Feeding behavior of dairy calves reared by the dam with access to automatic milk feeders

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DairyCare STSM “Cow & Calf Together”

2018

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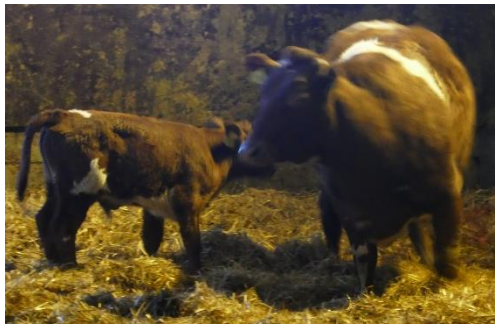
Introduction

- Many benefits to dam-rearing system

- But… weaning & separation = challenge!
  - Disentagling social & nutritional independence *(Weary et al., 2008)*
  - Providing supplementary milk to suckling calves *(Johnsen et al. 2015)*



Short Term Scientific Mission (STSM)

- Incubator grant “Cow & Calf Together”

- From Jan 22th to Feb 23th 2018

Work done during STSM

1. Analysis on pre-existing data *(Johnsen et al., 2015; Johnsen et al., 2017)*
    - Trial in 2012 at University of British Columbia
    - Body weight, milk intake, # visits automatic milk feeder, …
    - Before & after separation / weaning

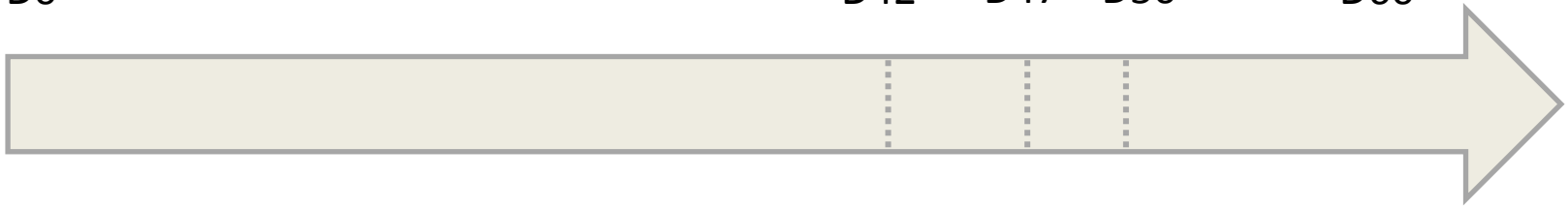
2. Trial on concentrate-dependent weaning in NR calves *(ongoing)*

Material & Methods

AMF only (n=10)

AMF + suckling (n=10)

D0 D42 D47 D50 D60



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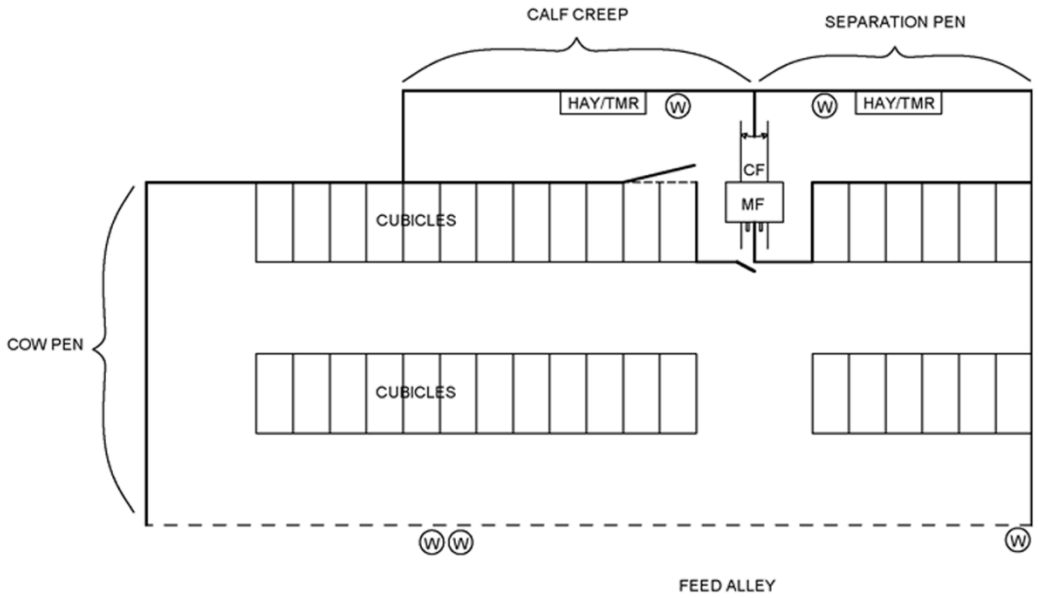

