Nurse sow strategies: an effective way to rear super-numerous piglets?

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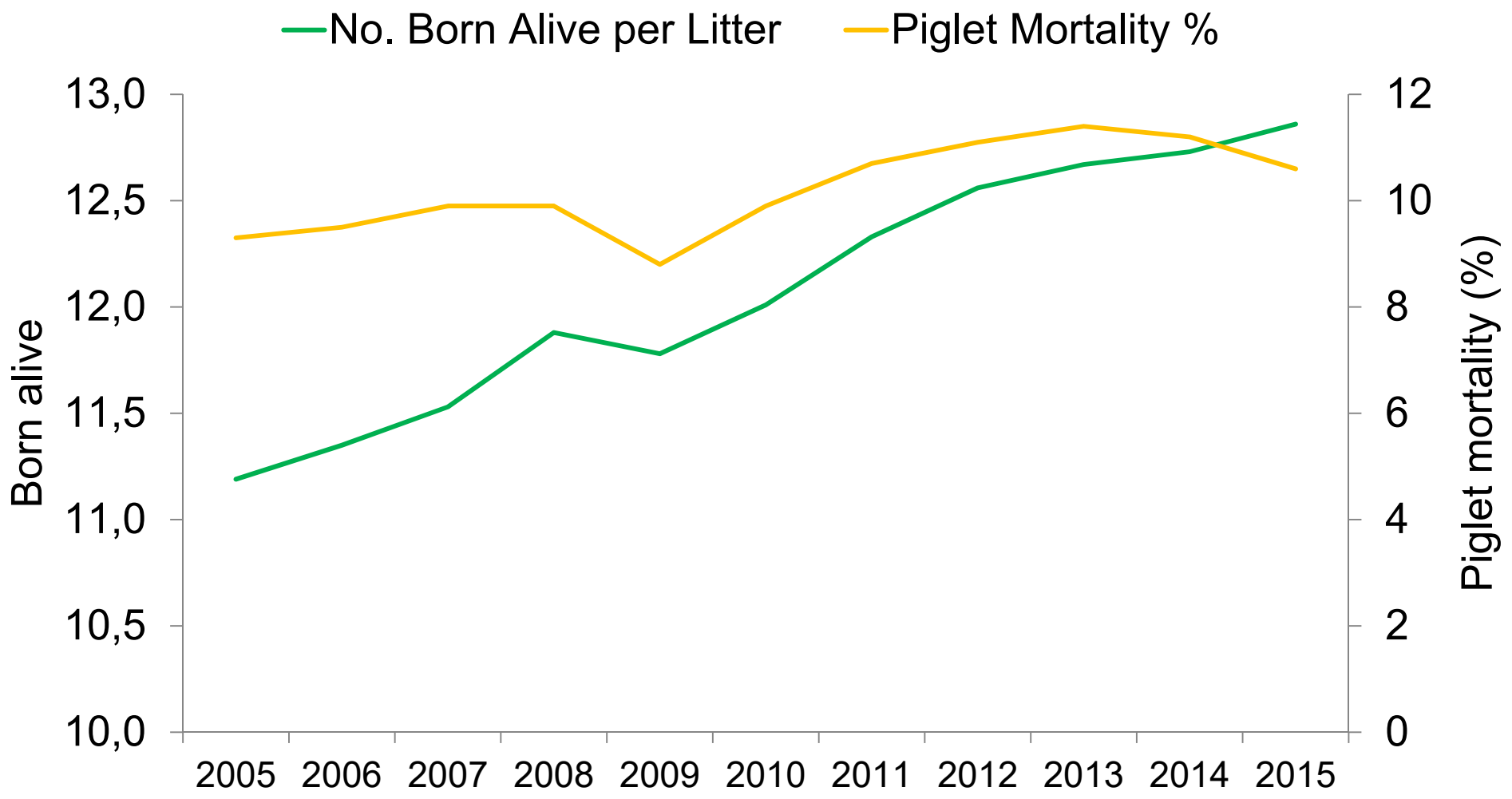
Background


No. Born Alive per Litter
Piglet Mortality %
Born alive
Piglet mortality (%)
13,0
12,5
12,0
11,5
11,0
10,5
10,0
12
10
8
6
4
2
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015

