Practice	Climate Change	Capital access	Social	Economic
Creating Better Futures Together. Builds on our strategic differentiators of care, inclusion and sustainability.	Great companies lead in sustainability with courage and heart, intentionally driving societal change.	Climate change science is unequivocal, and the impacts are disrupting economies worldwide, including here in Aotearoa.	Accessing finance will increasingly depend on credible transition plans and tangible commitments by businesses.	Social inequality and lack of inclusion widens 'the gap' and creates a bigger social need.	Economic growth depends on prioritising the environment and local communities. Climate resilience = economic resilience.

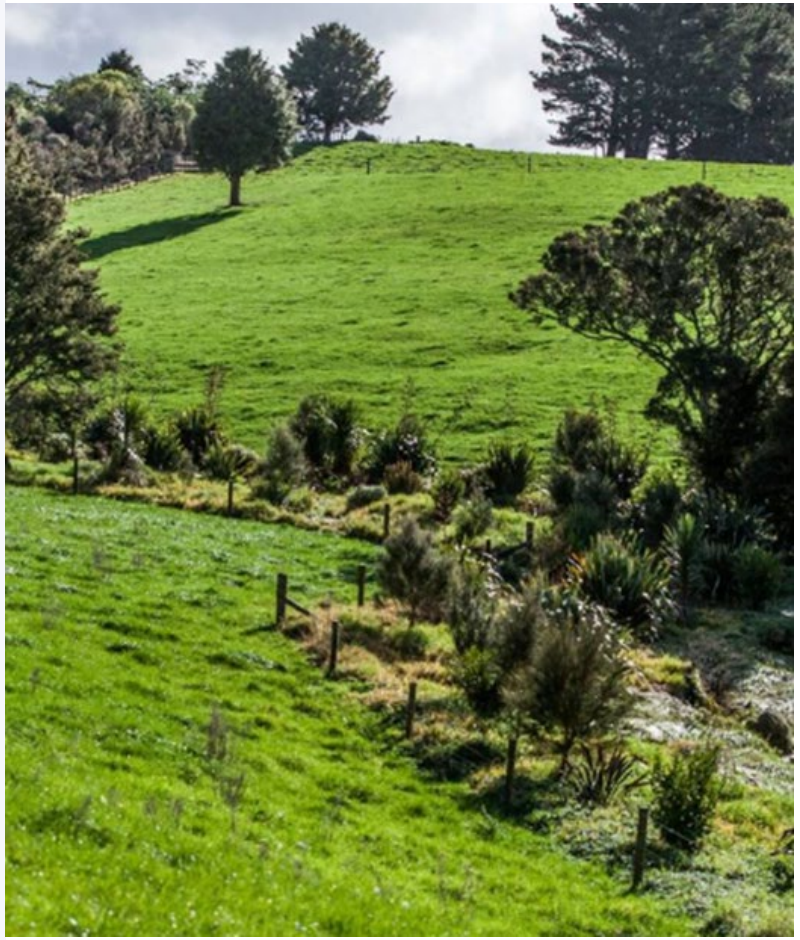
Highlights

Our standard takes a whole-of-farm approach to sustainability, to accelerate the on-farm changes needed, and position farms to be more resilient in the face of adverse weather events.

- √ Be recognised for the great work you are doing on farm
- √ Receive a 20bps discount on your term lending
- √ Recognises and complements farm assurance programmes, reducing duplication and reporting commitments on farm
- √ Be a sector leader

Overview

- Customers can apply to join the Westpac Sustainable Farm Programme (Programme) and be supported to achieve the Westpac Sustainable Farm Standard
- The Westpac Sustainable Farm Standard has been audited against both SAFI livestock and SAFI crops standards
- Once they are approved as a Transitional Member of the Programme, they will receive a discount of 20bps on all term lending supporting their farm and have 2 years to meet the Westpac Sustainable Farm Standard
- Assurance is made easier and cheaper by using existing compliance and assurance work, particularly recognised IAPs (Industry Assurance Programs)



Why it's different

- Most Sustainable Finance Products are for a particular project, such as upgrading your effluent system, hence the product and any applicable discount apply to just a small proportion of your total farm lending

- The only product in market that effectively gives you a cross credit for your existing assurance work on farm

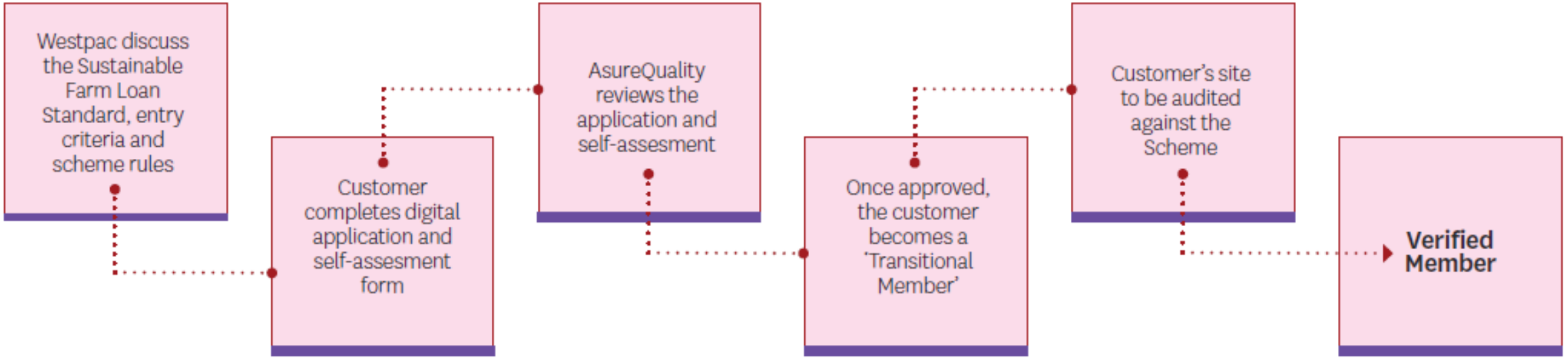
- Audits can be undertaken at the same time as other Industry Assurance Programme audit to align with other programme schedules

Westpac Sustainable Farm Standard

Four Pillars of Westpac Sustainable Farm Standard	
Plans and Maps	• **Plans and Maps** A Farm Environment Plan (FEP) that includes an aerial map. Analysis of on-farm risks related to freshwater, soil health, biodiversity and nutrients.
Environment & Sustainability	• **Water management** Actively managing the health of your waterways and ensuring efficient water usage • **Nutrient and chemical management** Reducing the risk of pollution on your farm through best practice application of synthetic and natural fertiliser and agrochemicals • **Waste Management** Disposing of and reducing your on-farm waste responsibly • **Land management** Responsibly managing your on-farm activities to create better outcomes for biodiversity and soil health • **Climate Change Mitigation** Understanding your farms greenhouse gas emissions and identifying emission reduction opportunities • **Climate Change Adaptation** Providing an understanding of the potential risks climate change and extreme weather events may have on your land and business for a more resilient future
Animal Welfare	• **Animal Welfare** Ensuring the health and welfare of your stock through clear management practices and appropriate training of your staff.
People	• **Health and Safety** Identifying and controlling hazards on your farm to make a safe work and home environment for your family and staff.

The steps

Summary of Programme application and verification steps.