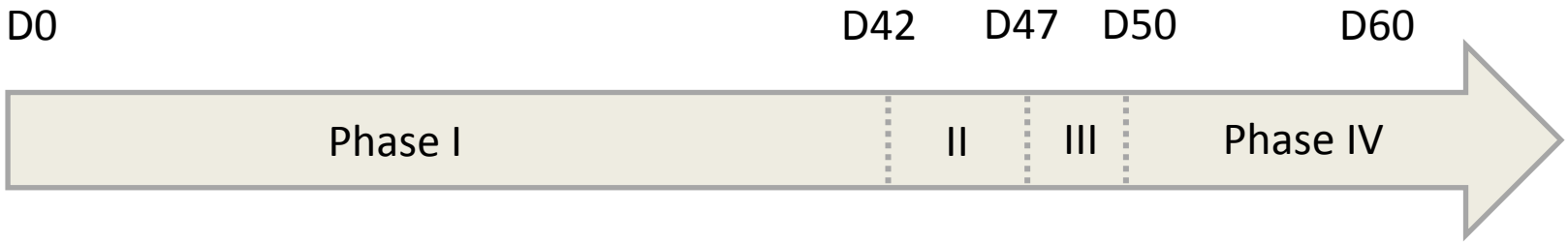

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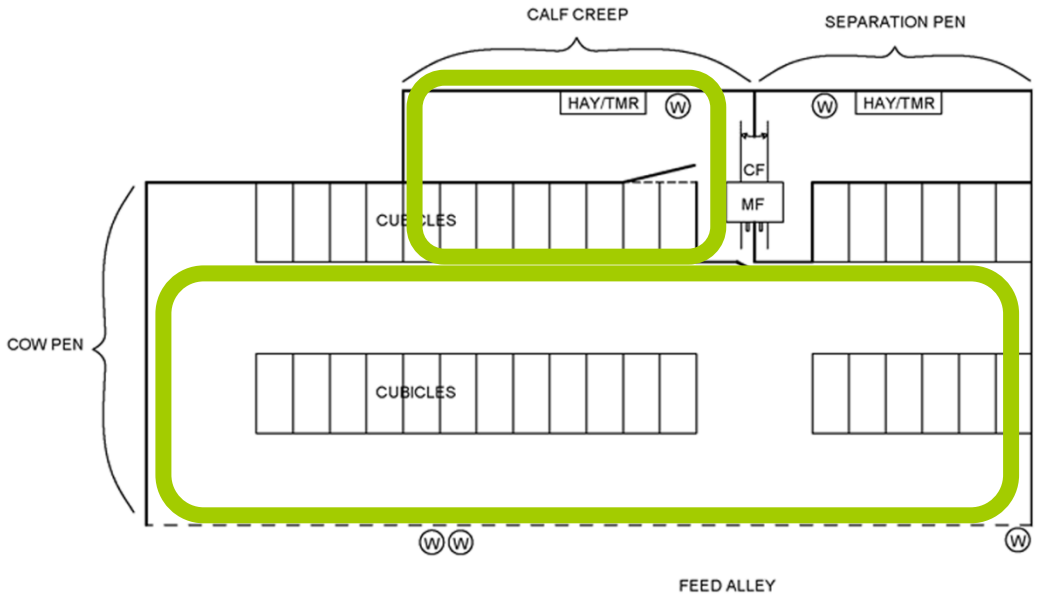

