

Optimum feeding in the farrowing unit to achieve the maximum potential

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DanBred expert knowledge

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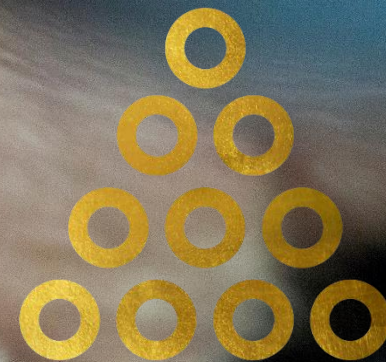


Photo: Rasmus Bendix, Bendix Production

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Danish Pig Levy Fund



Agenda



Optimizing the farrowing process



Amino acids and milk yield



Using the optimal feeding curve



Increased nursing capacity when feeding is optimized



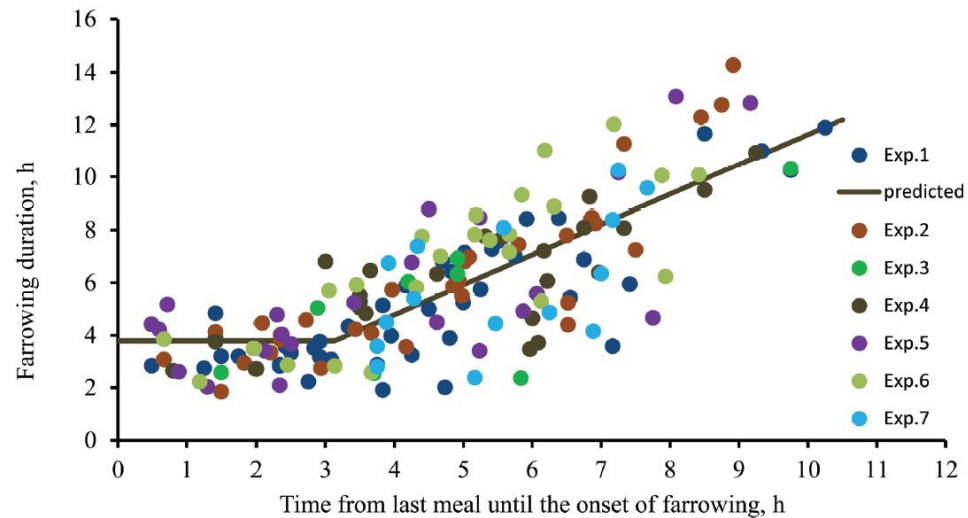
Summary



Improving the farrowing process

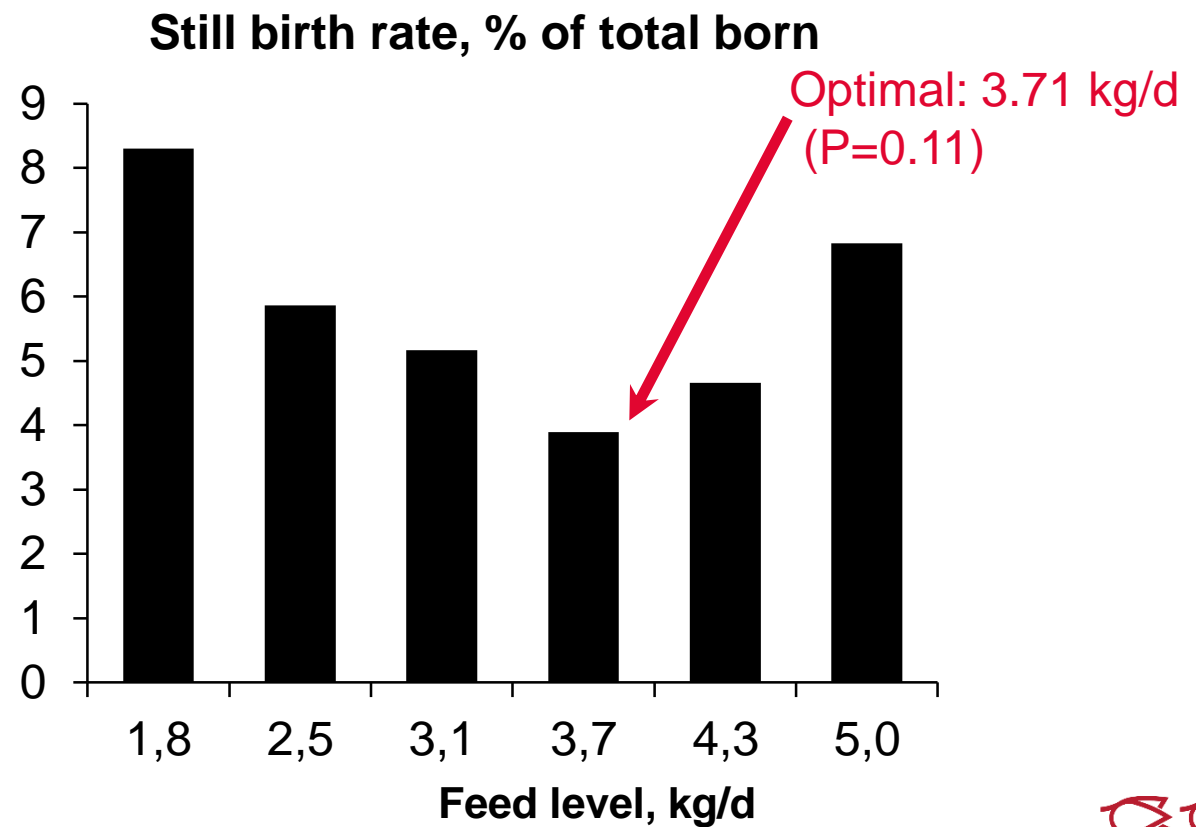
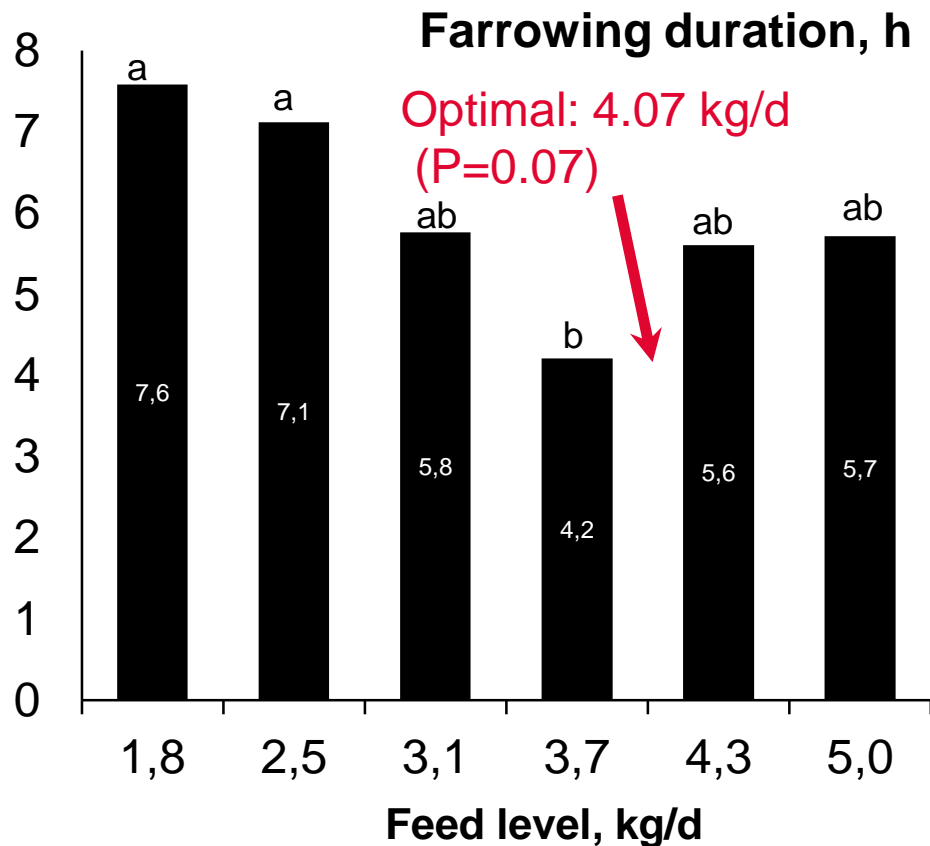
Frequent feedings

