

Productive and Reproductive Performance of Dairy Cows Milked once-a-day in a University Herd

Nicolas Lopez-Villalobos
Felipe Lembeye
Jennifer L. Burke
Penelope J Back
Danny J. Donaghy

Massey University
Palmerston North
New Zealand



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Palmerston North
Massey University



The farm is located adjacent to the Massey University campus, bounding the Manawatu river and Palmerston North City



Project Dairy 1

Leadership in low input future farm businesses that are kind to people, animals and the environment

Environment

Environmental stewardship & wise use of natural resources

Promote innovation in sustainable nutrient management

Lower the environmental footprint of milk

Future farm systems

Sustainable people practises & OAD milking

Animals

Farming to improve cow welfare, fertility & animal health

Improve dairy cow welfare, longevity, fertility & health

People

Community connection, building talent & working smarter

Engage with rural, urban, school & iwi communities

Enhance multidisciplinary research opportunities

Develop partnerships with business & industry leaders

Promote No. 1 Dairy Farm as a site for teaching & learning

The Farm

- Area: 120 ha, (32 ha can be irrigated)
- Annual rainfall: 980 mm
- Soils: Free-draining alluvial
- Altitude: 35 m above sea level
- Temperature: 18.5° C (7° C in July)
- 65 x1.9 hectare paddocks, all with race access
- Grazing rye-grass/white clover with alternative forages (plantain, chicory and lucerne)
- Pasture renovation on a 10-year rotation
- 24 aside herringbone shed

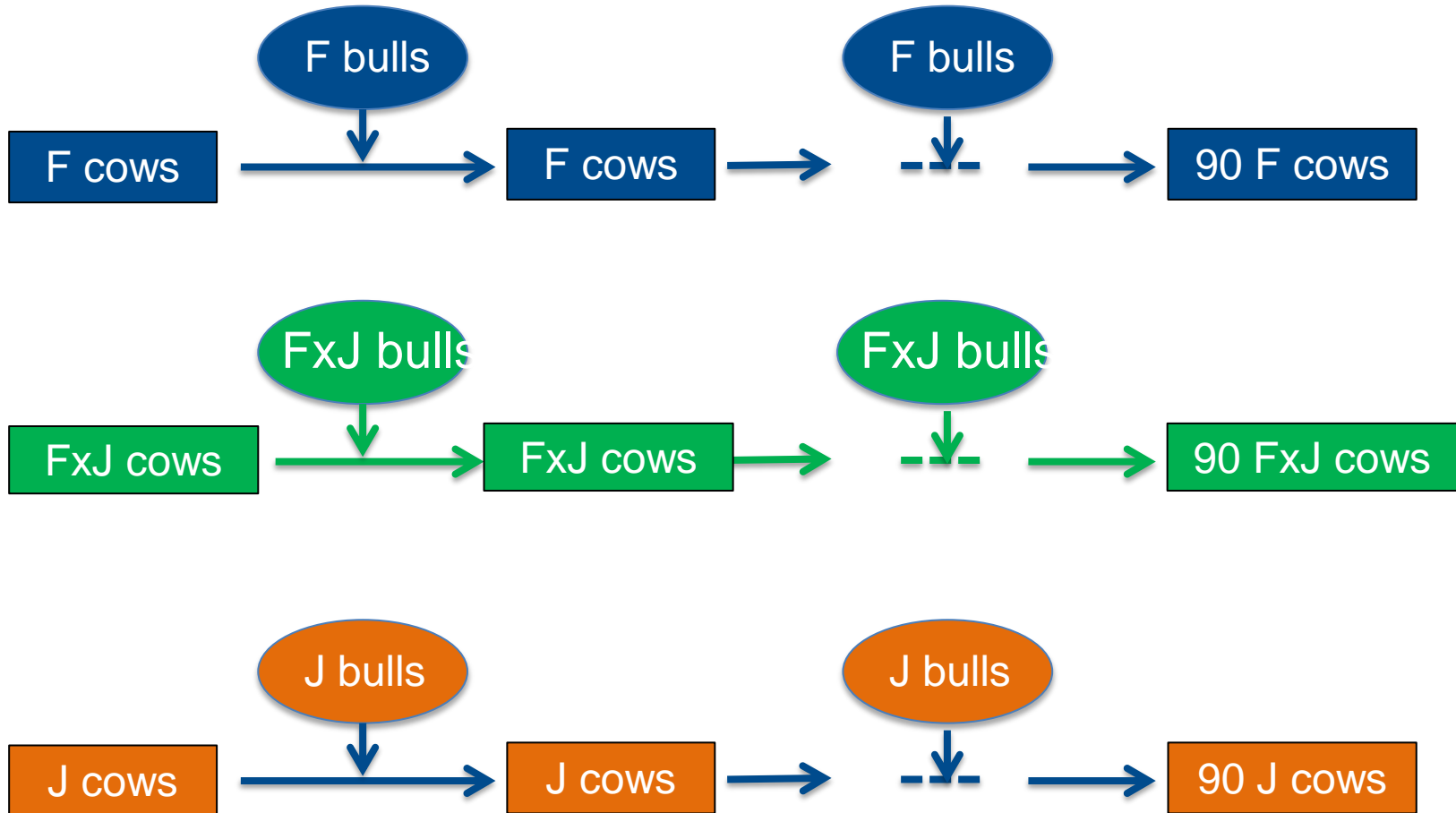


The Herd

- 270 spring calving cows milked OAD during the entire lactation since July 2013
- Mating for 6 weeks using artificial insemination plus 4 weeks of natural mating
- Drying-off in April/May depending on pasture availability, achieving 240 to 270 days in milk
- Strict health program
- Excellent milking routine
- 1 permanent staff