Background

- Increased litter size is a challenge
  - Piglets: growth performance, health, survival (crushing)
  - Sow: competition at udder, increased attention

- Nurse sow to rear super numerous piglets
  - Whole litter removed = better acceptance (Reese and Straw, 2006)
  - Milk quality considerations

Background

- Importance of maternal abilities
  - Milk quality = number reared, number of teats
  - Crushing = number crushed, body lesions, lameness

- Better fostering biggest piglets (Milligan et al., 2001; Muns et al., 2014)
  - Better at teat acquisition (Milligan et al., 2001)
  - Better able to undergo delayed nursing

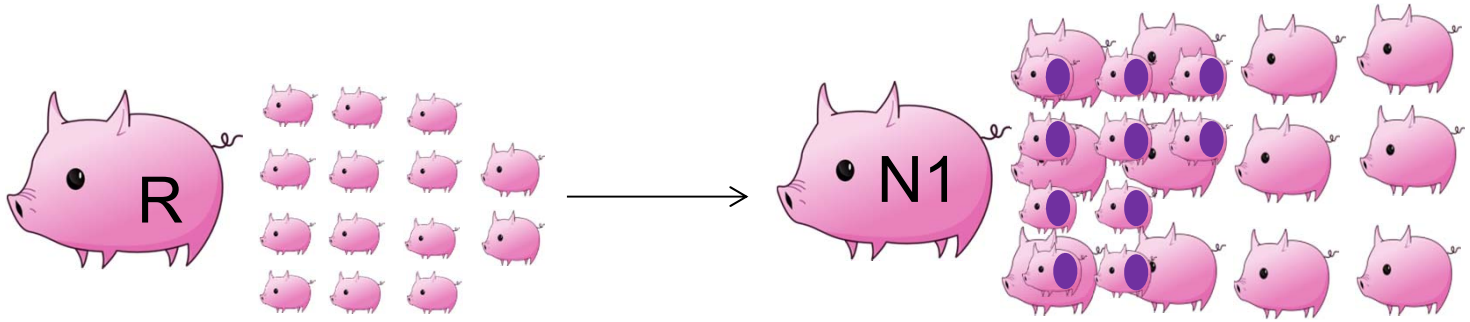
Objectives

Determine the impact of fostering on piglets' growth and pre-weaning survival

Determine if one strategy would promote piglets' growth and survival compared to the other

