

# Once-a-day Milking: Research Update

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# Introduction

- Why consider once-a day (OAD) milking
  - Difficulty sourcing labour
  - Better work life balance
  - Overcome issues with workload e.g. calving
- Benefits of OAD
  - improved energy balance due to lower bodyweight (BW) and body condition score (BCS) loss
  - improved fertility performance
- Potential drawbacks of OAD
  - reduction in milk production (~22%)
  - increased somatic cell count (SCC)
  - may result in decreased farm revenue



# Full-time OAD vs full-time TAD

- 2 years full-time OAD completed
- Same cows used both years



	2019	2020
Herd EBI	€164 (Fertility €70)	€169 (Fertility €66)
Proportion heifers in herd	23%	24%
Concentrate fed (kg/cow)	450	330

# Grassland and herd management

- Milking routine

- teats stripped, pre dipped, dry wiped, clusters on and post dipped (Deosan).

Normal routine

- OAD cows milked first, received all concentrate in one feed

- Grass – target post grazing height 4-4.2cm,

- Allowance 12 hrs during 1<sup>st</sup> rotation, 24 -36 hours 2<sup>nd</sup> rotation onwards
- Always high quality grass available (pre-grazing yield 1400 – 1600 kg DM/ha)

- Farm cover guidelines used as per PBI (O'Donovan et al., 2019)

- 11 week breeding season



# OAD vs TAD (2019 & 2020)

Milk yield  
↓29% (2019)

## Milk Yield (kg)

	<u>2019</u>	<u>2020</u>
TAD	6268	5846
OAD	4456	4243

Milk yield  
↓27% (2020)

## Milk Solids Yield (kg)

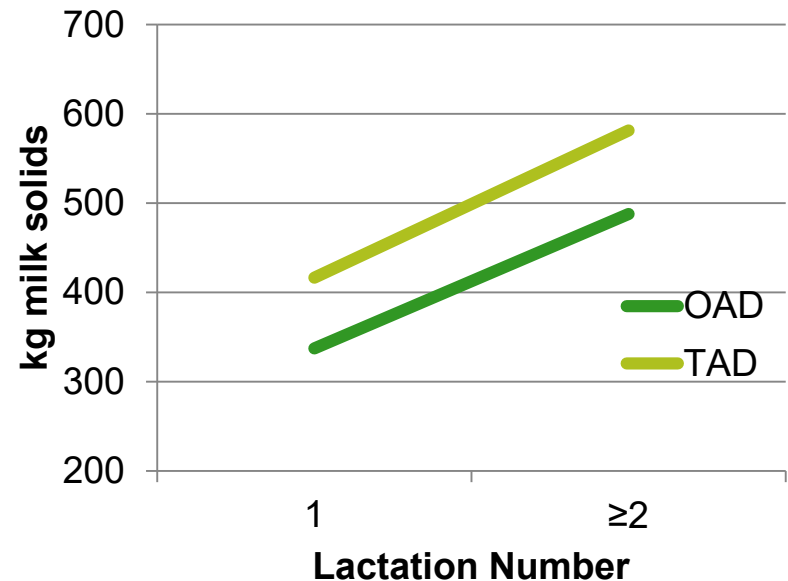
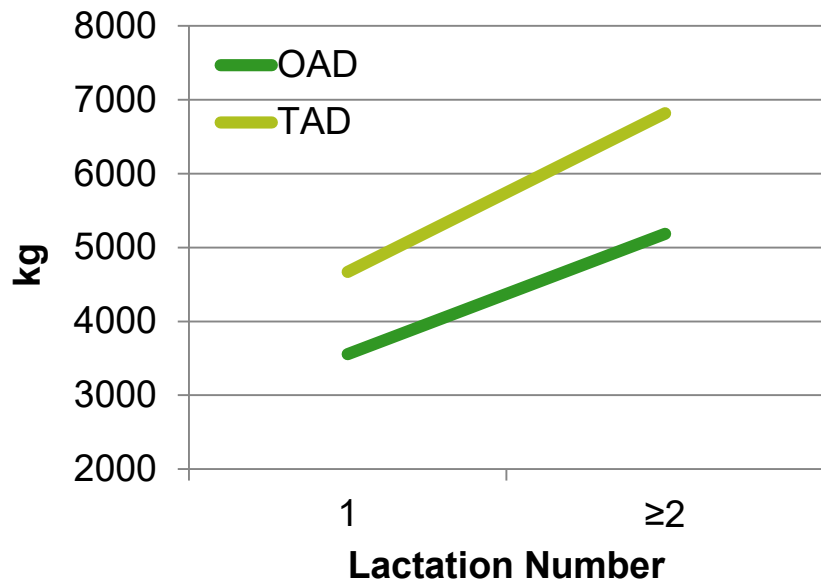
	<u>2019</u>	<u>2020</u>
TAD	511	505
OAD	396	409

