

Breeding stock with good longevity and strong legs

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DanBred expert knowledge

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Photo: DanBred

SUPPORTED BY

Danish Pig Levy Fund

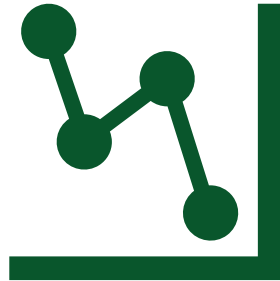


The challenges in many herds

All calls for focus on gilt rearing and gilt management...



The proportion of young sows culled



Variation in numbers of gilts per batch



Results in first parity



Pen capacity for gilts



Overall herd performance

Agenda

○ Feeding during the rearing period

○ Introduction to the breeding unit

○ Flushing before first service

○ How do you make a difference?

○ Summary

Gilts should not be fed as slaughter pigs

Less focus on gain and feed conversion rate is needed

Weight interval	30-110 kg	30-65 kg	65-110 kg	>110 kg
MJ NE/kg feed	9.5	9.7	9.5	9.5
FUsow/kg feed	1.05	1.06	1.05	1.05
SID protein, g/kg	105	125	105	100
SID lysin, g/kg	6.3	8.2	5.3	4.2
Digestible phosphorous, g/kg	2.6	3.2	2.4	2.1
Calcium (150-250% phytase ¹), g/kg	6.9	7.7	6.5	6.3

¹ 150-150 % phytase in the Danish Feed Evaluation system is equal to:

Natuphos: 750-1.000 FTU/kg); Phyzyme XP: 750-1.000 FTU/kg) Rono HiPhos: 750-1.000 FYT/kg;
Ronozyme NP: 1.875-2.500 FYT/kg; Optiphos: 1.005-1.340 FTU/kg; Axtra Phy: 450-600 FTU/kg;
Quantum blue: 600-800 FTU/kg; Natuphos E: 525-700 FTU/kg.

Special focus on bone development and mineralization

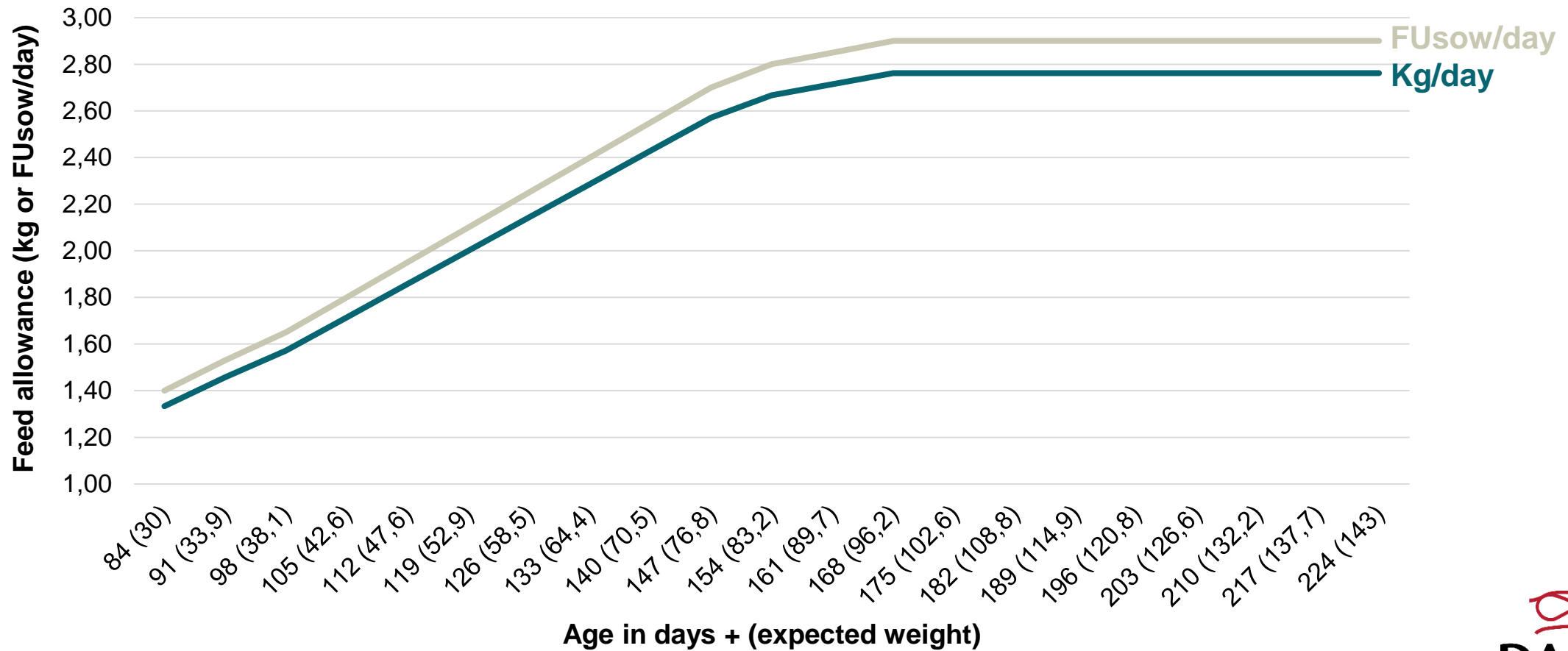
Calcium, phosphorous, vitamin D and vitamin K

- Follow the recommended levels of all nutrients
 - Use phytase
 - Avoid excess calcium and correct for phytase inclusion
- Use 500-800 IU of vitamin D/kg during the growing phase
 - Use of Hy-D has been shown to decrease bone strength*
 - If Hy-D is included we recommend not to use the highest dosage
 - The highest dose of Hy-D (50 µg/kg) can decrease calcium content of bones*
 - Further research will be conducted in 2021 looking at vitamin D/Hy-D/calcium
- Add 4 mg vitamin K₃ per kg of feed
 - Vitamin K is of importance when storing calcium in bones

