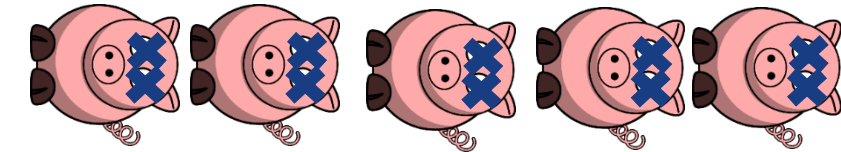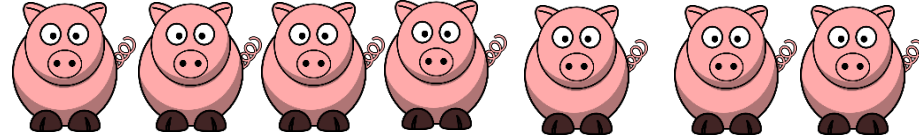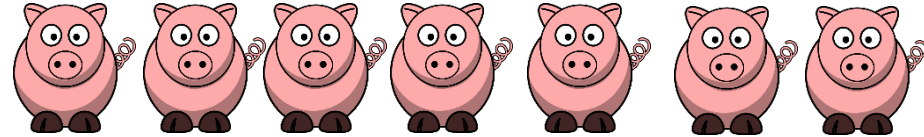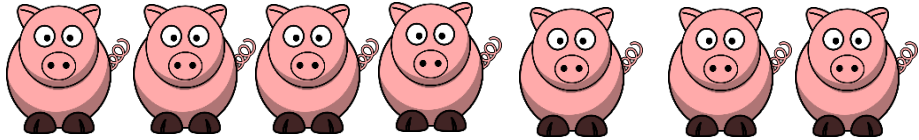# MANAGEMENT OF LARGE LITTERS USING MILK SUPPLEMENTATION - PRELIMINARY RESULTS

BACKGROUND

Large litter size

~**17 liveborn** piglets in Denmark
(Hansen, 2018)

Large piglet mortality

MANAGEMENT SOLUTIONS?

When more piglets than teats on the sow
- Nurse sows are used in Denmark
- Artificial rearing with milk replacer in Netherlands, Germany and USA

Can the sow nurse all her own piglets?
- With milk replacer
- Improved udder access by loose housing

WHAT?

Can milk replacer reduce mortality in large litters

without compromising litter weaning weight?

HOW?

3x2 factorial design

- Milk replacer
  - +Milk
  - NoMilk
- Experimental litter size
  - 14 piglets day 1
  - 17 piglets day 1
- Housing
  - Crate
  - Loose

Examples: 17, +Milk, Crate

14, +Milk, Loose

HOW?

Ninety-eight litters

~ 12 litters per treatment

Three batches

1st-2nd parity

Birth weight >700g

Random litter equalization

Weaning day 28

Examples: 17, +Milk, Crate

14, +Milk, Loose

TWO TYPES OF MILK REPLACER

Day 1-12

Skimmed milk powder, whey powder, vegetable fat, wheat protein concentrate

Day 12-28

Wheat, whey powder, vegetable oils, soy protein concentrate, wheat gluten, potato protein and rice

RECORDINGS

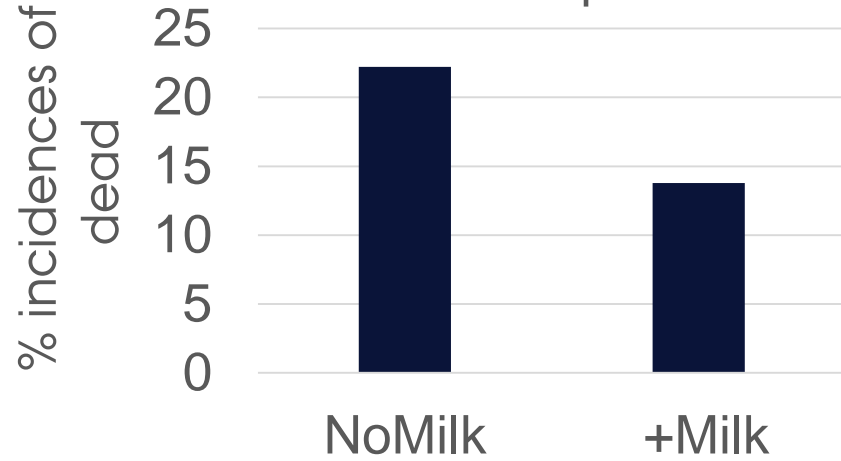Birth weight (kg)