Mating Strategy



2013

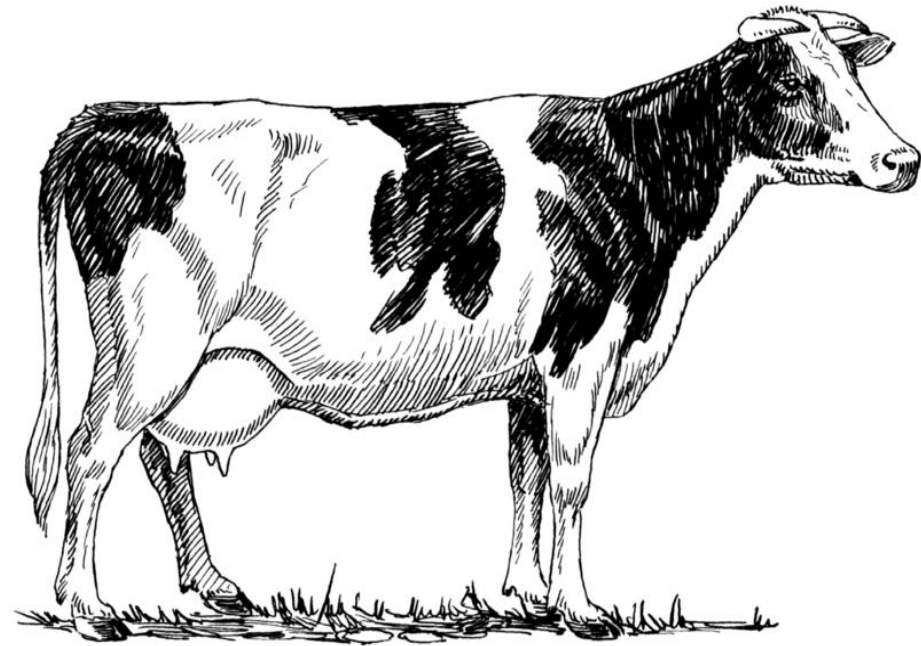
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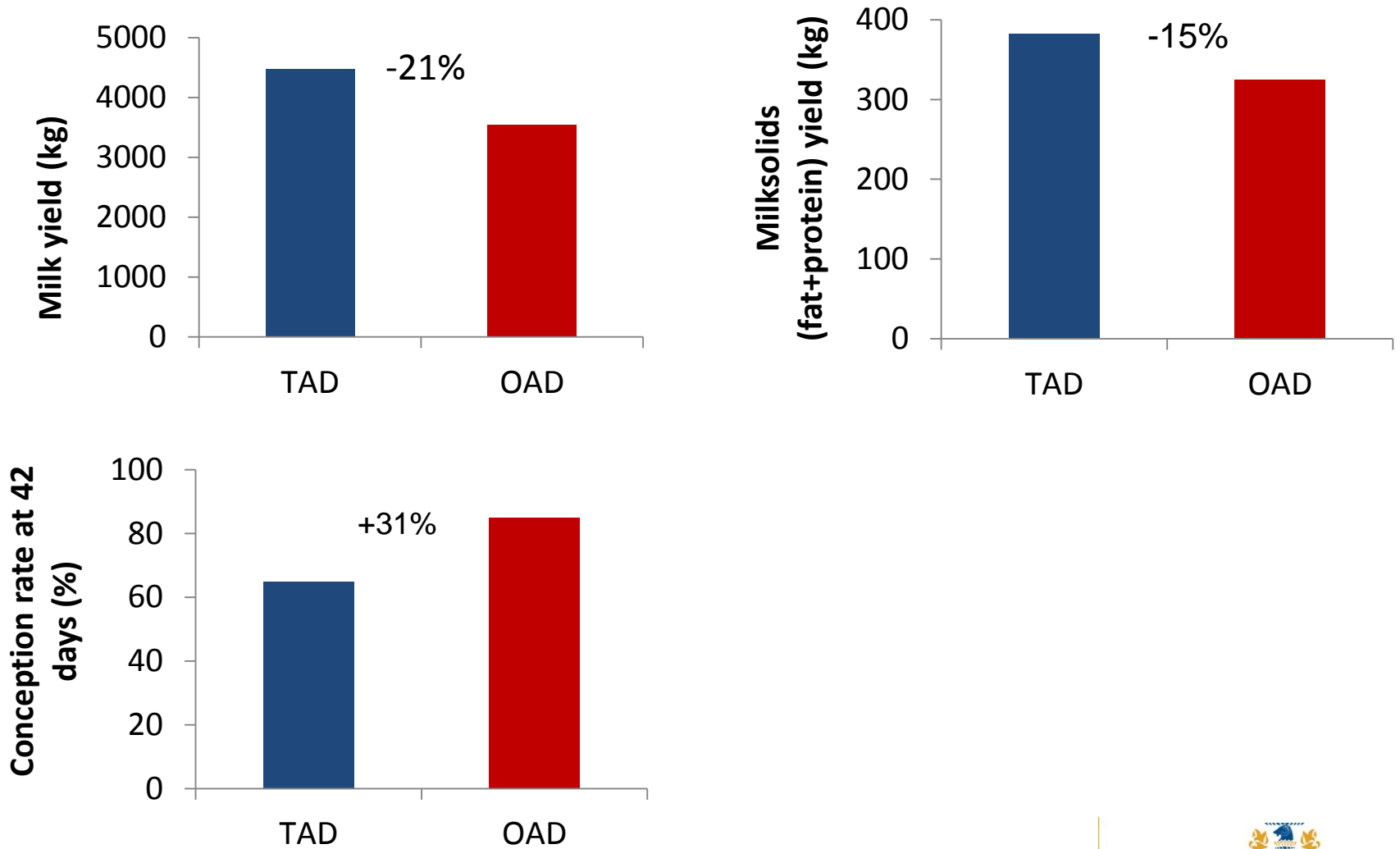
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Development of a selection index for breeding for OAD milking