- Farrowing duration in hyper prolific sows is increased
 - Depletion of energy may affect farrowing duration
- 3-4 feedings per day in 8-6 hour intervals
 - Energy available around the clock



Improving the farrowing process

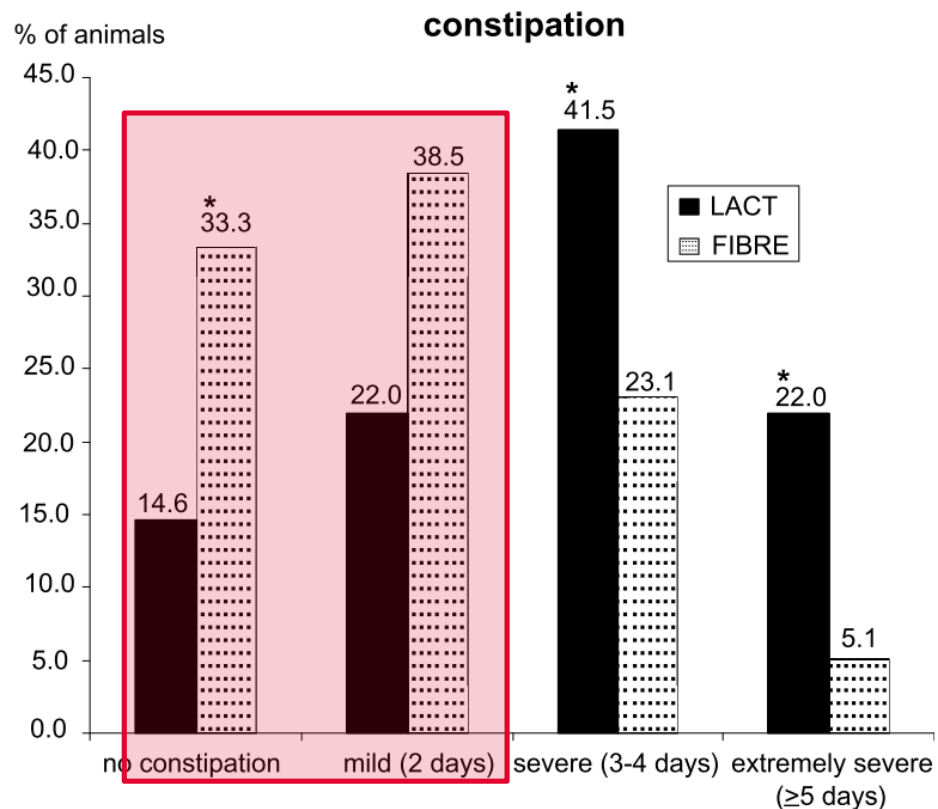
The optimal feeding level



Colostrum production is maximised at 3.2 kg/d ($P < 0.01$)

Improving the farrowing process

Fiber sources in the transition and/or lactation feed is a "must"



| Item | Control | Treatment | SEM ¹ | P-value |
|--|-------------------|-------------------|------------------|---------|
| Number of sows | 310 | 334 | | |
| Number of nurse sows | 52 | 56 | | |
| Number of total born piglets | 18.4 | 18.1 | 0.29 | 0.59 |
| Number of live-born piglets | 16.8 | 16.9 | 0.25 | 0.78 |
| Number of weaned piglets | 14.2 | 14.4 | 0.23 | 0.66 |
| Stillborn piglets, % of total born | 8.8 ^a | 6.6 ^b | 0.47 | <0.001 |
| Prewaning mortality, % of total born | 14.6 | 13.7 | 0.68 | 0.21 |
| Overall mortality, % total born | 22.3 ^a | 19.9 ^b | 0.71 | 0.004 |
| Causes of preweaning piglet mortality, % of total born | | | | |
| Crushing | 4.7 | 5.0 | | 0.41 |
| Low birth weight | 3.2 | 3.6 | | 0.24 |
| Poor viability at birth | 2.8 ^a | 1.5 ^b | | <0.001 |
| Unidentified | 2.3 | 1.9 | | 0.20 |
| Starvation | 0.8 | 1.0 | | 0.36 |
| Joint infection | 0.5 | 0.5 | | 0.91 |
| Diarrhea | 0.7 ^a | 0.3 ^b | | 0.004 |

^{a,b}Means within a row with different superscripts differ ($P < 0.05$).

¹The largest SEM.

~350 and ~700 g fiber additive per day for 7+7 days

Improving the farrowing process

Management should support optimized feeding

Optimized feeding includes

- 3-4 meals per day
- Feeding level before farrowing:
3.3-3.7 kg/d
- Added fibers i.e.
 - 3 % of dried sugar beet pulp ✓
 - 5 % of oats ✓
 - Barley, rye, wheat bran, wheat ✓

Optimized management includes

- Farrowing surveillance
 - How many hours present per day?
 - Consider working shifts?
- Farrowing assistance
 - Do not tolerate more than 30-40 min. between birth of piglets
 - Do not use oxytocin during farrowing (prohibited in Denmark)



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Amino acids and milk yield



Using the optimal feeding curve



Increased nursing capacity when feeding is optimized

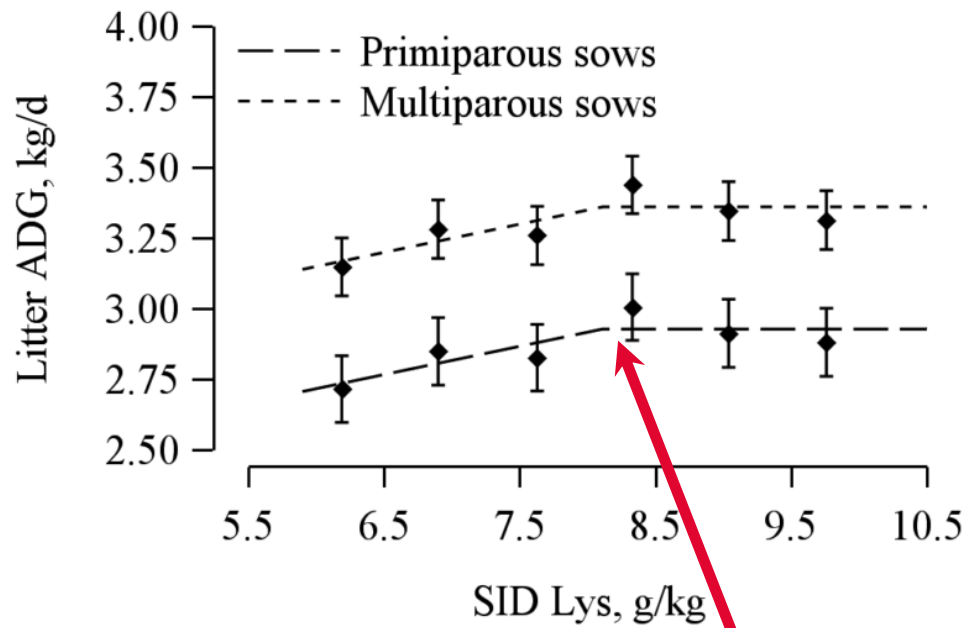


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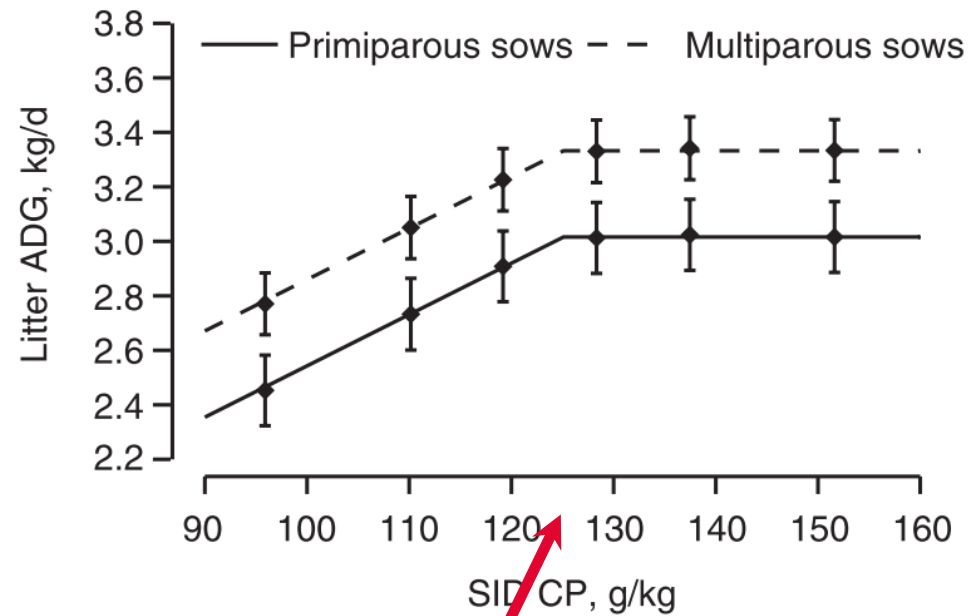