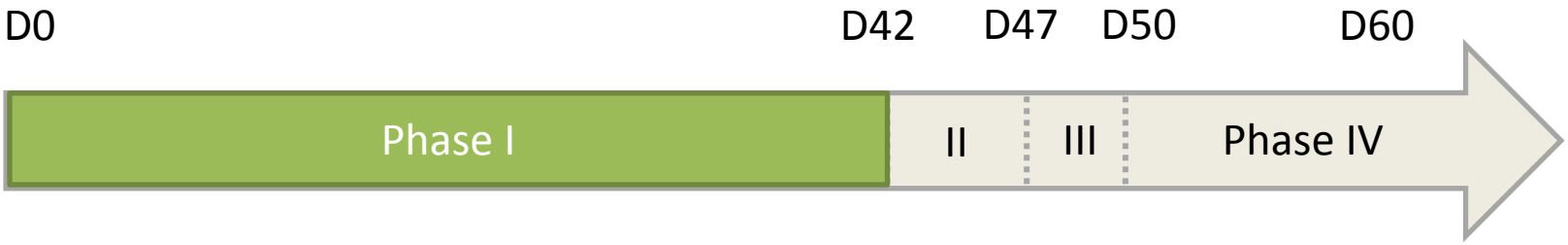

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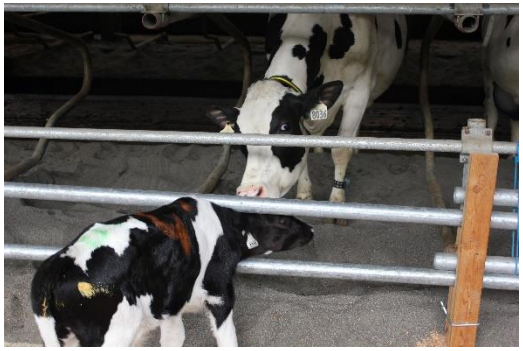

