Management strategies to improve piglets' survival

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The context

Increase in litter size :

- ↑ Litter weight variability
- ↑ Small piglets prevalence

  (< 1.1 kg birthweight; normal = 1.5 kg)

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Increase in litter size :

- ↑ Litter weight variability
- ↑ Small piglets prevalence

  (< 1.1 kg birthweight; normal = 1.5 kg)
- ↑ Fighting at the udder
- ↑ Piglet mortality

Experiment 1
Energy boost at birth

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Why bother ?

- Neonatal mortality
  - Low energy reserves (427 kJ/kg BW)

    vs. High energy demand (27 kJ/h/kg BW) (Mellor and Cockburn, 1986)

- Energy boost ↑ survival and growth (Decleck et al., 2016)

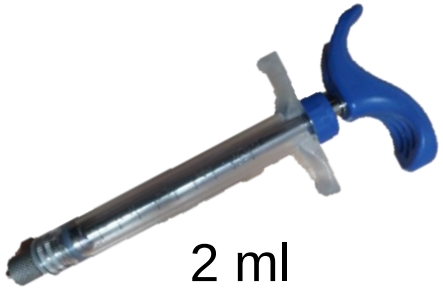
- Coconut oil
  - Riche in energy (fat)
  - Easily absorbable by piglets

Methods

Birth-Weight < 1.10 kg
(30% total born)

Average litter size
14.4 piglets born alive

3h post-partum



2 ml

Not dosed: 97 piglets
Coconut: 107 piglets
Commercial: 101 piglets
Water: 100 piglets

0 KJ/2ml

74 KJ/2ml

71 KJ/2ml

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Measures of interest and results

- **Weights** → No effect
- **Glucose** → No effect
- **Temperature** → No effect
- **Mortality**: 24h and pre-weaning

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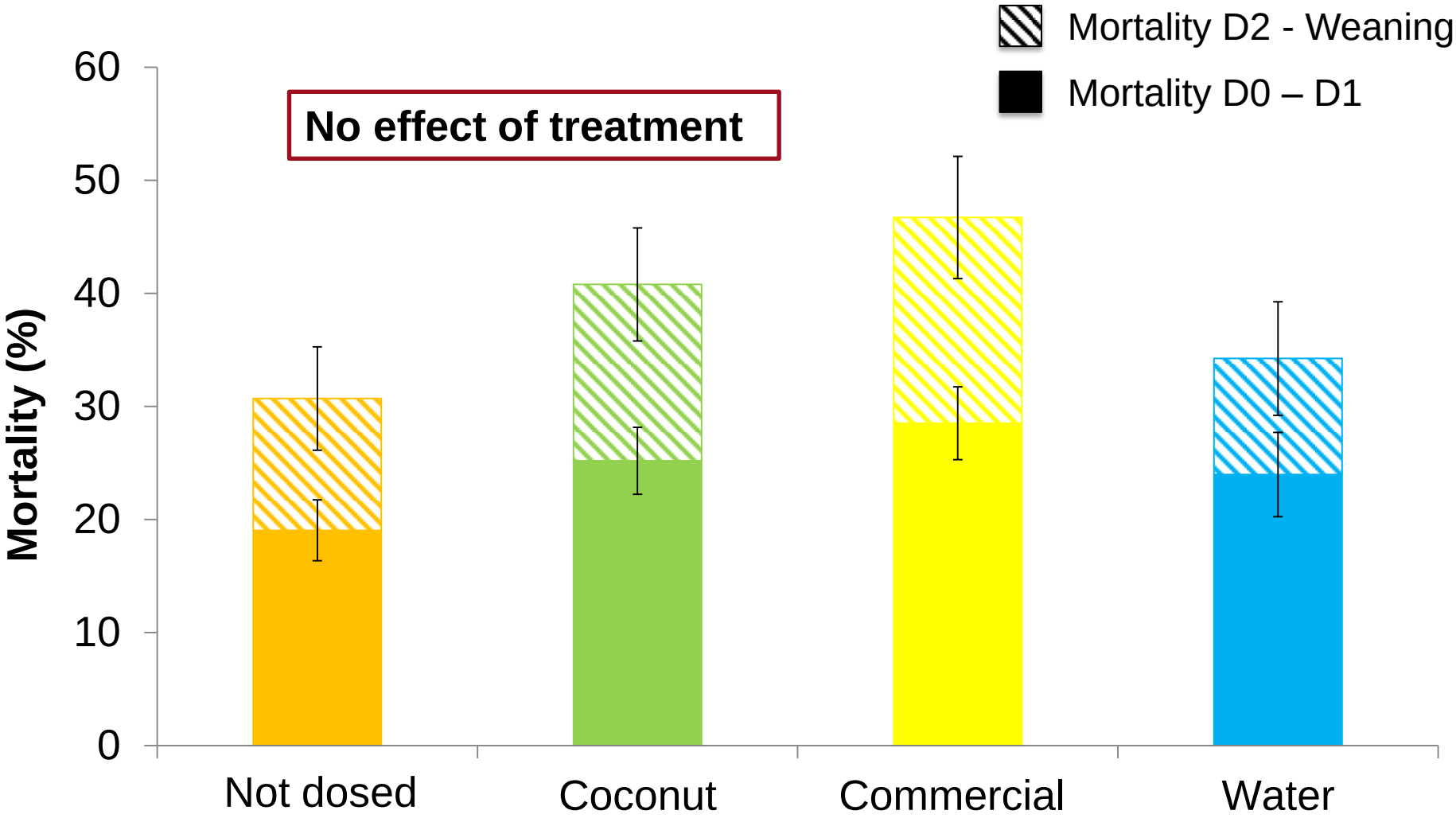
Live born mortality