Maximizing the milk yield to wean robust piglets

Optimal protein and amino acid levels for DanBred sows



SEGES and DanBred recommends 8.4 g SID lysine per kg feed

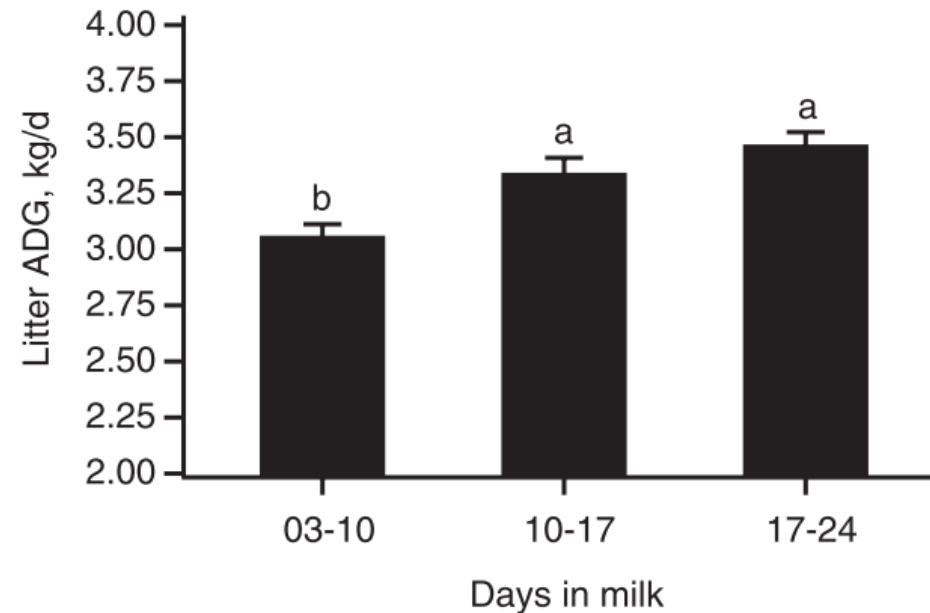
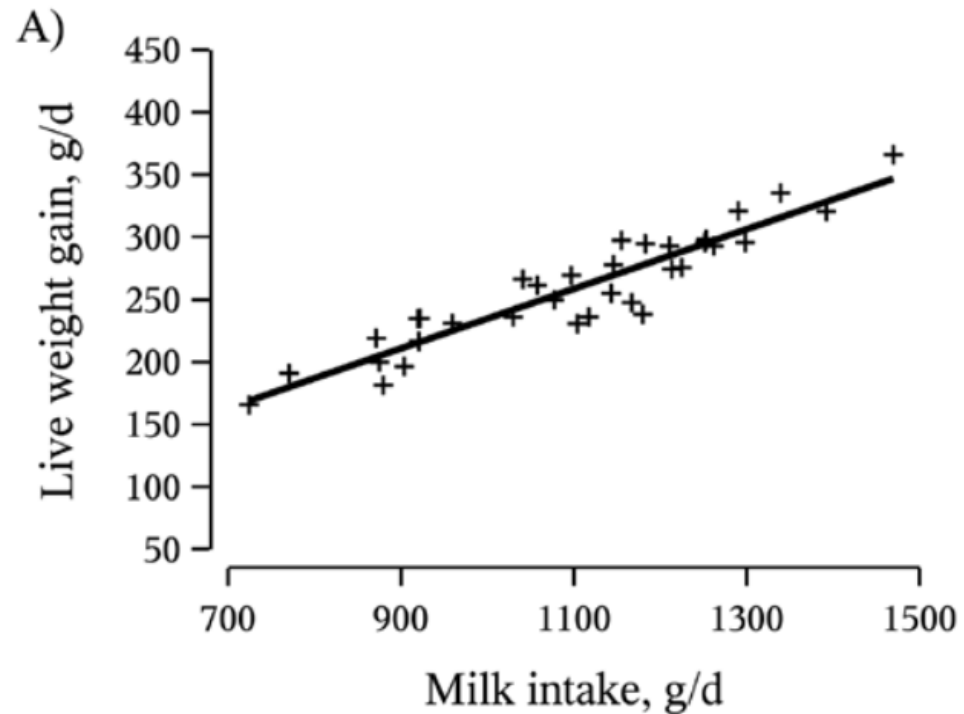


SEGES and DanBred recommends 125 g SID crude protein per kg feed



What makes the piglet grow during lactation?

Milk is the easy answer



The amount of milk is crucial whereas milk composition is not really

Optimization of the lactation diet

- Follow the guidelines
 - SID Crude protein: 125 g/kg
 - SID lysine: 8.4 g/kg
 - Energy: 1.08-1.09 FUsow/kg
9.6-10.1 MJ NE/kg
- All other amino acids
 - Keep the ratio to lysine at recommended level
 - Be sure that leucine:lysine (108%) is fulfilled



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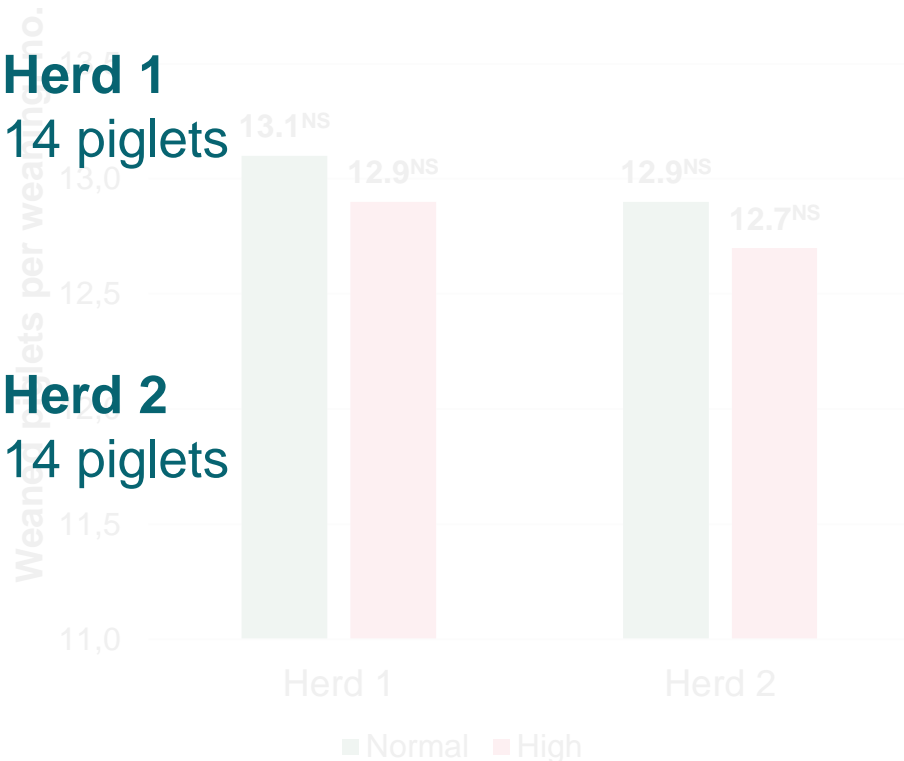
Choosing the optimal feeding curve day 0 to 14