Experimental Design

1 step strategy



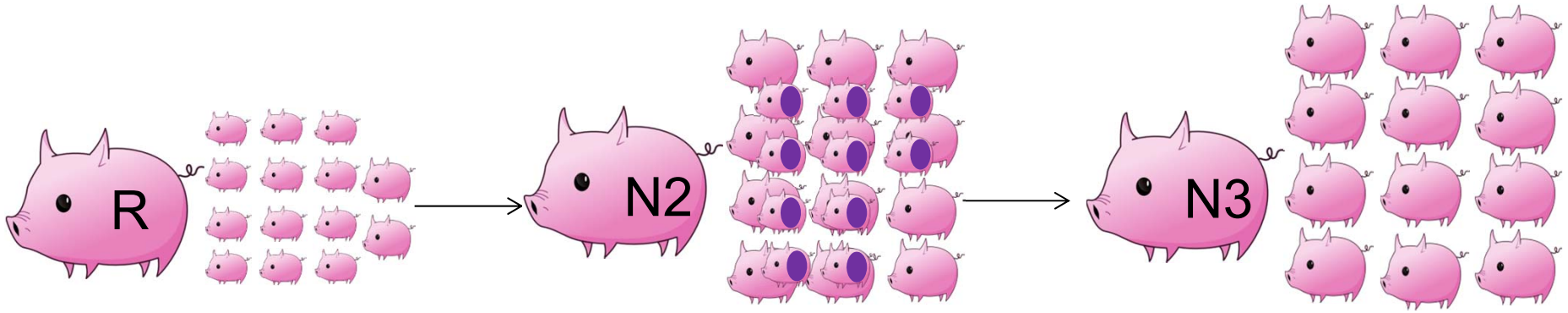
Remain (R)
1 day farrowed

Nurse sow (N1-D21)
21 days lactation

R = 10 litters / 117 piglets
N1-D21 = 10 litters / 120 piglets

Experimental Design

2 step strategy



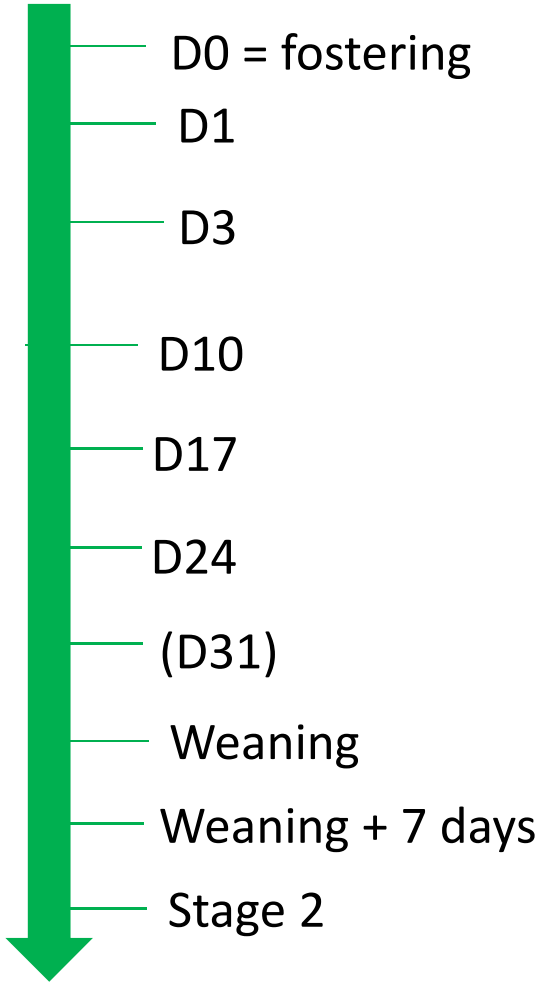
Remain (R)
1 day farrowed

Nurse sow (N2-D7)
4-7 days lactation

Nurse sow (N2-D21)
21 days lactation

R = 9 litters / 118 piglets
N2-D7 = 9 litters / 106 piglets
N2-D21 = 9 litters / 108 piglets

Data collection and analysis - Growth



- Piglets individually weighed
- Growth rate = Average Daily Gain

calculated between two measurement days

- Death of individuals recorded as occurred
- Average litter mortality for the entire lactation