Weaning weight (kg)

Mortality (dead/not dead)

Drinking milk replacer day 7 (~12h period)
- Individual marks on the back
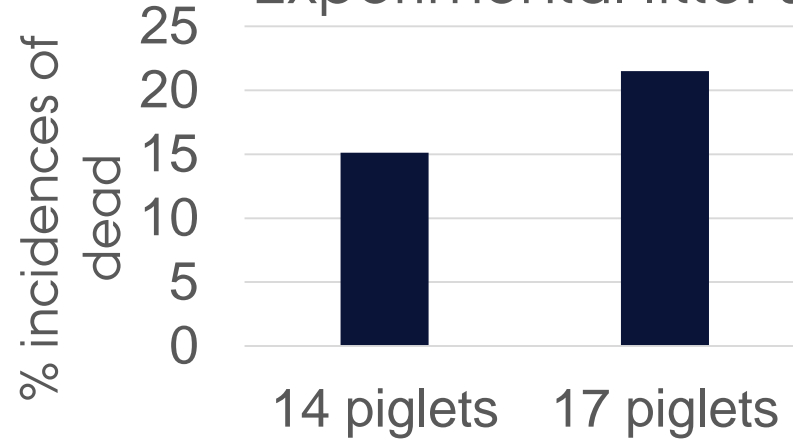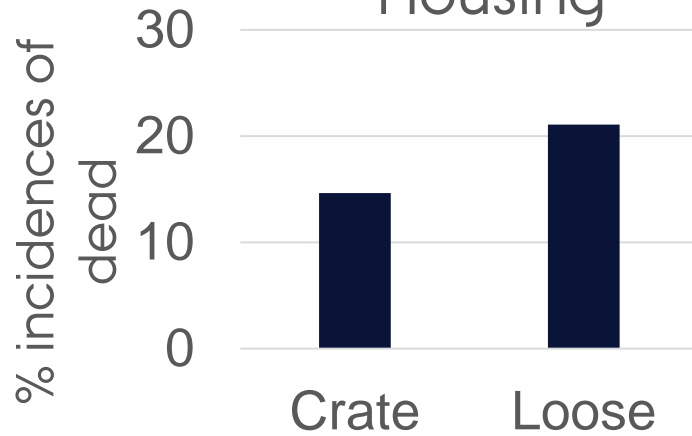- Drinking (Drinkers vs. NotDrinkers)