To control nursing capacity and average daily litter gain

Litter size

Herd 1
14 piglets

Herd 2
14 piglets

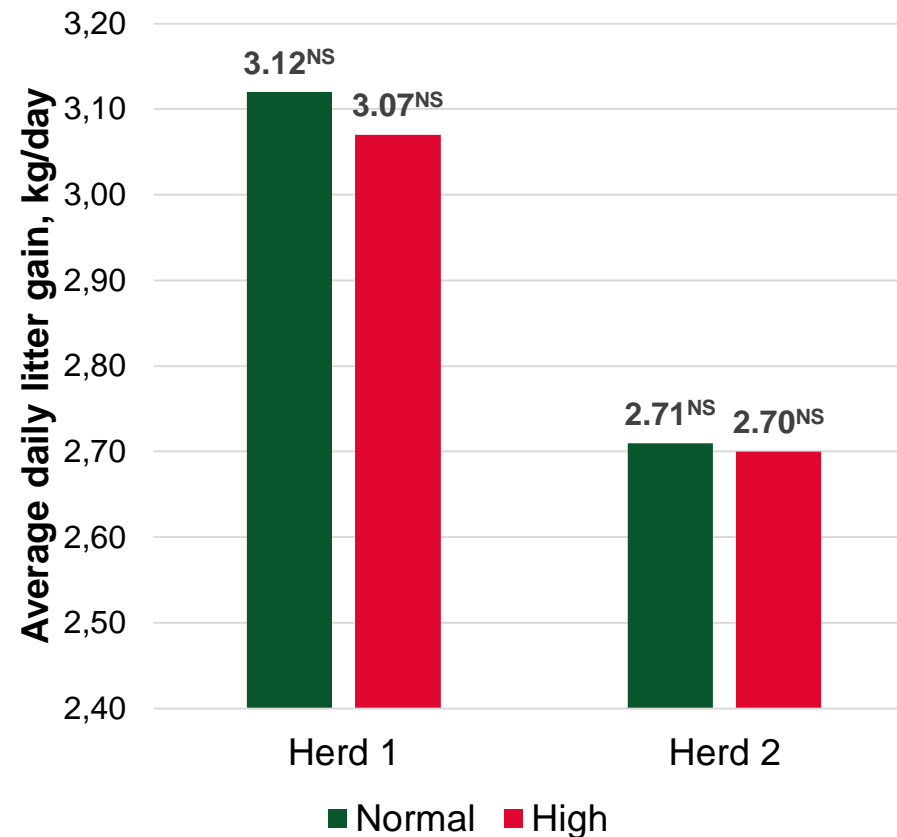
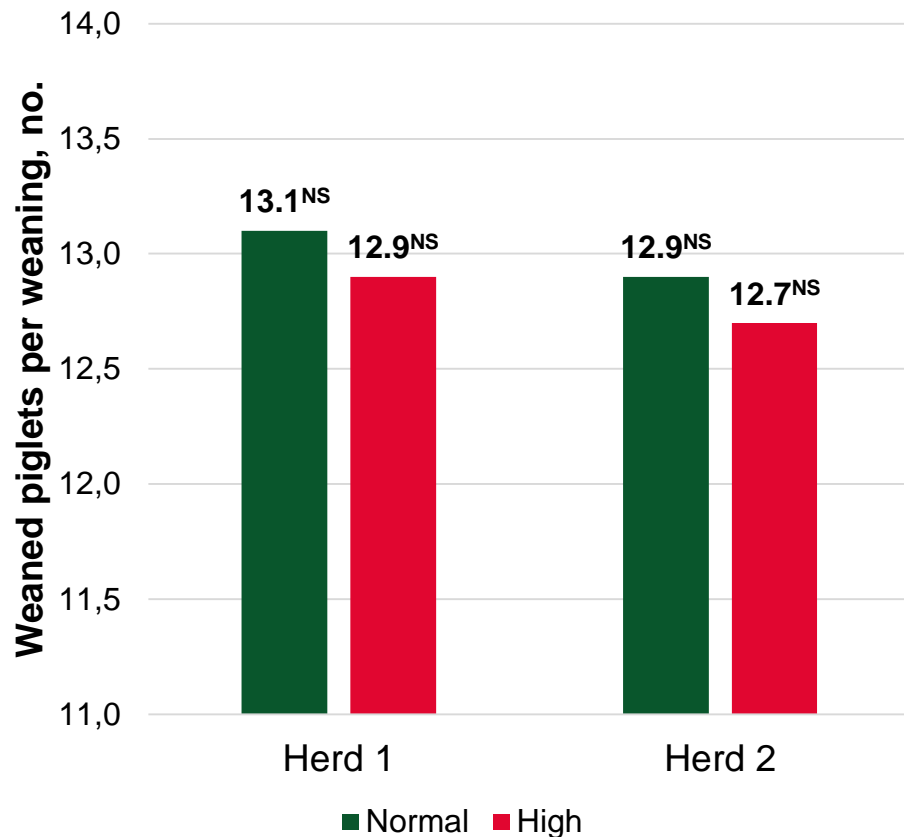


Feed allowance



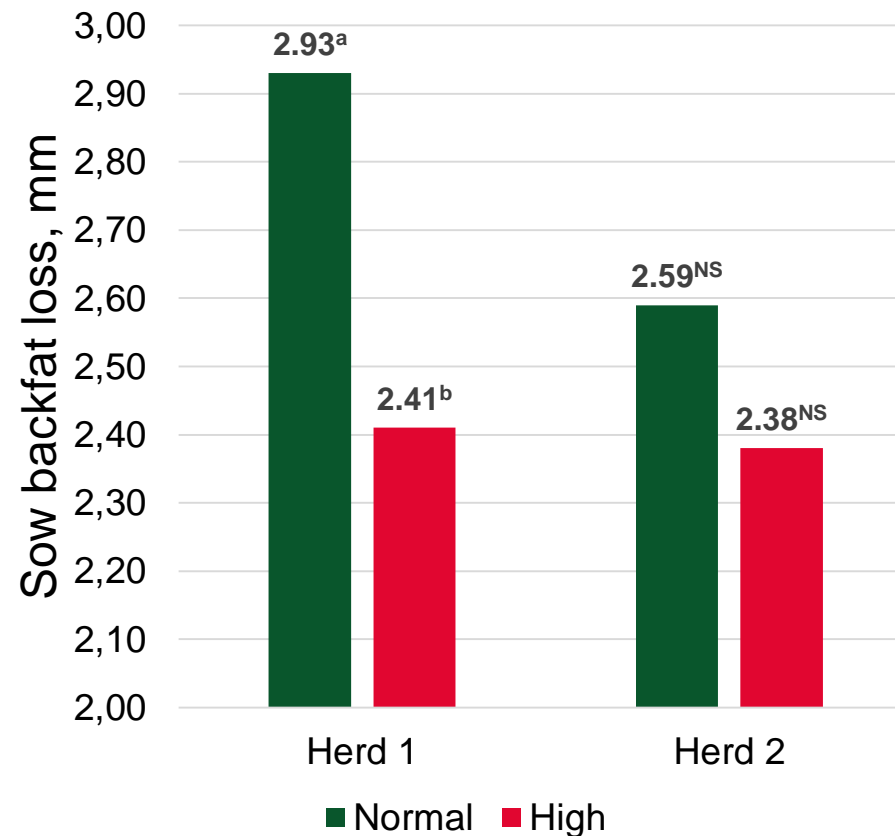
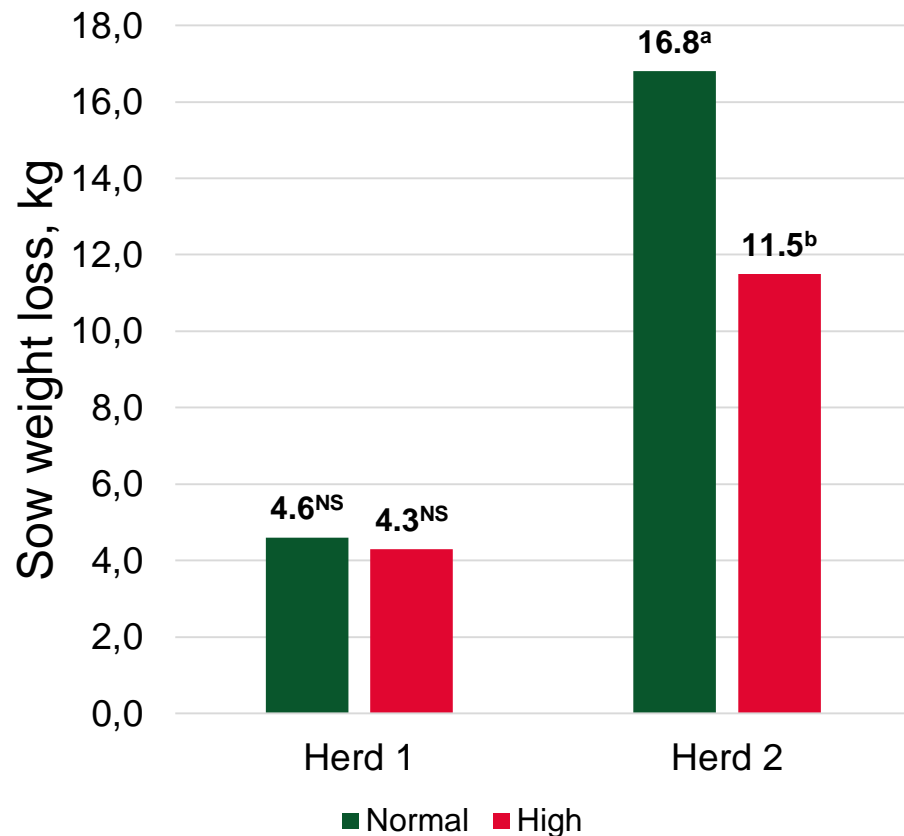
Choosing the optimal feeding curve day 0 to 14