Climate Change adaptation plan

BUSINESS HEALTH

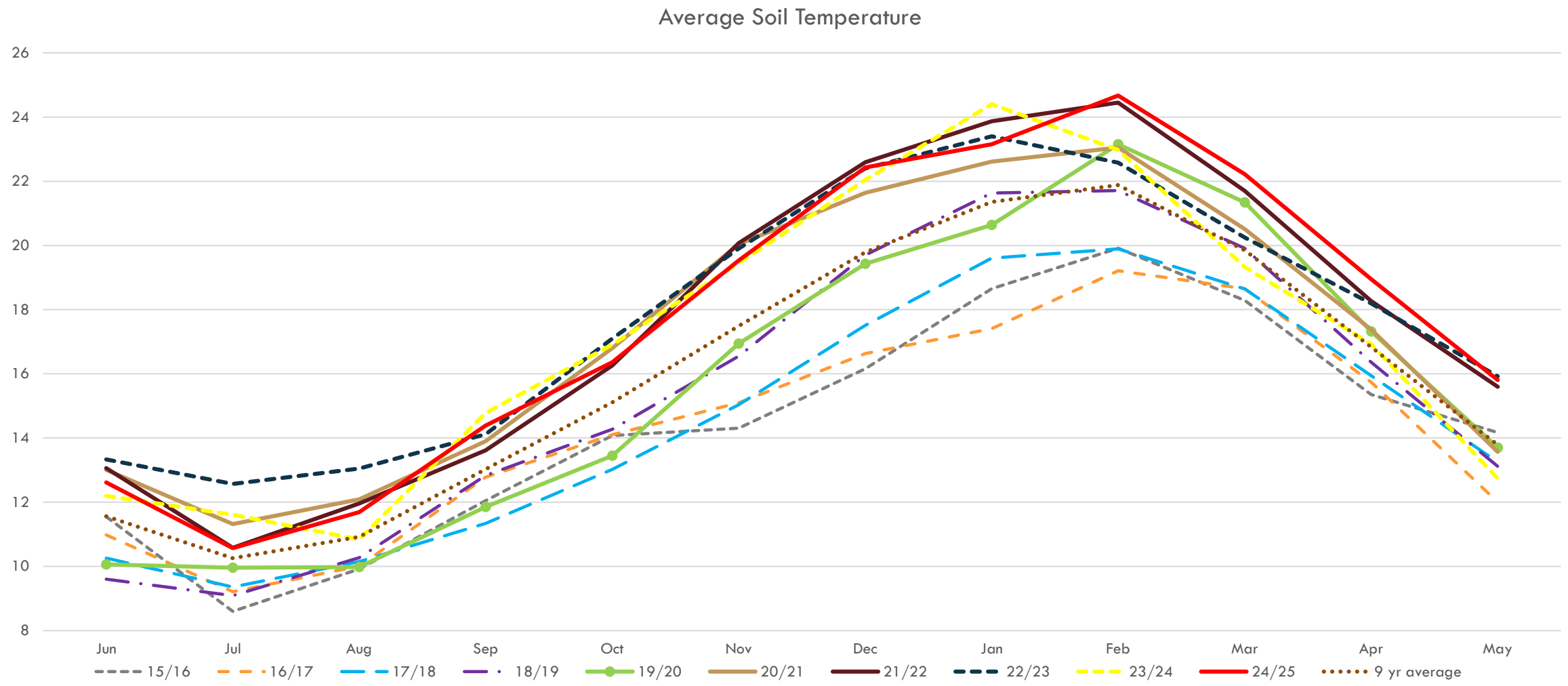
Consequence

Likelihood	Negligible	Minor	Moderate	Significant	Severe
Very Likely	Low Medium	Medium	Medium High	High	High
Likely	Low	Low Medium	Medium	Medium High	High
Possible	Low	Low Medium	Medium	Medium High	Medium High
Unlikely	Low	Low Medium	Low Medium	Medium	Medium High
Very Unlikely	Low	Low	Low Medium	Medium	Medium

- *High risk: requiring immediate action.*
- *Medium high risk: issue requiring additional research or some immediate action.*
- *Medium risk: issues that are likely to benefit from adaptation measures.*
- *Low medium risk: issues that can be dealt with as and when they happen.*
- *Low risk: issues that are considered acceptable should they happen.*

Soil temperature

FARM PERFORMANCE



Climate Change adaptation plan

Describe the Direct Risks	Potential Impact	Risk rating
Reduced growth of ryegrass pastures during the summer	Reduction in total feed supply	Medium High
Increased impact of heat stress on production	Reduced milksolids production and/or animal welfare concerns	Medium High
Pests and weeds impacting crop and pasture production	Reduced yield of crop and/or increased use of chemicals	Medium High
Increase incidence of Facial Eczema and Theileria	Disease and ill thrift in animals	Medium High
Heavy rainfall events creating soil erosion and surface flooding	Sediment and soil contaminants entering water ways. Loss of topsoil.	Medium
Climatic conditions creating hazardous working conditions for our farm team ie. Working outside in the heat or riding motorbikes in high rainfall situations.	Dehydration, heat stress and fatigue of farm team.	

Climate Change adaptation plan

BUSINESS HEALTH

Top Risk 1:

What is the Potential Risk(s)?	**Reduced growth of ryegrass during the summer months**
What Impact could this have?	Less paddock grown feed available for milk production
What is its risk rating?	*Medium High*

Potential Adaptation solution	Adaptation Category	Unknowns	Feasibility	Timeframe
Choose alternative plants to compliment ryegrass sward. Ie. Plantain, clover or cocksfoot	Strategic adaptation	Potential reduction in feed supply during the winter early spring months	Low cost – currently viable	Occurring for the last 5 years
Swap ryegrass for fescue	Strategic adaptation	Performance of new varieties. Management capability – impacts on winter feed supply	Low risk	Started on 2025
Utilise more N to grow and harvest more silage from ryegrass based pastures to feed during the dry months	Tactical adaptation	Cost to make and quality of silage	Improved once we have a silage bunker to reduce wastage	2025
Swap ryegrass for crops (brassicas, maize, chicory) transferring feed to summer time	Strategic adaptation	Value of pasture foregone changes each year depending on the season	Reduced yield increase cost and timing of planting impacts feed supply in early lactation. Bare ground	Currently doing this

Risk planning

BUSINESS HEALTH

Top Risk 1:

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Actions taken to reduce emissions

Reduced stocking rate (less methane) with reduced urine patches (less nitrous oxide)

Reduction in imported supplements (less methane)

Breed high BW cows currently top 3% nationally (less methane and nitrous oxide)

Reduce replacement rate using sexed semen and focusing on meeting youngstock growth targets (less methane and nitrous oxide)

New pastures planted with Ecotain Plantain (4 kg/ha) (less methane and nitrous oxide)

Retire and plant unproductive land (less methane and increased carbon dioxide sequestration)

Reduce nitrogen application rates to below 30 kg N/ha per application (less nitrous oxide)

Use SustaiN and Smartfert (less nitrous oxide)

Upgrade effluent storage facilities to eliminate spreading during the winter months (less nitrous oxide)

Increase effluent area (less nitrous oxide)

Reduce nitrogen application during May – July (less nitrous oxide)

Use soil moisture probe and soil temperature data to ensure nitrogen is applied when soil temperatures are above 10°C and soil moisture levels are above stress point (less nitrous oxide).

Conduct Soil Total N tests to determine most efficient use of nitrogen (less nitrous oxide)

Reduce total nitrogen used in conjunction with My Pasture Planner (less nitrous oxide)

Constructed wetland with 63% removal of nitrates from a 7.6 ha catchment area (less nitrous oxide, more carbon sequestration)

Zero cultivation using direct drilling of Cleancrop varieties for all crops (less carbon dioxide).