Trait	BW	OADSI
Milk	-0.10	-0.10
Fat	2.04	2.04
Protein	9.17	9.17
Live weight	-1.66	-1.66
SCS	-38.37	-19.00
Fertility	7.18	3.50
Survival	0.14	--
Milking speed		20.00
Udder support		22.00
Body capacity		16.00

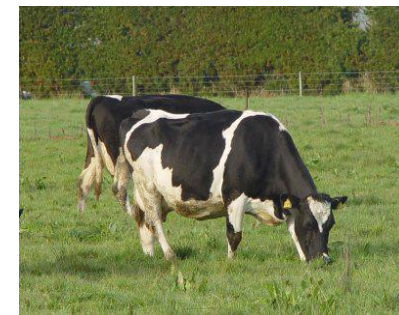


Effects of once-a-day milking



Productive performance of dairy cows from different breed groups milked once-a-day at Massey University dairy farm No 1 (season 2013-14)

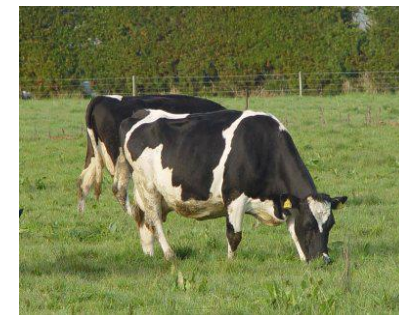
	F	J	F×J
N	39	44	89
Days in milk	235 ^a	246 ^b	240 ^{ab}
Milk yield, kg/cow	4036 ^a	3130 ^c	3661 ^b
Fat yield, kg/cow	180.0	184.9	192.7
Protein yield, kg/cow	145.6 ^a	132.3 ^b	144.0 ^a
SCS	6.72	6.90	6.67
Live weight, kg/cow	525 ^a	464 ^c	504 ^b
BCS	4.34 ^{ab}	4.24 ^c	4.39 ^a
Milksolids/100 kg of LW	61.7 ^b	70.5 ^a	67.0 ^a





Reproductive performance of dairy cows from different breed groups milked once-a-day at Massey University dairy farm No 1 (season 2013-14)

	F	J	F×J
N	39	44	89
Start of mating to first service	10.8	11.1	11.2
Submission rate 21 days	98	97	96
Conception rate 42 days	87	84	84
Empty rate	4.1	5.9	3.6



Once a day milking is enough

[JILL GALLOWAY](#)



HAPPY AS: Norsewood dairy farmer Andrew Young is rapt with the results of switching his farm from twice a day milking to once-a-day.

"OAD is kinder to everyone. Kinder on the people and the cows.

"I milk in the morning, about 7 or 7.30. There's no time pressure. The cows make their own way to the dairy shed."

Most of the cows are Friesian crossed with Jersey and there is a 26-a-side herringbone shed and it takes 50 minutes to milk at the moment.

Production hasn't fallen much, in a normal year, on twice-a-day milking, he did about 78,000 kg MS, this year on once-a-day it is 73,000 kg MS.

"Farm working expenses are \$2.41 per kg MS for this farm while the average is \$3.87. Gross farm revenue for me is \$7000 per hectare and the average is \$6900."

Bulls are carefully selected to produce once-a-day cows.

Conclusions

Effects of once-day-milking

- ✓ Reduce productivity per cow
- ✓ Productivity per hectare can be maintained – if stocking rate is increased
- ✓ Reduce labour cost
- ✓ Improve quality of life for the farmer
- ✓ Improve animal welfare
- ✓ Improve fertility of the cows
- ✓ Increase longevity of cows
- ✓ Increase rate of Δg in the herd

Further studies are required to evaluate genetic gain and farm profitability on the long-term