To control nursing capacity and average daily litter gain



Choosing the optimal feeding curve day 0 to 14

To control sow mobilization



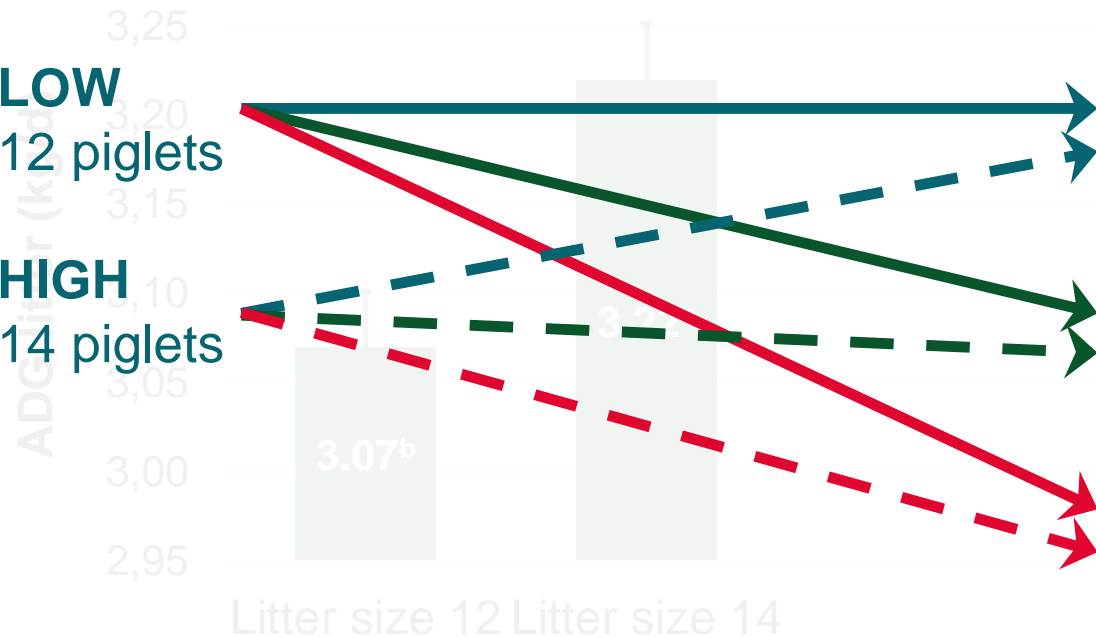
Choosing the upper feeding level from day 15 to weaning