↑ 3%

MSY ↓ 23%  
(2019)

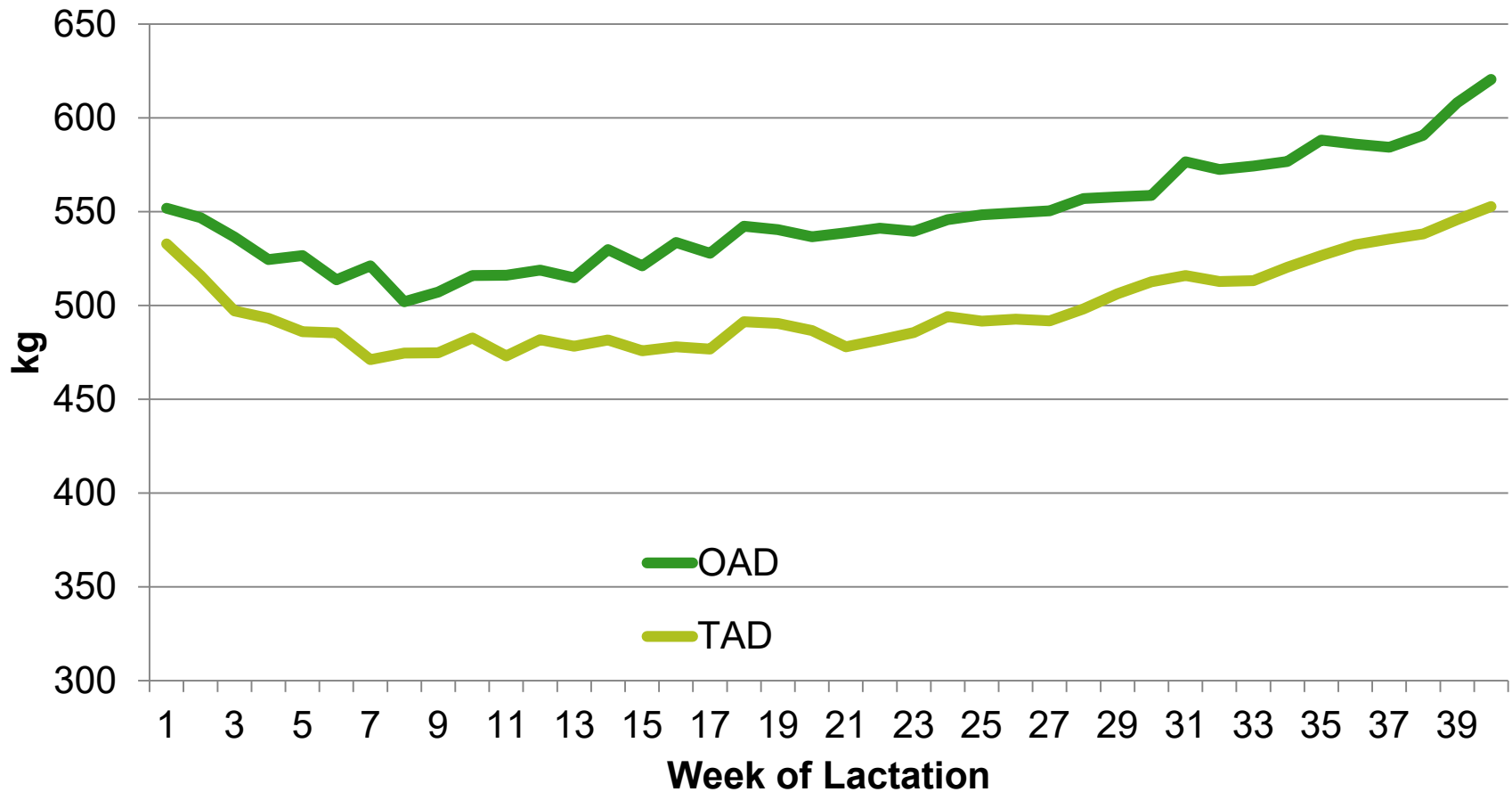
MSY ↓ 19%  
(2020)