* Experimental piglets were < 1.1 kg birthweight

Conclusions

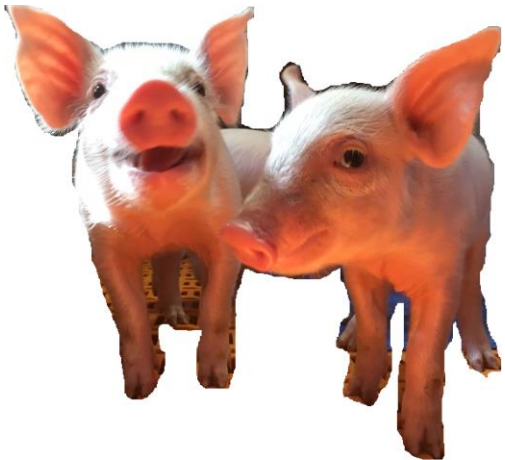
- No effect of energy boost on survival, growth, blood glucose or temperature

Why ??

  - Low mortality = Optimum management / health status ?
  - 2 ml enough ?
  - Two doses within 24 h better (Muns et al., 2017)

Take-home message

A single dose of 2 ml of energy boost is a waste of time and money



Experiment 2
Nurse sow strategies

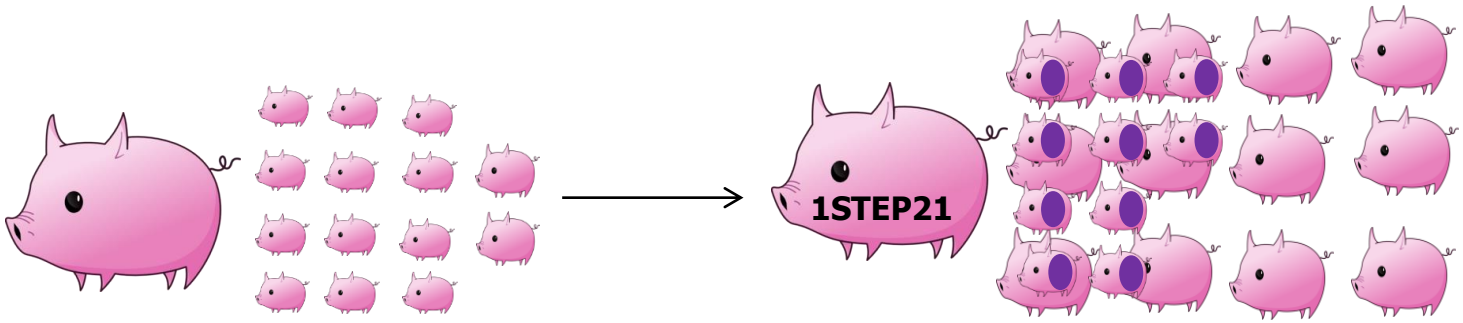
Why bother ?

- High prevalence of large litters
  - Most sows farrow >14 piglets
  - Equalisation of litters impossible

- Nurse sows = sows already in lactation to rear extra piglets
  - Concern for piglets: growth, survival, fighting