Average daily litter gain

Litter size

LOW
12 piglets

HIGH
14 piglets

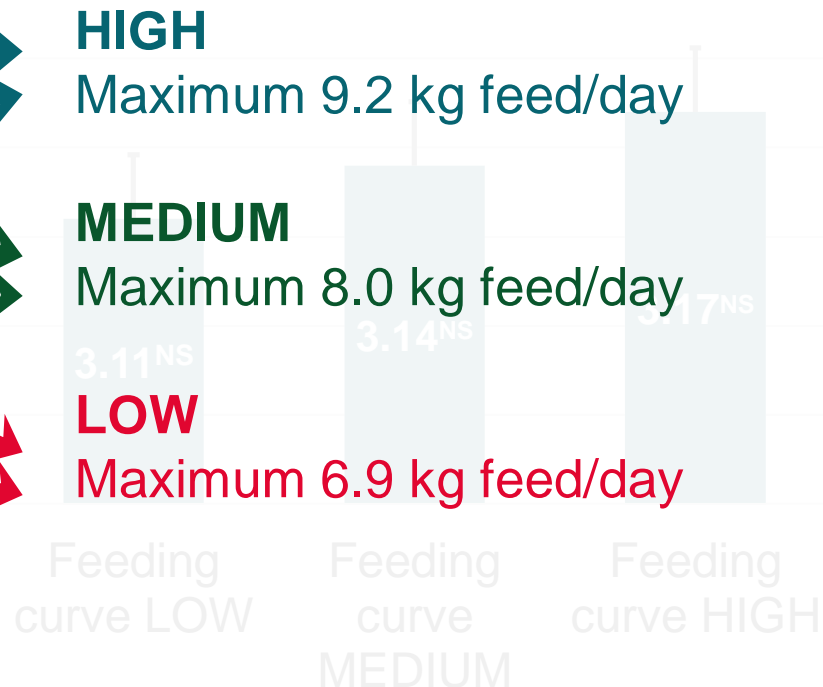


Feed allowance

HIGH
Maximum 9.2 kg feed/day

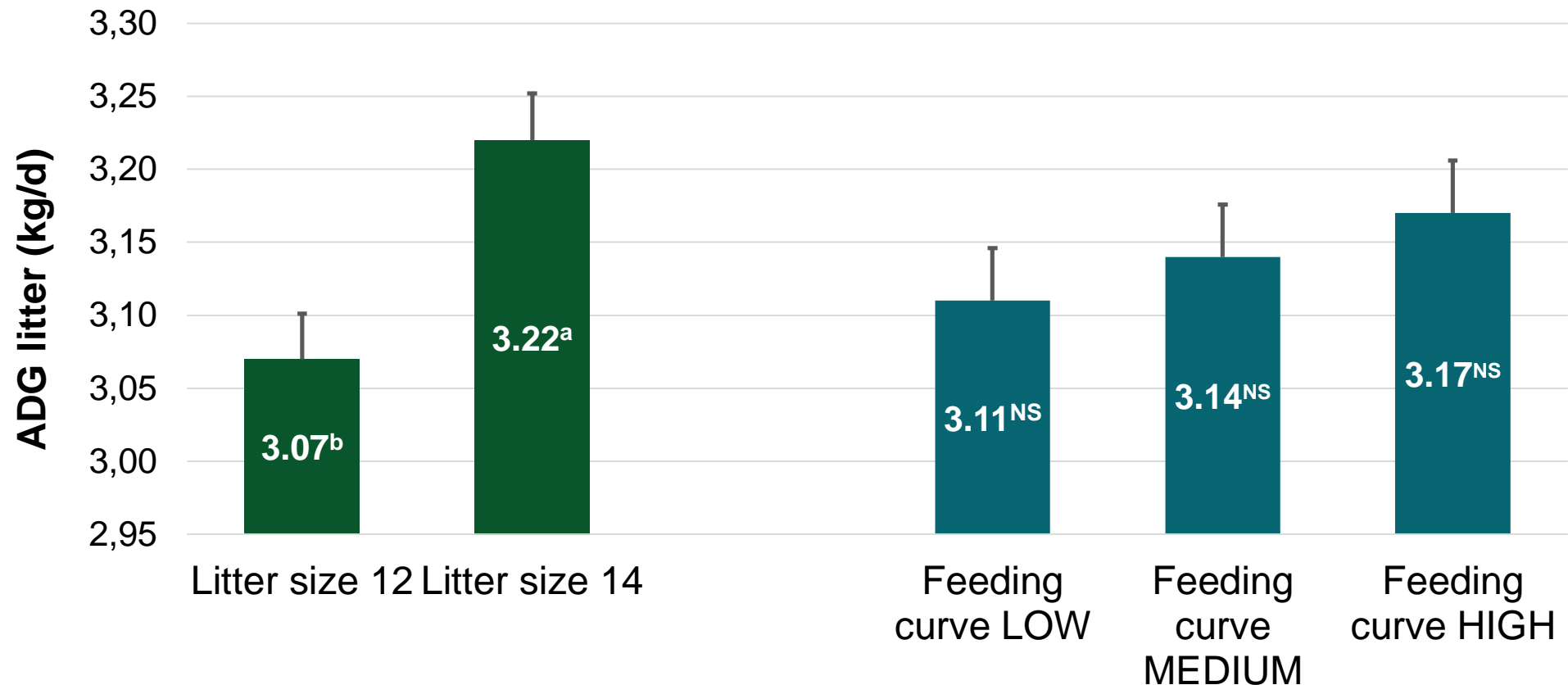
MEDIUM
Maximum 8.0 kg feed/day

LOW
Maximum 6.9 kg feed/day



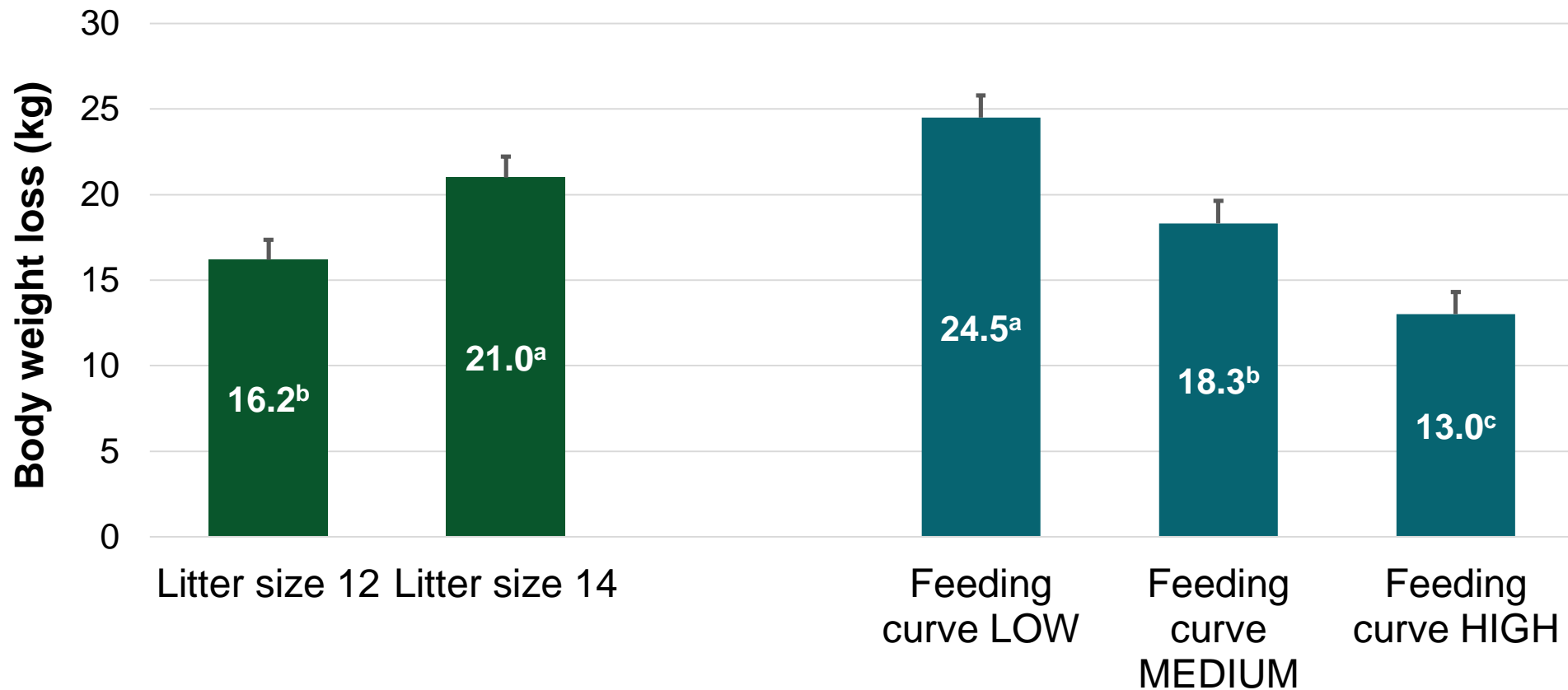
Choosing the upper feeding level from day 15 to weaning

Average daily litter gain



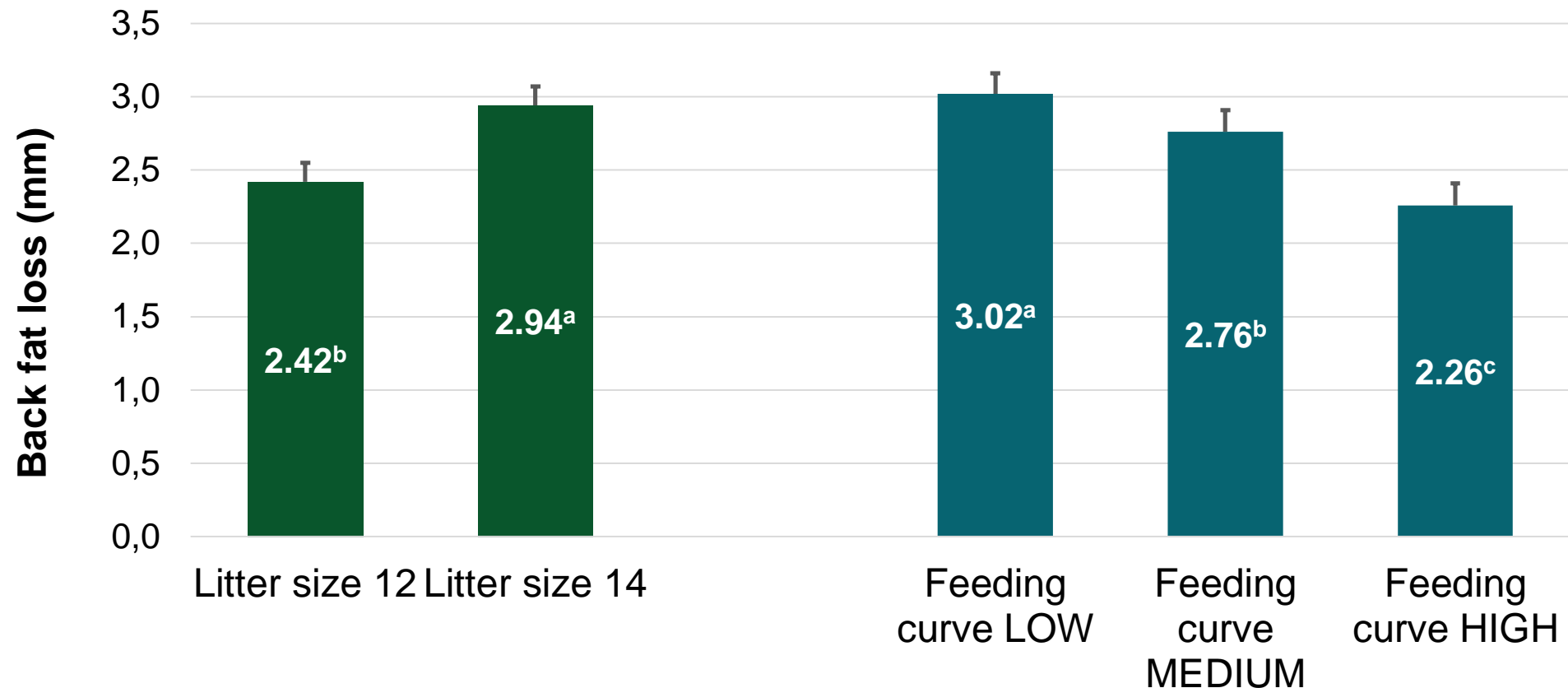
Choosing the upper feeding level from day 15 to weaning