* Source: Lauridsen et al. (2010) Journal of Animal Science 88: 202-213

Recommended feeding curve for DanBred gilts

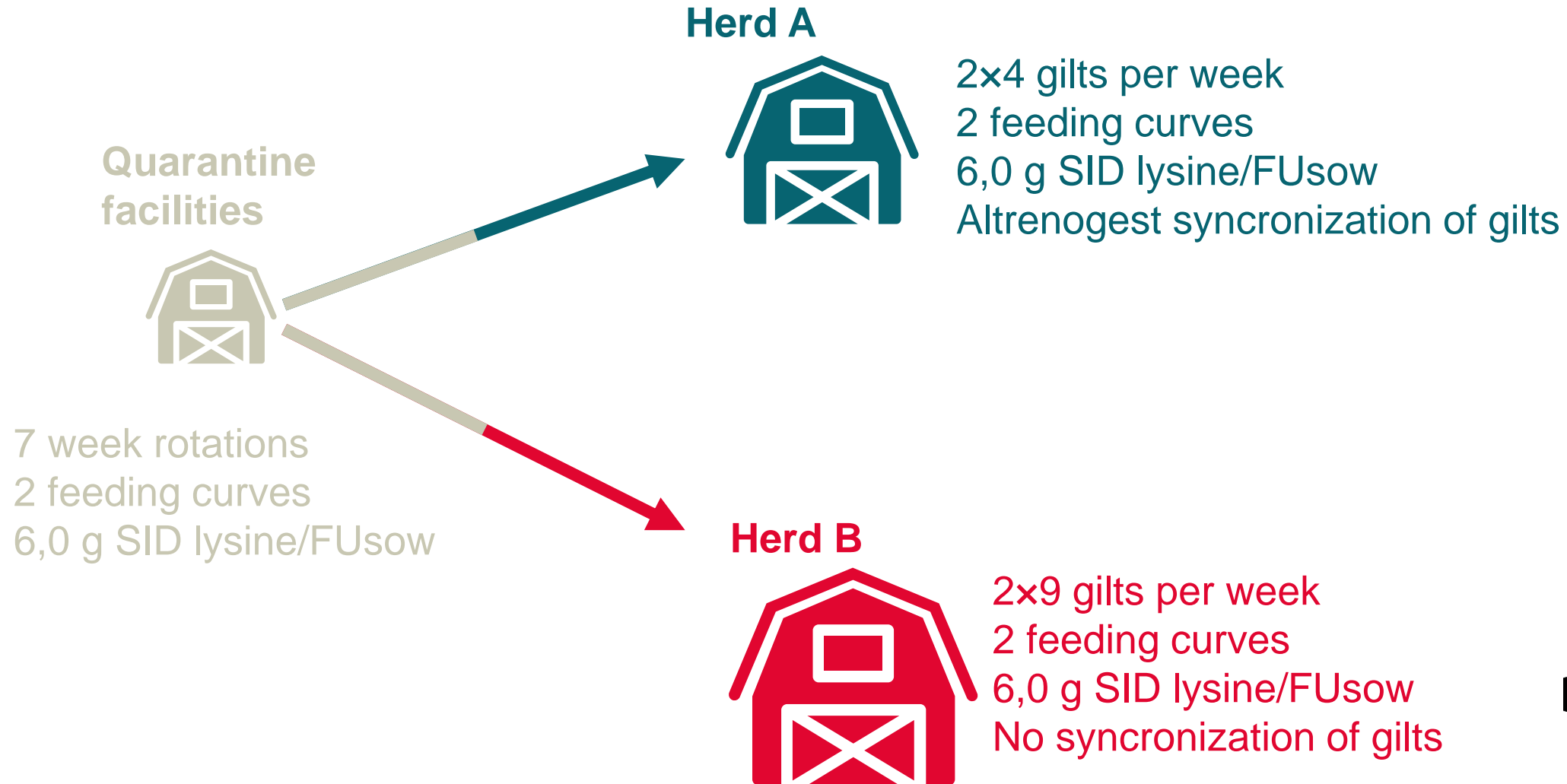
Aiming for a daily gain around 800 g/day



Source: DanBred Manual (2020)

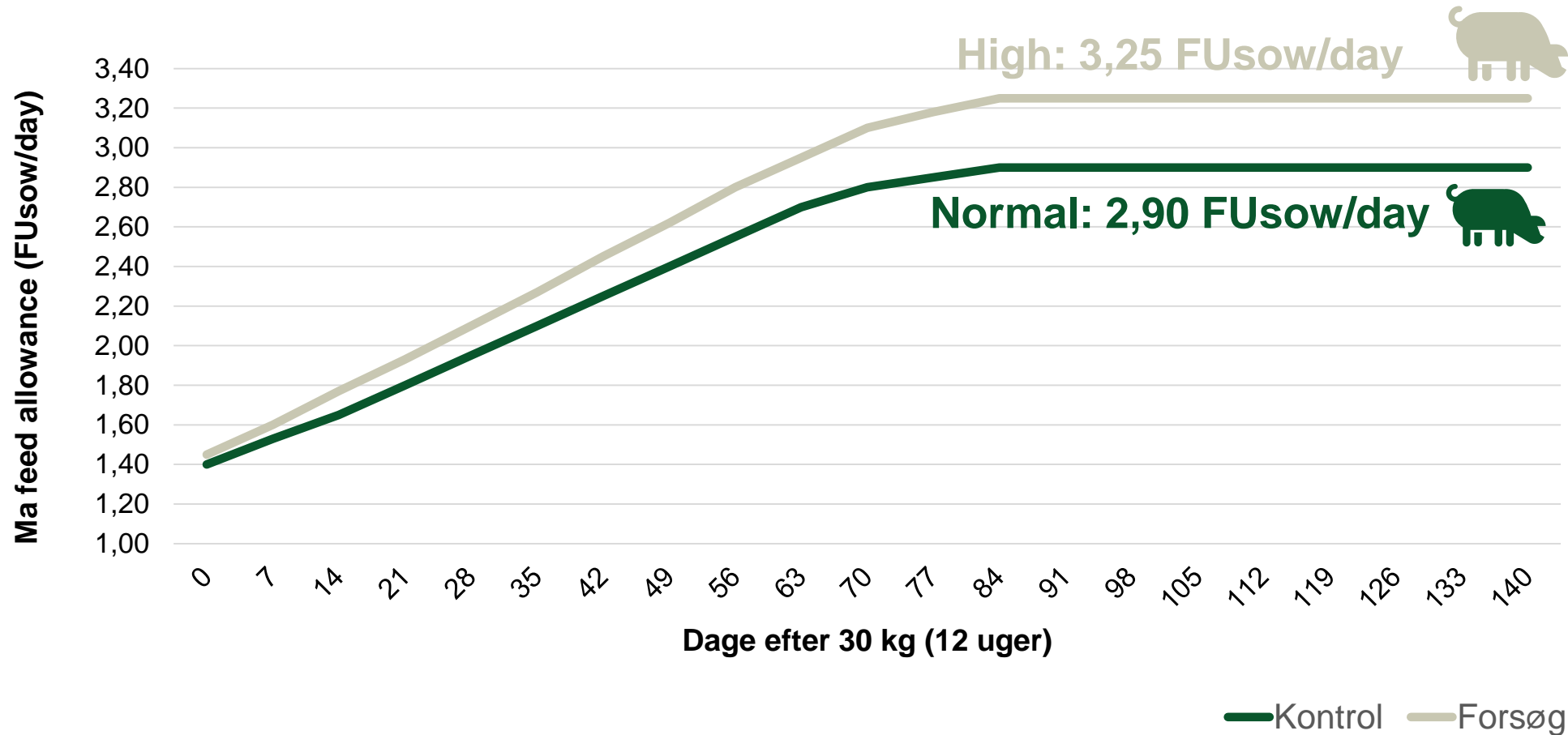
Main findings in a trial with >1400 DanBred Hybrid gilts