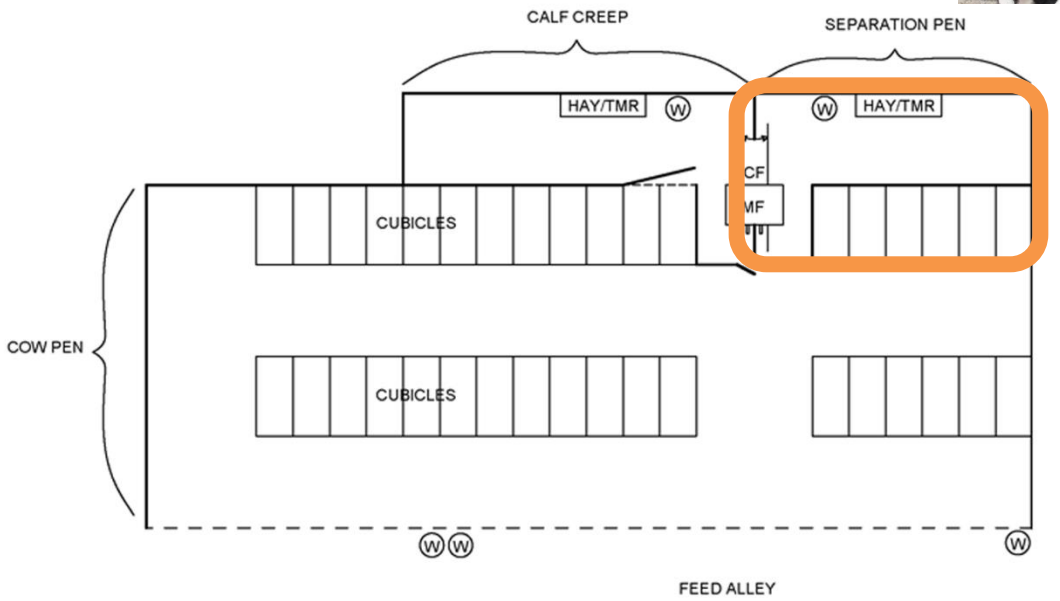

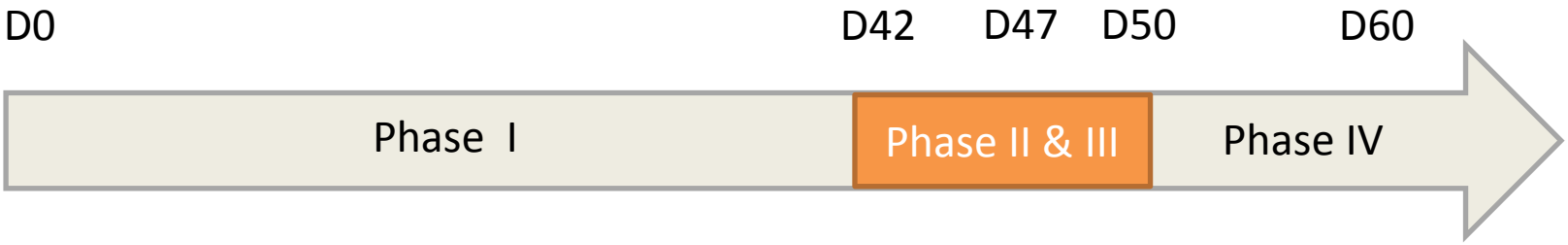

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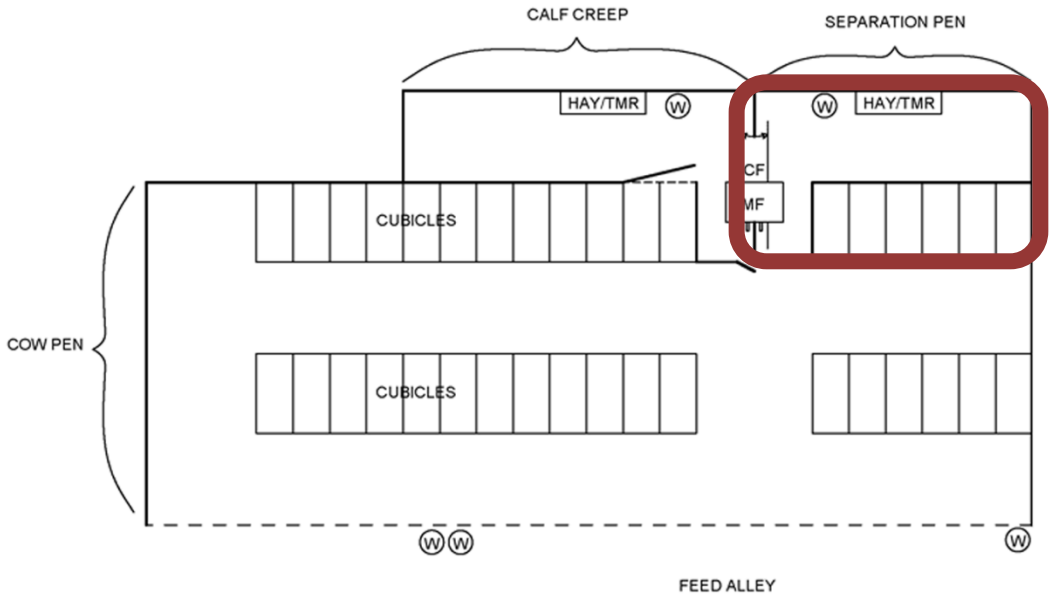