MORTALITY

Milk replacer

OR = 1.6
P=0.02

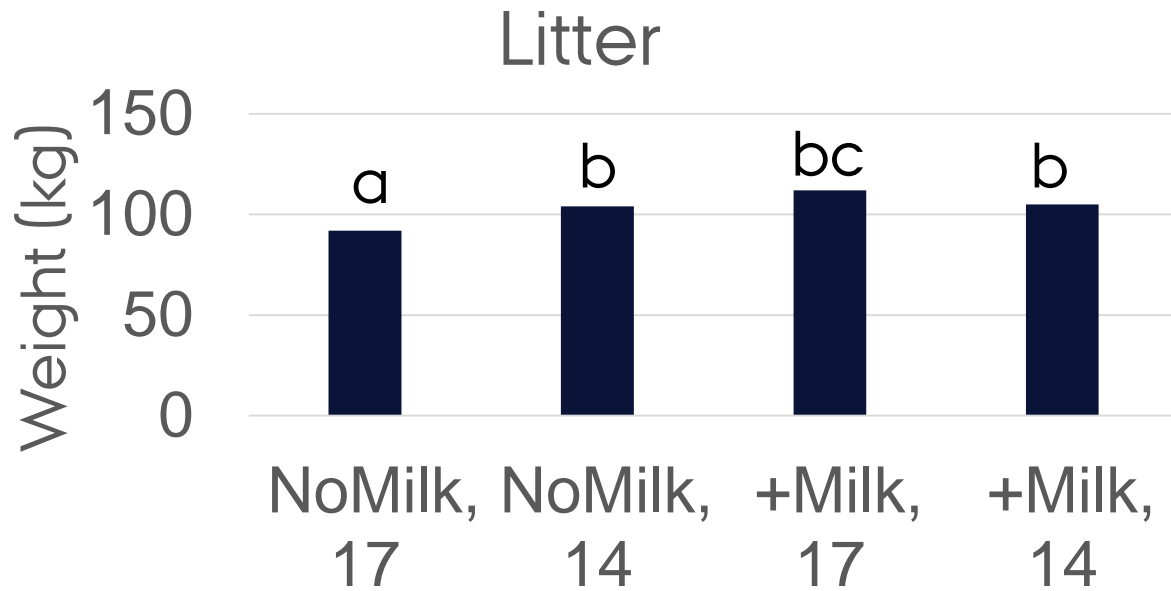Experimental litter size

OR = 2.4
P<0.001

Housing

P=0.08

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WEIGHT AT WEANING

Litter

Weight (kg): 150, 100, 50, 0

Bars labeled: NoMilk, 17 (a); NoMilk, 14 (b); +Milk, 17 (bc); +Milk, 14 (b)

Piglet

Weight (kg): 10, 8, 6, 4, 2, 0

Bars labeled: NoMilk, 17 (a); NoMilk, 14 (d); +Milk, 17 (b); +Milk, 14 (c)
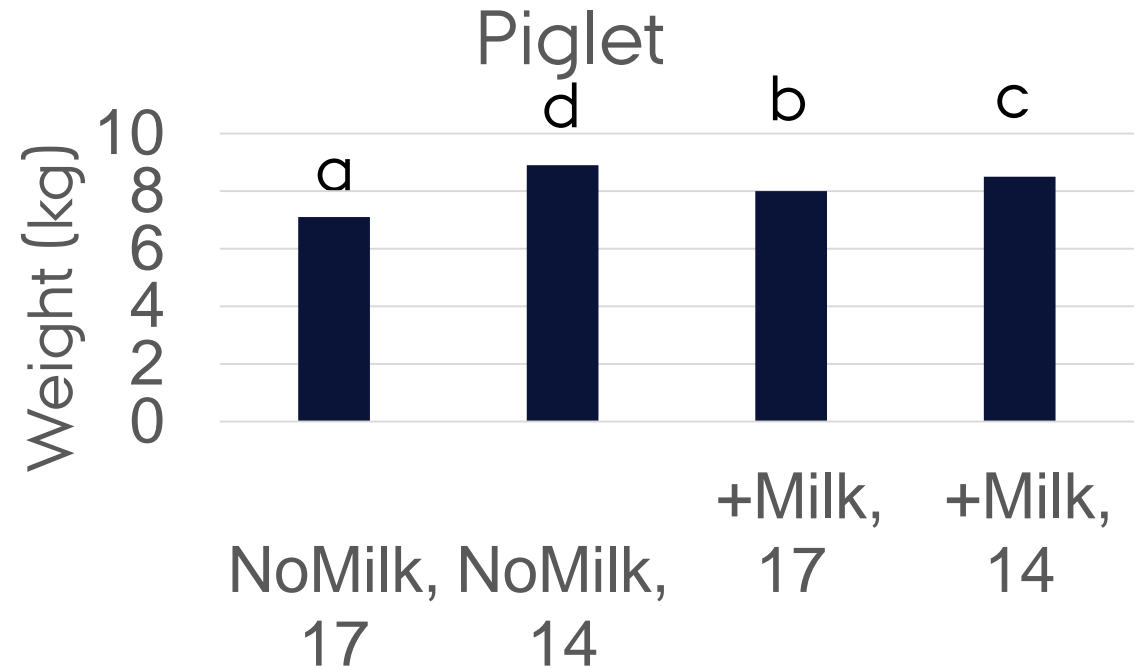
Lowest litter weight in NoMilk 17