Harnessing of solar energy to move cows around the farm reducing our consumption of fossil fuels (Halter collars)

Future mitigation options

Reduce involuntary culls to less than 15% (allowing selective culling and reduced replacement rate)
Improve production efficiency of cows (90% of lwt) focusing on high feed conversion efficiency
Reduce reliance on low quality imported supplements during dry summers
Reduce CO2 footprint of imported supplements by purchasing more locally grown feed
Reduce bare/fallow periods between crops
Improve the balance of protein content in the diet within the season
Adopt low N and low methane genetics in sire selection
Explore the use of methane inhibitors and vaccines as they come to market
Explore water and energy use on farm and strategies to reduce use
Explore options for solar energy capture and use
Continue to plant natives as per our Integrated Planting Plan
Continue to adopt fertiliser technology that reduces GHG emissions

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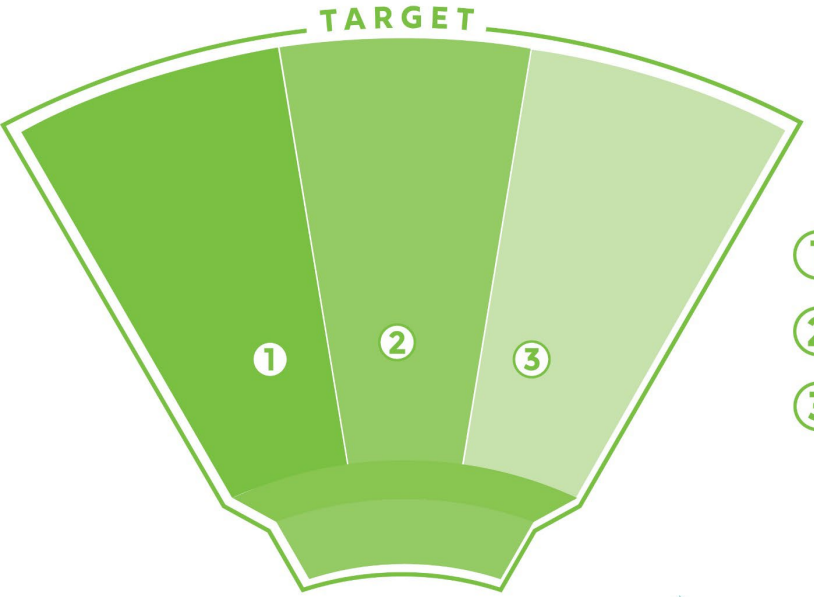
ENVIRONMENT

PRIMARY KPI'S

1. Biological GHG/ha CO2 equiv
2. GHG Emissions Intensity
3. Modelled N loss kg/ha/yr

Environment KPIs

ENVIRONMENT



	PRIMARY KPI	OWL FARM TARGET	2023/24	2022/23	2021/22	2020/21	2019/20	2018/19
1	Biological GHG/ha CO2 equiv	3 yr average trending down	7901	9633	10411	9945	9074	9192
2	GHG Emissions Intensity	3 yr average trending down	11.1	11.4	12.2	12.0		
3	Modelled N loss kg/ha/yr	3 yr average trending down	25	28	35	34	32	33

Data Acknowledgment
Map contains data sourced from LINZ
Crown Copyright Reserved

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Figure 1. Overview of Management Units and Shade Tree Locations, Owl Farm, Cambridge

0 250 500 m

Wildlands

Scale: 1:7,000
Date: 24/08/2021
Cartographer: FM
Format: A3R


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2022 SHADE TREE PLANTING GUIDE
Poplar
Populus Flevo
London Plane
Plantus Acerifelia
Variegata Elm
Ulmus Carpinifolia Variegata
Red Alder
Alnus Rubra
Gleditsia
Gleditsia Tri Sunburst
Swamp Spanish Oak
Quercus Palustris
Ginkgo
Ginkgo Biloba
Canadian Red Maple
Acer Rubrum
Weeping Willow
Salix Vitellina Aurea
Cooper Beach
Fagis Sy Riversii
Scarlet Oak
Querus Coccinea

Description	Quantity	Unit Price	Amount NZD
Supply and Plant Manuka	600.00	4.30	2,580.00
Supply and Plant Kanuka	600.00	4.30	2,580.00
Supply and Plant Pittosporum Kohuhu	300.00	4.30	1,290.00
Supply and Plant Pittosporum Tarata Lemonwood	700.00	4.30	3,010.00
Supply and Plant Cabbage Tree	400.00	4.30	1,720.00
Supply and Plant Wineberry	400.00	4.30	1,720.00
Supply and Plant Ribbonwood	400.00	4.30	1,720.00
Supply and Plant Hebe Stricta	100.00	4.30	430.00
Supply and Plant Karamu	200.00	4.30	860.00
Supply and Plant Akeake	200.00	4.30	860.00
Pre Spray - Spot spray ready for planting	3900.00	0.40	1,560.00
Release Spray	3900.00	0.60	2,340.00
		Subtotal	20,670.00
		TOTAL GST 15%	3,100.50
		TOTAL NZD	**23,770.50**

Webinar by Adam

ENVIRONMENT

Join Adam at 7:30pm Wednesday 28 May for a FREE webinar packed with expert advice on:

1. Site identification

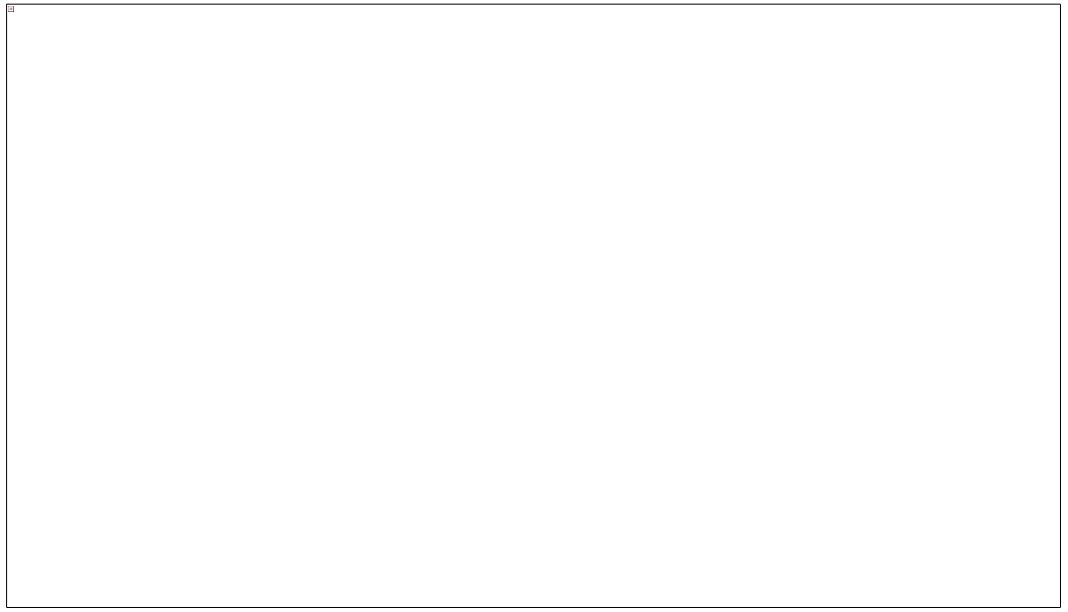
- How our specialist drone mapping ensures the correct density for the location

2. Getting the site ready

- Effective weed control, including use of sprays and manual control
- Spot spraying vs grazing for site prep
- Managing animal and weed pests

3. Picking the right plants

- Choosing the right plants for different site conditions (exposed, wet, dry, erosion prone etc)
- Why a mix of plant types and sizes makes a difference