Methods

1 step strategy



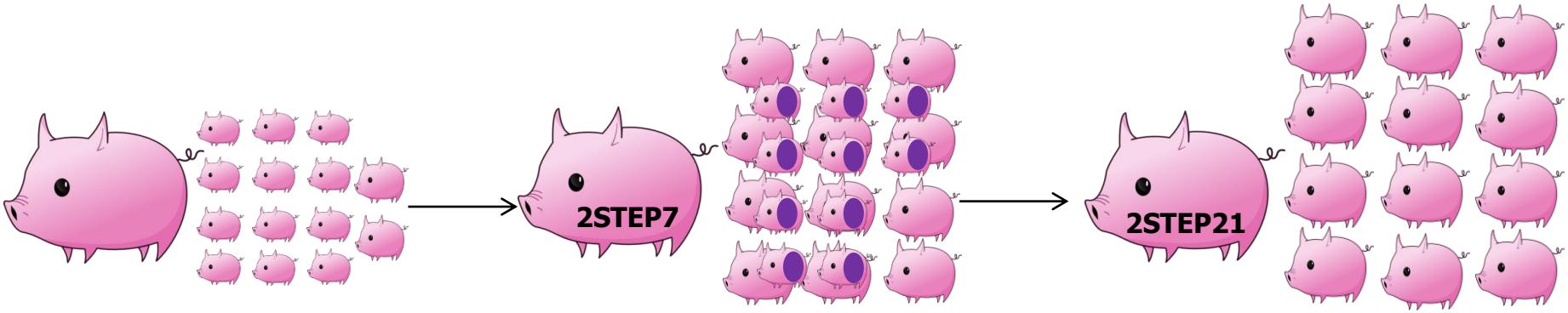
Control
1 day post-partum

Nurse sow (1STEP21)
21 days lactation

Average litter size
13.3 piglets born alive

Methods

2 step strategy



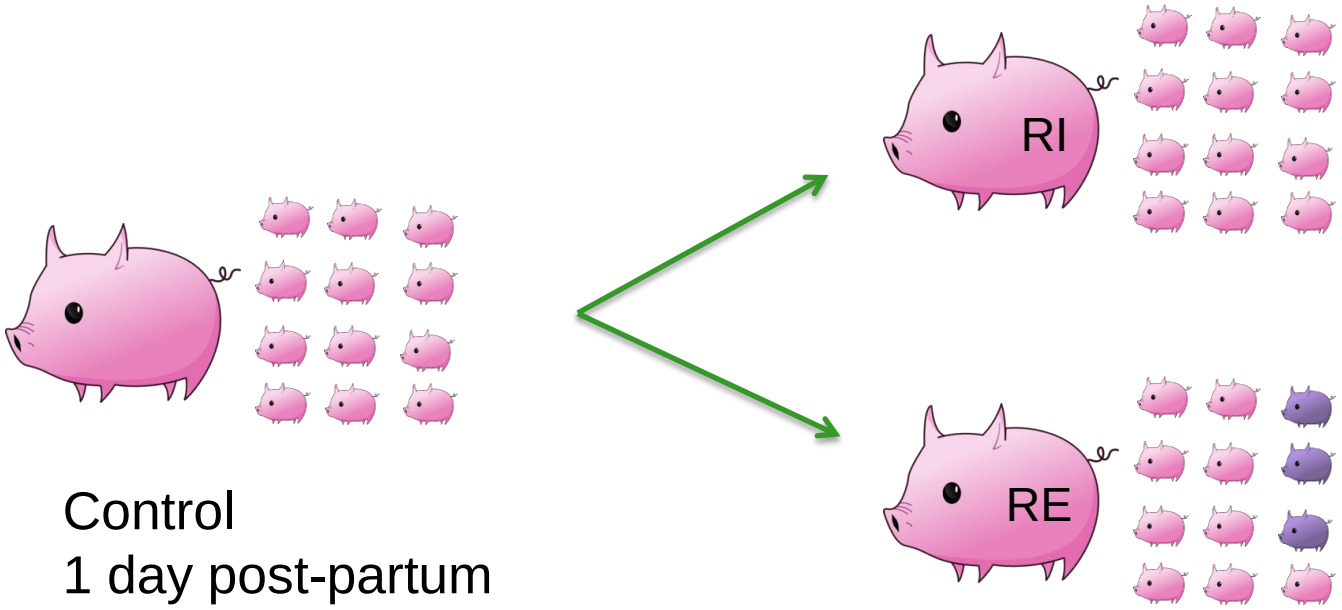
Control
1 day post-partum

Nurse sow (2STEP7)
7 days lactation

Nurse sow (2STEP21)
21 days lactation

Average litter size
13.3 piglets born alive

Methods



Control
1 day post-partum

Litter remains **intact** with mother

Litter remains with mother but is **equalised**

Treatment	Litters/sows	Piglets
RI	9	118
RE	10	117
1STEP21	10	120
2STEP7	9	106
2STEP21	9	108

Measures of interest

- **Pre-weaning mortality**
- **Weight**
- **Fighting behaviour at udder**

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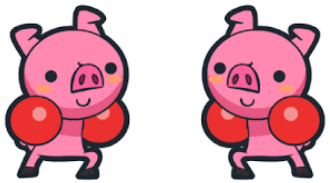