Sow body weight loss



Choosing the upper feeding level from day 15 to weaning

Sow backfat loss



Choosing the optimal feeding curve

A wrong choice may adversely affect subsequent reproduction

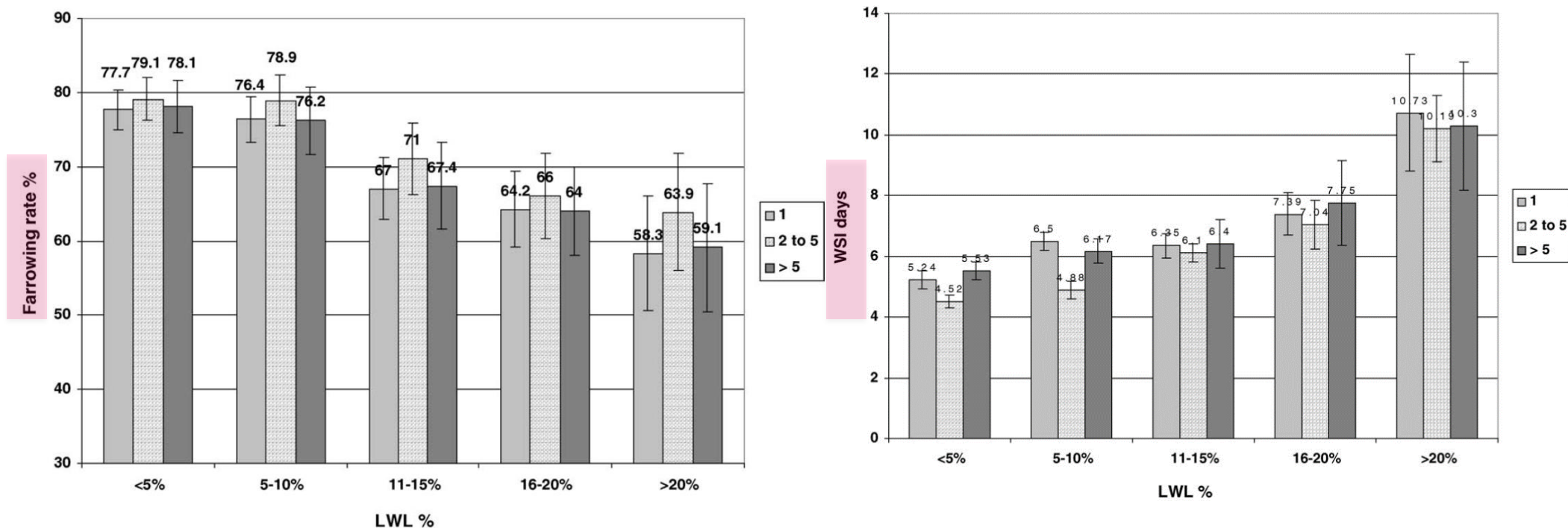


Fig. 1. Weaning-to-service-intervals (WSI) (days \pm S.E.M.) of ad libitum fed lactating sows of parity 1, parity 2–5 and >5 suffering different [$<5\%$ ($3.9 \pm 0.4\%$), $5\text{--}10\%$ ($7.6 \pm 1.2\%$), $11\text{--}15\%$ ($12.9 \pm 2.1\%$), $16\text{--}20\%$ ($17.2 \pm 1.5\%$) or $>20\%$ ($23.1 \pm 3.9\%$)] weight losses during lactation (LWL) in German and Slovakian indoor pig breeding units ($n = 1677$ sows evaluated).

Choosing the optimal feeding curve

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Choosing the optimal feeding curve

The sow tells you about her appetite – look 30 min. after feeding



Choosing the optimal feeding curve

Guidelines

2.4 - 2.9 kg feed for maintenance and 0.47 kg per piglet at maximum milk yield

⇒ 12 Piglets ~ 8.5 kg

⇒ 14 piglets ~ 9.5 kg

| Days post farrowing | Minimum feed allowance (kg per day) ^{1,2} | Aim for feed allowance (kg per day) ^{1,2} |
|---------------------------------|---|---|
| 0 | 2.9 | 2.9 |
| 2 | 3.3 | 3.7 |
| 7 | 4.7 | 6.0 |
| 14 | 7.0 | 8.5 |
| 16 | 7.5 | 9.0 |
| 18 | 8.0 | 9.0 |
| 21 | 8.0 | 9.0 |
| 28 | 8.0 | 9.0 |
| 35 | 8.0 | 9.0 |
| Total feed allowance in 28 days | 194 | 226 |

Choosing the optimal feeding curve

Guidelines

Evaluation of the feeding curve

⇒ 12 Piglets ~ 8.5 kg

⇒ 14 piglets ~ 9.5 kg

1-3 mm loss of backfat from farrowing to weaning ✓

0-15 kg weight loss from farrowing to weaning ✓

>92 % of the weaned sows bred 0-7 days later ✓

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|---------------------------------|--|--|
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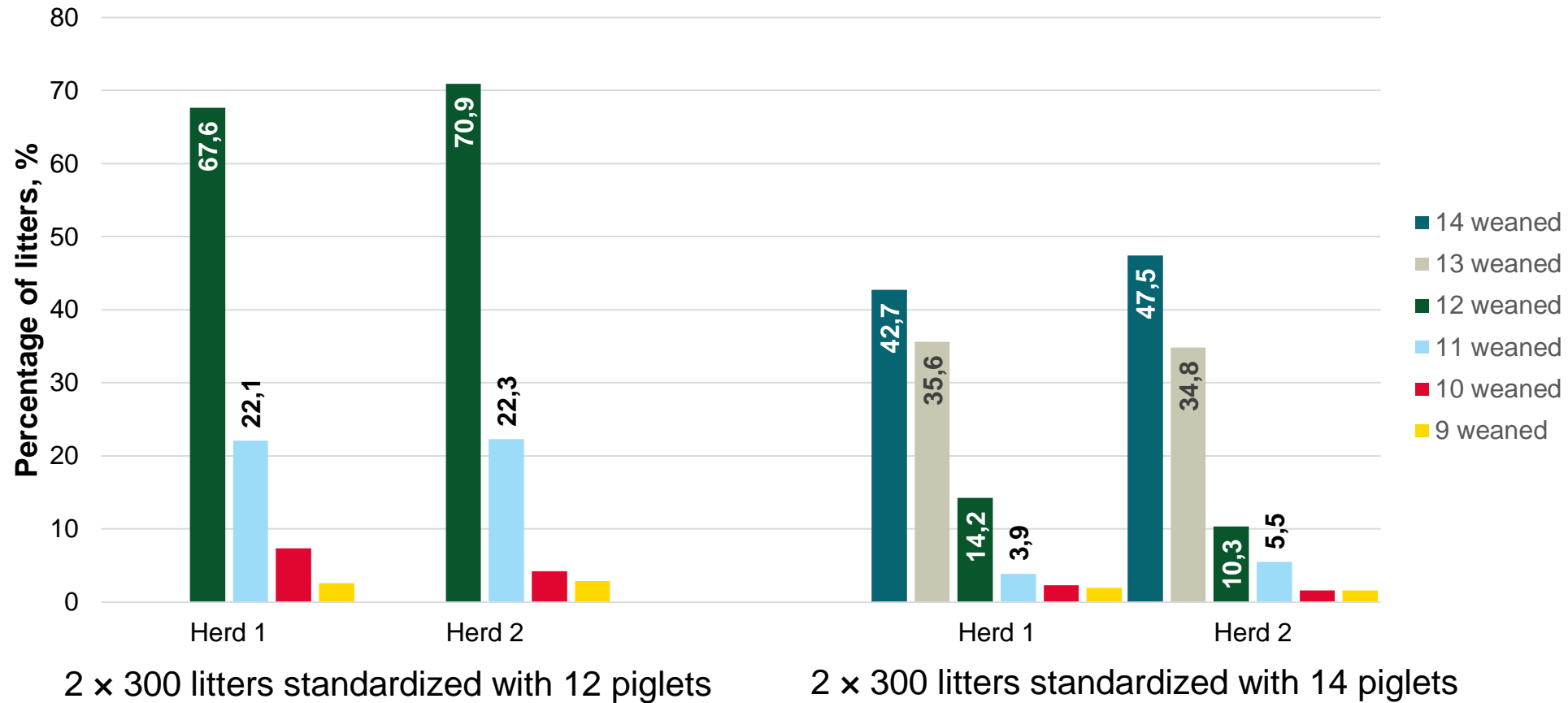


