




Optimal feeding of gilts and sows

Get the best herd performance

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22 March 2023

Fokus 35 Vital Meeting, Porcus

 Ministry of Food, Agriculture
and Fisheries of Denmark

gudp

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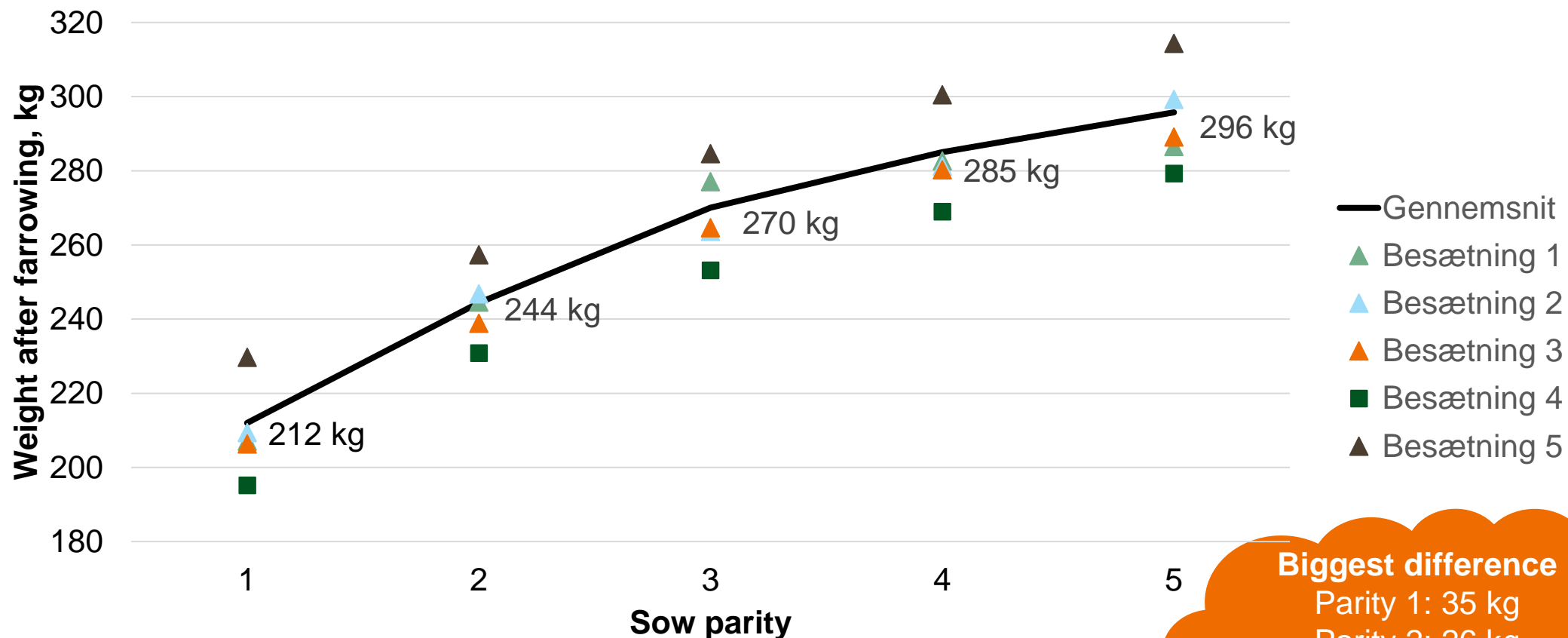
Danish Pig Levy Fund

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Recent knowledge about: Body condition and sow weight development

Weight development from first to fifth parity

Gilt weight at first service and first farrowing is essential

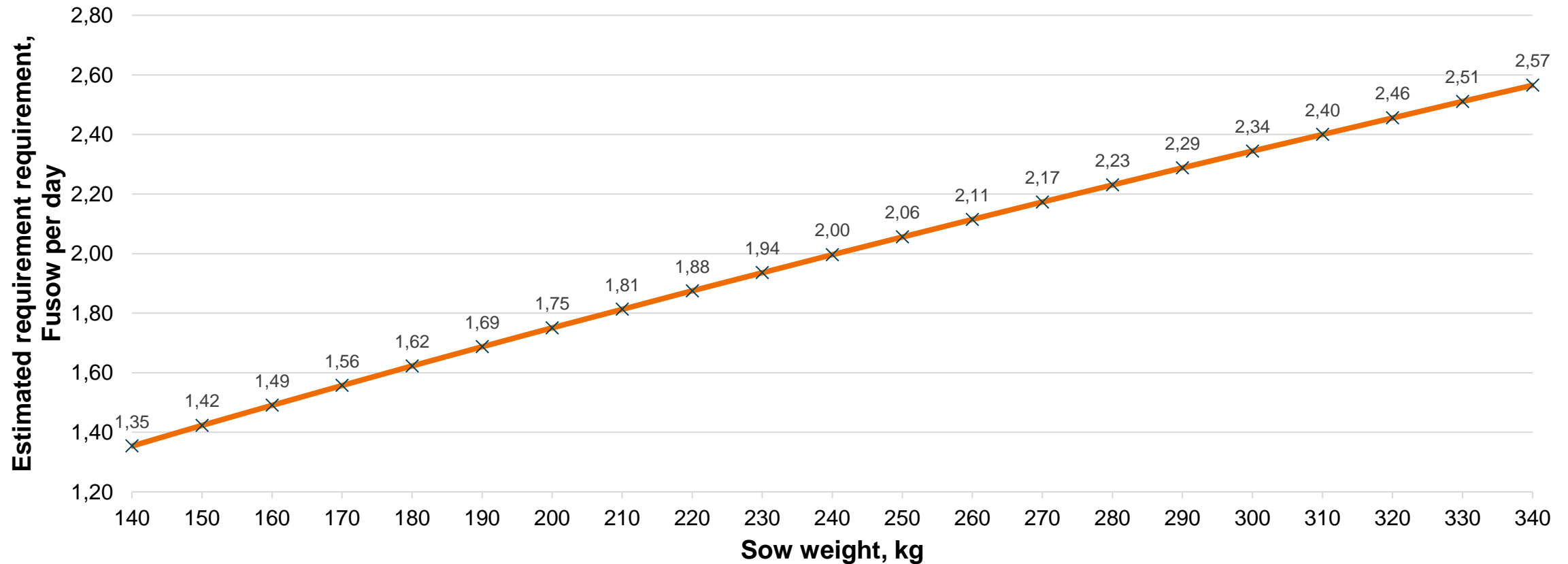


Biggest difference
Parity 1: 35 kg
Parity 2: 26 kg
Parity 3: 32 kg
Parity 4: 31 kg
Parity 5: 35 kg

Reference: Trials from 2015-2021

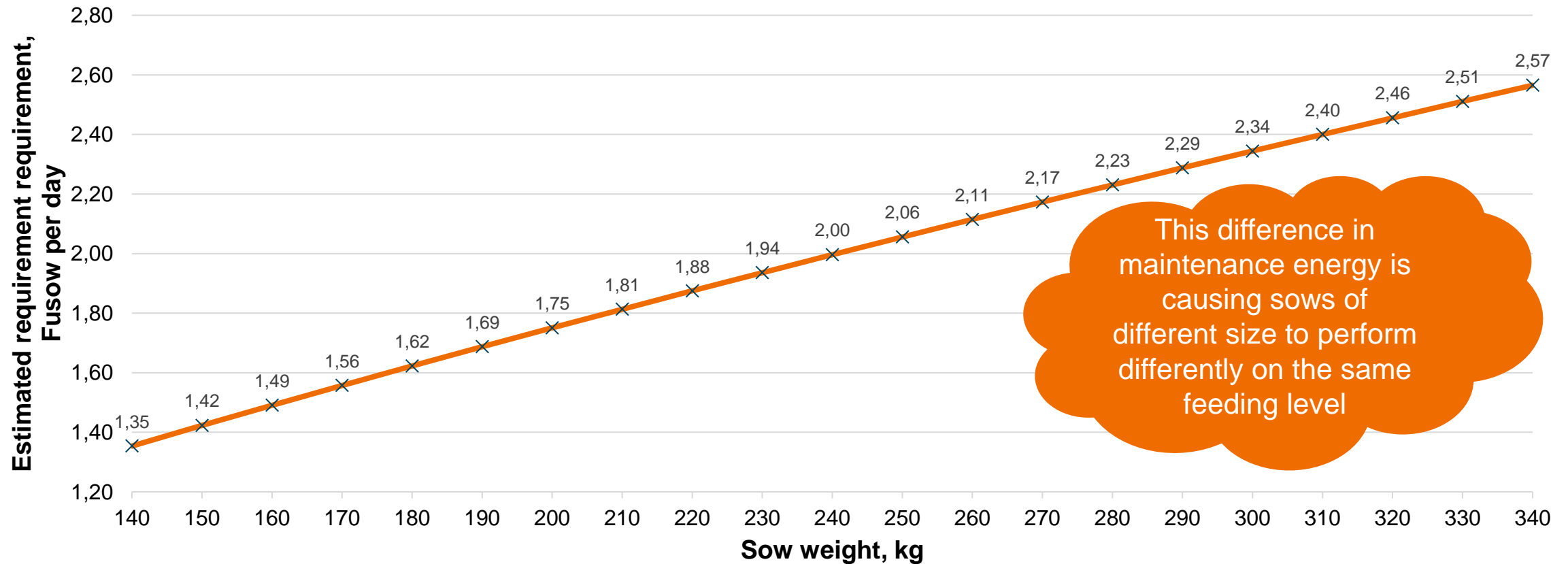
Understand energy requirement for maintenance

The part of the feed needed to live



Understand energy requirement for maintenance

The part of the feed needed to live



This difference in maintenance energy is causing sows of different size to perform differently on the same feeding level

Backfat gain

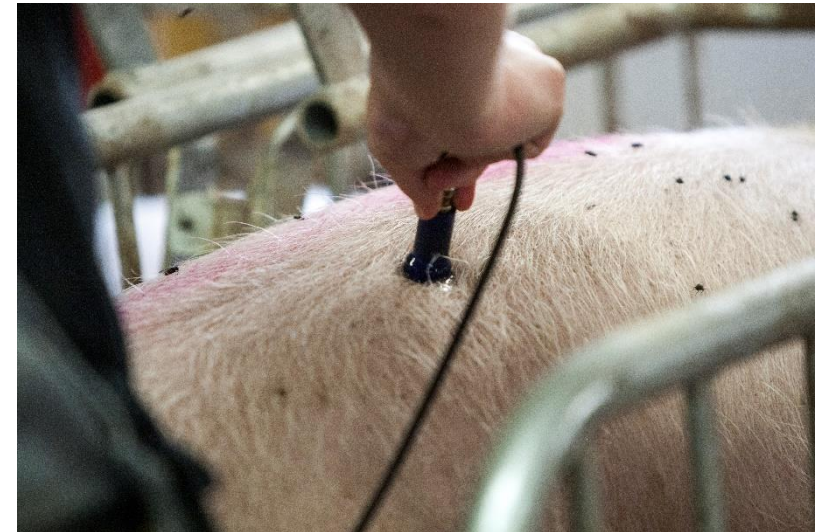
No 100% clear indications on the cost of re-establishing 1 mm backfat

