Transition seasons from twice-a-day (TAD) milking to once-a-day (OAD) milking at Massey University Dairy Farm No 1

M. Correa Luna[2]*, N. López-Villalobos[1], D. Donaghy[1], P. Kemp[2]

[1]Institute of Vet, Animal and Biomedical Sciences, Massey University, Palmerston North, New Zealand
[2]Institute of Agriculture and Environment, Massey University, Palmerston North, New Zealand
*email: M.L.CorreaLuna@massey.ac.nz

Farm Focus
- Explore sustainability through OAD milking system
- Farm in a manner that meets environmental requirements of Horizons Council
- Link with community
- Teaching resource for students, research and extension

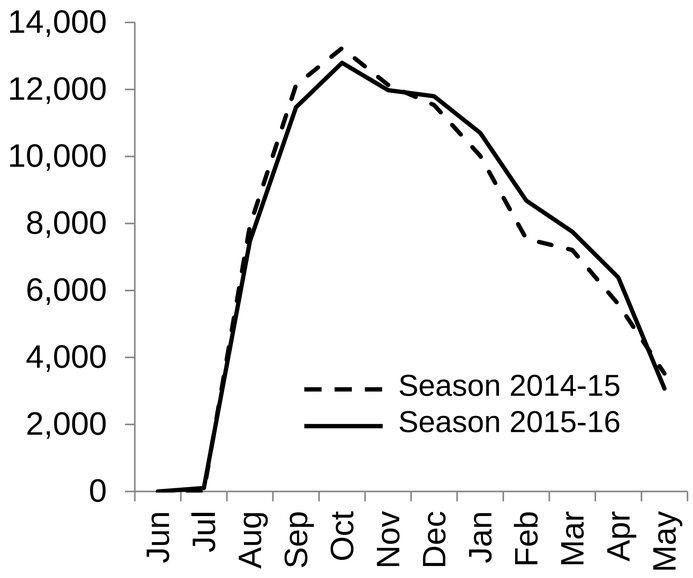
Farm
- Established in 1929
- Converted to OAD full season in 2013
- 120 ha (117 ha effective area)
- 61 paddocks in total
- 18 paddocks (35.4 ha) can be irrigated

Soils
- Association of river soils
- Excessively well drained, and prone to summer drought
- High in natural fertility

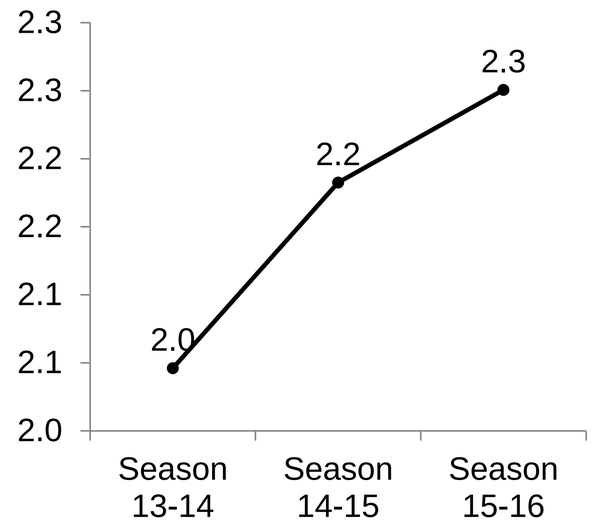
Facilities
- 24 aside herringbone shed equipped with Westfalia metatrons
- 3 bay calf shed
- Office, storage room, teaching room
- Concrete feeding pad, 280 cow capacity

	Season 2014-15	Season 2015-16
Area		
Total effective area	117.3	117.3
Rye-grass pasture (ha)*	76.2	94.5
Lucerne (ha)	9.4	9.4
Plantain - chicory - red clover (ha)	9.7	9.7
Chicory irrigated (ha)	-	2.4
Brasssica crops - turnips (ha)	4.0	9.0
Brasssica crops - rape (ha)	8.6	-
Milking cows		
Total	256	264
Holstein friesian	70	70
Jersey	57	65
Crossbreed	129	129
Milk production		
Total		
Milk (litres)	974,674	1,003,087
Milksolids (kg)	90,842	92,783
Fat (kg)	51,904	52,505
Protein (kg)	38,938	40,278
Per cow		
Milk (litres)	3,807.3	3,799.6
Milksolids (kg)	354.9	351.4
Fat (kg)	202.8	198.9
Protein (kg)	152.1	152.6
SCC	130	113
Lwt	489.6	468.8
Per ha		
Stocking rate	2.2	2.3
Milk (litres)	8,309.2	8,551.5
Milksolids (kg)	774.4	791.0
Fat (kg)	442.5	447.6
Protein (kg)	331.9	343.4
DMI (kg DM/cow)‡	4,464.5	4,287.3
FCE (kg MS/t DM)◊	79.5	82.0
Calving and mating		
Planned start of calving	20/07/14	24/07/15
Calved by week 3 (%)	68	60
Calved by week 6 (%)	90	87
Calved by week 9 (%)	100	98
Planned start of mating	15/10/14	15/10/15
3-week submission rate (%)	94	90
6-week pregnancy rate (%)	85	78
Empty rate (%)	8	8
Length of AB (weeks)	10	11
Length of total mating (weeks)	10	11
BW	119.4	128.9
PW	147.2	150.0
TOP scores		
Capacity	7.091	6.723
Udder support	6.203	6.400
Front udder	5.728	5.929
Rear udder	6.264	6.273
Front teat	4.524	4.617
Rear teat	6.125	5.764
Udder overall	5.976	6.147

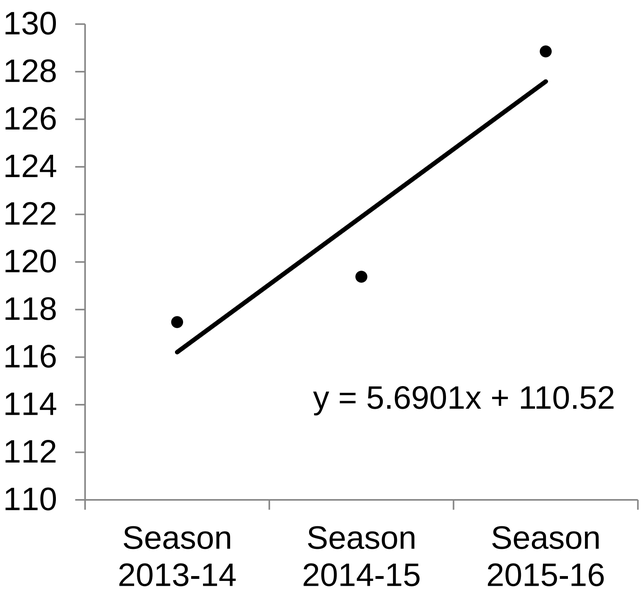
Milk production per season (kg MS/month)



Stocking rate (cows/ha)



Genetic gain in breeding worth ($/5 t DM)



* Weighted Average during season

‡ DMI = dry matter intake calculated using info provided by Farmax Dairy Pro modelling software

◊ FCE = feed conversion efficiency calculated as kg MS produced per ton of DM offered