Experimental design



Main findings in a trial with >1400 DanBred Hybrid gilts

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Main findings in a trial with >1400 DanBred Hybrid gilts

Results from first service

Herd A

Feeding curve	Normal	High
Age, days	233	232
Weight, kg	150 ^a	156 ^b
Back fat, mm	13.5 ^a	14.4 ^b

Herd B

Feeding curve	Normal	High
Age, days	238	237
Weight, kg	161 ^a	166 ^b
Back fat, mm	14.0 ^a	14.9 ^b

^{a, b} Within a row, values without common superscript letters differ ($P < 0.05$).

Main findings in a trial with >1400 DanBred Hybrid gilts

Results from first service

Herd A

Feeding curve	Normal	High
Age, days	233	232
Weight, kg	150 ^a	156 ^b
Back fat, mm	13.5 ^a	14.4 ^b
ADG in quarantine, g/day	824^a	906^b

Herd B

Feeding curve	Normal	High
Age, days	238	237
Weight, kg	161 ^a	166 ^b
Back fat, mm	14.0 ^a	14.9 ^b

^{a, b} Within a row, values without common superscript letters differ ($P < 0.05$).

Main findings in a trial with >1400 DanBred Hybrid gilts

Gilts mated in second parity

Herd A

Feeding curve	Normal	High
Gilts mated in 2 nd parity, %	97.1	94.8

Herd B

Feeding curve	Normal	High
Gilts mated in 2 nd parity, %	88.2	88.0

a, b Within a row, values without common superscript letters differ (P < 0.05).

Main findings in a trial with >1400 DanBred Hybrid gilts

Looking at the 25 % lightest, 50 % medium and 25% heaviest gilts

Herd A

Feedingcurve	Light	Medium	Heavy
Age at 1 st service, days	230	230	241
Av. Weight at 1 st service, kg	136	153	173
Totalborn per litter, no	16.4 ^b	17.2 ^a	17.8 ^a
Gilts mated in 2 nd parity, %	97.1	94.5	97.2

a, b Within a row, values without common superscript letters differ (P < 0.05).

Herd B

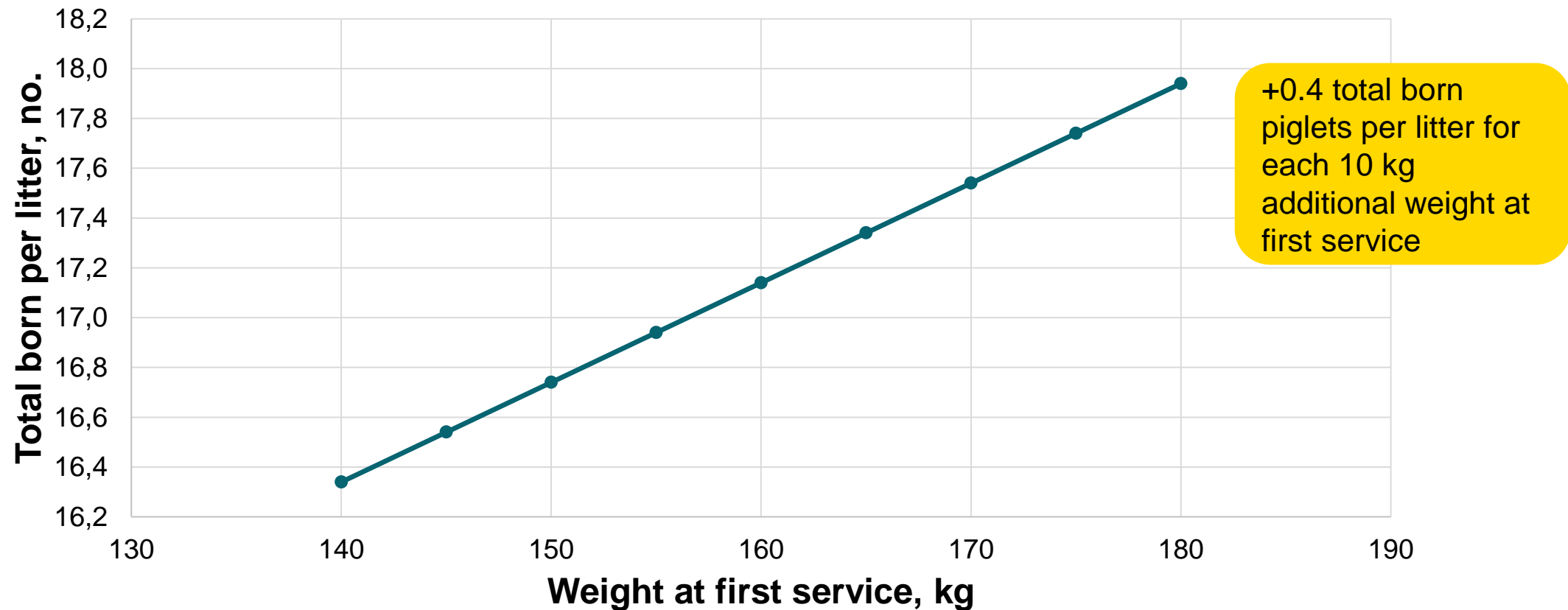
Feedingcurve	Light	Medium	Heavy
Age at 1 st service, days	229	233	256
Av. Weight at 1 st service, kg	140	161	187
Totalborn per litter, no	16.8 ^z	17.6 ^y	18.5 ^x
Gilts mated in 2 nd parity, %	92.5 ^x	91.5 ^x	77.4^y

x, y, z Within a row, values without common superscript letters differ (P < 0.05).