- Best assumption based on figures from AUI
 - 20-25 FUsow above maintenance per mm backfat (assumed 22.5 FUsow per mm)
- 3.5 Fusow 0-28 after insemination
 - Sow weight 200 kg: +2,2 mm
 - Sow weight 230 kg: +1,9 mm
 - Sow weight 260 kg: +1,7 mm

Forskøl 0,5 mm
- 2.3 Fusow from day 28-84 after insemination
 - Sow weight 200 kg: +1,4 mm
 - Sow weight 230 kg: +0,9 mm
 - Sow weight 260 kg: +0,5 mm

Forskøl 0,9 mm
- Difference day 84
 - Sow weight 200 kg: +3,6 mm
 - Sow weight 230 kg: +2,8 mm
 - Sow weight 260 kg: +2,2 mm

Forskøl 1,4 mm



Recommended feeding curves for gestating sows

Current knowledge does not take age/weight into consideration

Days	Fat	Normal	Thin	Gilts
Backfat	>14 mm	12-14 mm	<12 mm	13-15 mm
0	2,5	3,0	4,5	(2,2) 2,4
26	2,5	3,0	4,5	(2,2) 2,4
31	2,3	2,3	2,3 (3,5)	2,5 (2,7)
76	2,3	2,3	3,5	2,5 (2,7)
84	3,5	3,5	3,5	3,3
112	3,5	3,5	3,5	3,3
114	3,5 (4,0)	3,5 (4,0)	3,5 (4,0)	3,3
115	3,5 (4,0)	3,5 (4,0)	3,5 (4,0)	3,5
Farrowing	3,5 (4,0)	3,5 (4,0)	3,5 (4,0)	3,5
Backfat	14-17 mm			

Estimated gain during gestation

Different lysine levels and "normal" feeding curve

Weight at insemination	Lysin (g SID per FUsow)	Sow gain, kg
140	3,0	30,6*
140	4,0	50,8*
140	5,0	67,0**
160	3,0	29,7*
160	4,0	50,0*
160	5,0	62,8***
180	3,0	28,9*
180	4,0	48,4**
180	5,0	58,5***

Weight at insemination	Lysin (g SID per FUsow)	Sow gain, kg
200	3,0	28,1*
200	4,0	45,5**
200	5,0	54,1***
220	3,0	27,3*
220	4,0	42,6**
220	5,0	49,8***
240	3,0	26,5*
240	4,0	39,7**
240	5,0	45,3***

*Lysine is limiting daily gain = backfat will increase

** Energy is limiting daily gain from day 30-84 and lysine in the rest of the gestation = slightly less increase in backfat

*** Energy will be limiting for the gain in the entire period = potential loss of backfat/skinny sows

Effect of different feeding levels from day 30-84

And at the same time varying lysine levels

Weight at insemination	Feeding level (FU _{sow} per day)	Lysine (g SID per FU _{sow})	Sow gain, kg
140	2,0	3,0	28,1*
140	2,3	3,0	30,6*
140	2,5	3,0	32,2*
140	2,0	4,0	47,3**
140	2,3	4,0	50,8*
140	2,5	4,0	53,1*
140	2,0	5,0	59,7**
140	2,3	5,0	67,0**
140	2,5	5,0	71,2**

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140			
140			
140			
140		4,0	53,1*
140	2,0	5,0	59,7**
140	2,3	5,0	67,0**
140	2,5	5,0	71,2**

At a lysine level of 5.0 g SID per FU_{sow} and 140 kg at insemination a low feeding level increases the risk of getting into bad body condition

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Take home messages

Body condition and sow weight gain development

- Gilt weight at first insemination and gain in first gestation is the tipping point for your sows
- As maintenance is dependent on body weight the weight and age of the sows should be in focus
 - Body condition + weight/age is better than just body condition
- High protein and lysin is not optimal for gestating sows
 - More money from the slaughter house
 - More leg problems
 - Less space in the farrowing pen for large litters

A photograph of a pig in a farrowing pen. The pig is lying down, and its head is visible through the metal bars of the pen. The background shows other pens and equipment. A blue semi-transparent overlay covers the left side of the image, containing white text. In the bottom right corner, there are logos for 'Svineafgiftsfonden' and 'SEGES INNOVATION'.

Recent knowledge about: Frequent and slow feeding in the farrowing section

STØTTET AF

Svineafgiftsfonden

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Innovative feeding equipment for dry feed in farrowing stables

Automatic, individual and slow feeding



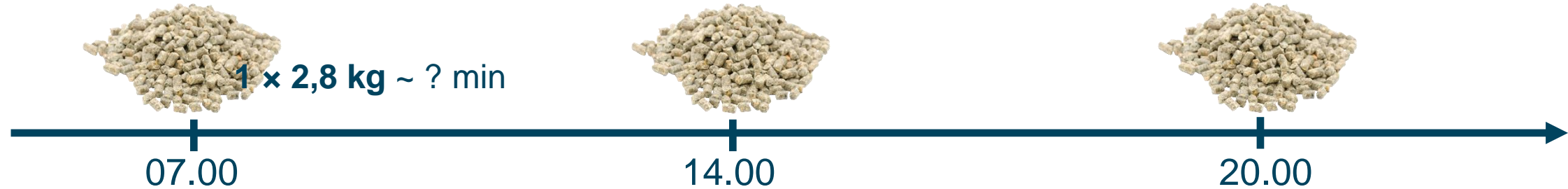
Testing of SKIOLD SmartFeeder

Traditional dry feed "quick" (example with 9.0 FUsow per day)

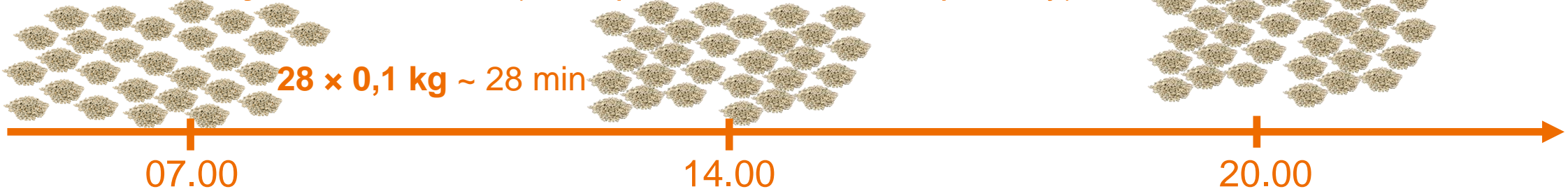


Afprøvning af den innovative fodringsteknik fra SKIOLD

Traditional dry feed "quick" (example with 9.0 FUsow per day)



Innovative dry feed I "slow" (example with 9.0 FUsow per day)

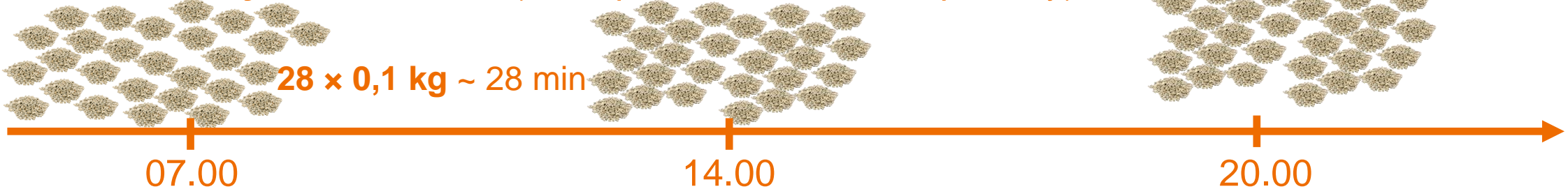


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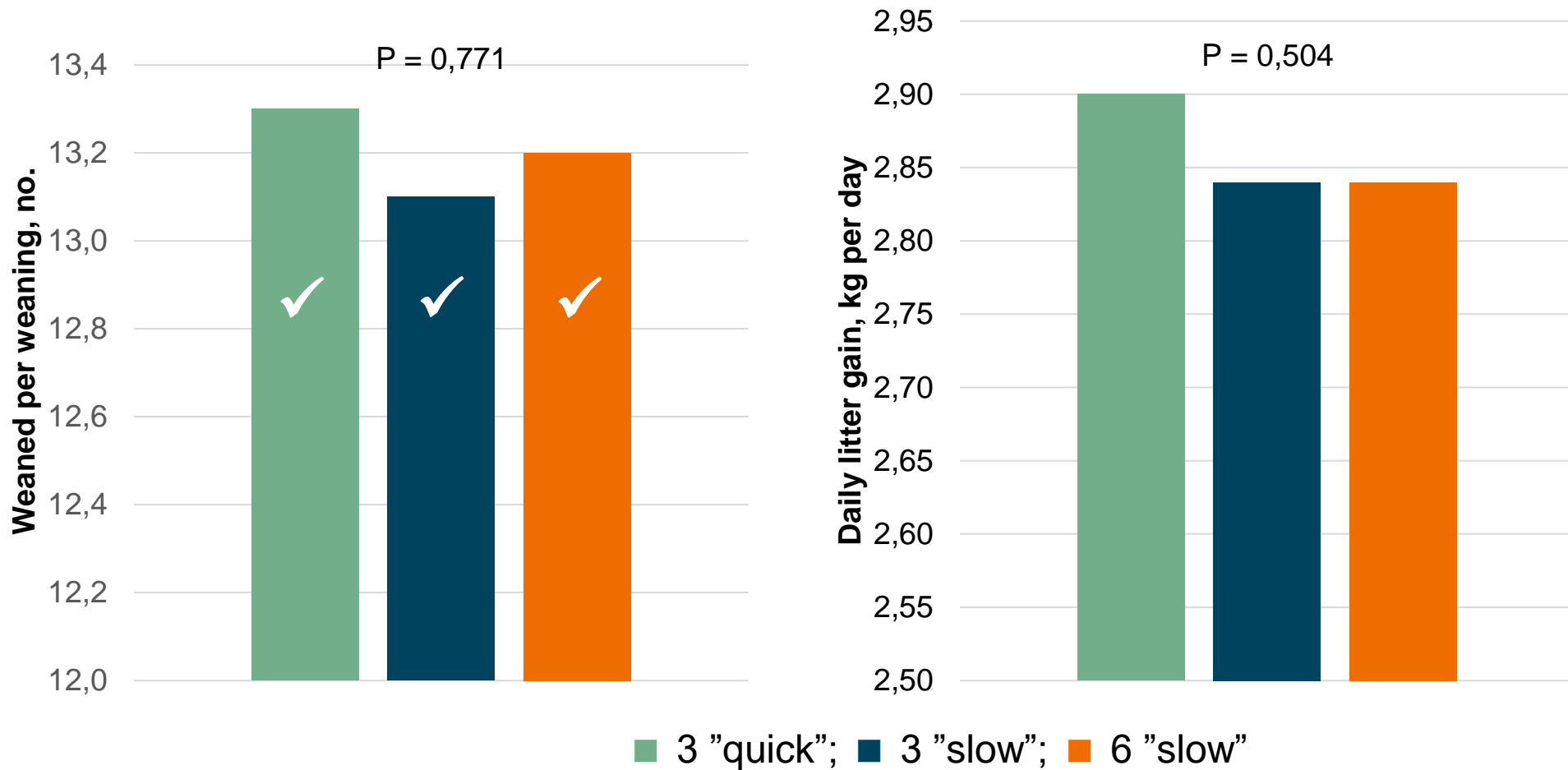