Statistics

- **Weight and Average Daily Gain**

Normal data distribution

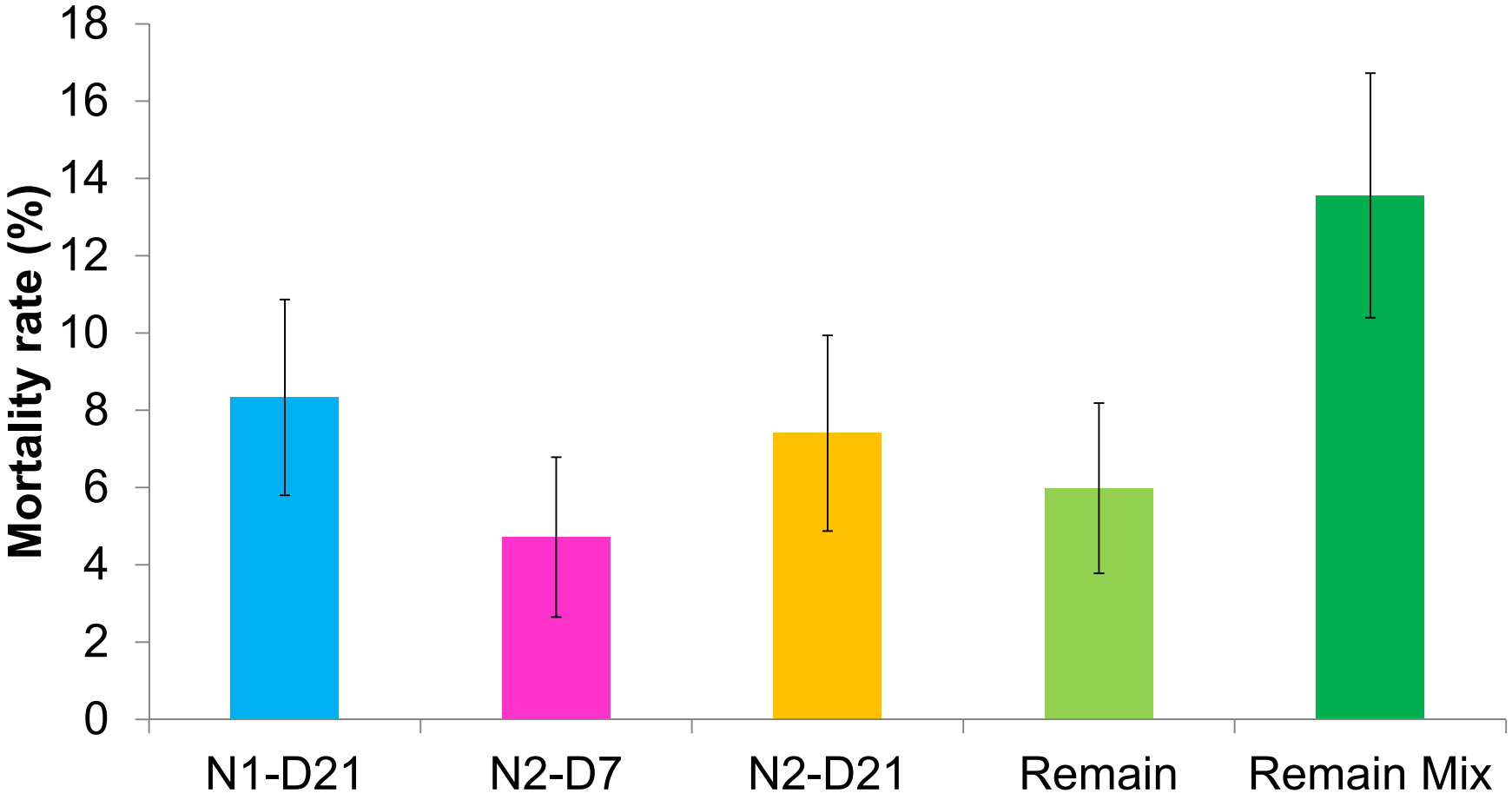
General Linear Mixed Model (GLMM)
Repeated measures (day)
Random factor (sow)