Old/heavy gilts is an issue to consider...

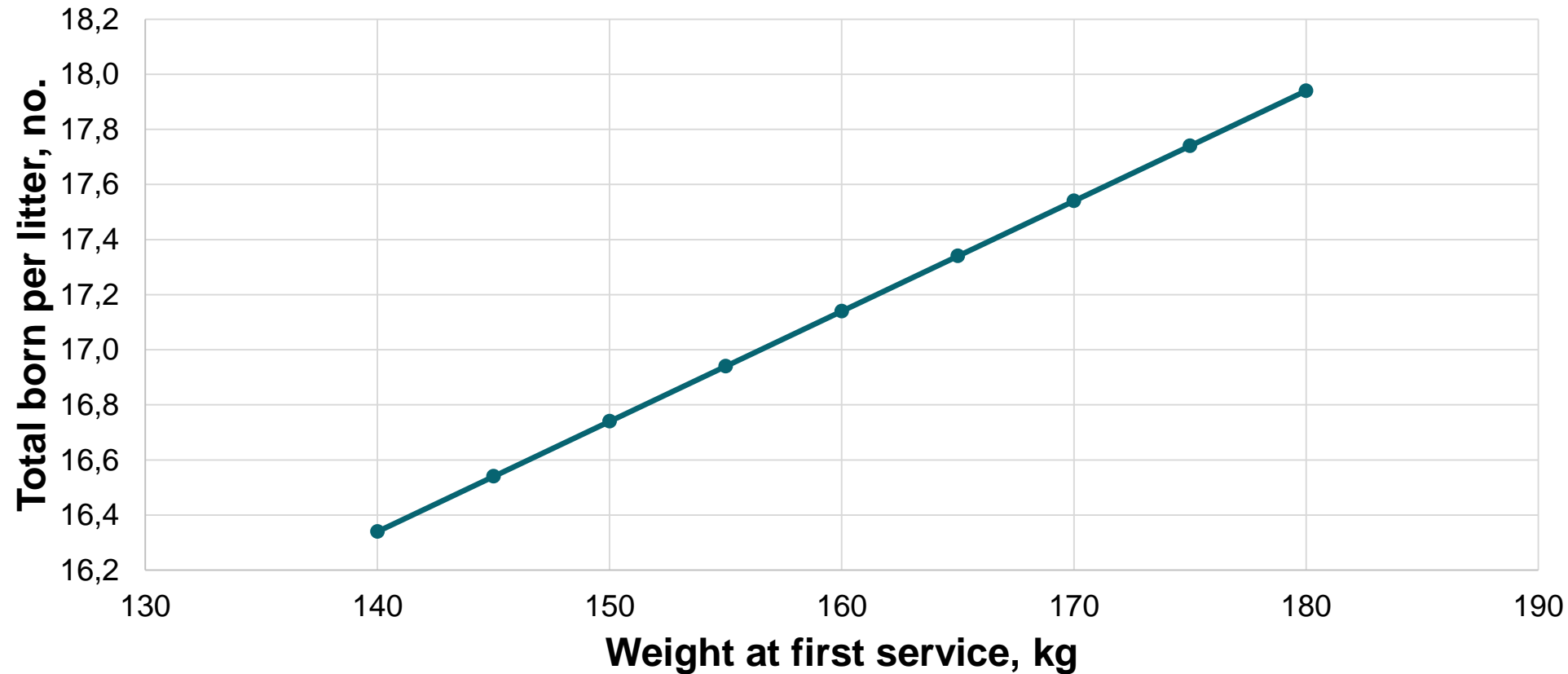
Merging data from the two herds

What is most important when optimizing litter size?



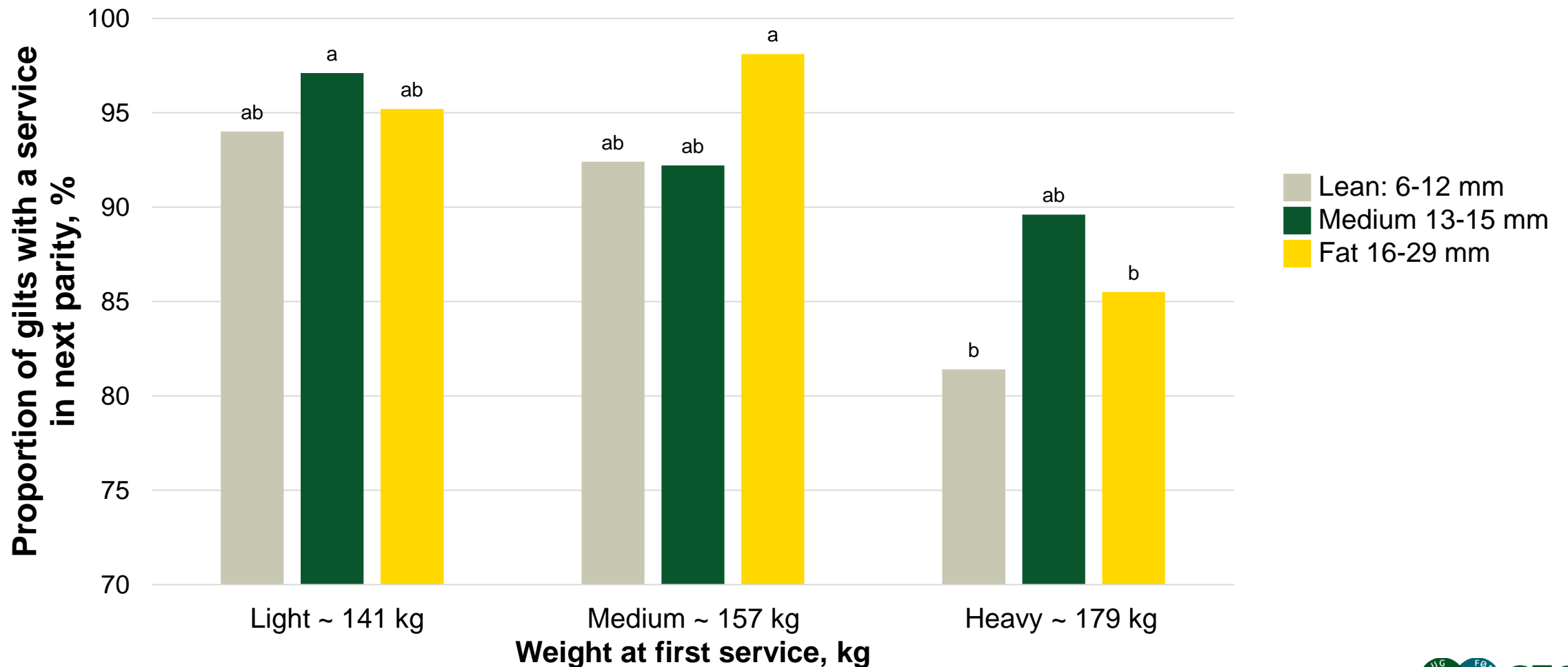
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What is most important when optimizing litter size?