Innovative dry feed II "slow" (example with 9.0 FU_{sow} per day)



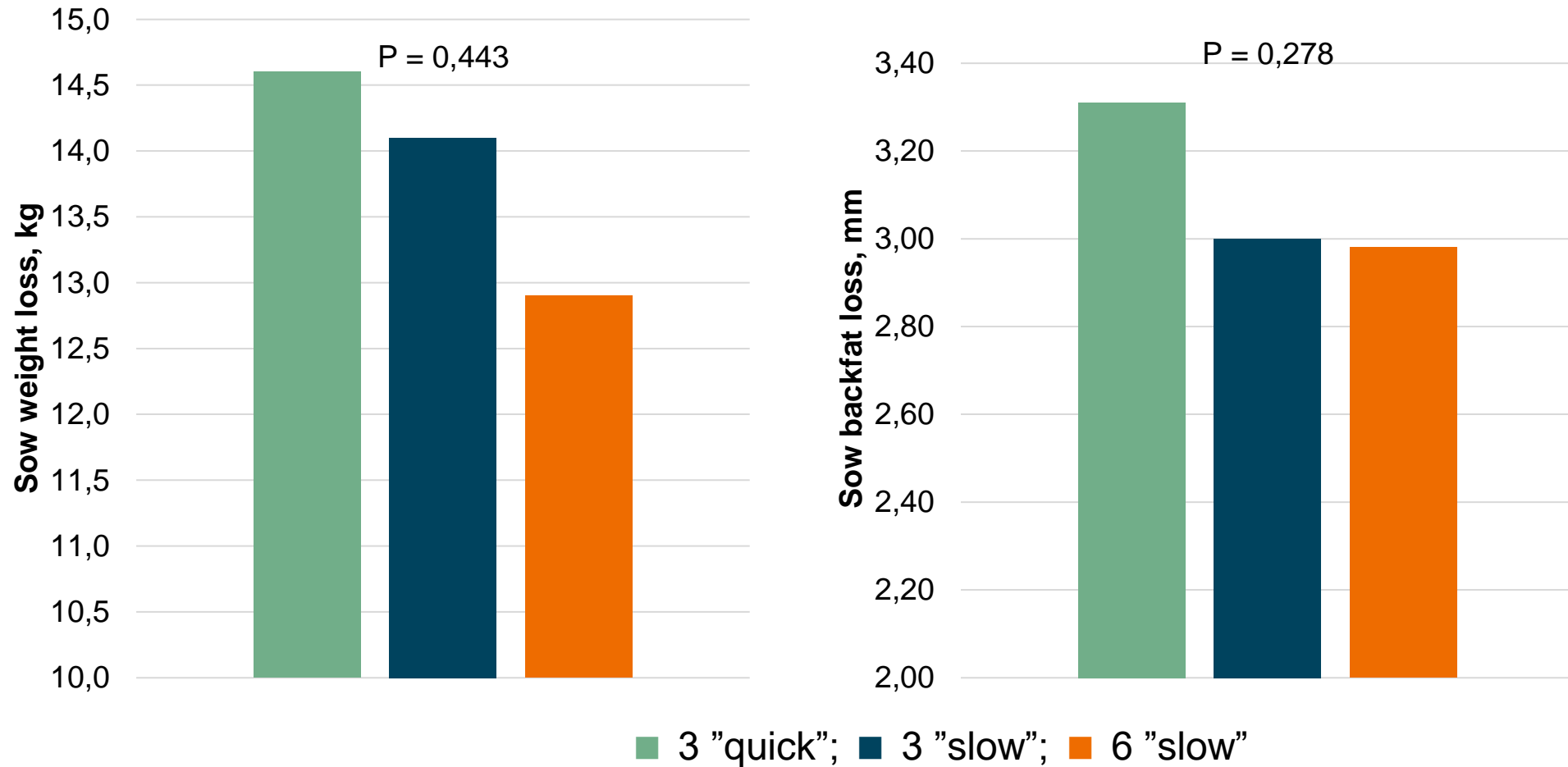
Slow and frequent feedings with SmartFeeder

