

Findings of OAD research at
Massey University and in the
New Zealand dairy industry



Transition to once-a-day

- Spring calving 240-270 cow herd, currently 257
- Massey University Dairy One started its transition to OAD in 2013
- Cows were selected based upon genetic merit (BW) as well as age
- Cows were screened within 4 months of start of first OAD season for udder confirmation

Mating management

- In the first season of mating, the mating window was reduced from 14 weeks to 10 weeks – all AI
- Bulls were chosen based on breeding values for OAD advantageous traits (udder and concentration)
- Minimal interventions used (where possible)



Mating Performance

Measure	2014/ 15	2015/ 16	2016/ 17	2017/ 18	2018/ 19	2019/ 20
3 week Submission %	96	92	95	95	97	94
6 week in-calf %	85	76	74	83	79	78
Empty Rate %	8	9	12	9	9	9
3 week calving rate %	67	75	69	71	76	70
6 week calving rate %	90	95	89	88	93	92
9 week calving rate %	98	100	98	98	100	100

Comparing OAD to TAD in industry:

- **10.4%** higher 6 week in-calf rate
- **4.8%** lower empty rate
- **7.7%** higher 3 week submission rate
- **8.2%** higher 3 week submission rate (first calvers)
- **7.9%** higher conception rate
- All from a shorter mating window (~5 days)



Milk production over the seasons

System	Measure	2014/ 15	2015/ 16	2016/ 17	2017/ 18	2018/ 19	2019/ 20
OAD	KgMS/cow	354	351	357	348	320	354
	Litres/Cow	3810	3800	3780	3770	3440	3750
	kgMS/ha	774	791	771	729	647	760
	Liveweight	490	469	489	484	486	500
TAD	KgMS/cow	405	402	410	390	466	*
	kgMS/ha	1131	1053	1056	971	1172	*
	Liveweight	520	540	*	*	*	*

National data shows a similar story

- Research from Lembeye et al. 2016 indicated that milk production was around **15-25%** lower in OAD
- The difference is greater in Holstein-Friesians than Jerseys (**25%** vs **17%** reduction)
- The reduction in milk volume is greater than the reduction in milksolids





Continued pressures and Selections

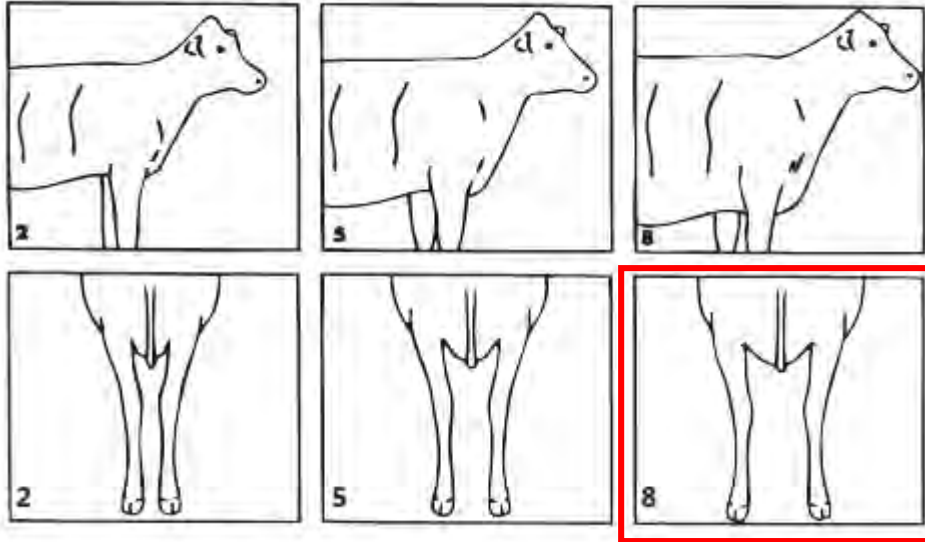
- Overtime the stressors on the udder take their toll – we have to stop them falling off
- Confirmation becomes a highly important selection criteria for cows
- It is important to undertake regular and consistent scoring of the animal's confirmation