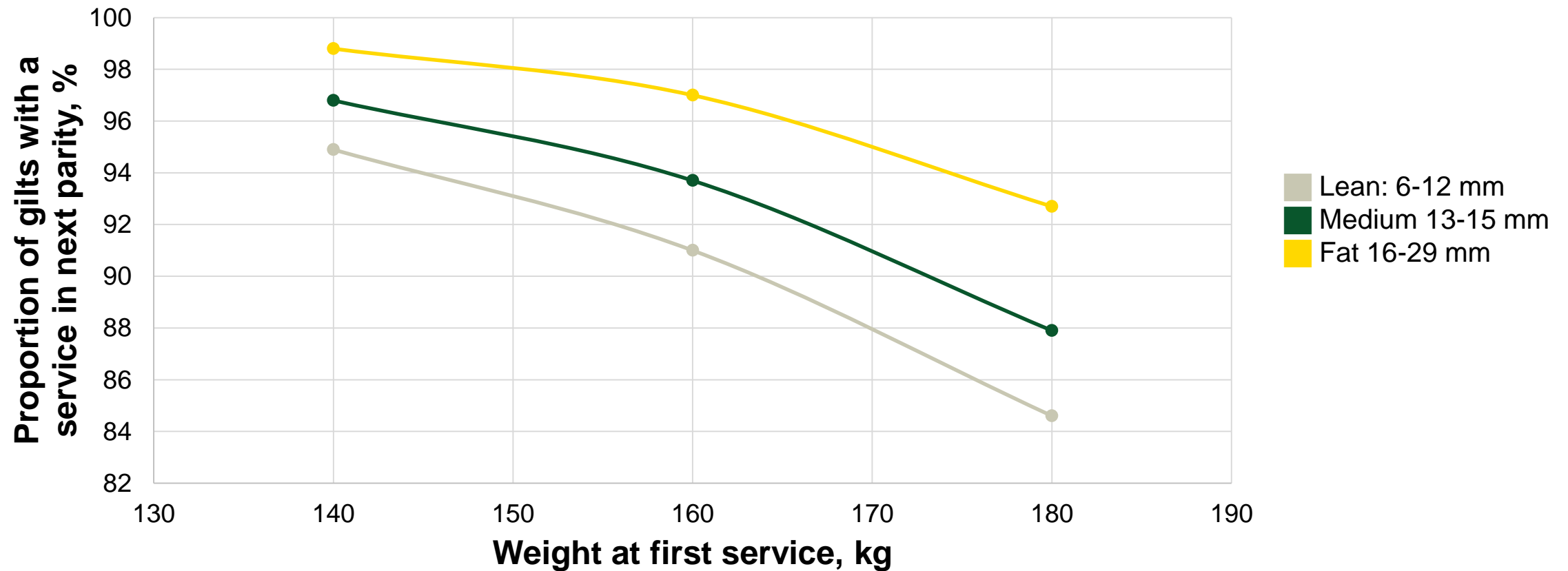
Weight makes a difference for potential longevity