Loose housed sows



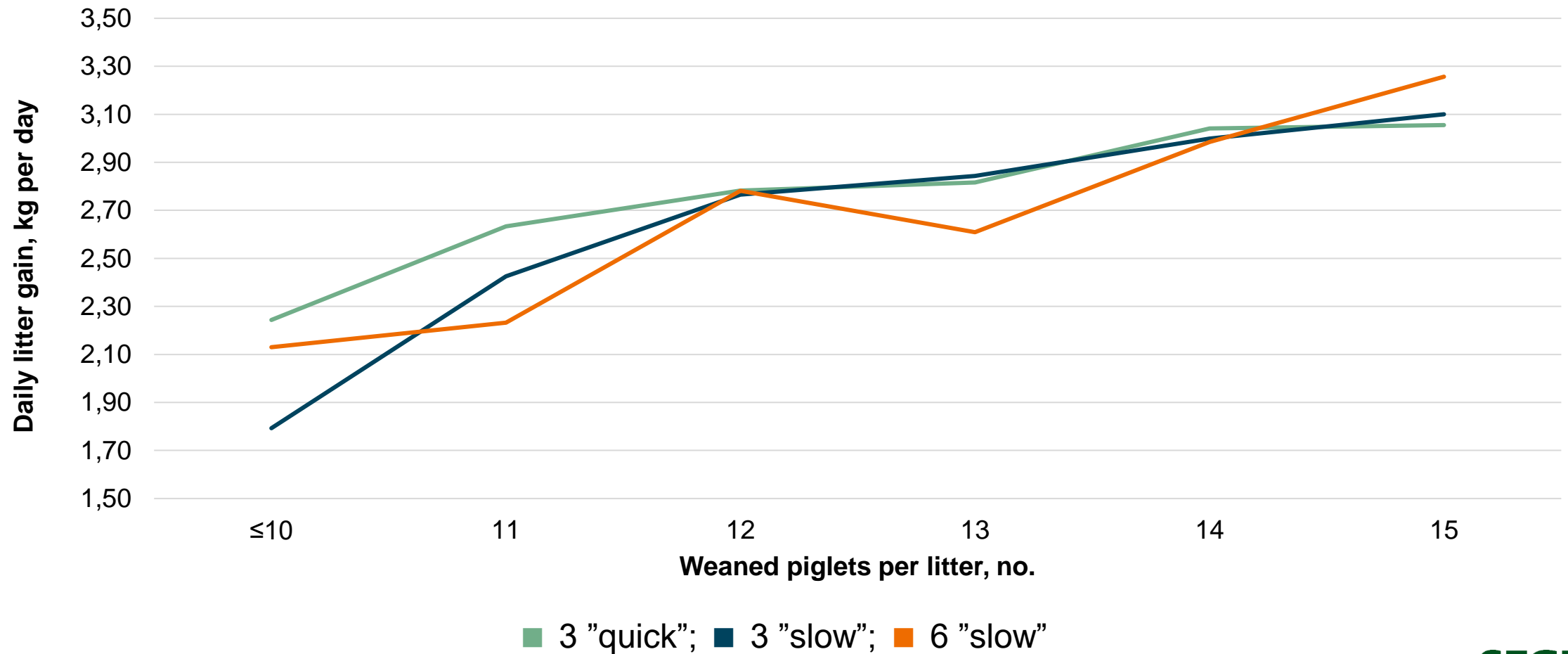
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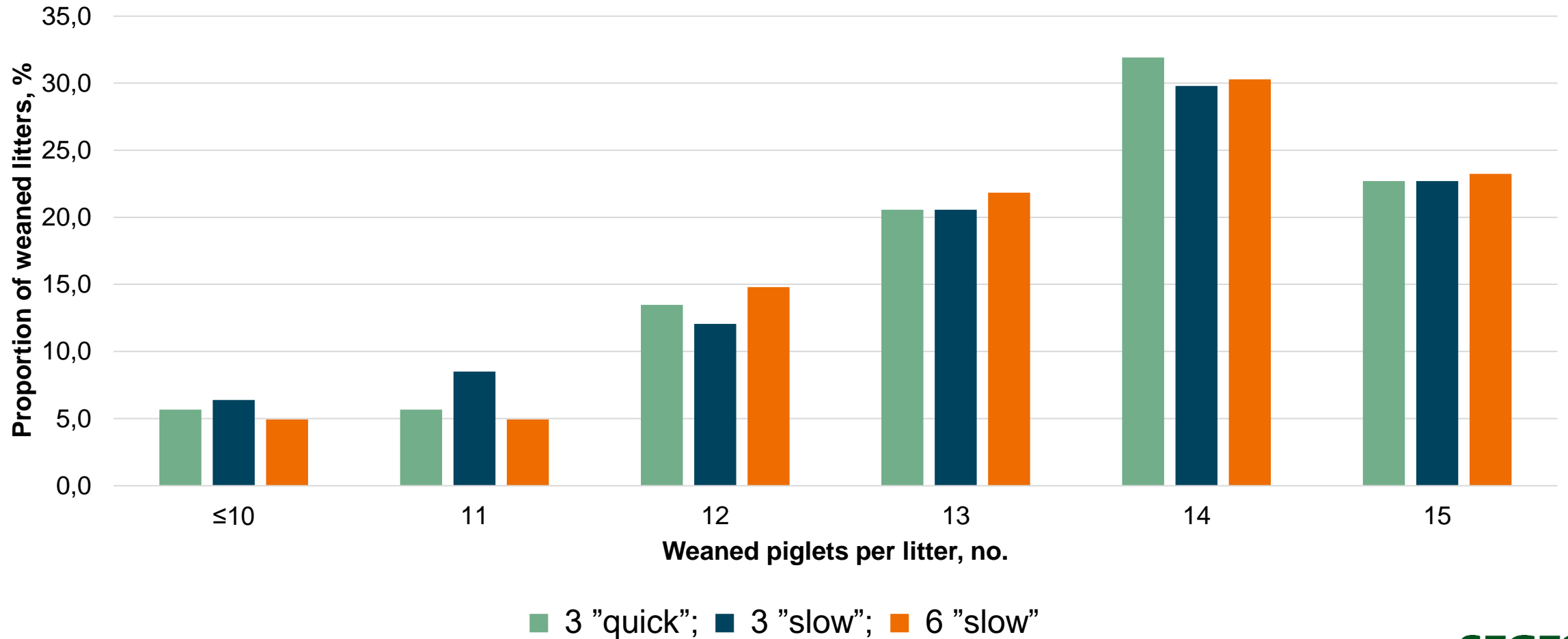
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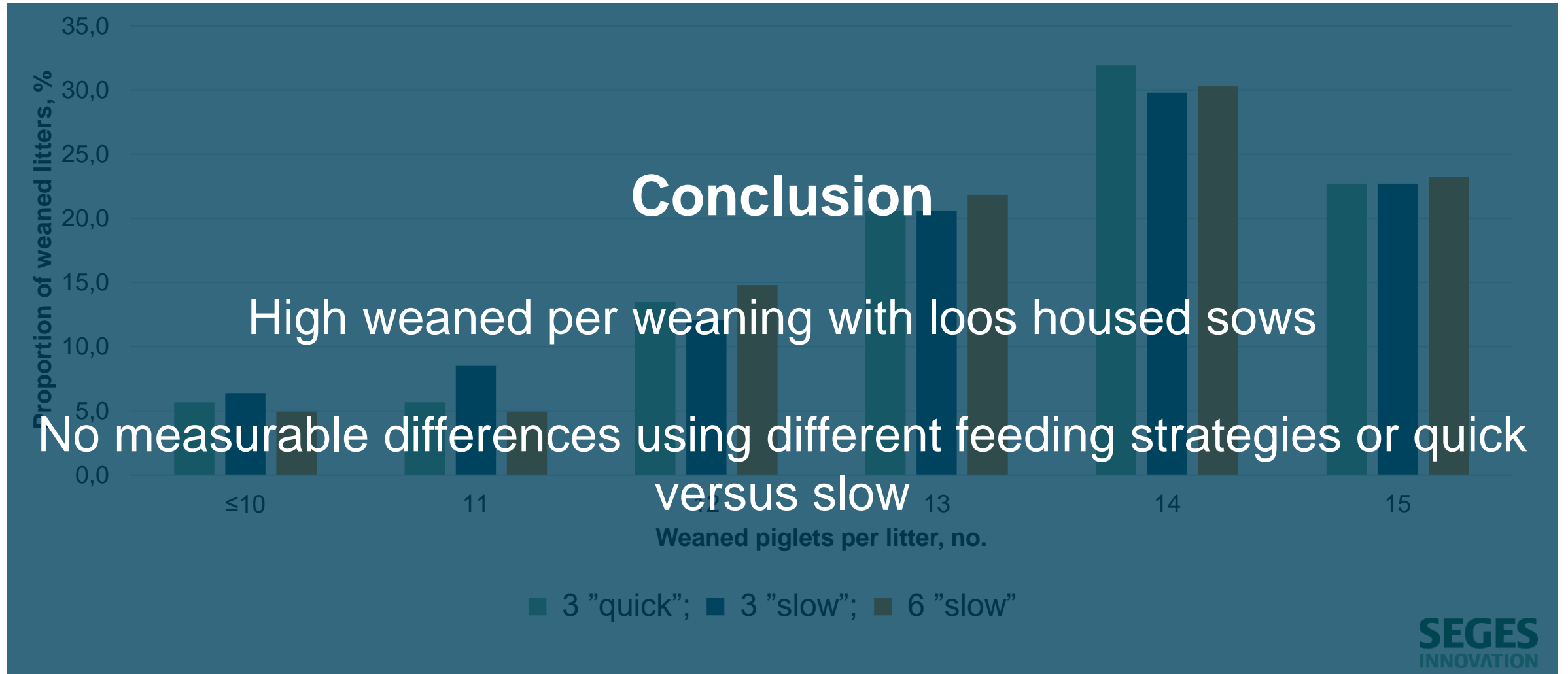
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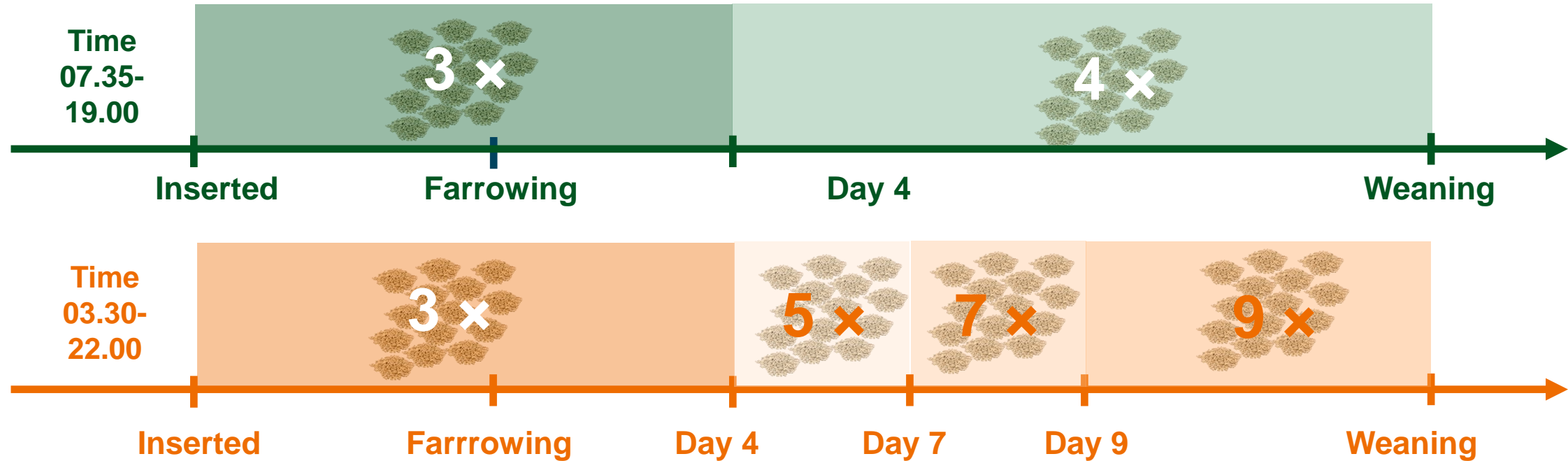
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Loose housed sows