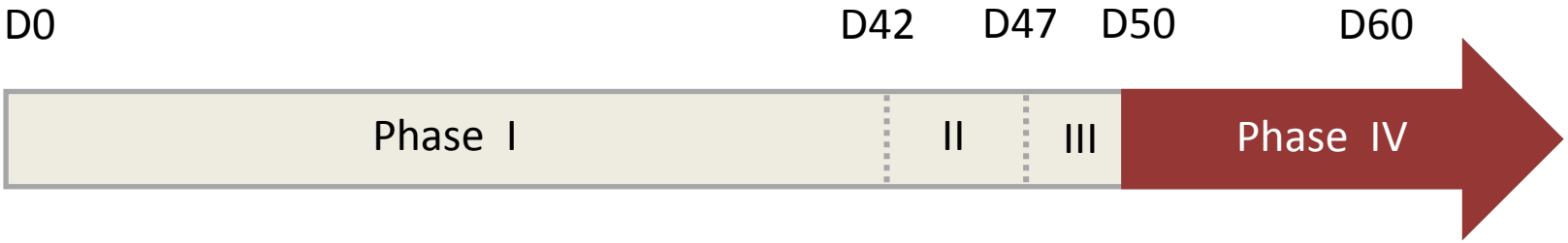

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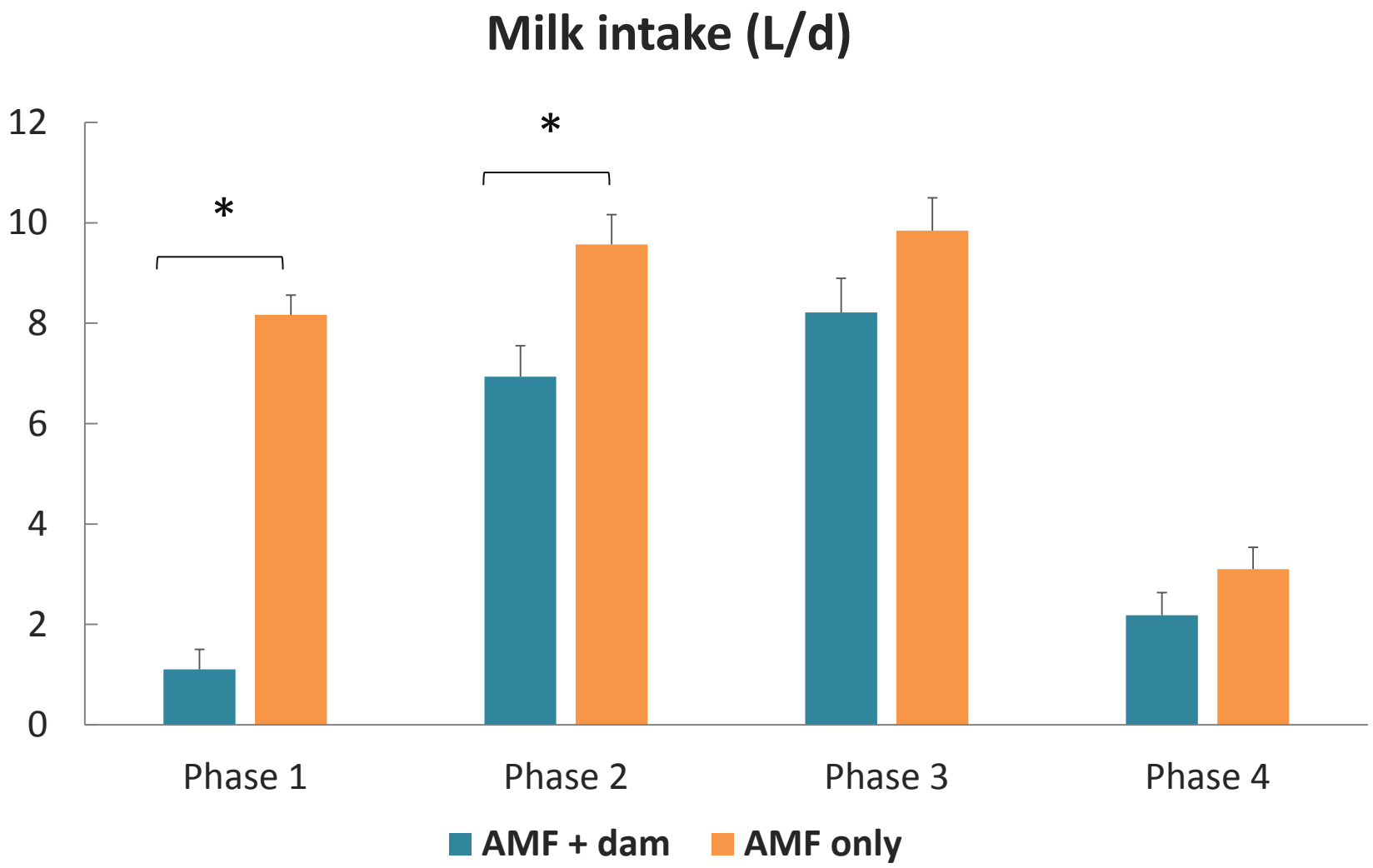
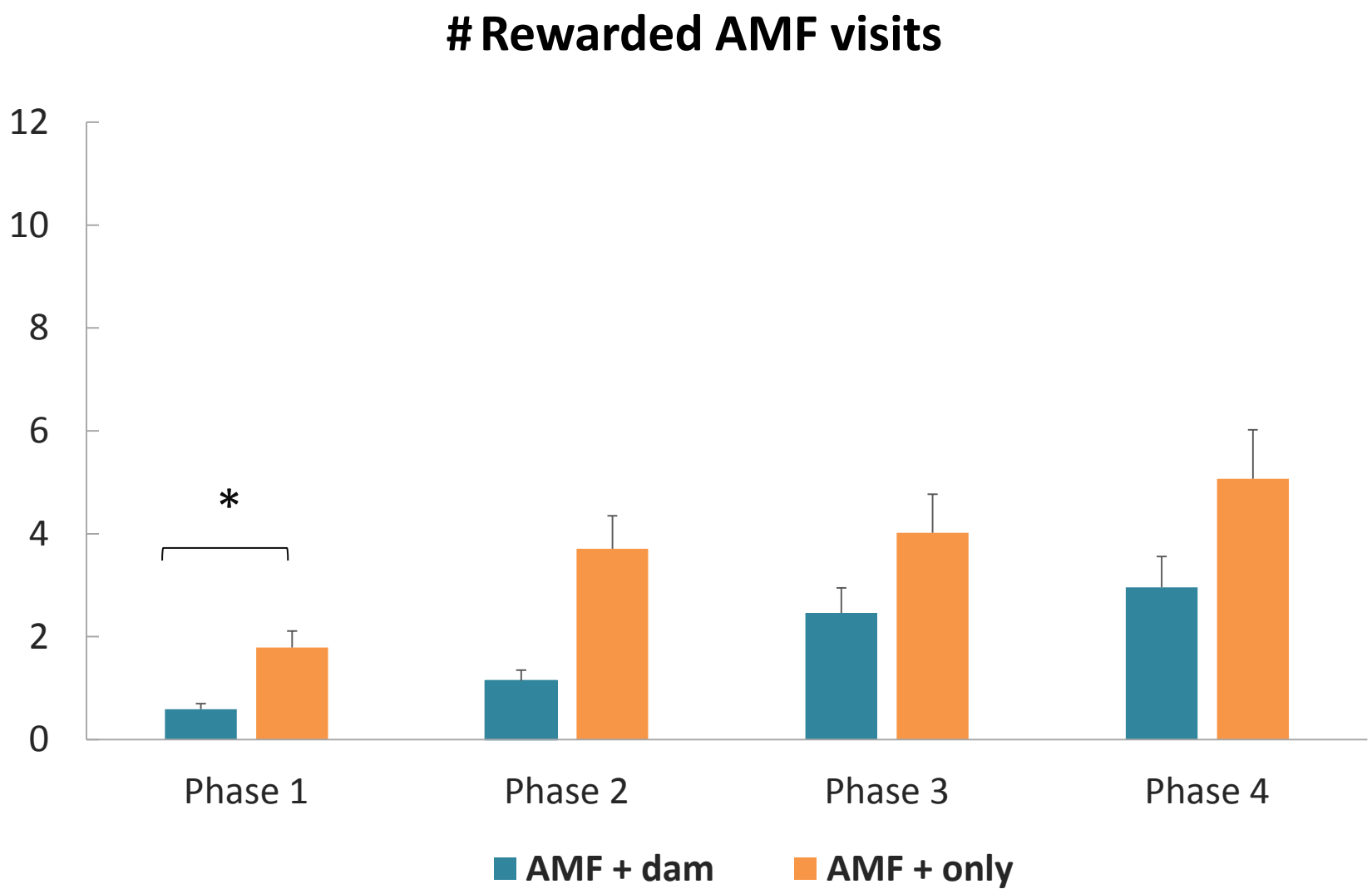
Statistical analysis