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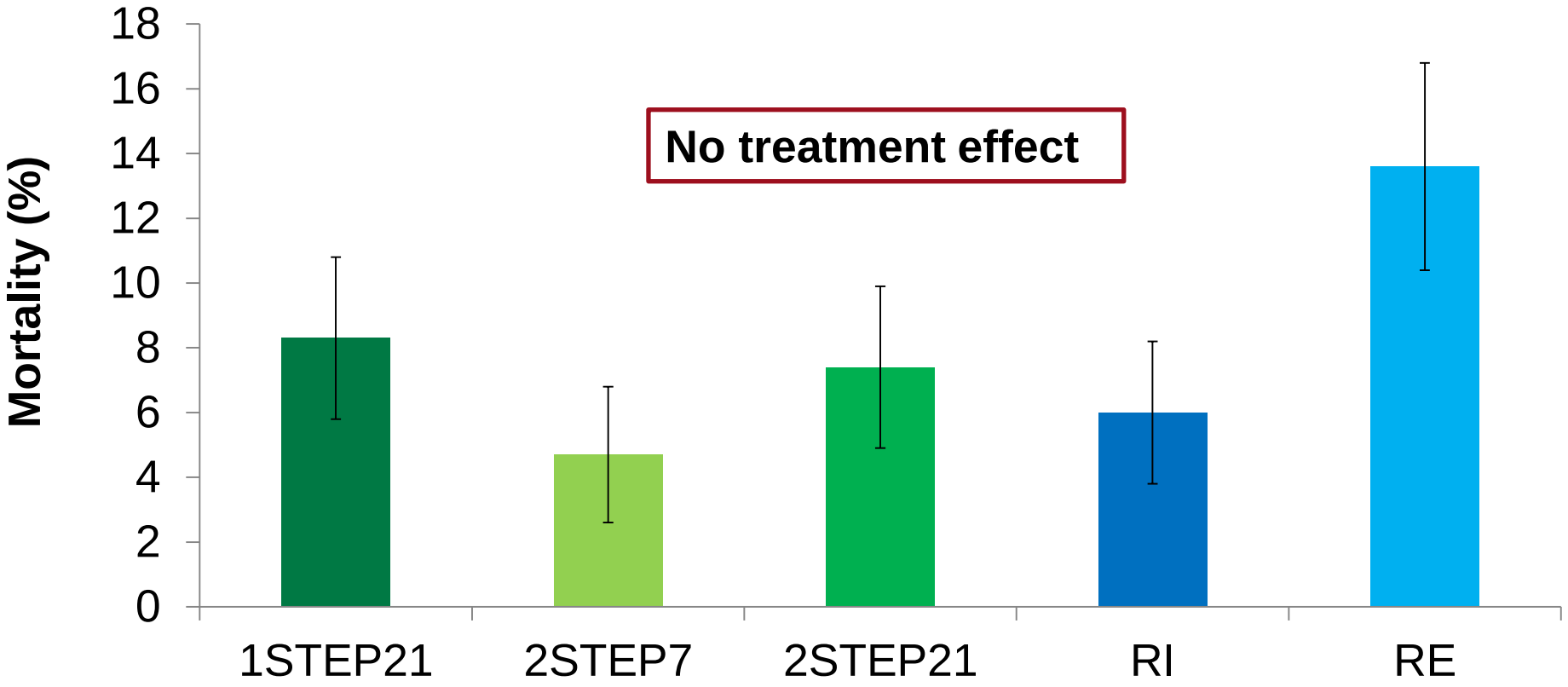