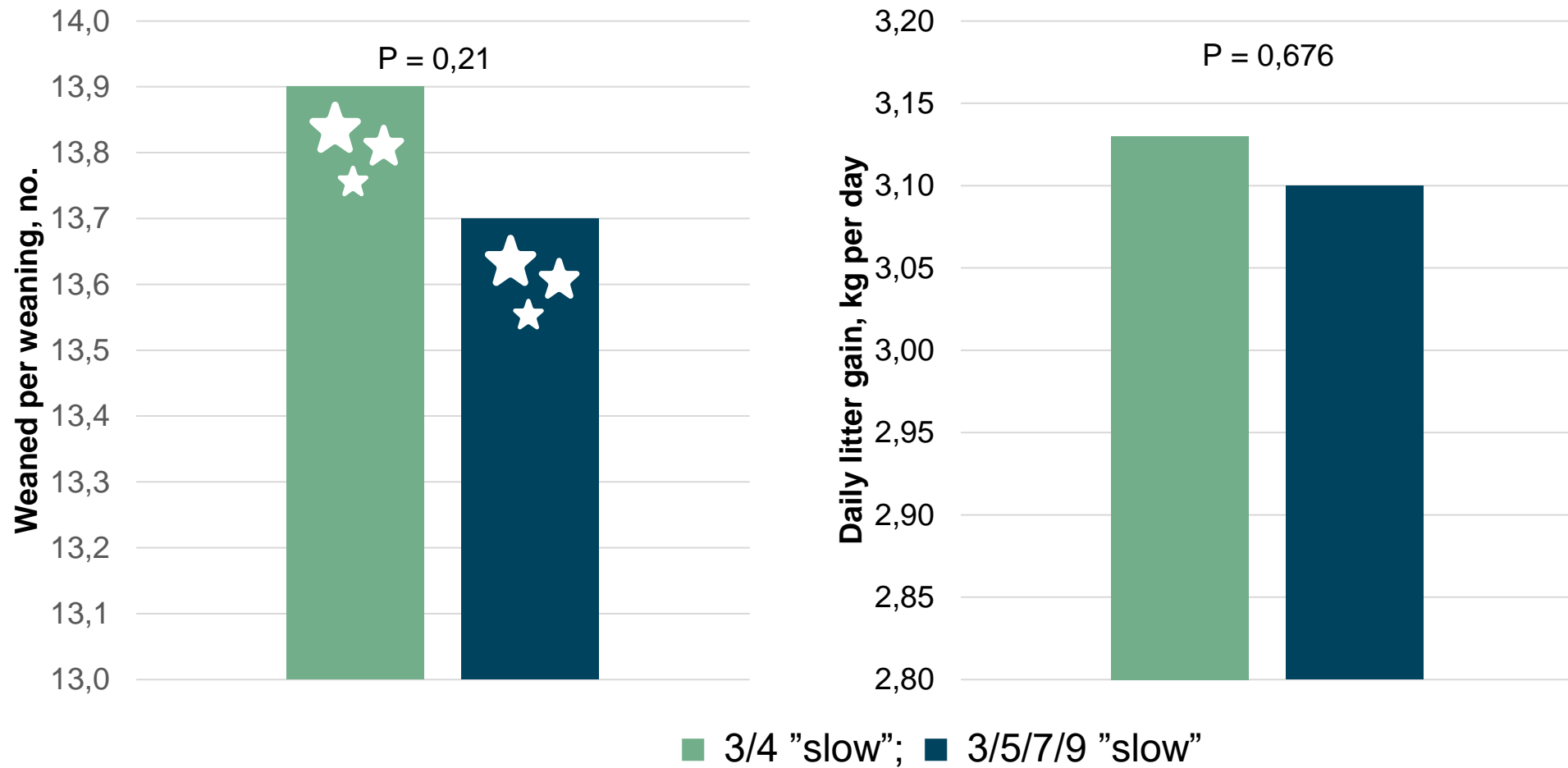


Testing MamaDos from BoPil

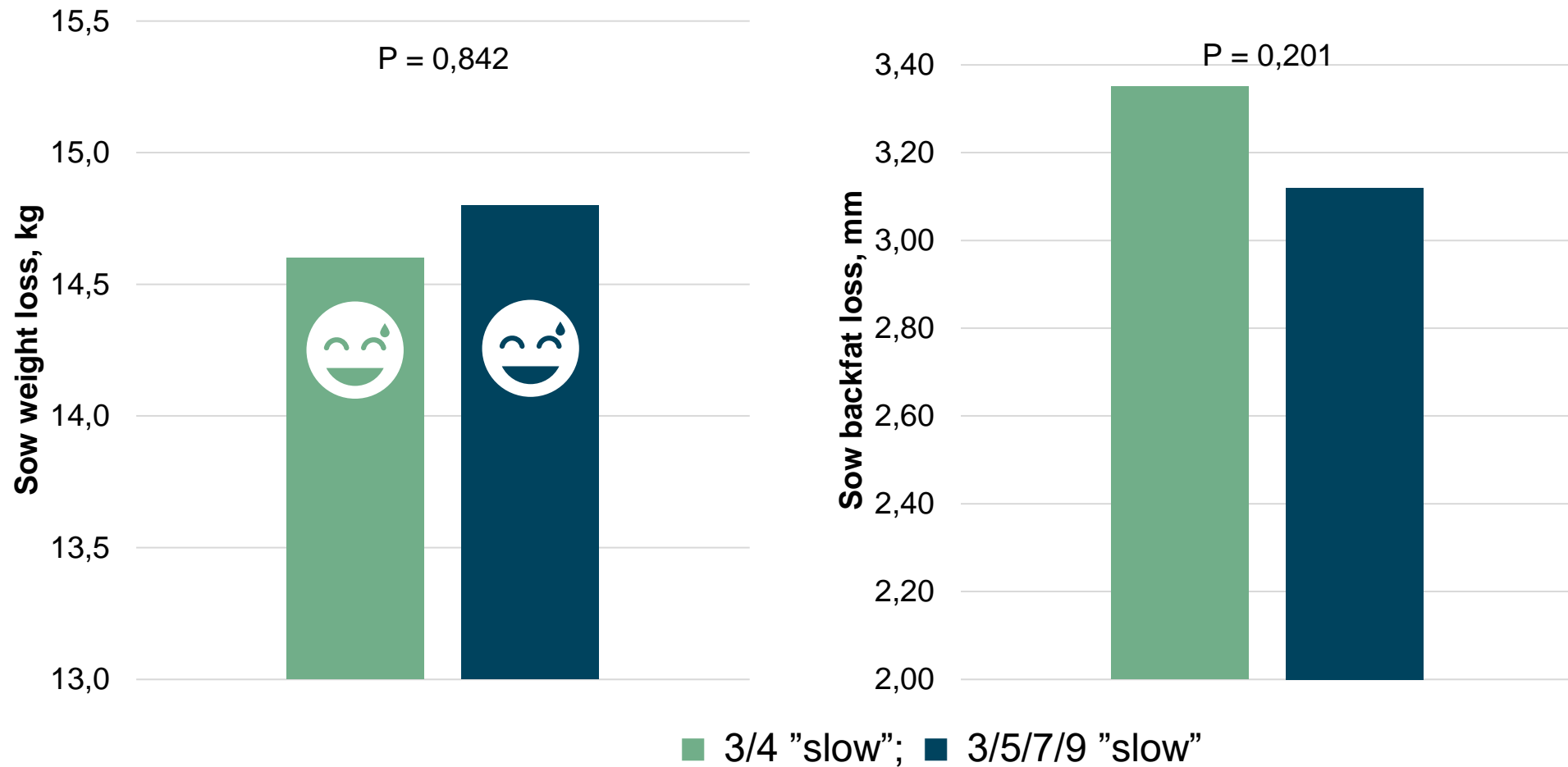
Different number of feedings per day – all slow feed



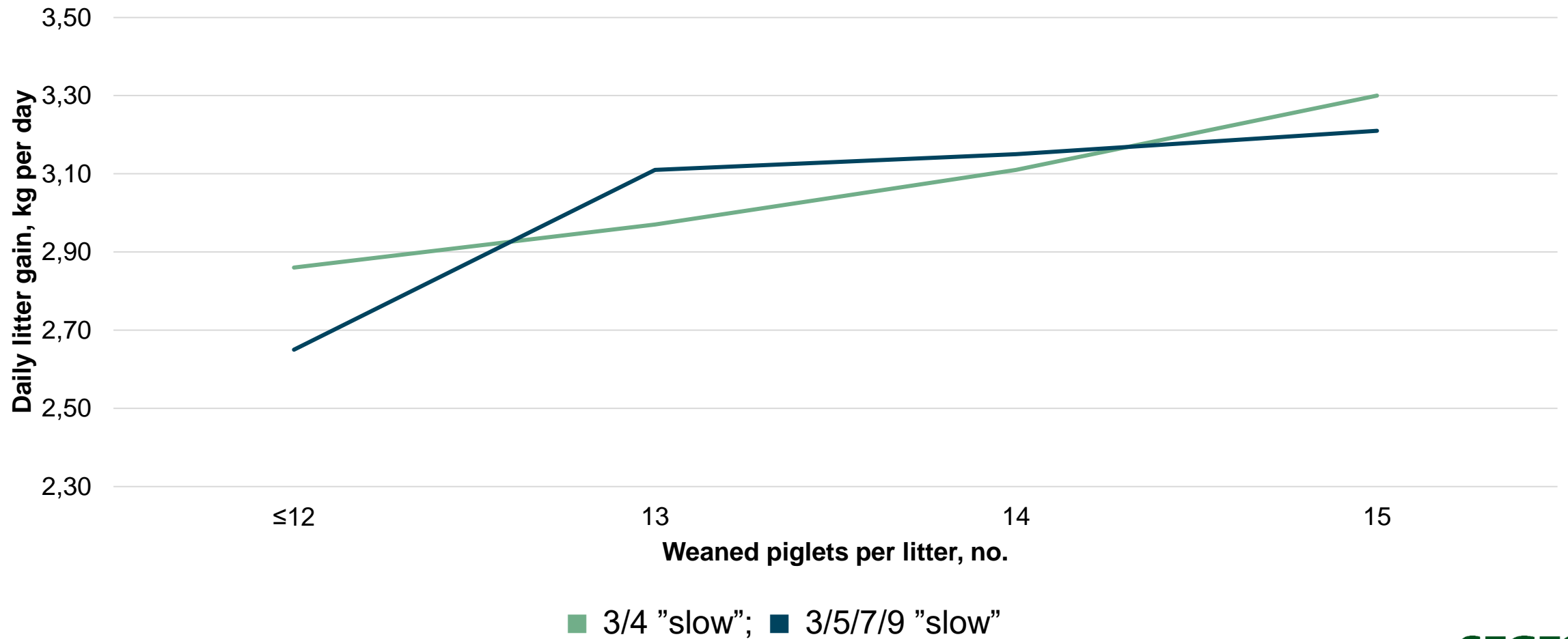
Different number of feedings per day using MamaDos Results



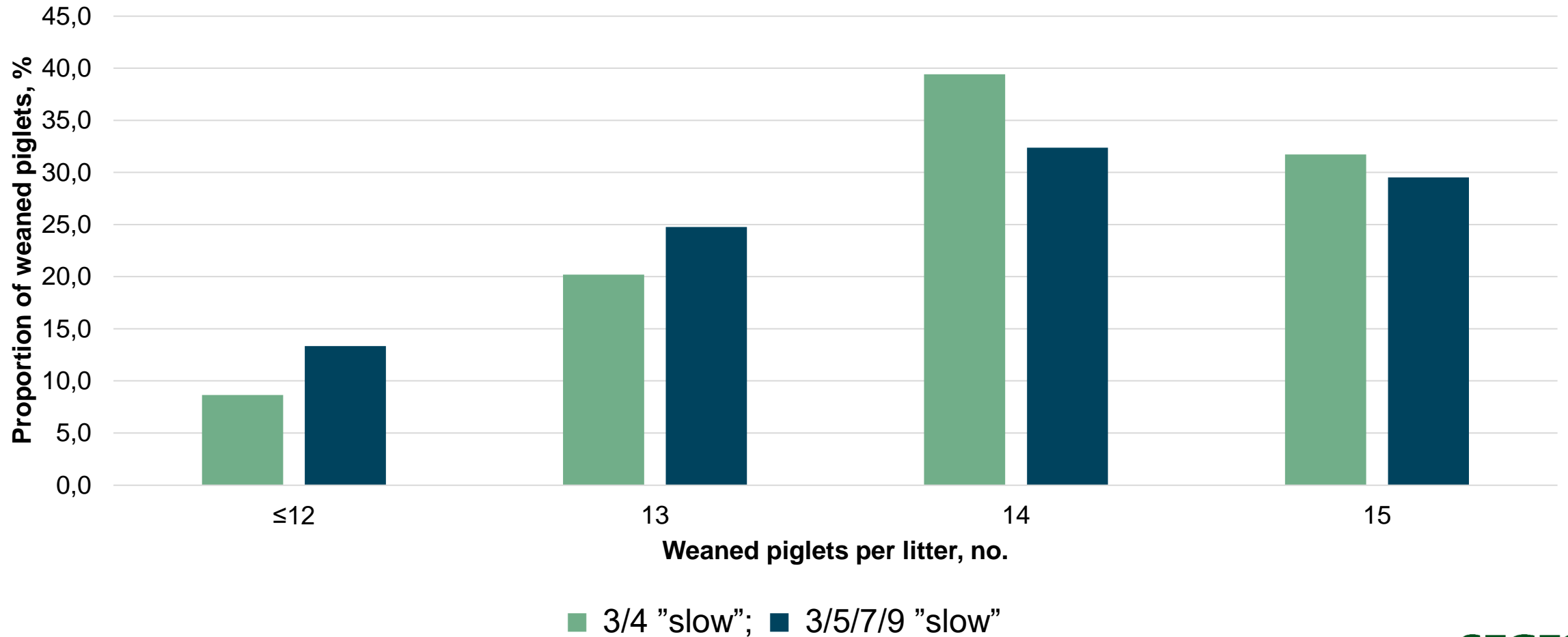
Different number of feedings per day using MamaDos Results