# Do heifers react differently when milked OAD compared to TAD?



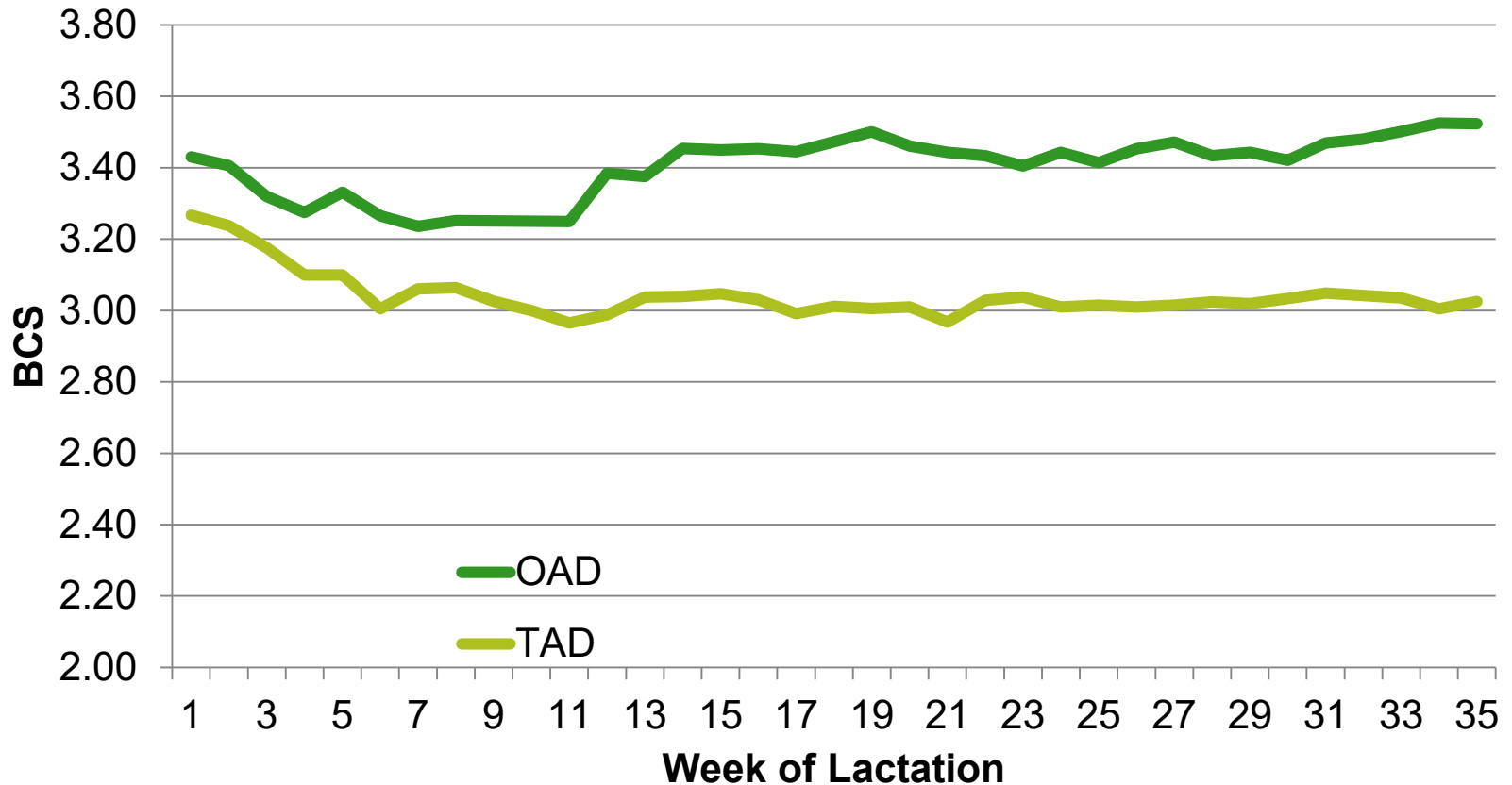
- Milk/milk solids production of heifers milked OAD reduced by the same proportion as mature cows
- Similar results observed in 2019

# Bodyweight



- On average 50kg difference in BW between treatments across year
- Approx. 70 kg difference at end of lactation