Higher litter weight in +Milk 17, but not different from litters of 14

Lowest individual weight in NoMilk 17

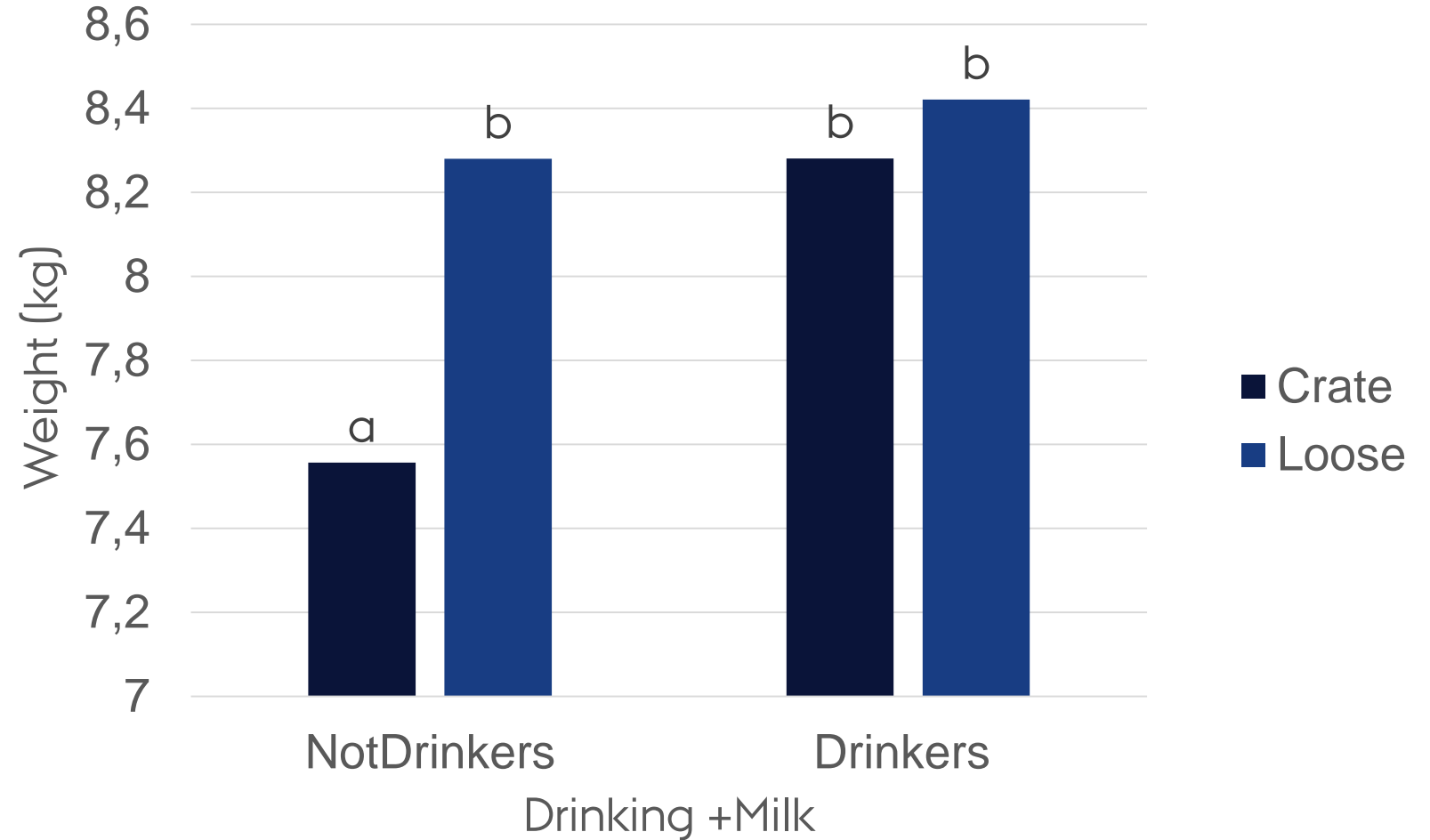Lower individual weight in +Milk 17 compared to 14 +Milk and 14 NoMilk