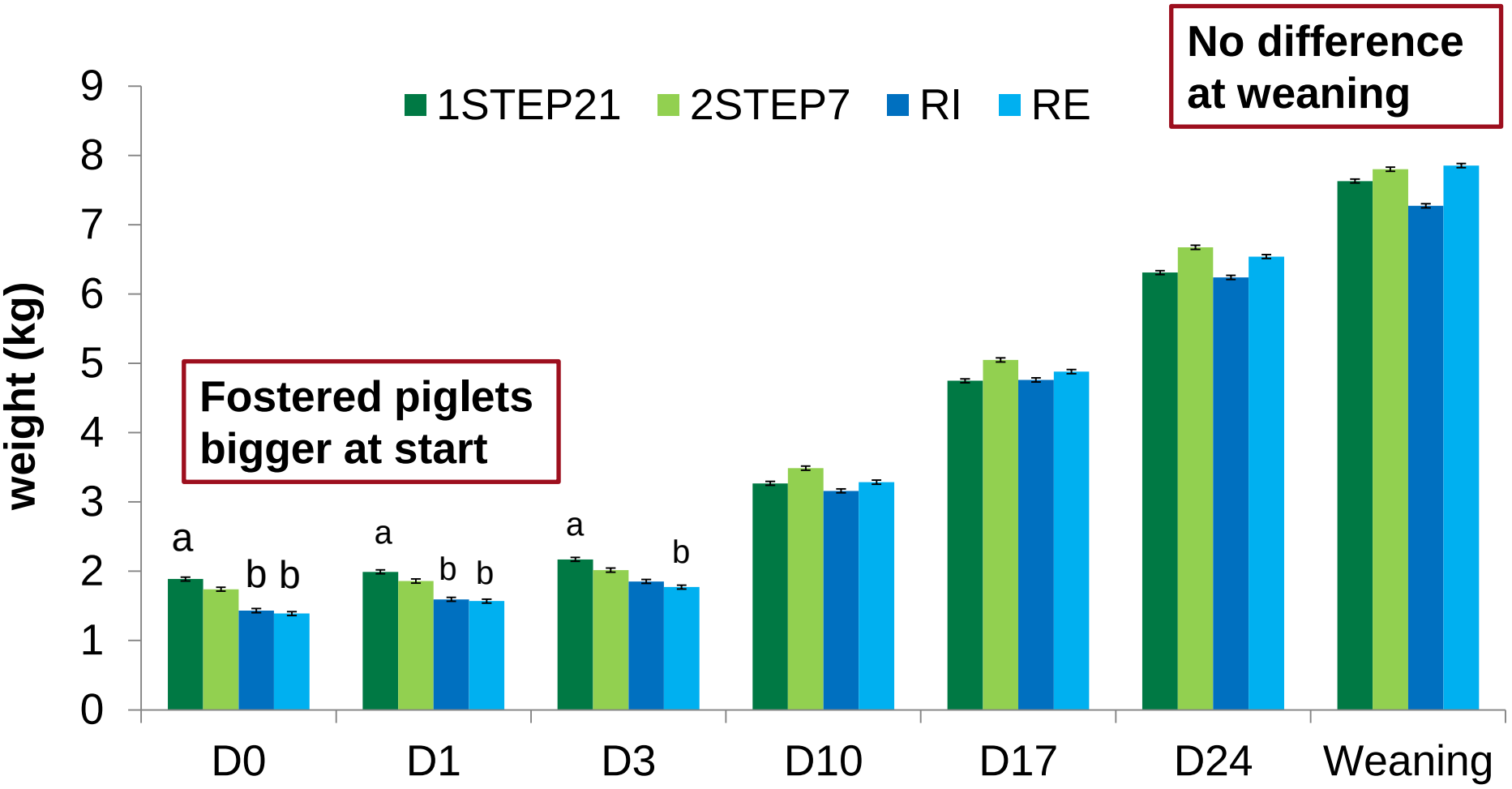
Pre-weaning mortality (live born)