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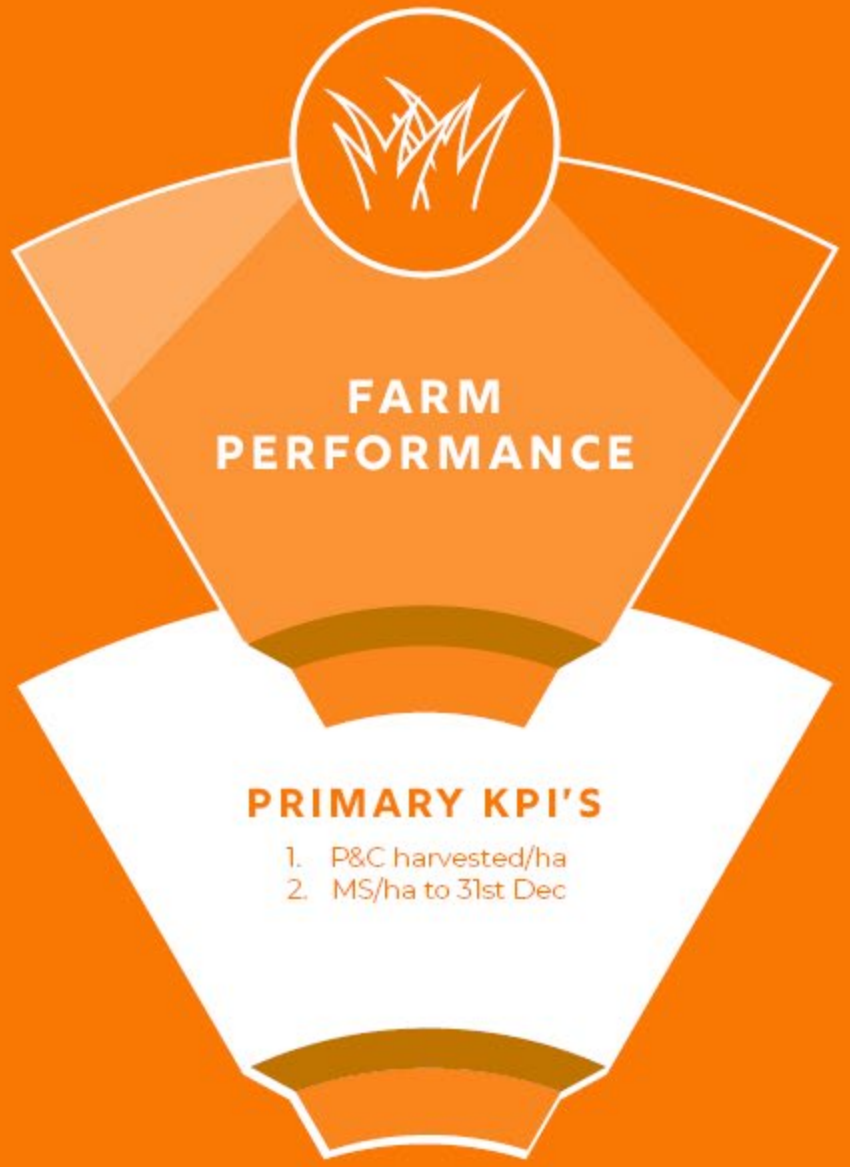
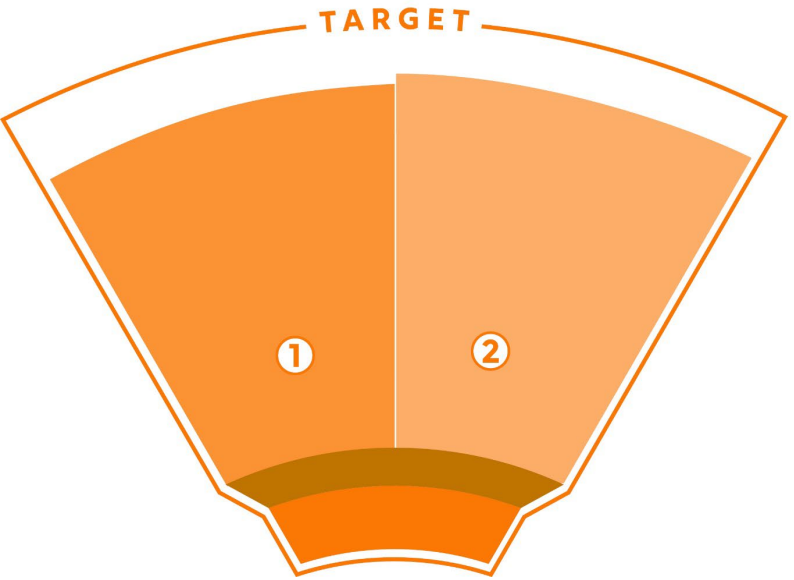


Farm Performance KPIs

FARM PERFORMANCE



	PRIMARY KPI	OWL FARM TARGET	2023/24	2022/23	2021/22	2020/21	2019/20	2018/19
1	P&C harvested/ha	15t DM/ha - measured via DairyBase	12.7	11.2	13.2	13.7	13.1	13.1
2	MS/ha to 31st Dec	850 kgMS/ha	729	766.5	808	810	816	819

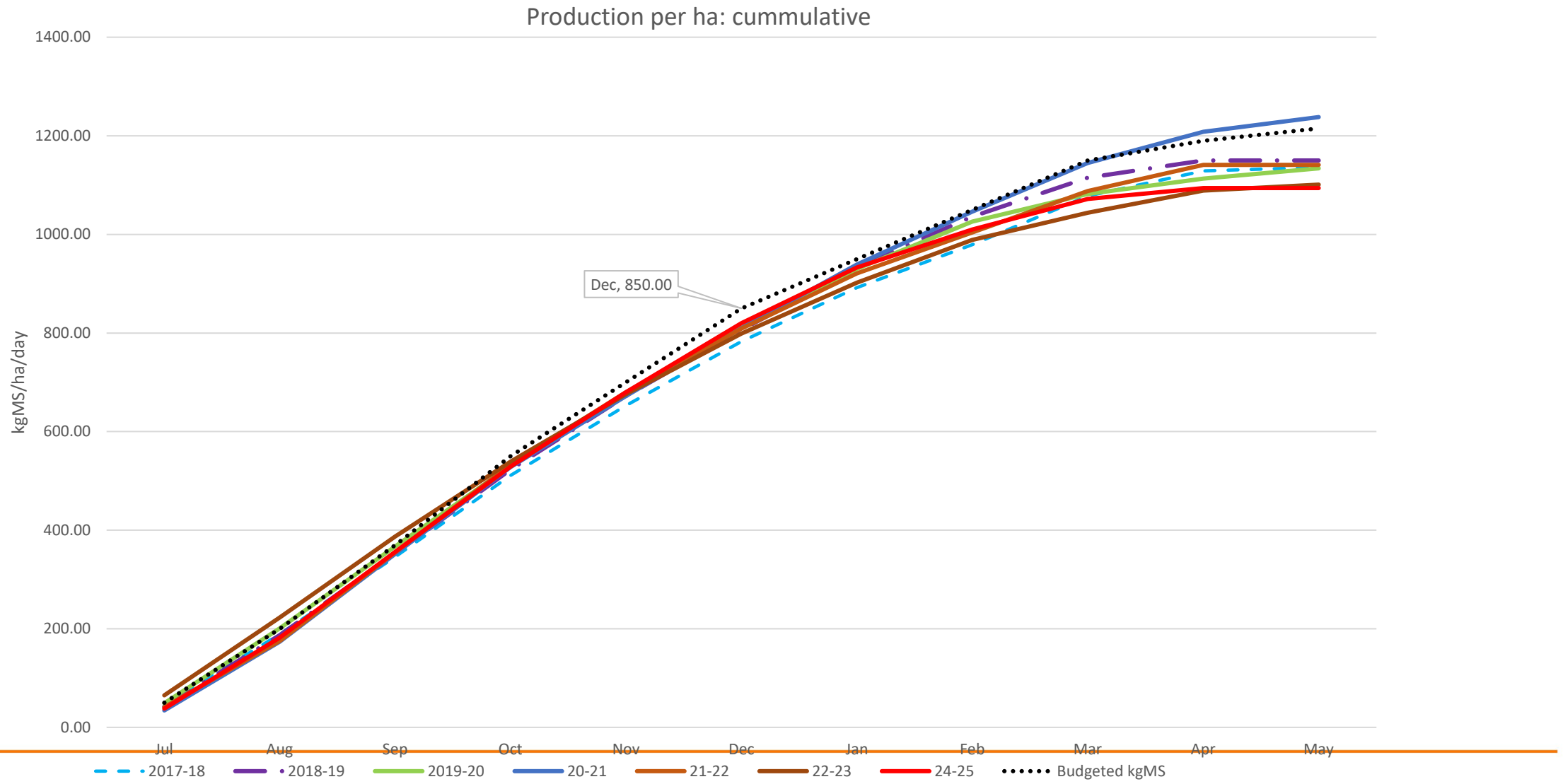
Monthly kg MS vs target

FARM PERFORMANCE

	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
23/24 Production	6,205	16,549	20,742	20,834	18,705	17,241	13,824	11,093	9,523	6,486	1,821
24/25 Production	4,562	17,057	20,696	20,571	17,947	16,563	13,774	9,072	7,126	2,627	0
Budgeted 24/25	6,000	16,000	20,000	22,000	18,000	17,000	14,000	11,000	9,000	6,000	1,700