Subset of data – only +Milk
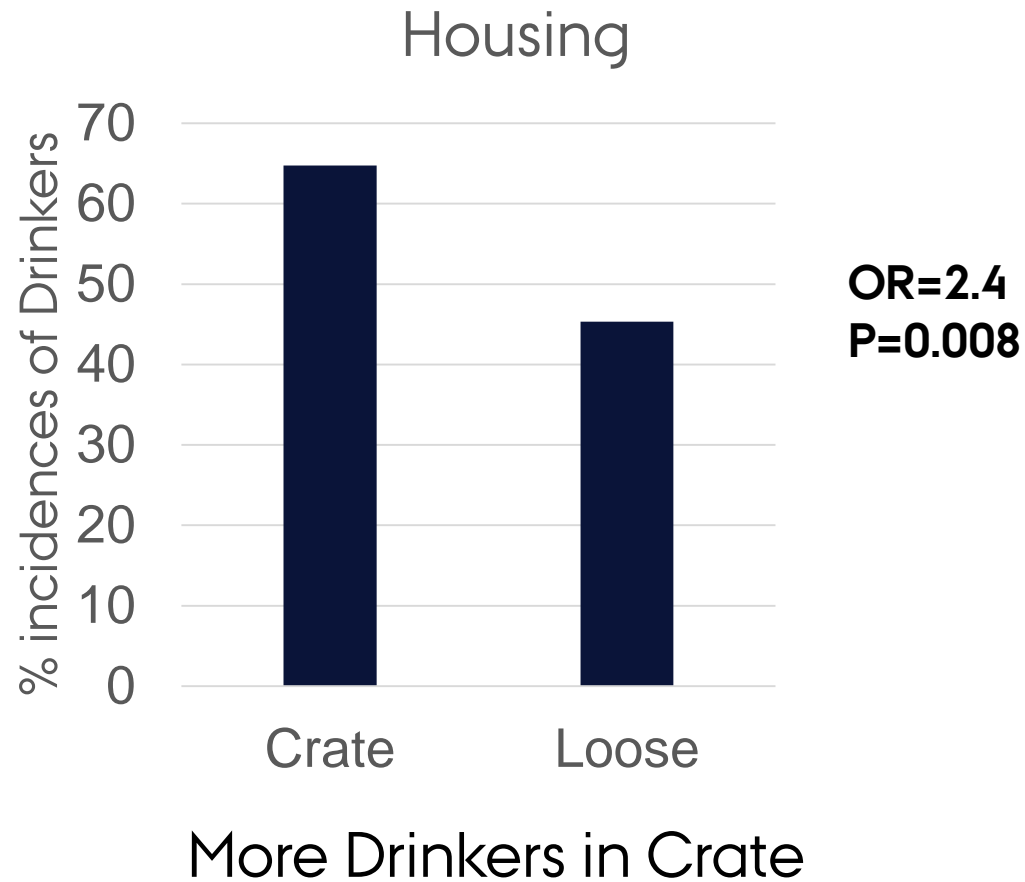
PIGLET WEIGHT– ONLY +MILK

Drinkers =
drinking at least
once day 7

NotDrinkers =
no drinking on
day 7

~ 50/50
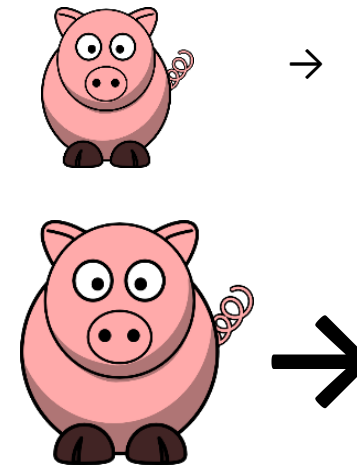
WHAT CHARACTERIZES DRINKERS?

Housing

OR=2.4
P=0.008

More Drinkers in Crate

Increased birth weight increased odds of being a Drinker

With 200g increase the OR was 1.3 (P<0.001)

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SUMMARY

Mortality was lower:

- In +Milk compared to NoMilk
- In 14 compared to 17 piglets per litter
- No significant effect of housing although numercially lower in crates

Litter weaning weight:

- Highest in litters of 17 piglets and +Milk
- Lowest in litters of 17 piglets and NoMilk

Drinking milk replacer:

50 % became Drinkers

High birth weight increased odds of being a Drinker

Crate increased odds of being a Drinker

CONCLUSION

Can milk replacer reduce mortality in large litters without compromising litter weaning weight?

YES: Milk replacer could reduce mortality in large litters and increase litter weaning weight – at least in very large litters.

However, it was achieved on the expense of reduced individual weaning weight

WHAT IS NEXT?

Do frequent Drinkers gain more weight?

Do frequent Drinkers drink less frequently from the sow ?

Do frequent Drinkers have a lower body fat and protein content than fully sow-reared piglets (due to lower quality nutrition) ?

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