Overall a high weight is not the best



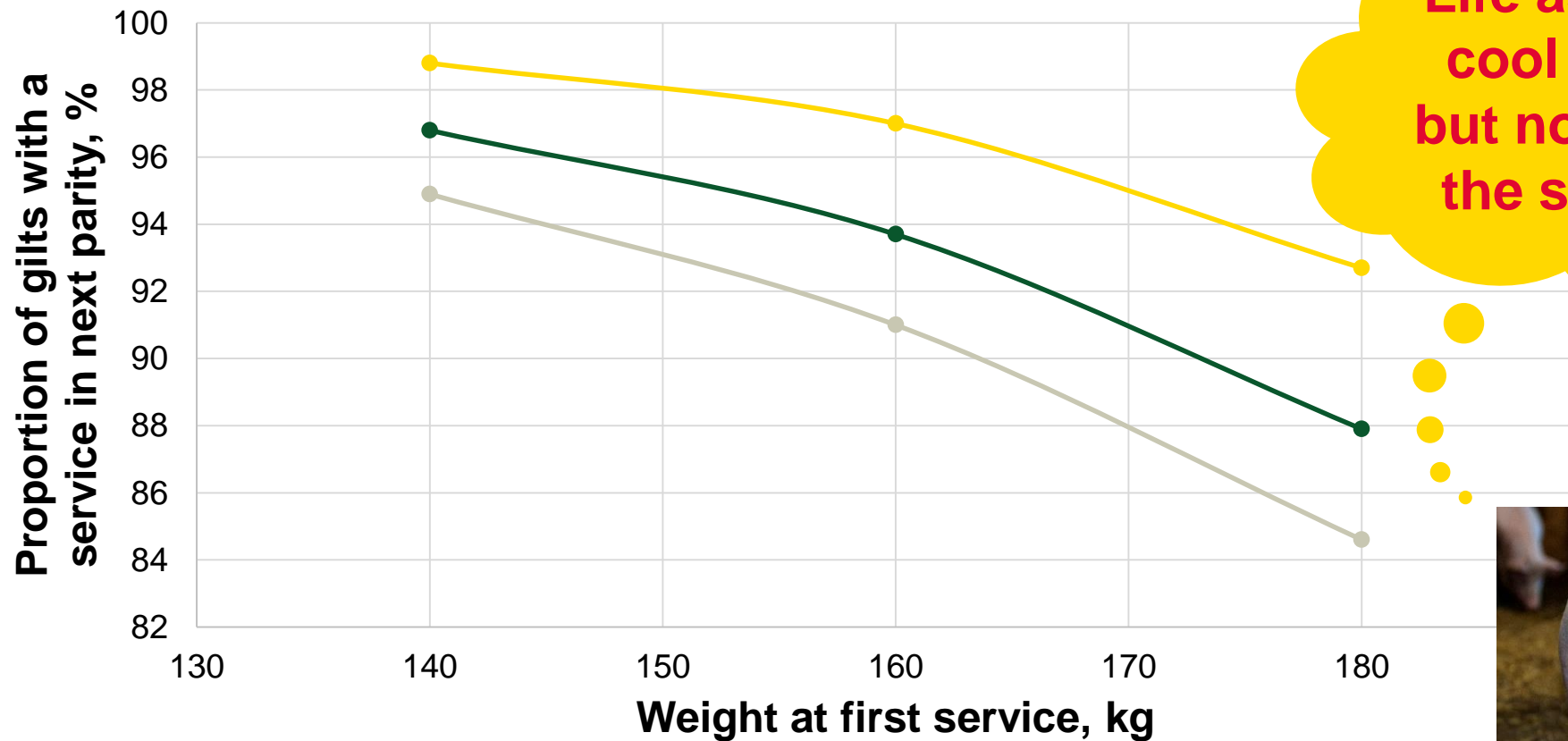
Looking at potential longevity as an effect of weight

Body condition makes quite a difference



Looking at potential longevity as an effect of weight

Body condition makes quite a difference



Life as a sow is cool being fat but not heavy at the same time



Agenda

Feeding during the rearing period

Introduction to the breeding unit

Flushing before first service

How do you make a difference?

Summary

Entering the service unit

A change from rearing conditions to reproductive conditions

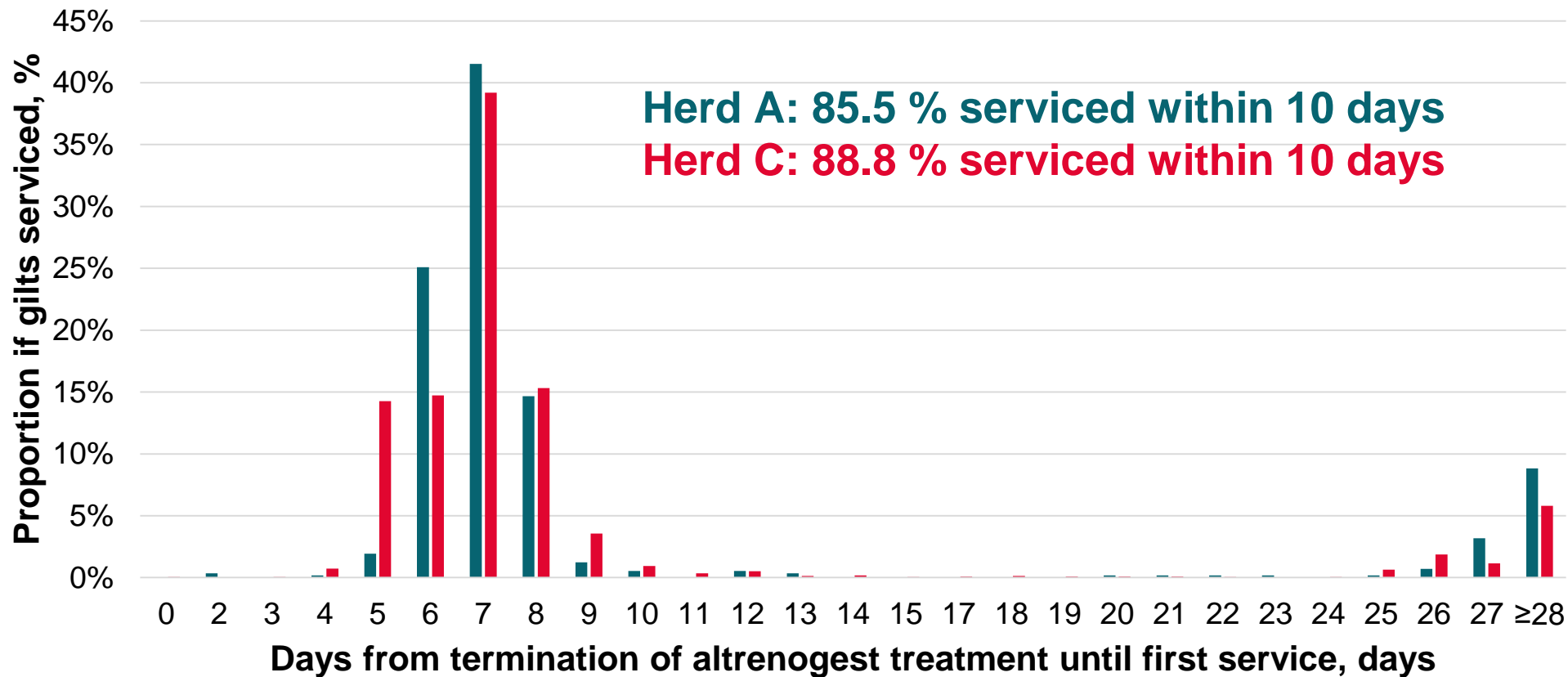
- Several significant changes for the gilt
 - New pen/environment
 - Change in feed composition
 - Presence of boars
 - Smell, sound, look
 - More frequent interactions with human