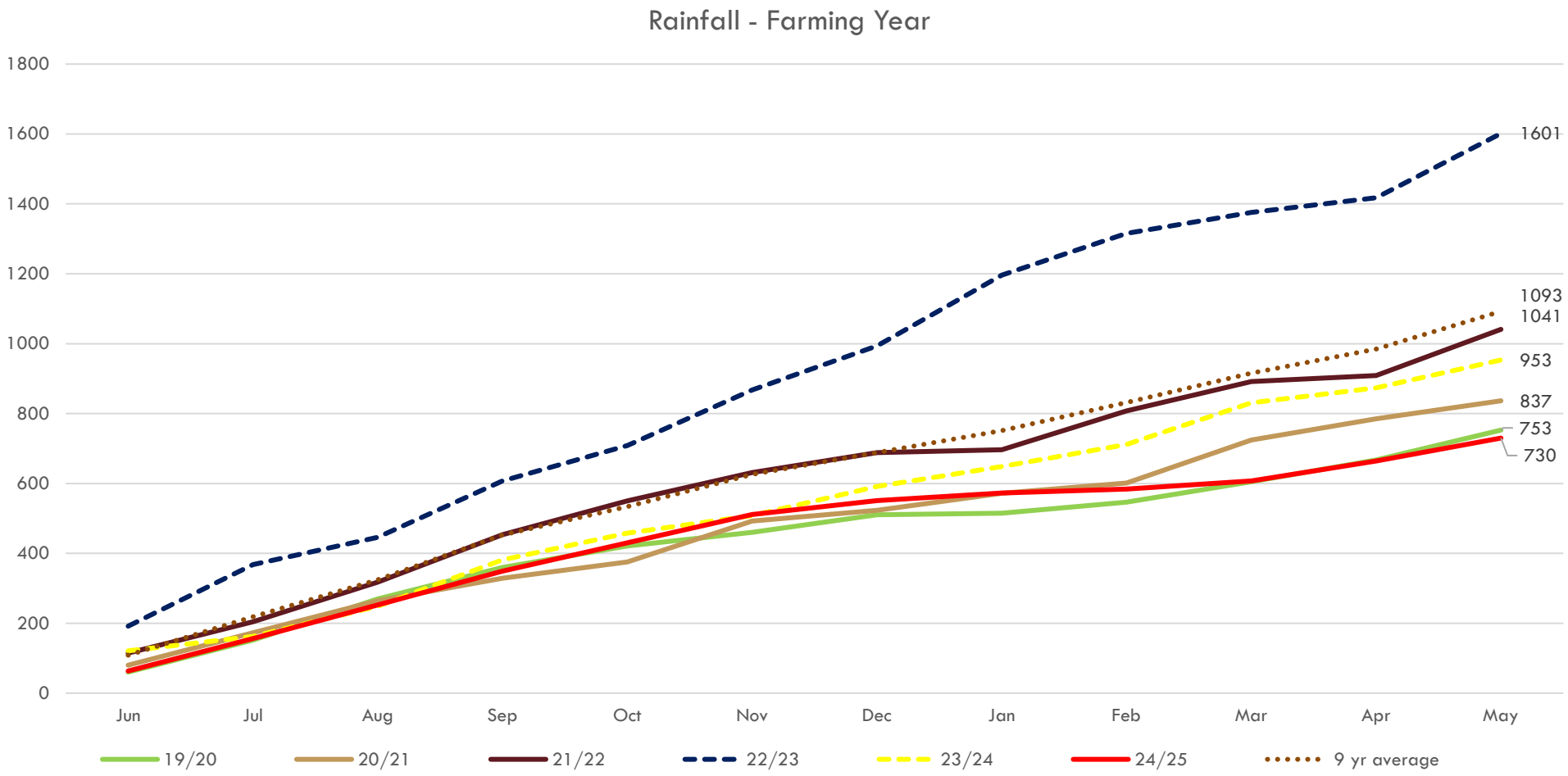
kg MS/ha cumulative

FARM PERFORMANCE



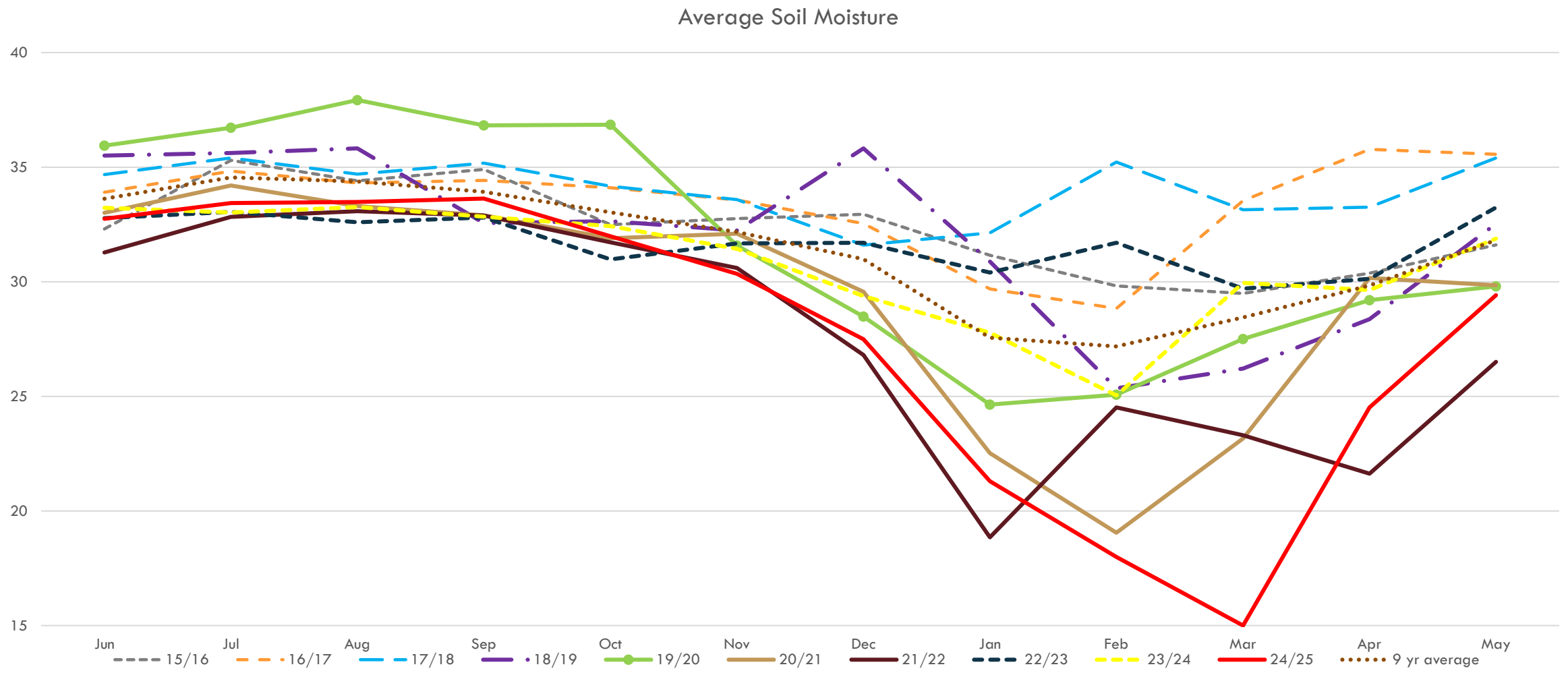
Rainfall cumulative

FARM PERFORMANCE



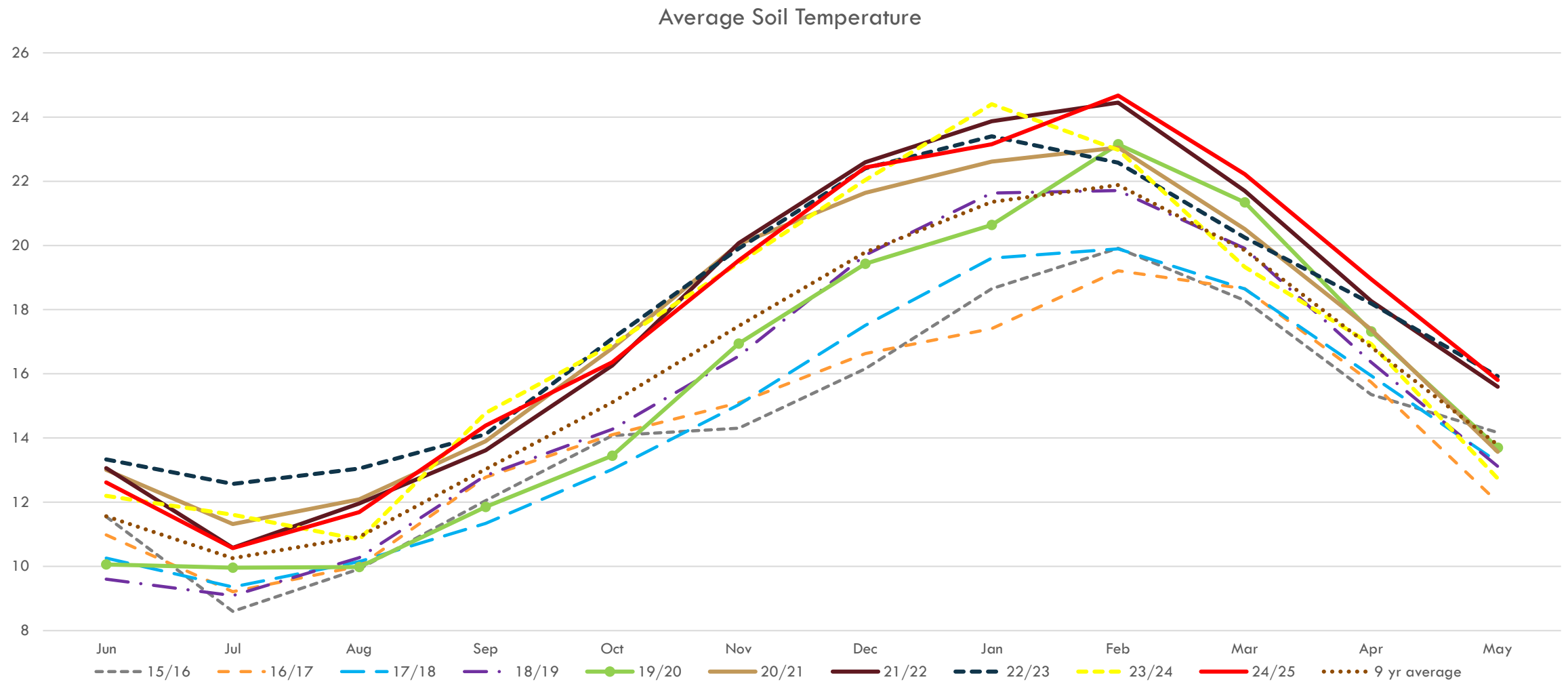
Soil moisture

FARM PERFORMANCE



Soil temperature

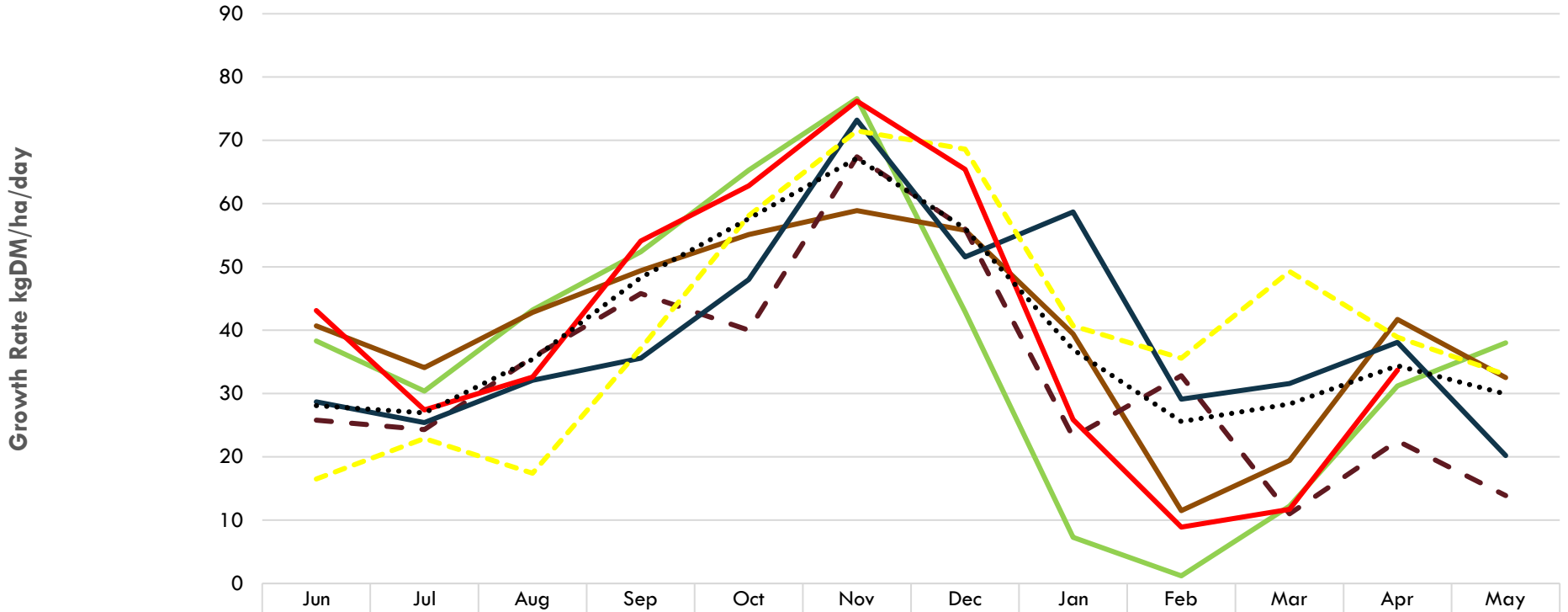
FARM PERFORMANCE



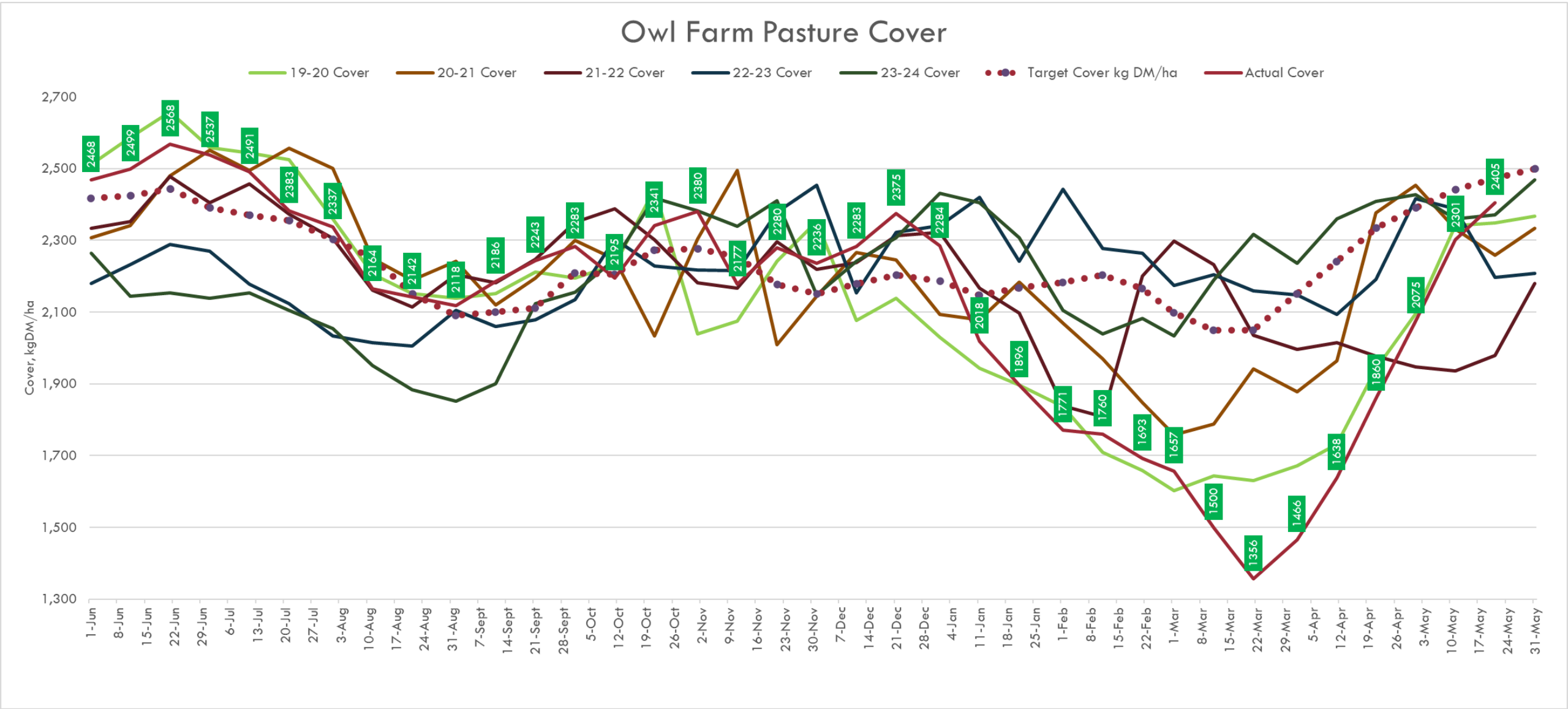
PGR

FARM PERFORMANCE

Farmax Potential Growth Rates



	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
2019-20	38	30	43	52	65	77	43	7	1	12	31	38
2020-21	41	34	43	49	55	59	56	39	12	19	42	33
2021-22	26	24	36	46	40	67	56	23	33	11	23	14
2022-23	29	25	32	36	48	73	52	59	29	32	38	20
2023-24	17	23	17	37	58	72	69	41	36	49	39	33
2024-25	43	27	33	54	63	76	65	26	9	12	34	
Long term average	28	27	35	48	58	67	56	37	26	28	34	30


Owl Farm Pasture Cover