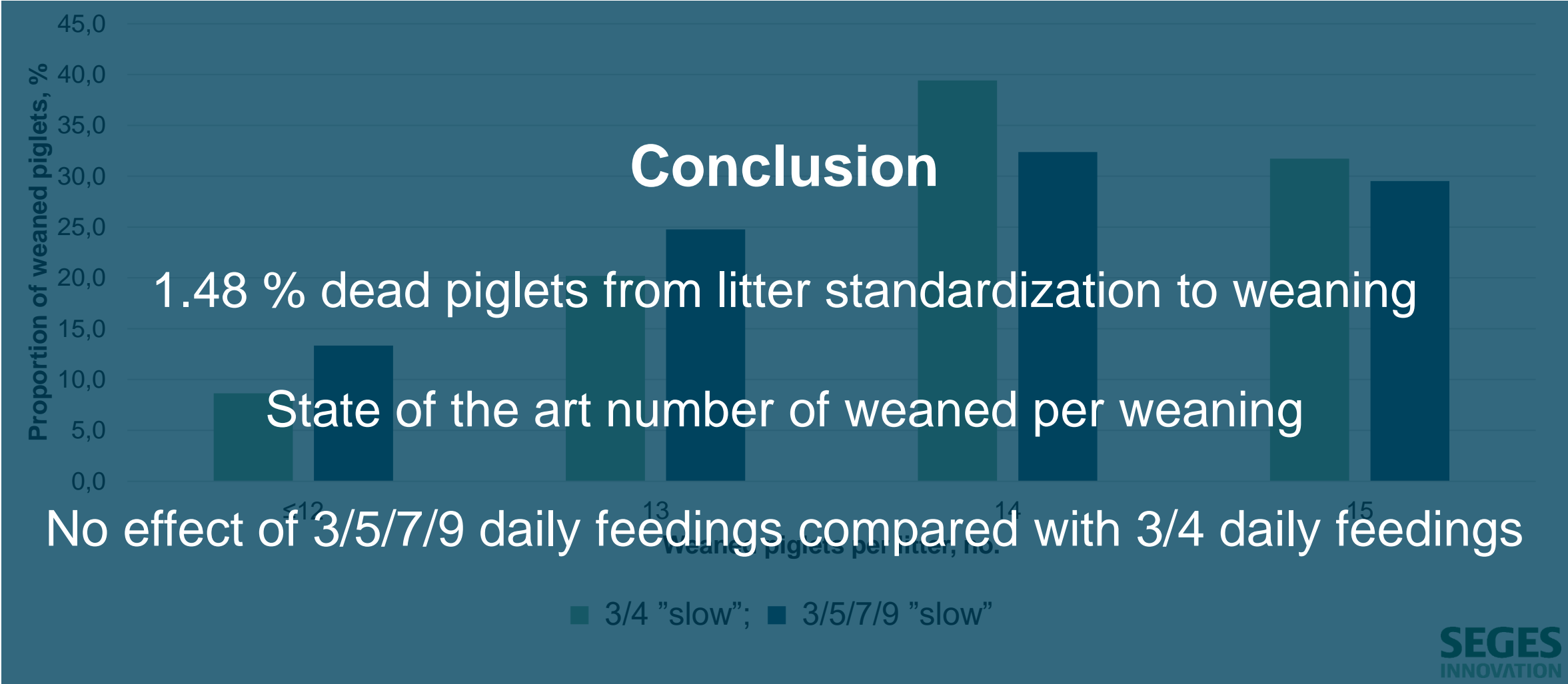
Different number of feedings per day using MamaDos Results



Different number of feedings per day using MamaDos Results



Different number of feedings per day using MamaDos Results

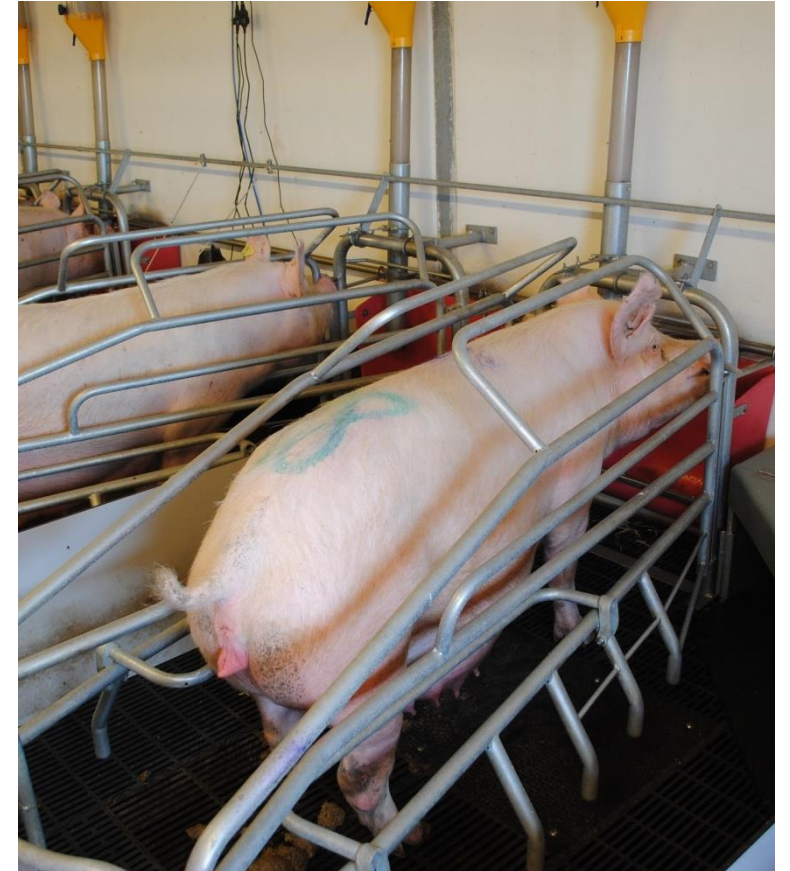


Reference: Bruun & Bache (2022): Meddelelse nr. 1250

Feeding frequency

How can you make a difference at farm level?

- The easy solution
 - 3 feedings equally distributed around the clock
 - Consider 4 feedings a day
- Carefully consider the following
 - Is the feeding precision ready for 4 feedings a day?
 - What is minimum dosage of dry/wet feed?



Take home messages

Frequent and slow feeding in the farrowing section

- Two trials showed no effects of
 - 3 quick vs. slow feedings per day
 - 3 vs. 6 slow feedings per day
 - 3/4 vs. 3/9 slow feedings per day
- In both herds
 - High number of weaned per weaning
- Other herds having the equipment says
 - Weaned per weaning is increased by 1 piglet



15 min

PLAY ►

Hvad er værdien af computerstyrede tørfodringsanlæg?

SEGES Gris

Science

[Listen on Apple Podcasts ↗](#)



I denne podcast debatteres det, om computerstyrede tørfodringsanlæg skaber værdi. Der er ikke så mange anlæg i Danmark, men vi besøger en af de producenter, som har investeret i et anlæg. Chefkonsulent hos SEGES Innovation, Thomas Sønderby Bruun præsenterer resultater fra to afprøvninger af innovativ tørfodring.

[More Episodes](#)

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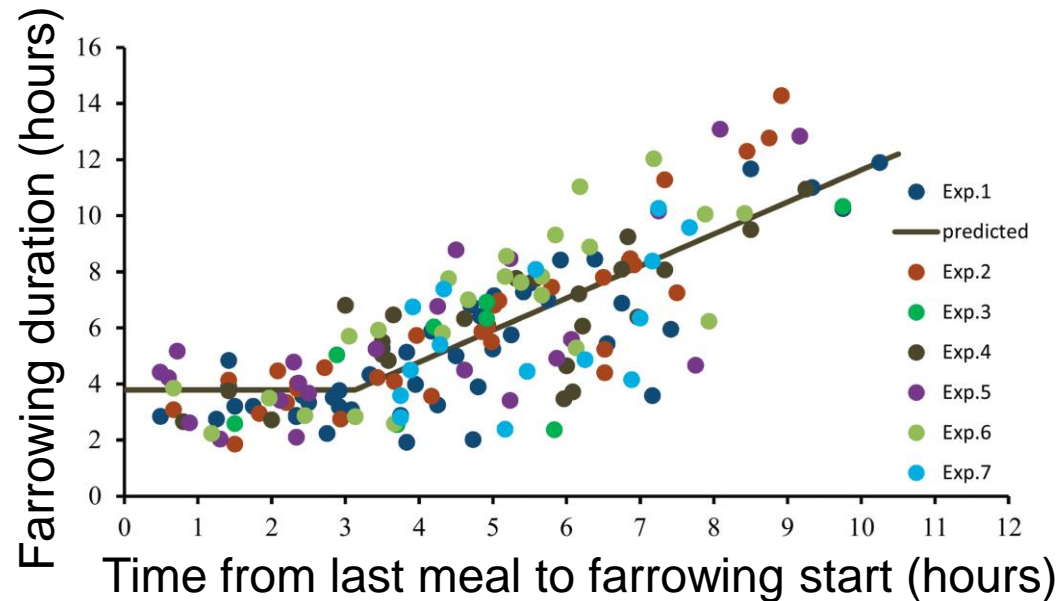
A photograph of a piglet lying on a metal grate in a farrowing pen. The piglet is positioned in the lower center of the frame, facing right. Its body is partially obscured by a semi-transparent, light-colored rectangular overlay that contains text. The background shows the dark metal bars of the pen and a concrete wall. The lighting is somewhat dim, typical of an indoor farm setting.

**Recent knowledge about: Feeding
before farrowing**

Feeding frequency

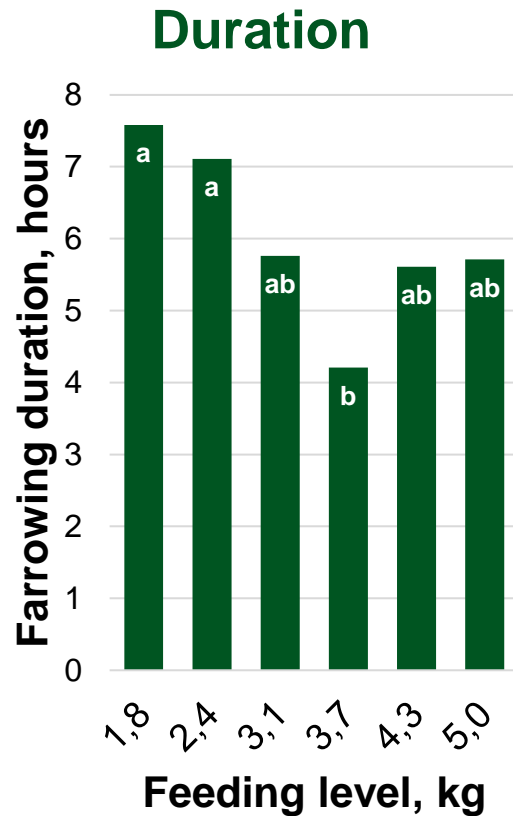
Analysis of several trials at AU indicates a potential

- The duration of farrowing increases linearly from 3 hours after the sow is fed
- Glucose uptake decreases after feeding (0-6 hours)
- Fiber must fulfill the need for energy between two feedings (4-24 hours)