# Body Condition Score

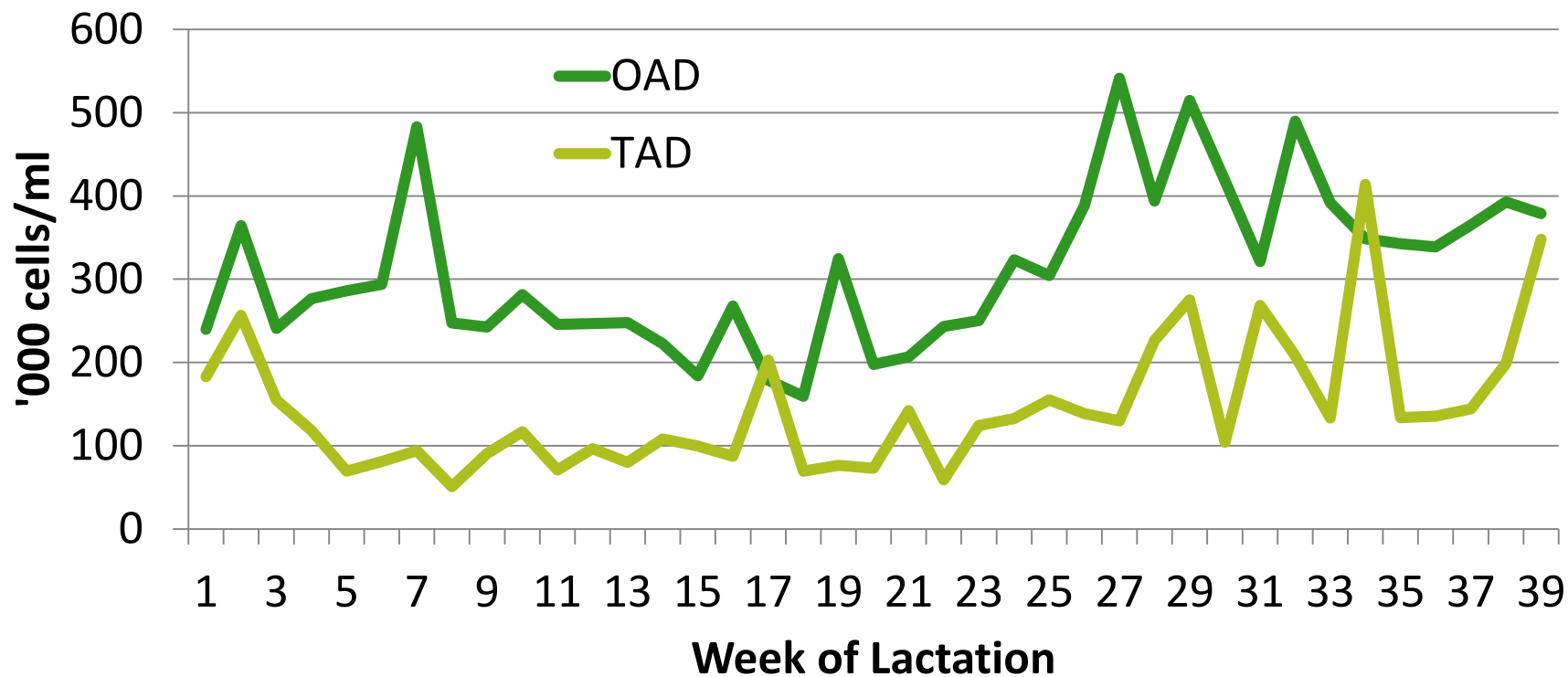


- OAD cows average BCS across year = 3.41
- TAD average across year = 3.04
- Approx. 0.5 BCS difference at end of lactation



# Somatic Cell Count

- No difference in SCS in 2019



- Lactation average:

- OAD 344      TAD 147

# Fertility Performance 2020

	Conception to First Service (%)	Calving to conception (days)	Not in calf (%)
TAD	69 %	87	9 % (5 cows)
OAD	88 %	81	4 % (1 cow)



# Milk processability: Oct 5<sup>th</sup> – Nov 30<sup>th</sup>

- Overall, no negative impacts of OAD milking on milk processability, possible improved cheese-making functionality and potentially improved milk heat stability.
- No apparent relationship between low lactose content and bulk milk processability.
- Variable, but overall increased heat stability in OAD milk.