Pre-weaning weights



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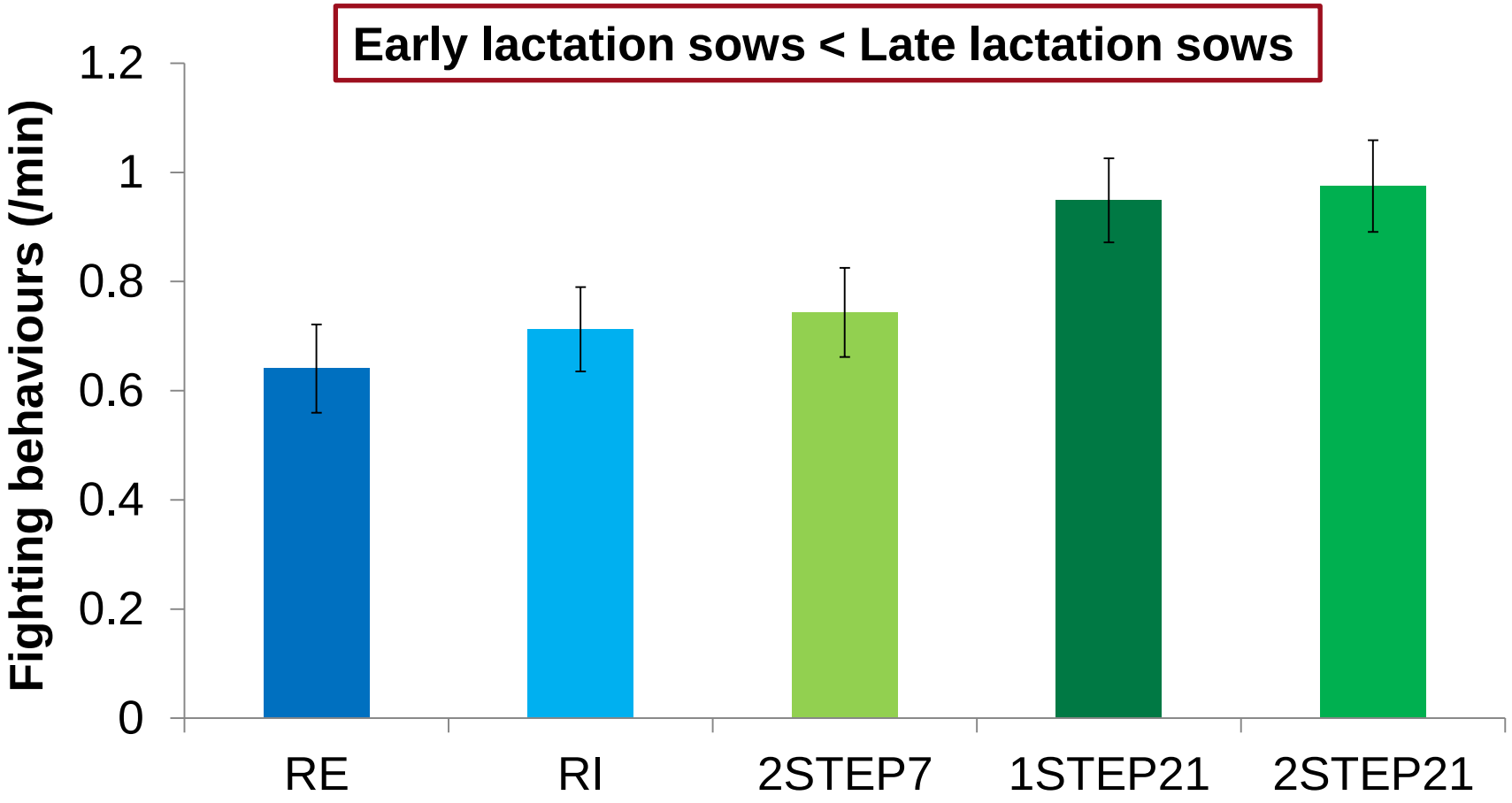
Fighting behaviours at the udder



Conclusions

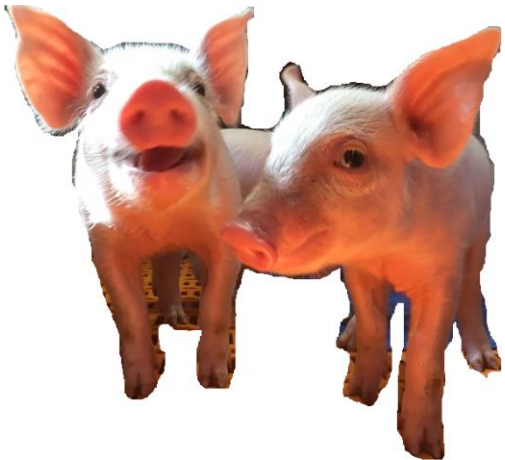
Nurse sows strategies had

- Minor effects on piglet performance
  - Fostering did not impair survival
  - Overall survival should be improved
  - Birth weight advantage not maintained at weaning

- Nurse sows in late lactation = more fights

Take-home message

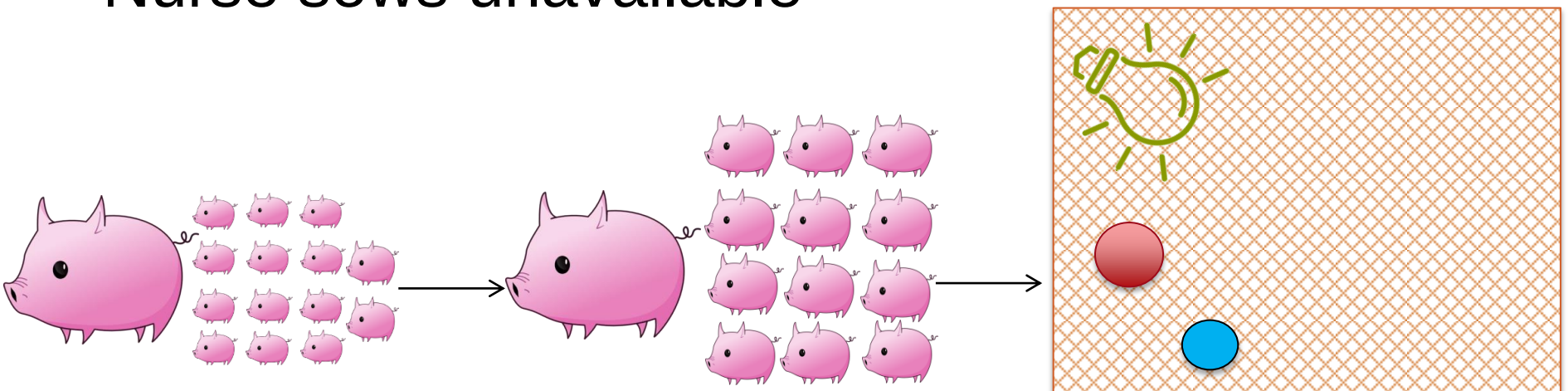
Nurse sows represent a viable solution to deal with large litters and improve overall piglet survival



Experiment 3
Artificial rearing

Why bother ?