- Mixed linear / Poisson regression models
- Outcome variables
  - Body weight
  - (Un)rewarded visits to AMF
  - Milk intake
- Fixed effects
  - Treatment, phase or age, interaction
  - Health (healthy *vs.* sick)
- Random effect
  - Calf

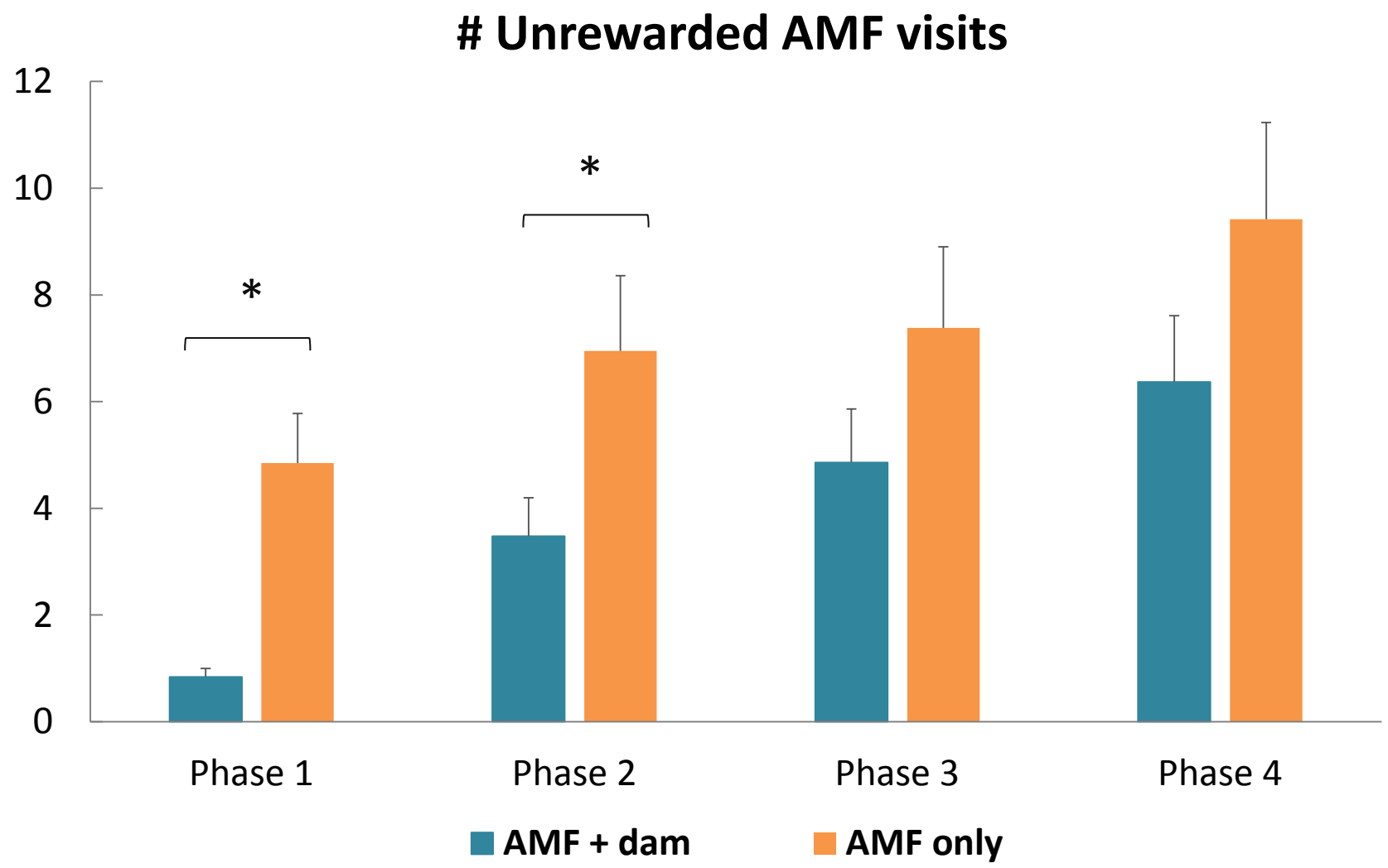
Results


Milk intake (L/d)
12
10
8
6
4
2
0
*
*
Phase 1
Phase 2
Phase 3
Phase 4
AMF + dam
AMF only

Results


Rewarded AMF visits
12
10
8
6
4
2
0
*
Phase 1
Phase 2
Phase 3
Phase 4
AMF + dam
AMF + only

Results


Unrewarded AMF visits
12
10
8
6
4
2
0
*
*
Phase 1
Phase 2
Phase 3
Phase 4
AMF + dam
AMF only

Conclusions

- No difference in weight over time between treatments

- “AMF + suckling” calves prefer suckling from dam, but switch easily to AMF during separation phase

- # unrewarded AMF visits
    - ↑ during separation & weaning phase for both groups
    - ↓ when calves are sick

Acknowledgements

DairyCare

cost
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