Feeding level

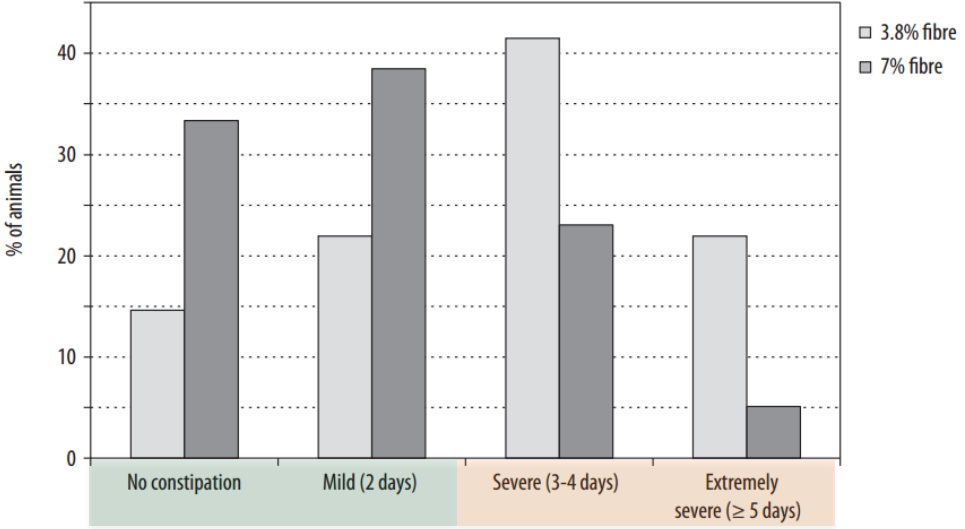
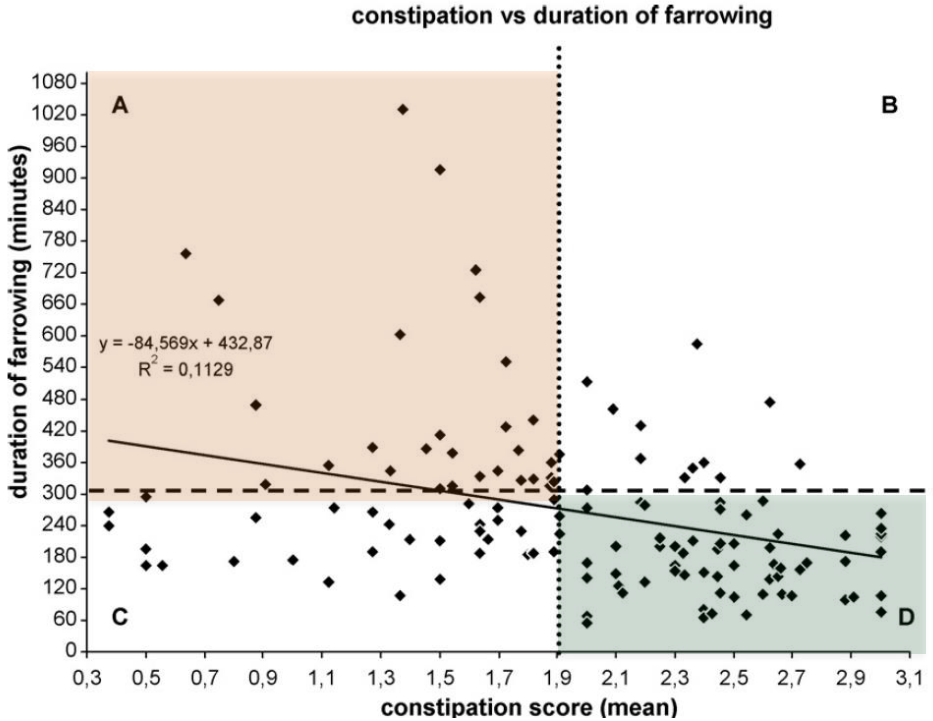
A higher feeding level before farrowing helps the sow



Low and high feeding levels may have same effects as constipation

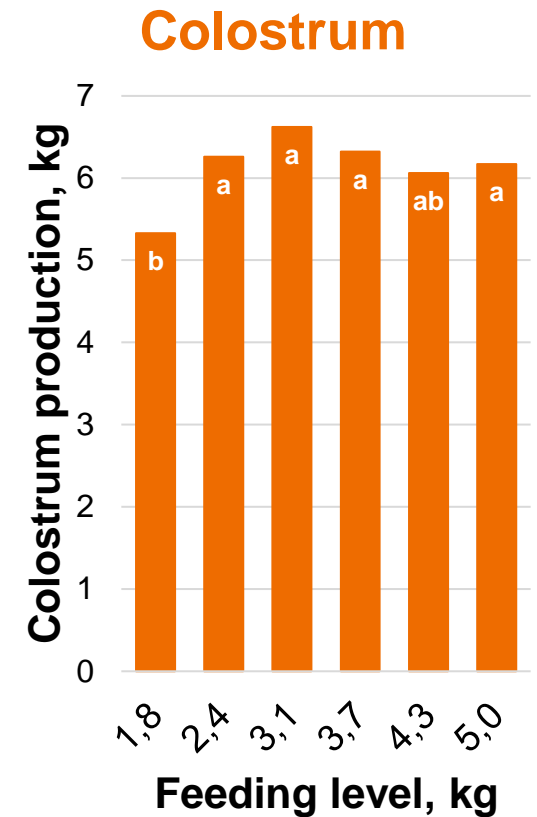
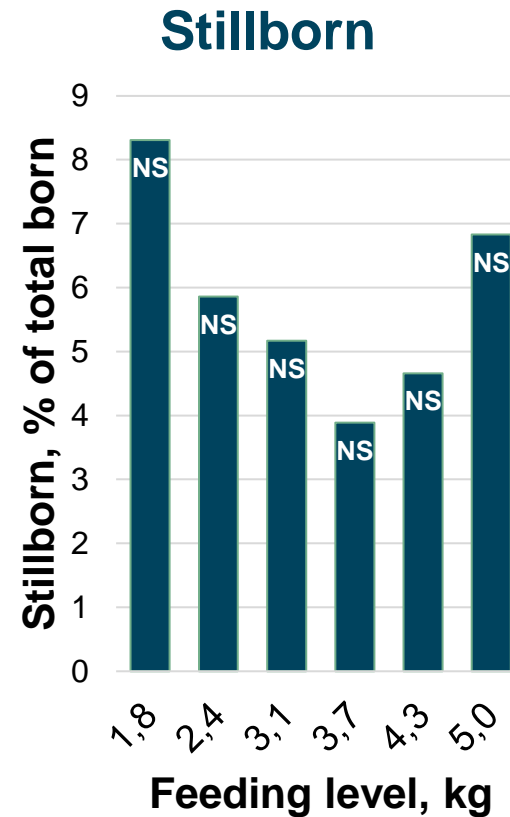
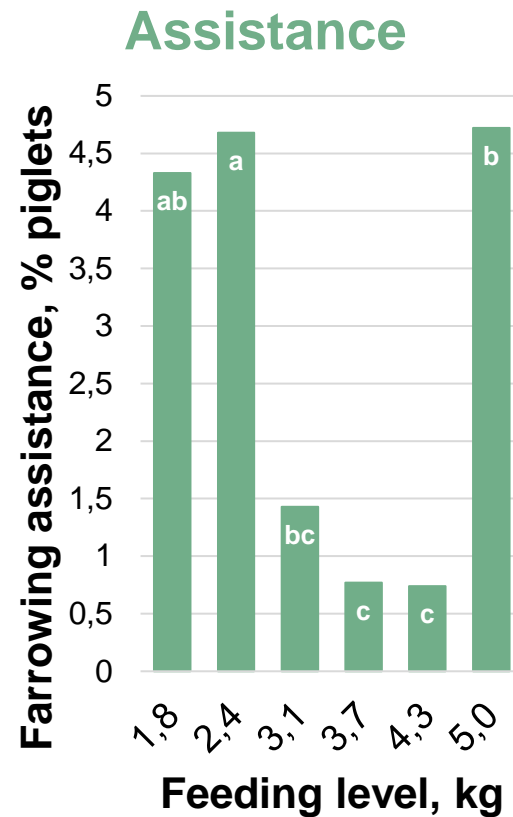
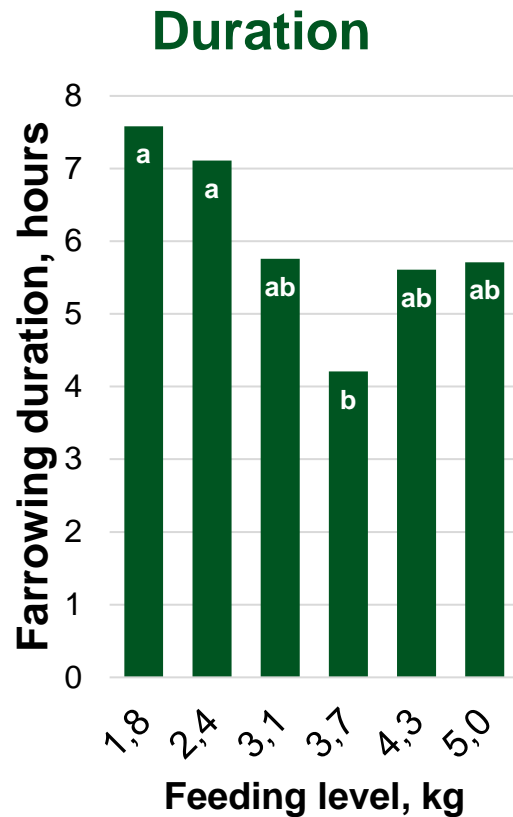
Fibre