- **Mortality**

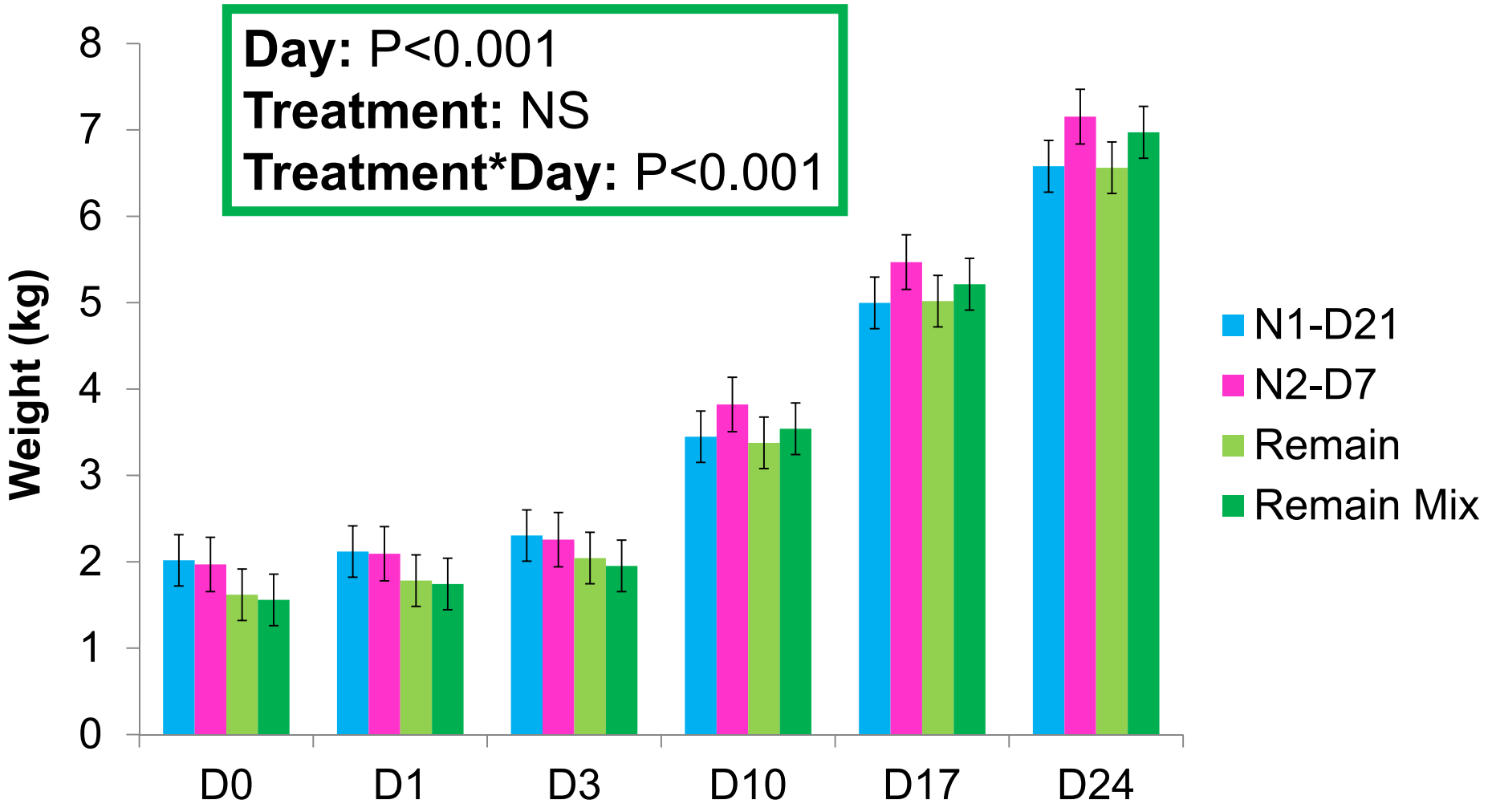
Binary data distribution

General Linear Mixed Model (GLMM)