Photo: Rasmus Bendix, Bendix Production

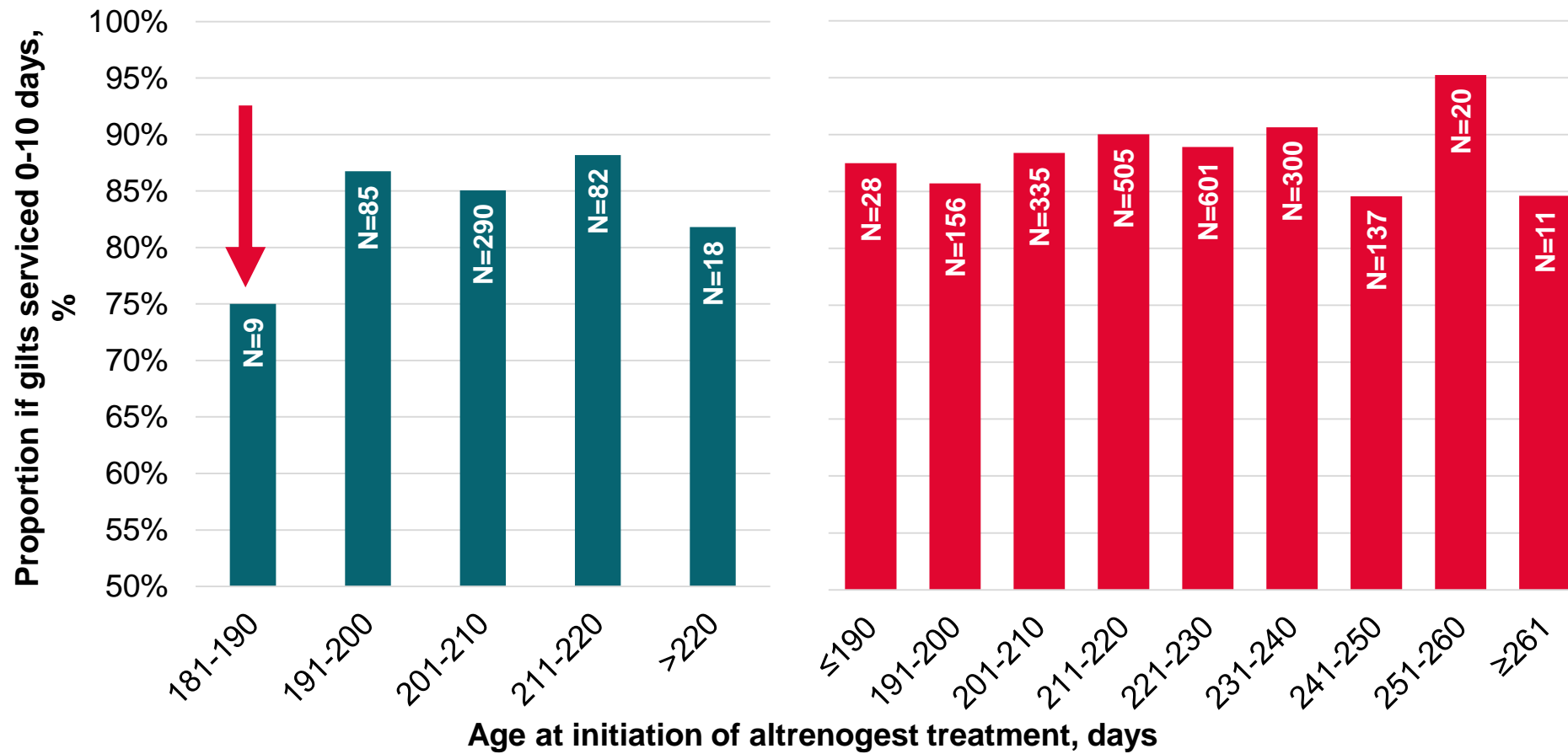
Syncronization of gilts using altrenogest