19-20 Cover
20-21 Cover
21-22 Cover
22-23 Cover
23-24 Cover
Target Cover kg DM/ha
Actual Cover
Cover, kgDM/ha
2,700
2,500
2,300
2,100
1,900
1,700
1,500
1,300
2468
2499
2568
2537
2491
2383
2337
2164
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2118
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6-Jul
13-Jul
20-Jul
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30-Nov
7-Dec
14-Dec
21-Dec
28-Dec
4-Jan
11-Jan
18-Jan
25-Jan
1-Feb
8-Feb
15-Feb
22-Feb
1-Mar
8-Mar
15-Mar
22-Mar
29-Mar
5-Apr
12-Apr
19-Apr
26-Apr
3-May
10-May
17-May
24-May
31-May

Set up for next season

Metric	Status
APC at 1st June > 2400 kg DM/ha	2405 kg DM/ha now
New pastures had first grazing and N application	6 paddocks remaining from 15 new grass paddocks (24ha of ex tree nursery added)
Cows on track for BCS target at PSC	Herds currently drafted based on last BCS with increased PK while we wait for shed access for whole herd BCS due 1st week June.
Outstanding leave liability	All used up – everyone has had good time off farm
Feed on hand for winter/spring	Approx 30 t DM hay and baleage plus in-shed feeding

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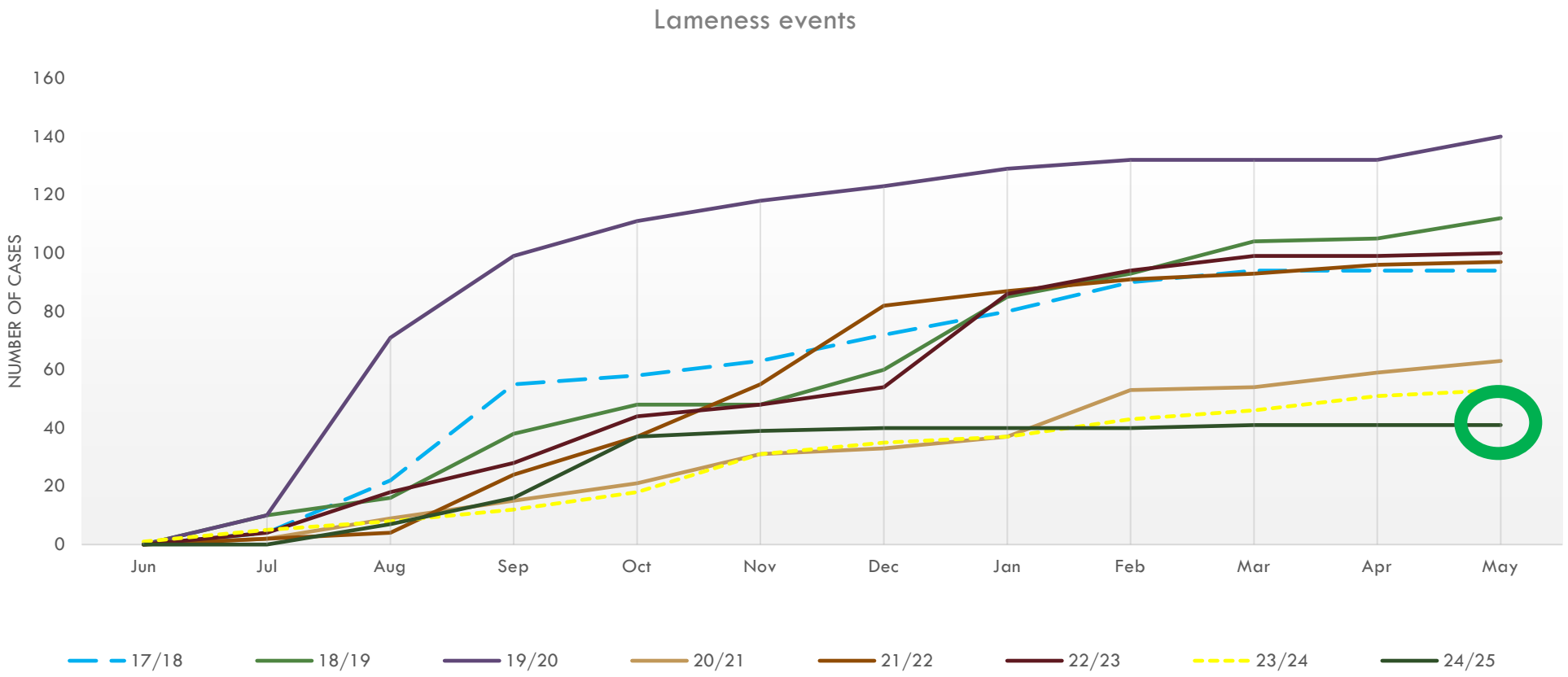
Animal Well-being KPIs

ANIMAL WELL-BEING

	PRIMARY KPI	OWL FARM TARGET	2023/24	2022/23	2021/22	2020/21	2019/20	2018/19
1	Healthy cows	15% or less involuntary culls	22%	22%	12%	19%	20%	-
2	Purposeful lives for calves	100% reared past 4 days on farm	54%	61%	70%	60%	39%	34%
3	Replacements reared	21% - at weaning	20%	19.4%	19.4%	22.9%	23.4%	23.1%
4	Healthy calves	100% adequate total protein	92%	83%	83%	80%	-	-