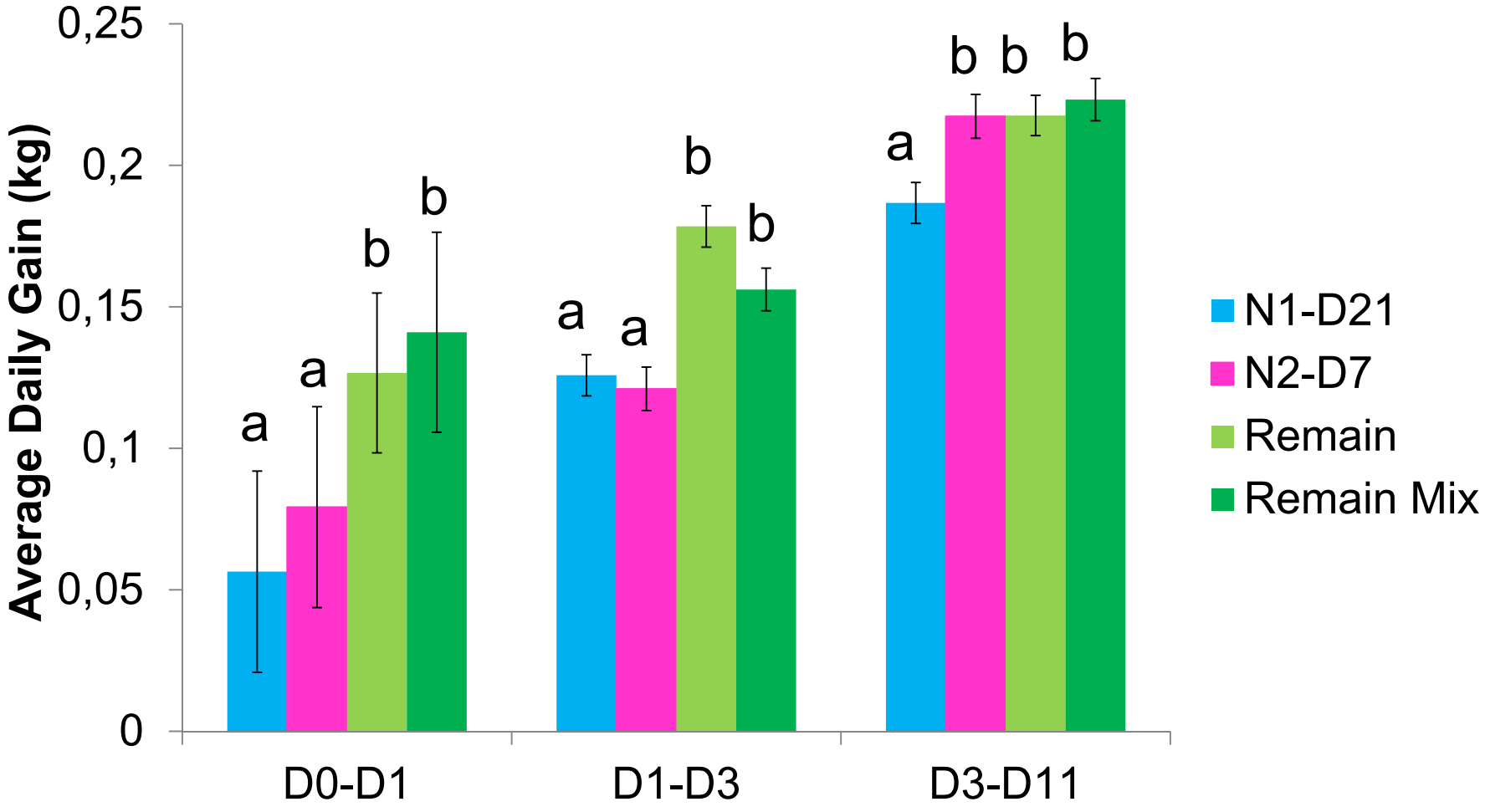
Pre-weaning mortality



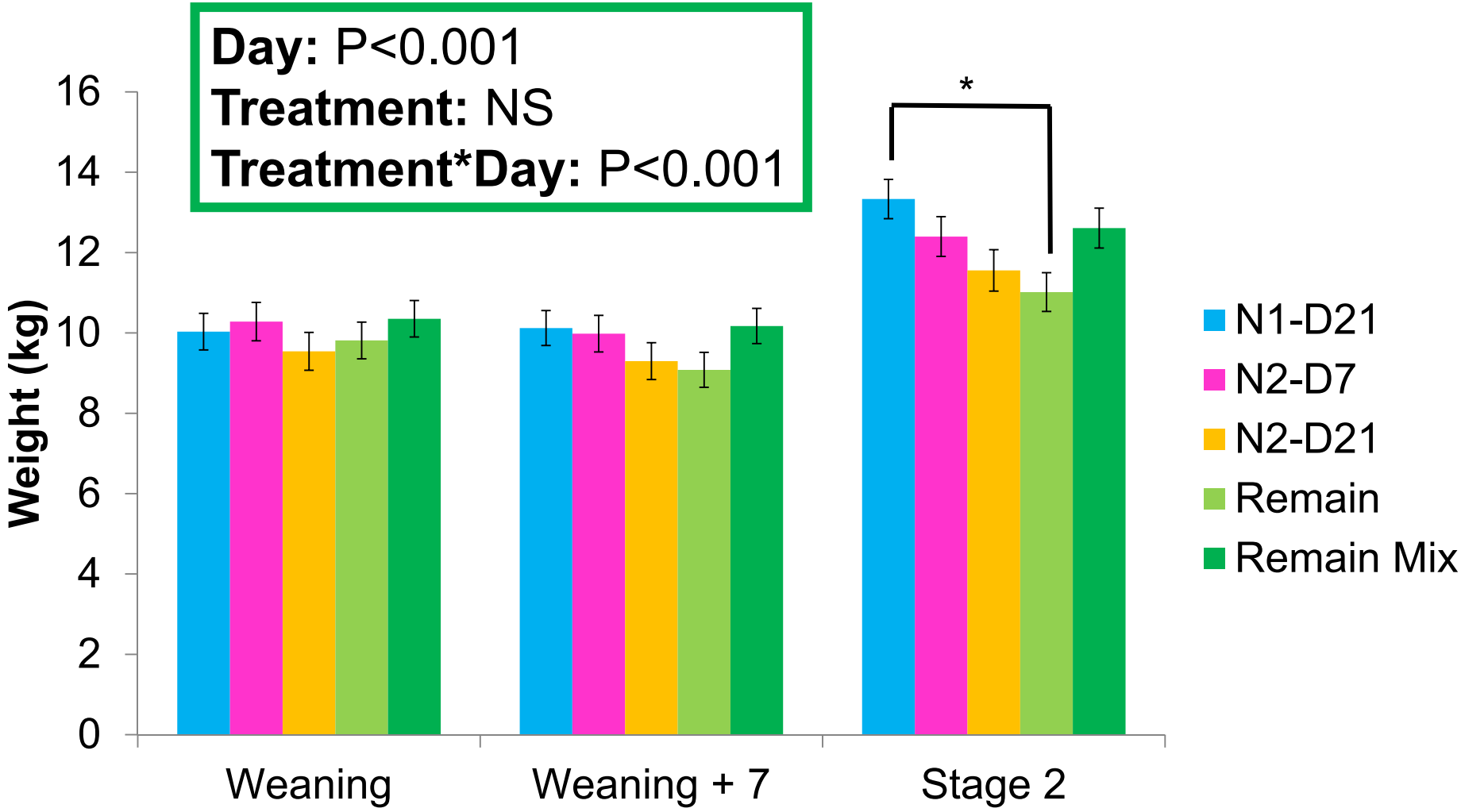
Pre-weaning growth – Body weight



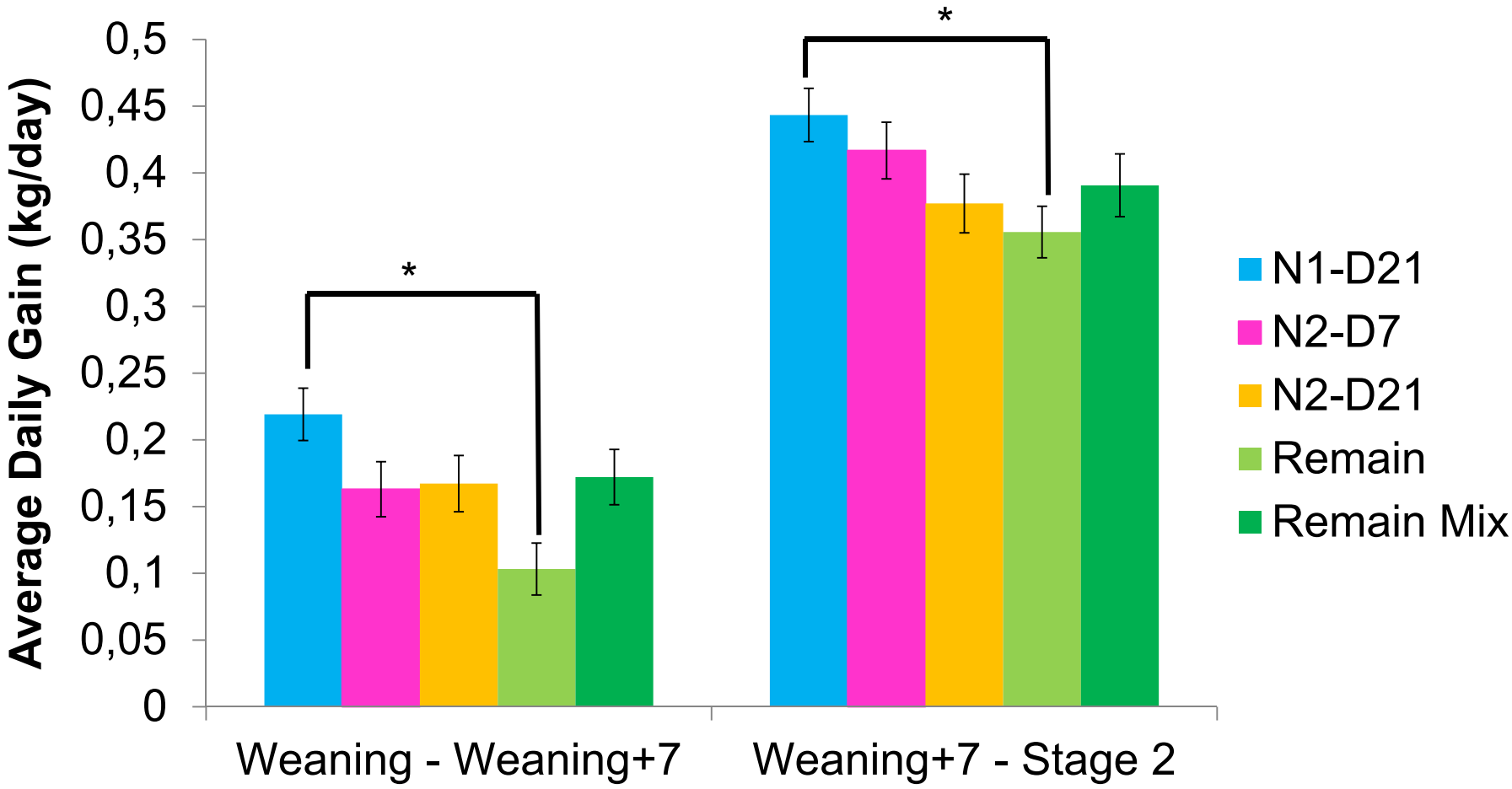
Pre-weaning growth – Average Daily Gain



Post-weaning growth – Body weight



Post-weaning growth – Average Daily Gain



Conclusions

Fostering onto a nurse sow

- Did not compromise survival nor growth of fostered piglets

Compared to the lightest littermates which remained with their dam

