



MASSEY UNIVERSITY

Massey Agricultural and Horticultural Enterprises – Dairy 4

History:

Massey University purchased the property of W.J. Brogden (111.3 ha) in April 1973, and the property of L.L. Lovelock (50.6 ha) in July 1973. These two properties were amalgamated and developed by the University for a large seasonal supply dairy farm. In May 1988, the adjoining property of G.W. Perry (58.24 ha) was purchased. Dairy 4 is the larger of the two dairy farms owned by Massey University. In early 2012, half of the Dairy Cattle Research Unit (DCRU) grazing platform joined Dairy 4, and the remainder of the DCRU land (then organic) was dissolved into the Dairy 4 grazing area in early 2013. This has increased Dairy 4's effective grazing area to 221 hectares.



Dairy 4 Objectives:

- To provide the University with a base for on farm teaching and research .
- To be managed as a profitable, large scale, commercial seasonal supply dairy farm.
- To study the problems inherent to large-scale dairying and to provide a teaching resource for undergraduate and postgraduate programmes.
- To provide a link between Massey University and Agribusiness.

Location: Dairy 4 is located adjacent to the Massey University campus, Tennent Drive (SH57) approximately 5km from Palmerston North City.

Altitude: 80m above sea level.

Rainfall: 980mm (average annual rainfall)

Temperature: 7°C July, 18.1°C January (monthly 10cm soil temp).

Soils: Predominately Tokomaru Silt Loam with some Ohakea Silt Loam soils on the lower terraces. Poor natural drainage and with a tendency to dry out in summer. Moderate natural fertility. All artificially drained.

Area: 250 hectares

Effective Area: 221 hectares

Subdivision: The farm is subdivided into approximately 80 x 1.5-3.5 hectare paddocks all with race access.

Drainage: Tile and mole. Approximately 90% of the farm. Soils are prone to being excessively wet in winter, and dry in summer.

Water Supply: Massey University water supply, reticulated to all paddocks.

Staff: Six permanent staff and casual staff as required

Stocking Rate & Production:

	2012/2013	2013/2014	2014/2015	2015/2016	2016/2017	2017/2018*	2018/2019	2019/2020	2020/2021
Total Milksolids Supplied (kg)	226,505	229,148	262,278	244,263	244,980	225,326	263,500	269,024	276,049
Cows Milked (Peak)	667	654	647	608	597	578	565	575	572
Stocking Rate (cows/ha)	2.9	2.8	2.8	2.6	2.6	2.5	2.6	2.6	2.6
Milk Production (kg MS/cow)	340	350	405	402	410	390	466	468	483
Milk Production (kg MS/ha)	976	988	1,131	1,053	1,056	971	1,176	1,217	1,249
						*2017/2018 OAD from November			

The Herd (as at 10/07/2019):

Breed: Friesian x Jersey herd
Recorded ancestry: 99%
Breeding Worth: 107/58
Production Worth: 110/66

Mating:

Planned start of mating is 18th October for 9 weeks. Artificial breeding only.

	2012/2013	2013/2014	2014/2015	2015/2016	2016/2017	2017/2018*	2018/2019	2019/2020	2020/2021
Repro 6 Week	No Data	65.5%*	70%	79%	81%	75%	78%	75%	74%
Repro Empty	No Data	7%	9%	8%	10%	13%	12.5%	13%	15%
Mating AB (Weeks)	No Data	6	6	6	9	9	9	10	9.5
Mating Natural (weeks)	No Data	6	6	5	0	0	0	0	0
Total Weeks Mating	No Data	12	12	11	9	9	9	10	9.5
		* Crude average % across two herd codes. (58% 450 cows, and 70% for 200cows).							

Farm Dairy:

Milking facility:

Commercial:

Waikato Milking 60 bale Centrus platform, ECR Plus, LIC Automation Yield Sense, in-bale teatspray, five way drafting, Nedap cow collars

Research:

Waikato Milking 28 bale Centrus Platform, ECR Plus automation, LIC Automation Yield Sense, in-bale teatspray, three way drafting,

Feed Pad:

600 cow capacity. 400 cow commercial and 200 cow research.

Freestall Barn:

200 cow capacity with individual freestalls, plus two open calving areas

Calf Units: Two calf units, 120 calf capacity research rearing shed located next to the dairy shed. 80 calf capacity unit on Old West road for all outgoing animals and overflow for main shed.

Pasture:

Pastures are predominantly perennial ryegrass / white clover species. Historically, Dairy 4 has grown on average, 11.4 t DM/ha/year.

Grazing Policies:

Pasture based production system with supplements imported (see below) aiming to achieve high levels of feed conversion efficiency through excellent grazing management.

The following stock are grazed off the farm:

- Heifer Calves from weaning
- Yearling Heifers
- Jersey breeding bulls from twelve months of age
- Mixed age dry cows. 150 for 60-70 days

Crop and Supplements:

Chicory is used as summer crop

Maize silage, grass silage, bypass products and concentrates are used throughout the season.