Reduktion af forstoppelse samt langsom frigivelse af energi



Feeding level

A higher feeding level before farrowing helps the sow

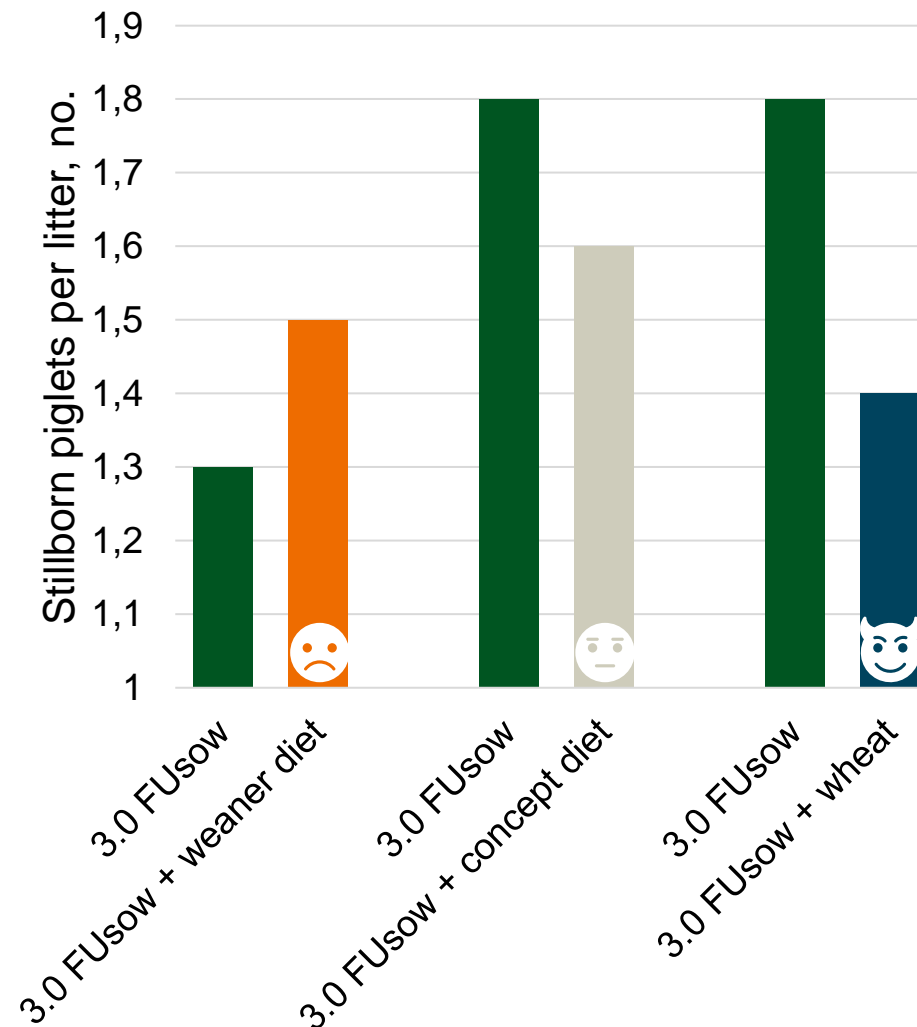


Feeding level

A higher feeding level and less protein before farrowing helps the sow

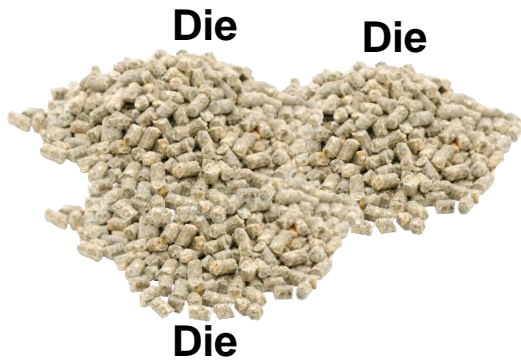
perhaps

- Sows inserted in farrowing unit
 - 3.5 FUsow per day
 - 2 days before farrowing reduced to 3.0 FUsow per day
- Extra feed for at least 2 days before expected farrowing
 - 1 FUsow per day as weaner diet
 - 1 FUsow per day as concept diet
 - 1 FUsow per day as wheat

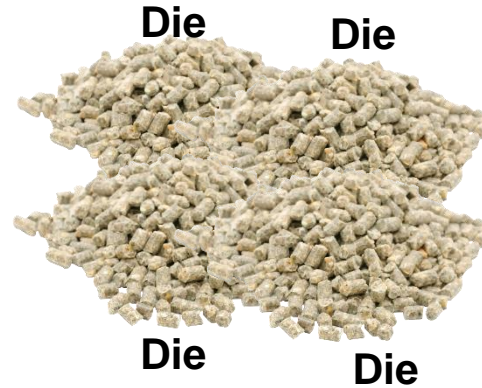


Feeding level

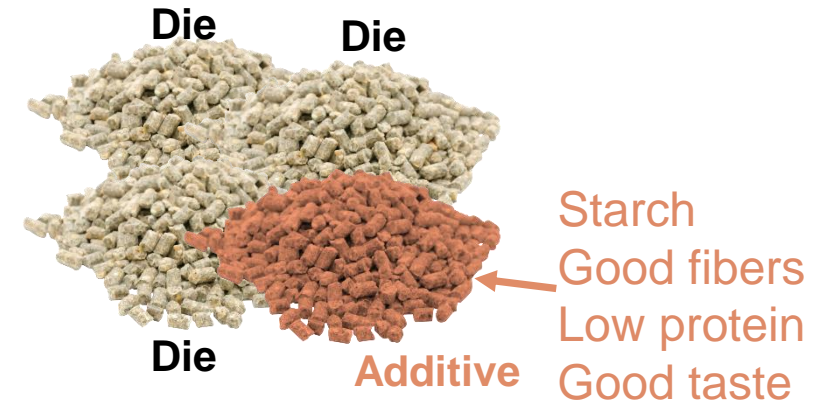
A higher feeding level and less protein gives less stillborn



3 FUsow



4 FUsow



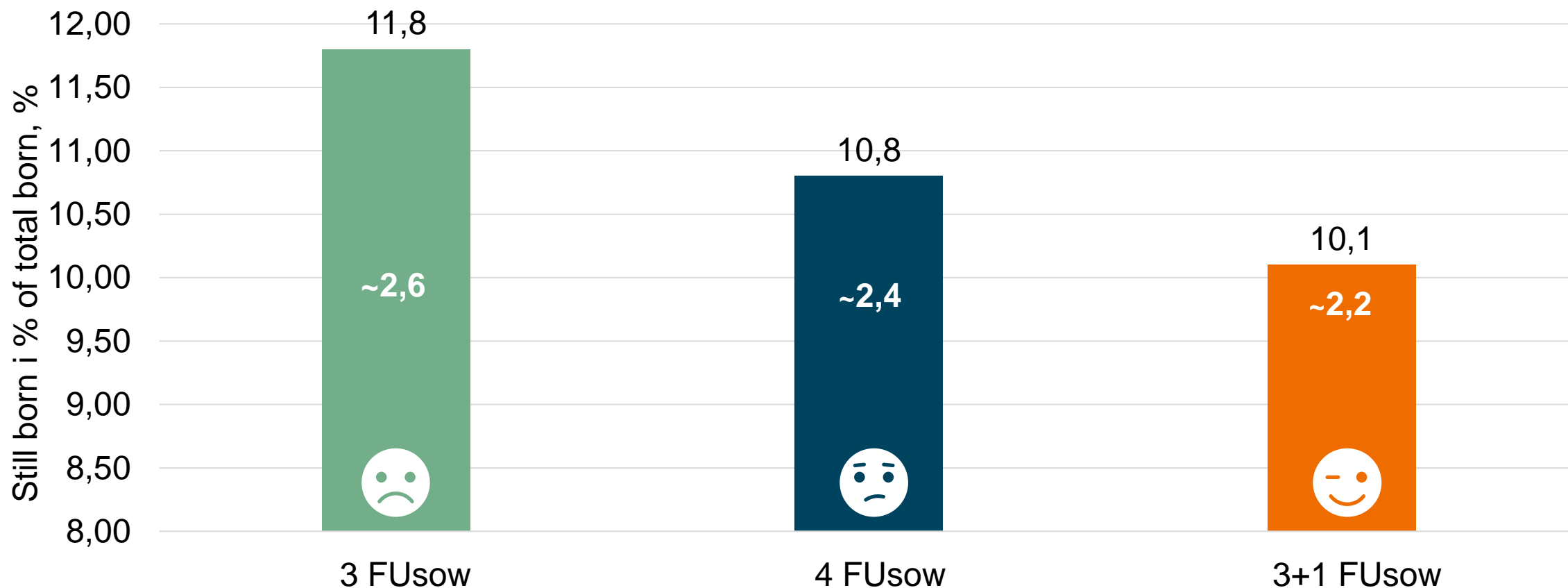
3+1 FUsow

- 2 herds
- 3 daily feedings (05:30/11:30/23:00)
- Only 3rd to 7th parity sows included

Feeding level

A higher feeding level and less protein gives less stillborn

significantly



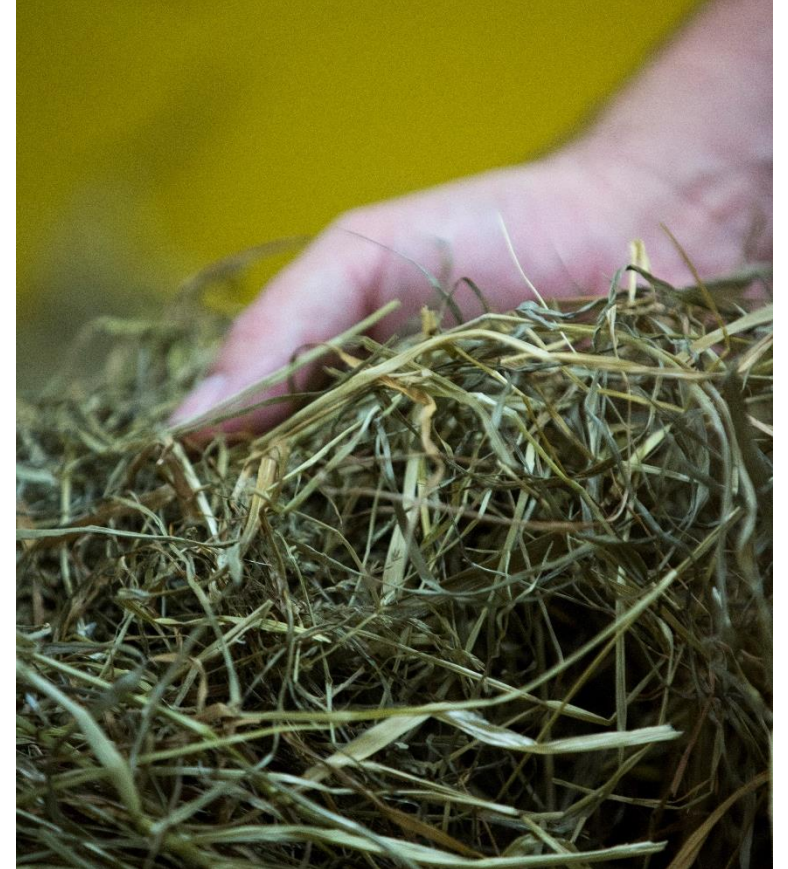
P-value 3 FUsow vs. 4 FUsow: 0,23

P-value 3 FUsow vs. 3+1 FUsow: 0,03

Take home messages

Feeding before farrowing

- Try not to reduce feeding level before farrowing
 - 4,0 FUsow per day for 3rd to 7th parity sows supports the farrowing
 - Dilution of the diet can further help the farrowings but takes time
 - Start by "keep it simple"
- 3-4 daily feedings
 - Around the clock





Questions?

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