Note: cows were in good BCS (> 3) and they were offered high quality grass (~ 1600 - 1800 kg DM/ha; last rotation)

# Take Home Messages: OAD vs TAD

- Not suitable for everyone, depends on circumstances (herd size, person etc.)
- Medium production performance can be achieved with OAD milking and low concentrate input

## **BUT**

- Need to be technically efficient
- Excellent grassland management required
- Good herd management essential

# Previous research: 2018/2019

- Year 1 – 2018
  - Compare twice-a-day (TAD) milking to OAD for 4, 6 or 8 weeks at the start of lactation on immediate and total lactation performance
- Year 2 – 2019
  - Compare TAD milking to fulltime OAD and OAD for 2, 4 or 6 weeks at the start of lactation on immediate and total lactation performance
- Year 3 – 2020
  - Compare TAD milking to fulltime OAD and OAD for 7 or 11 weeks at the end of lactation



# Summary early lactation OAD

- Short term OAD is an option in early lactation on all farms
  - Initial 22 – 24% reduction in milk yield
  - 20 – 23% reduction in milk solids yield
  - Immediate increase in production when cows return to TAD
  - No difference in total lactation MSY
  - 6 and 8 week OAD in early lactation reduce milk yield compared to TAD
  - No difference in SCC
  - Milking time reduced by 30%

Is late  
lactation OAD  
an option?



- Comparison of TAD milking with OAD milking from
  - 11 weeks before dry off
  - 7 weeks before dry off

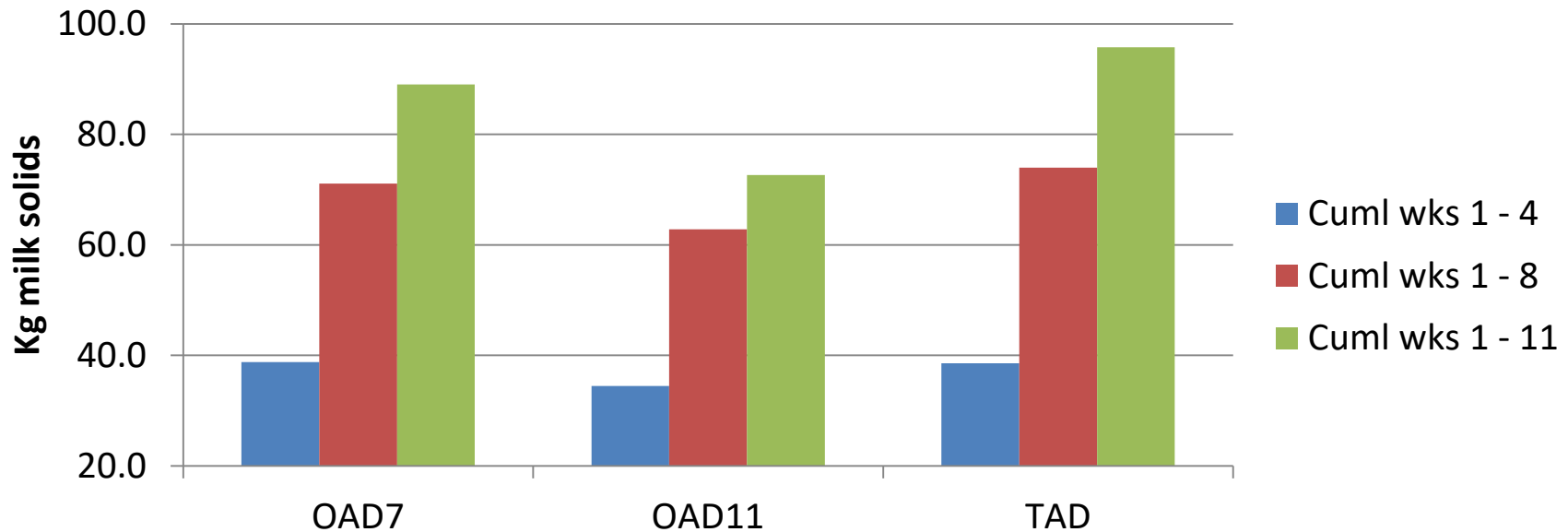
# Decision rules for drying off

- Cows milking less than 5 kg/day
- Within 8 weeks of calving
- BCS <2.75 within 10-weeks of calving
- SCC does not reduce following treatment for a clinical infection
- SCC >500,000 for two consecutive weeks