5-10 ha of Maize silage is grown on farm the remainder is sourced externally, along with grass silage. Approximately 500 bales of baleage harvested across the season. Concentrates can be fed in shed. Minerals are provided on a daily basis through the mixer wagon.

Regrassing Policy:

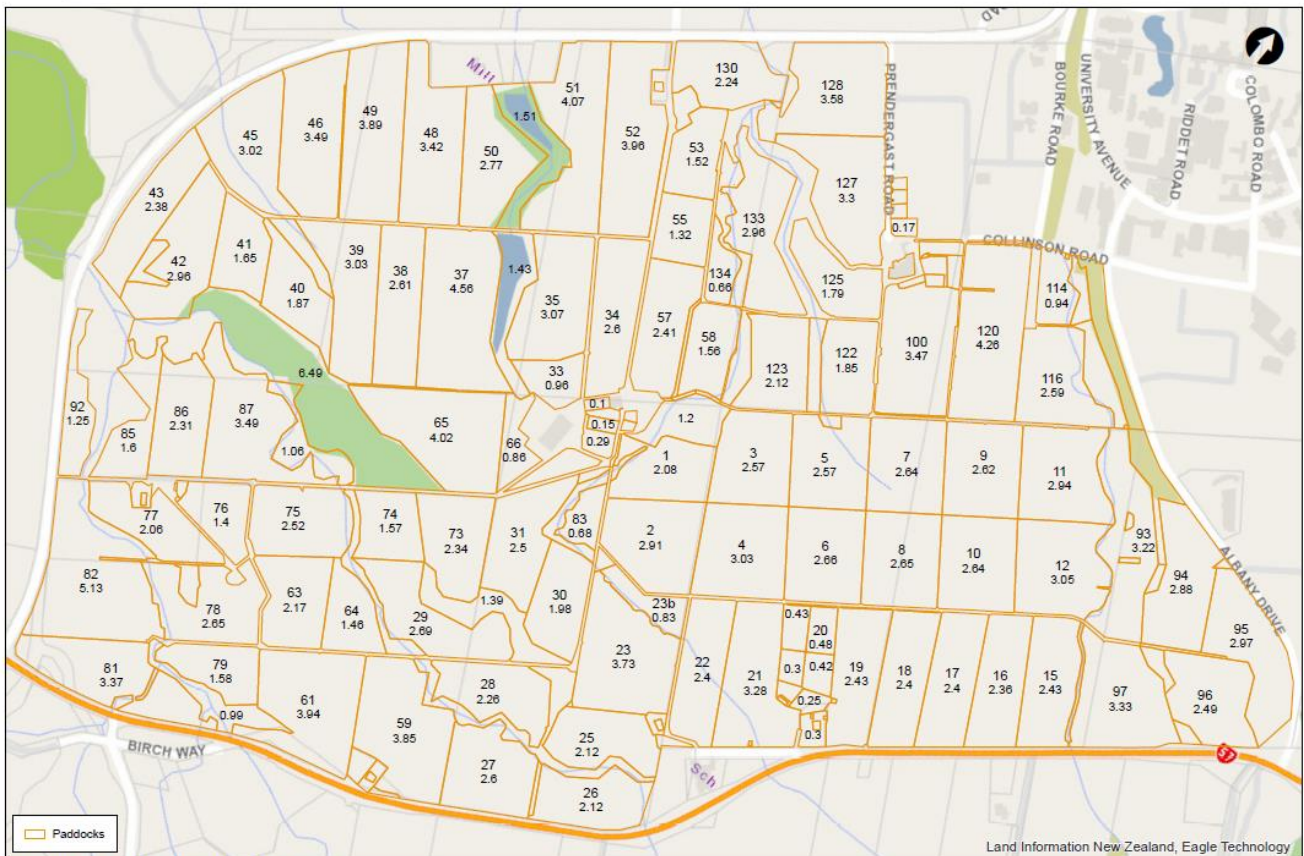
Pastures are renewed on a ten-year rotation. A mixture of Perennial and short-term grasses are used, approximately 20-25 hectares. Any known crop paddocks for the following season are sown with annual the autumn before.

Fertiliser:

Fertiliser programmes vary every year. Fertiliser applications are based on biennial soil tests, plant demand and climate data. Soil tests are done biennially (see soil test results below).

Year	pH	Olsen P (mg/g)	SO ₄ (mg/g)	K (MAF QT)	Mg (MAF QT)
2000	5.7	65.5	8.8	5	32
2002	5.8	45.6	8.2	6	29
2004	5.7	39.6	9.3	6	28
2010	5.8	39.4	14.5	5	28
2012	5.8	43	22	6	27
2016	5.9	37	17	8	36
2018	6.1	26	15.2	7	34
2020	6.1	28	13	10	38

Dairy 4



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Land Information New Zealand, Eagle Technology