Summary



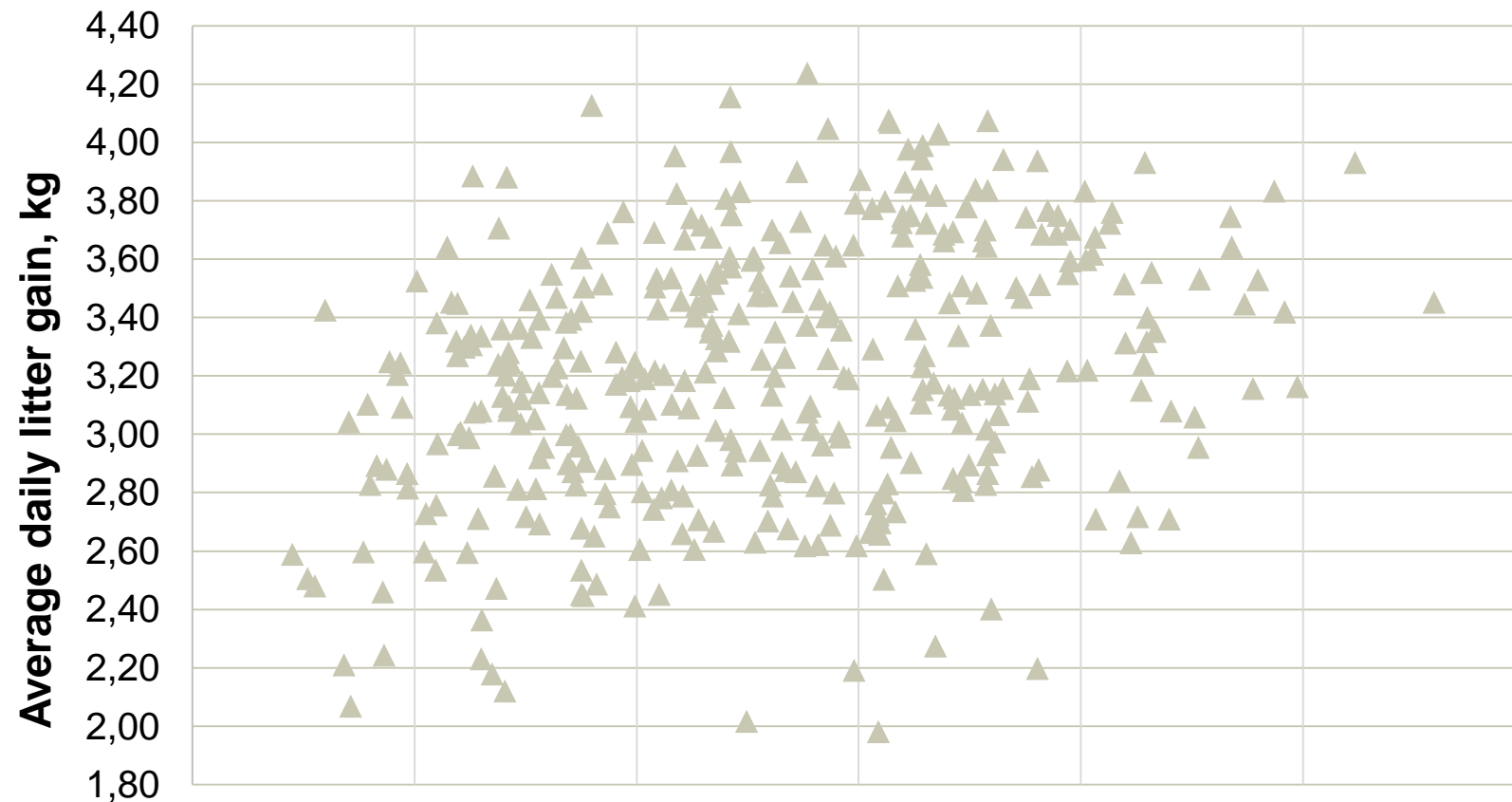
Nursing capacity

What can be expected when feeding is optimized?



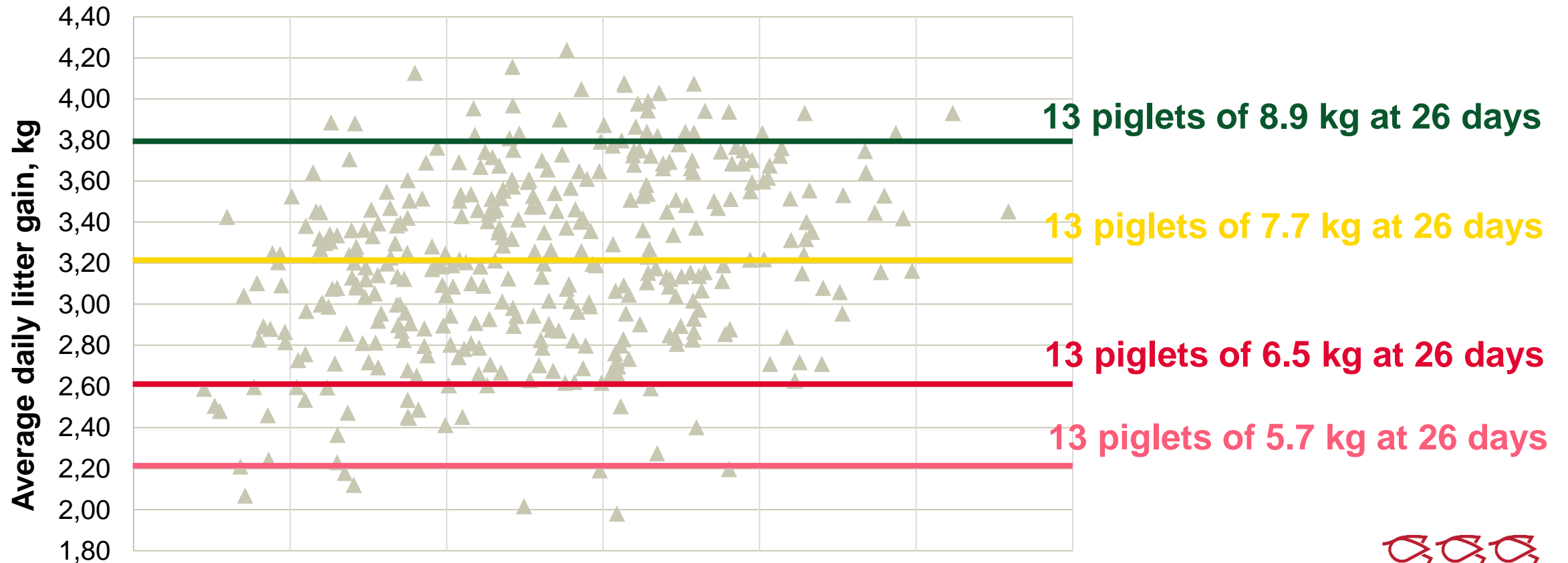
Average daily litter gain

What can be expected when feeding is optimized?



Average daily litter gain

What can be expected when feeding is optimized?



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Summary



Summary

- **Optimize the farrowings**
 - Frequent meals
 - No feed decrease before farrowing
 - Fibers ↗
- **Lactation feed should comply with recommendations**
 - Oversupply does not help either piglets or the sow
- **The feeding curve should not overfeed and not result in too high mobilization**
 - Feed allowance ↑ ≠ Heavier piglets
 - Feed allowance ↑ = Backfat loss ↓ (1-3 mm ✓)
 - Feed allowance ↑ = Weight loss ↓ (0-15 kg ✓)



Photo: Rasmus Bendix, Bendix Production


DANBRED

 **SEGES**
Danish Pig Research Centre

Merry Christmas