# Last 11 weeks of lactation – milk solids



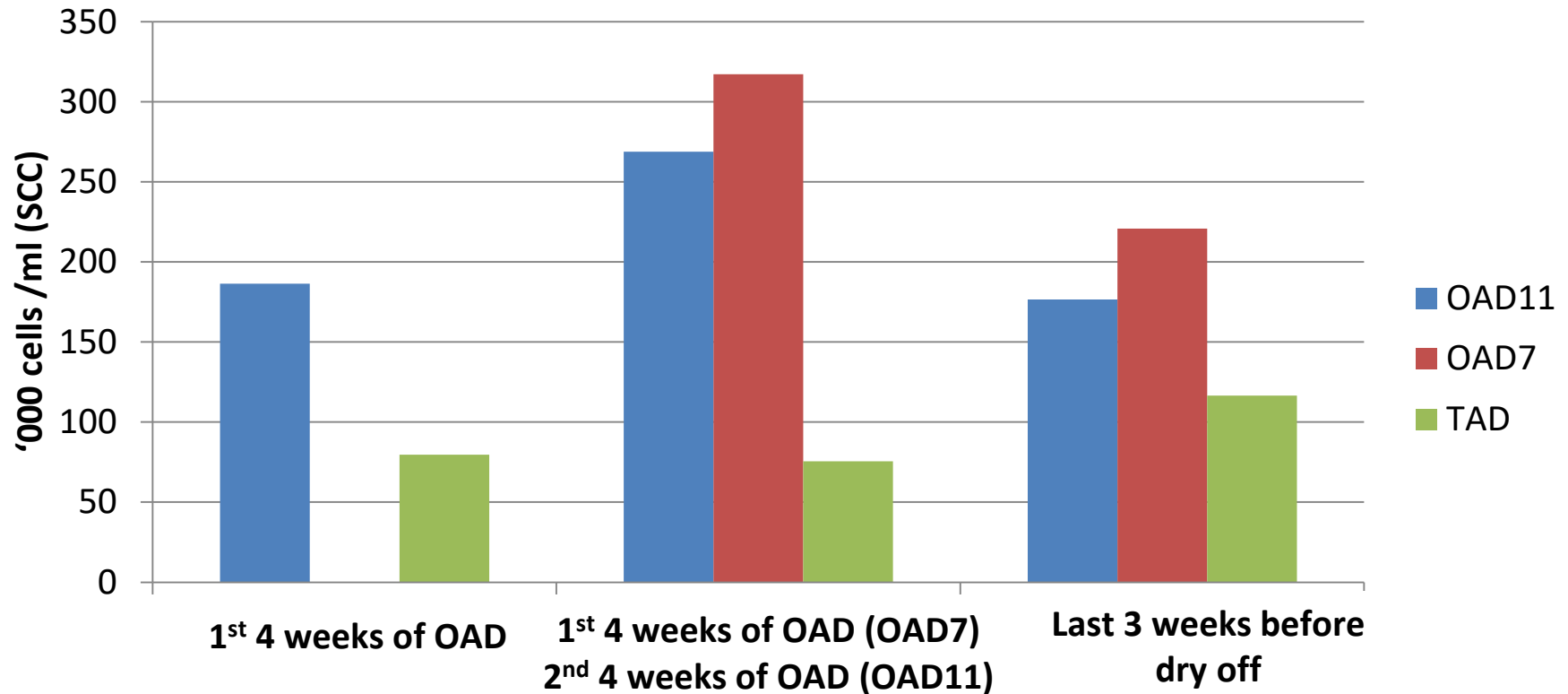
- OAD11 – 24% reduction in milk solids over last 11 weeks of lactation
- OAD7 – 7% reduction in milk solids over last 11 weeks of lactation
  - MSY was reduced by 26% during the OAD milking period

# Effect of late lactation OAD on total lactation yield

- No difference in total lactation milk yield
- No difference in total lactation milk solids yield

	OAD7	OAD11	TAD
Total lact MY	5868	5634	5846
Total lact MSY	504	491	505

# Effect of late lactation OAD on SCC



- Late lactation OAD increases SCC
- Initial increase then reduces
- Significantly higher than TAD
- \*Average SCC before OAD was 177

# Late lactation OAD – take home messages

- Need low SCC with good management practice
- No difference in total lactation production
- Good grassland management essential
  - Need to include grass in diet for as long as possible
- Labour saving
- Increase in SCC when switch to OAD but reduces again

**Short-term OAD has a role on all farms**