-> Further investigation is needed to assess the impact of fostering on heaviest piglets' growth and survival

Conclusions

Fostering onto a nurse sow

- Did not compromise survival nor growth of fostered piglets
- Allowed lightest piglets to catch up with fostered piglets

Some of fostered piglets experienced growth check after fostering

-> Further investigation is needed to assess the impact of fostering on heaviest piglets' growth

Conclusions

Fostering onto a nurse sow

- Did not compromise survival nor growth of fostered piglets
- Allowed lightest piglets to catch up with fostered piglets

Both nurse sow strategies were effective in ensuring survival and growth of super-numerous piglets

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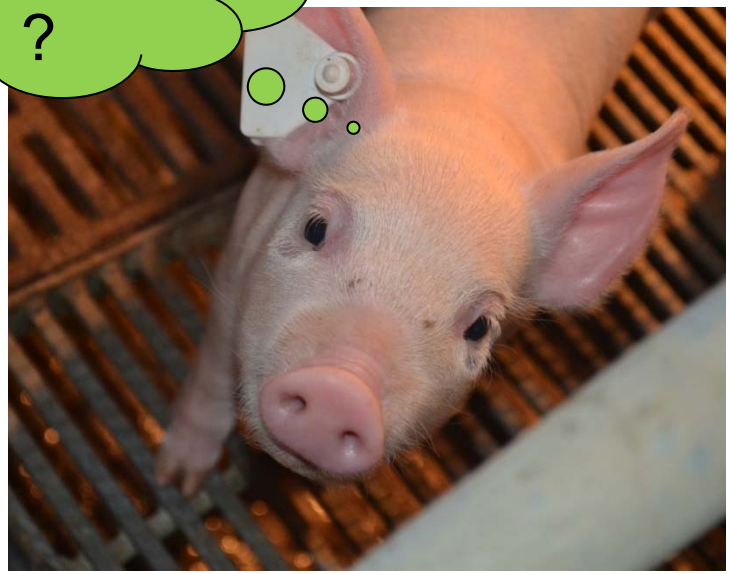
An Roinn Talmhaíochta, Bia agus Mara

Questions ?



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