- Nurse sows unavailable



Large litter
1 day post-partum

Nurse sow
7 days lactation

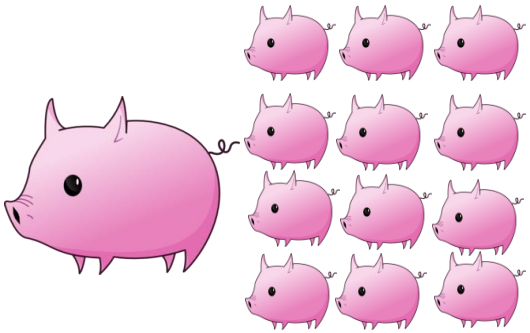
Why bother ?

- Nurse sows unavailable

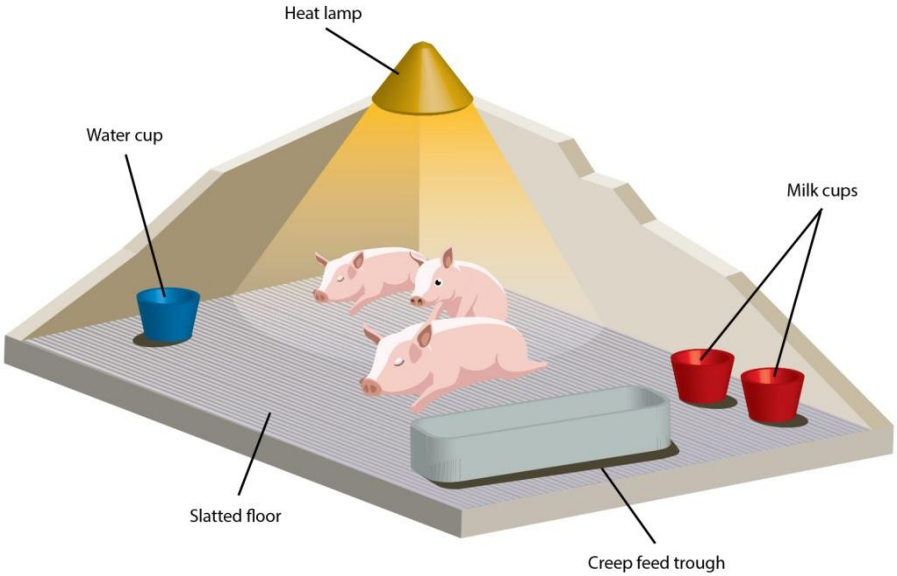
- Artificial rearing = rear piglets apart from sow with milk replacer
  - Promotes survival and growth
  - May affect piglets welfare
    - » Lack of mother care
    - » Reduced space (0.11 vs 0.25 m^2/piglet)

Methods

Litter pairs recruited, same age/weight/size (12 piglets)
Healthy and good body condition



Versus



Sow reared (SR)
- Farrowing room
- 7 days to weaning

Artificially reared (AR)
- Milk replacer
- Separate room
- 7 days to weaning

SR = 10 litters / 116 piglets
AR = 10 litters / 117 piglets

Measures of interest

- **Pre-weaning mortality** → No effect

  (1 piglet dead in each treatment)

