



## 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 232 hectares.



#### Dairy 4 Objectives:

- To be actively involved in research and extension of innovative pastoral dairy technology systems.
- 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.  
See:  
<https://massey.maps.arcgis.com/apps/View/index.html?appid=eb4afbf3647f4c5fbb89df84559dae99>

**Area:** 250 hectares

**Effective Area:** 224 hectares

**Subdivision:** The farm is subdivided into approximately 90 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*
Total Milksolids (kg)	226,505	229,148	262,278	244,263	244,980	225326.9	263500
Cows Milked (Peak)	667	654	647	608	597	578	565
Stocking Rate (cows/ha)	2.9	2.8	2.8	2.6	2.6	2.5	2.4
Milk Production (kg/cow)	340	352	405	402	410	390	466
Milk Production (kg/ha)	976	988	1131	1053	1056	971.24	1172

2017/2018 OAD from November

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

Breed: Friesian x Jersey herd  
Recorded ancestry: 96%  
Breeding Worth: 74/55  
Production Worth: 86/61

#### Mating:

Planned start of mating is 18<sup>th</sup> October for 9 weeks. Artificial breeding only.

	2012/2013	2013/2014	2014/2015	2015/2016	2016/2017	2017/2018	2018/2019
Repro 6 week	No Data	65.5%*	70.0%	79.0%	81.0%	75.0%	78.0%
Repro EMPTY	No Data	7.0%	9.0%	8.0%	10.0%	13.0%	12.5%
Mating AB (Weeks)	No Data	6	6	6	9	9	9
Mating Natural (Weeks)	No Data	6	6	5	0	0	0
Total Weeks Mating	No Data	12	12	11	9	9	9

\* Crude average % across the two herd codes. 58% (450 cows) CDBH and 70% CCRK (200 cows).

#### Farm Dairy:

Milking facility: 50 bale rotary cowshed equipped with De Laval Alpro system (electronic identification, milk yield, sampling, drafting, in-shed feeding, and walk-over weighing)

Feed Pad: 250 cow capacity

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. 180-220 for 60-90 days

**Crop and Supplements:**

Chicory is used as summer crop

Maize silage, grass silage, bypass products and concentrates are used throughout the season. Some Maize silage is grown on farm the rest is purchased along with grass silage. Approximately 100-150 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:**

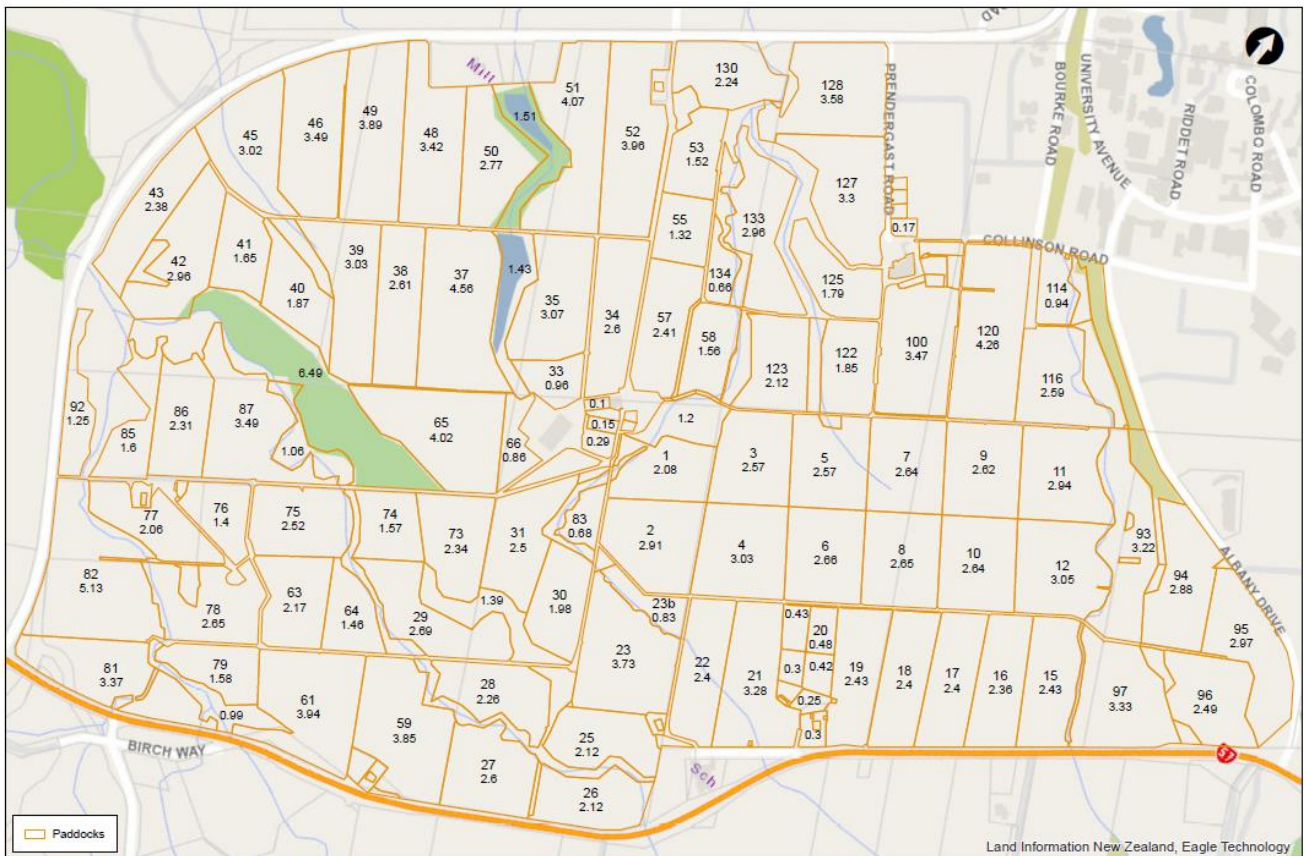
Pastures are renewed on a ten-year rotation. A mixture of Perennial and short-term grasses are sown following the harvest of summer crop, approximately 20-25 hectares. Known crop paddocks for the following season are sown with annual the autumn before.

**Fertiliser:**

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

Year	pH	Olsen P (mg/g)	SO <sub>4</sub> (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

# Dairy 4



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Land Information New Zealand, Eagle Technology