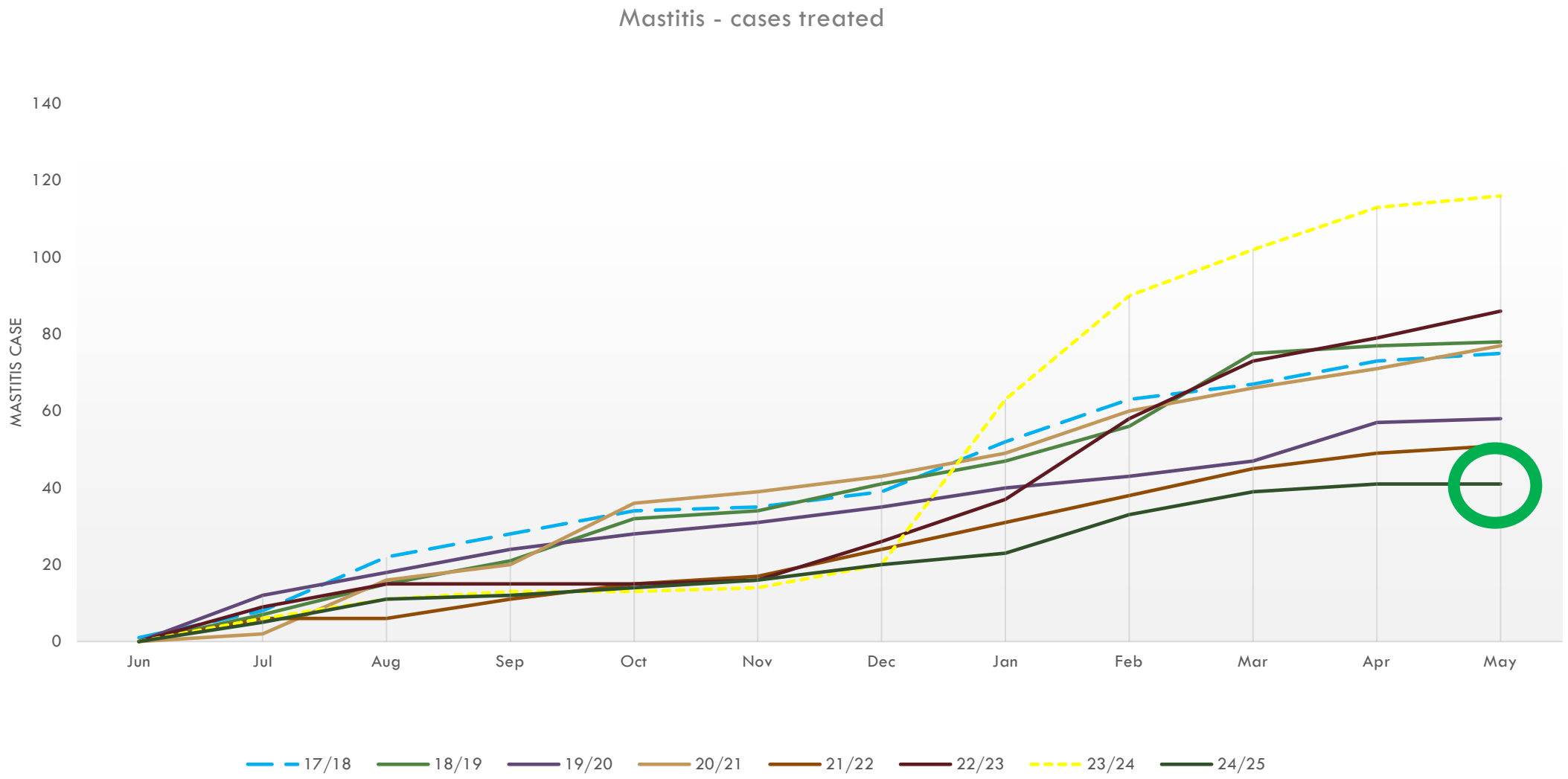
Lameness

ANIMAL WELL-BEING



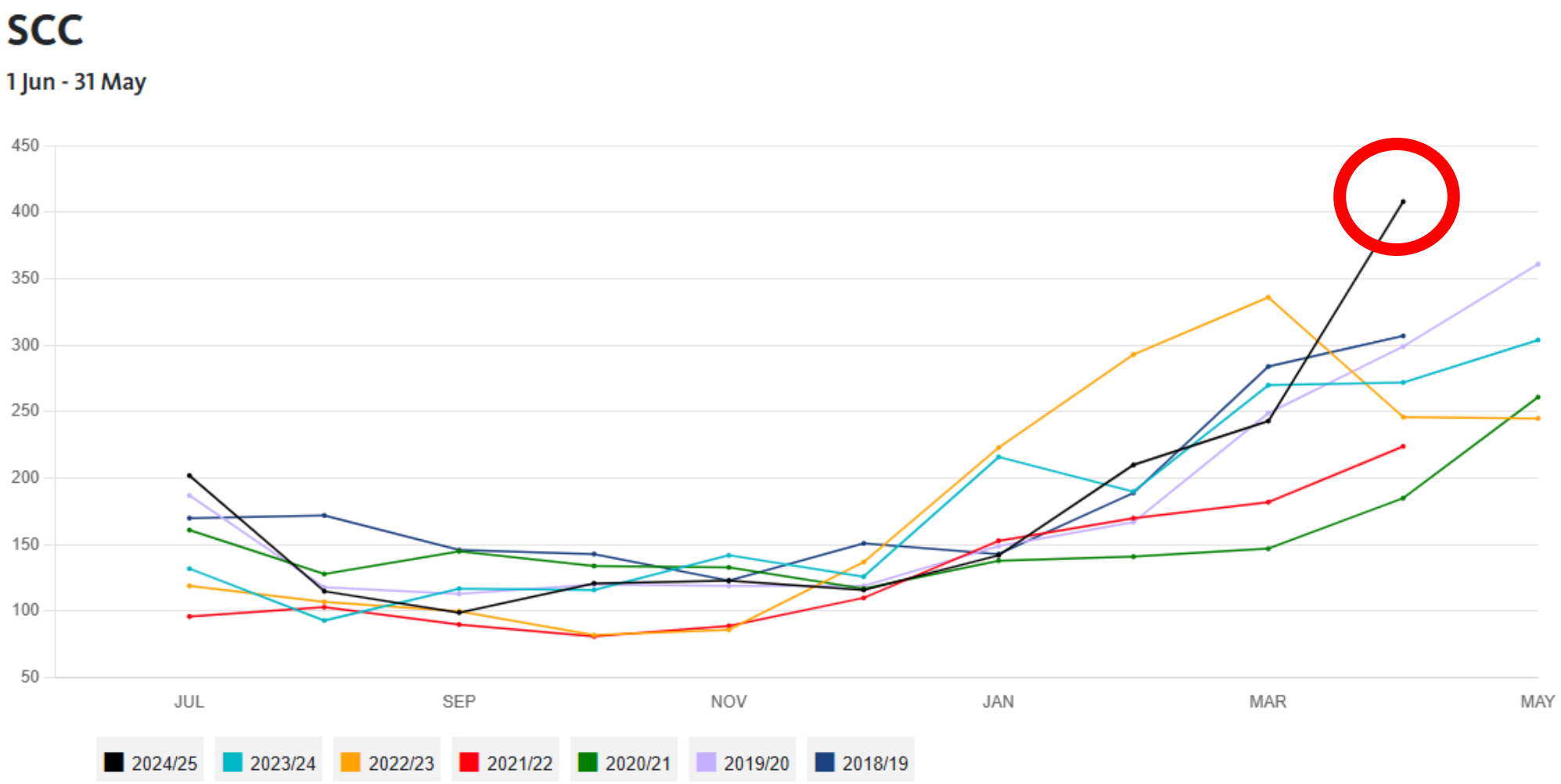
Mastitis

ANIMAL WELL-BEING



Somatic Cell Count

ANIMAL WELL-BEING



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Thank you