What traits and how are they scored

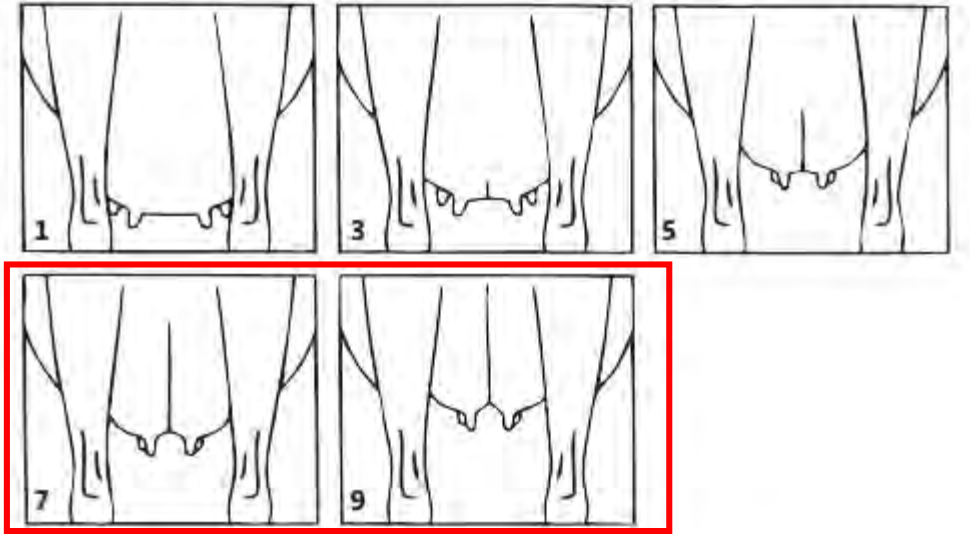
- 14 traits scored by certified inspector annually and 4 farmer scored traits
 - Stature, Weight, Capacity, Rump angle, Rump width, Legs, Udder support, Front udder, Rear udder, Front teat placement, Rear teat placement, Udder support, Udder overall Dairy confirmation, Body condition score.
 - Adaptability to milking, Shed temperament, Milking speed, Overall opinion
- Majority are 1-9 score traits, some are optional at 5 and others 9



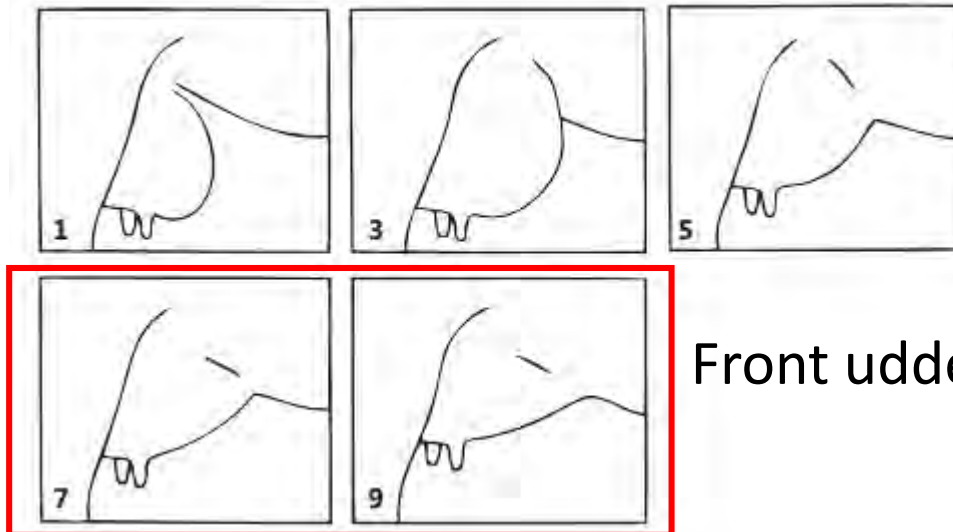
A few examples



Capacity



Udder support



Front udder

What we are after vs what we want to avoid





Our average score is unchanged but

- First calving cattle have had a great improvement, from **6.1** to **7.7** for udder support, **5.9** to **7.5** for udder overall
- 6 year olds and up went from **5.2** and **5.3** to **5.7** and **4.9**
- Our cows are getting older/staying in the system longer

Continued pressures

- Over time the pressures on the udder continue, as such we have maintain strong selection forces on the udder traits
- It does mean **harder** culling decisions – even culling heifers due to udder in first season but lower now
- Mating decisions have to predate transition by 2 years



Closing remarks



- Positives:
 - Fertility is up
 - Cow confirmation is improving
 - Improved farmer time use
- Negatives:
 - Decreased production
 - Altered pasture management (lower stocking rate – higher residuals) (Massey Specific)

Sometimes there is something to be said for taking it slow