- **Weights**

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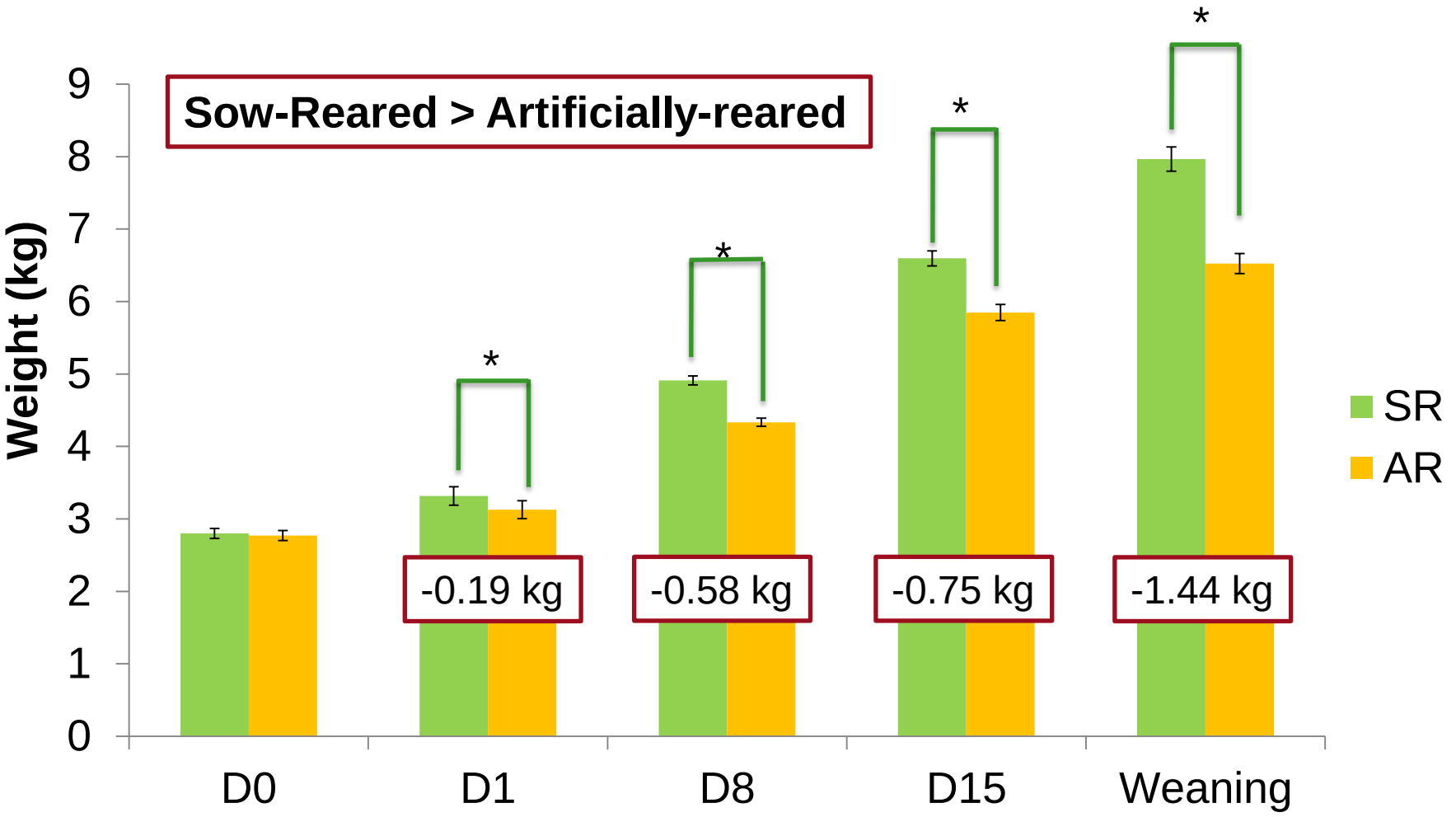
Pre-weaning weights



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Conclusion

- No difference survival
  - 7 days-old piglets
  - Good health and body condition

- Growth check just after transfer
  - AR lighter at weaning
  - 5 days difference at slaughter

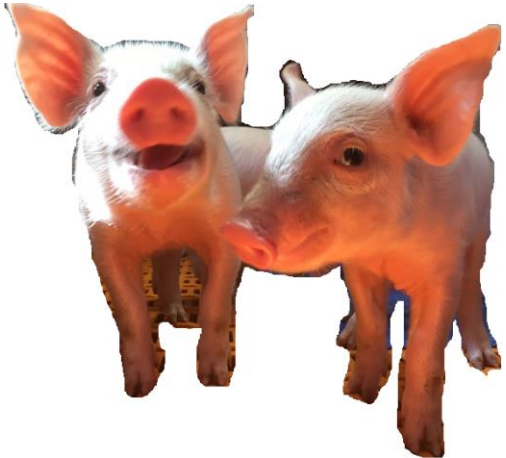
Economic loss
2,50 euros / pig

Take-home message

Artificial rearing can improve overall survival of litters

but

resulted in a long-lasting impairment of piglet growth



THANK YOU

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Sows body condition

1STEP21 = 21 d lactation nurse sow receiving 1 day old piglets
2STEP7 = 7 d lactation nurse sow receiving 1 day old piglets
2STEP21 = 21 d lactation nurse sow receiving 7 day old piglets
RI = newly farrowed sow with intact litter
RE = newly farrowed sow with equalised litter

No effect of treatment