One way to decrease variation



Effect of age on altrenogest efficiency

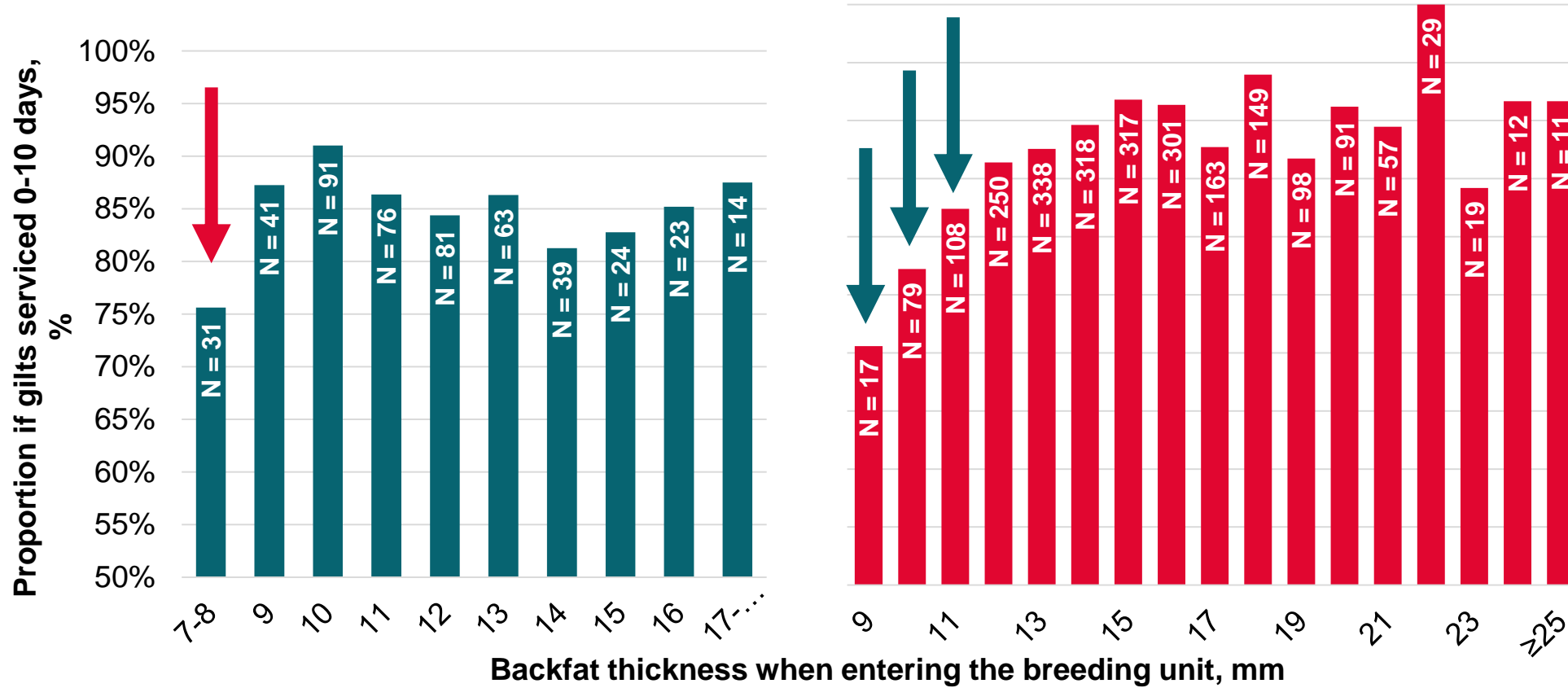
Herd A and C



Source: Bruun *et al.* (2020): SEGES Publication no. 2025

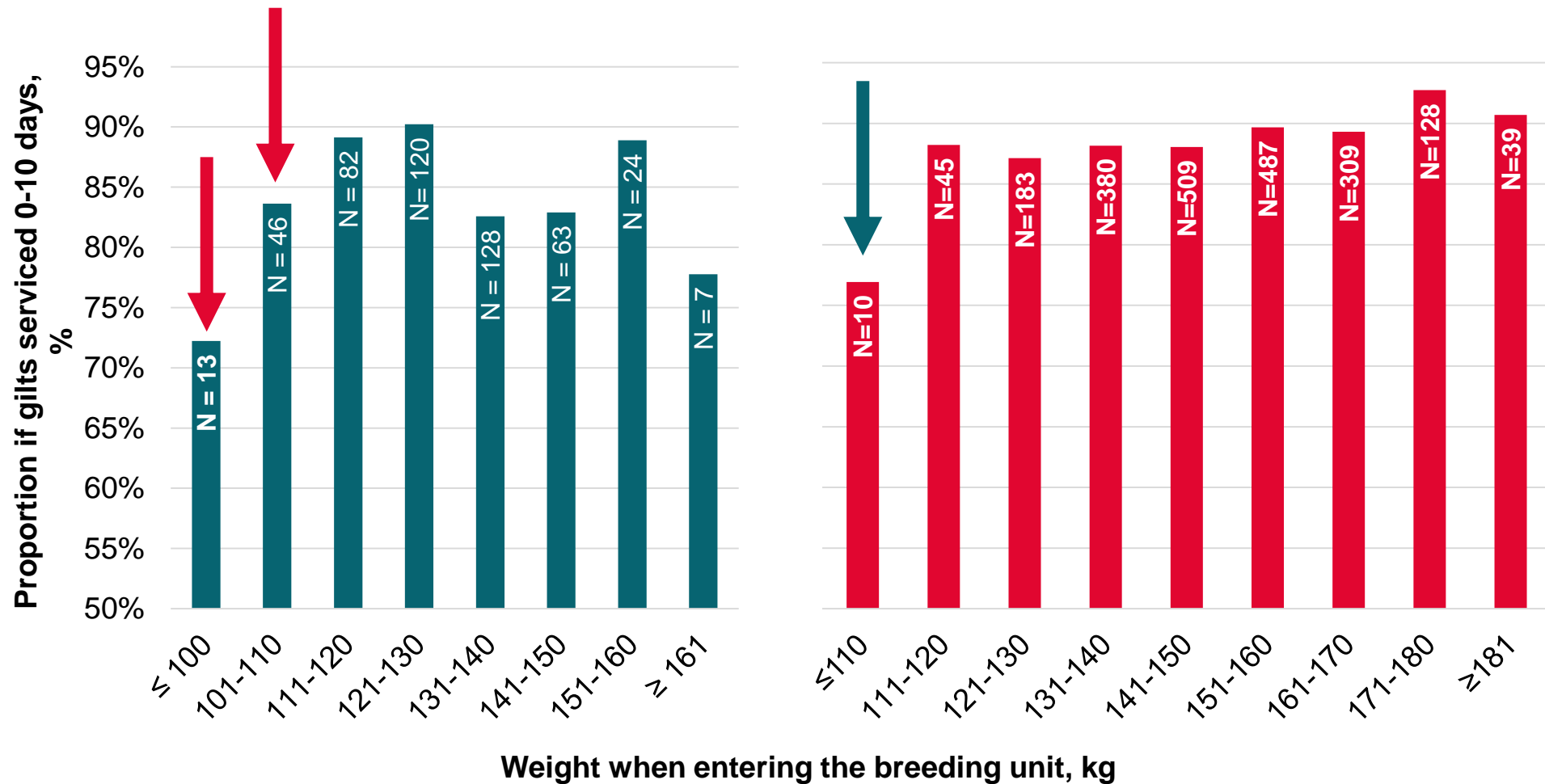
Effect of backfat on altrenogest efficiency

Herd A and C



Effect of weight on altrenogest efficiency

Herd A and C



Syncronizing the gilt second heat

Caution at the different levels

- **Step 1 (conditions when entering the breeding unit)**
 - Age >190 days
 - Backfat >11-12 mm
 - Weight > 110 kg
- **Step 2 (important tasks in the breeding unit)**
 - Intensive boar contact to induce 1st heat
 - Boar on the pathways twice a day
 - Identify the 1st heat at each individual gilt
 - Mating should be done in 2nd heat (+1 total born piglet per litter)
 - Optimizing the flushing strategy (+0.4 total born piglet per litter)
- **Step 3 (optional for further alignment)**
 - Syncronization using altrenogest
 - Treatment should be given at the exact same time every day

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How do you make a difference?

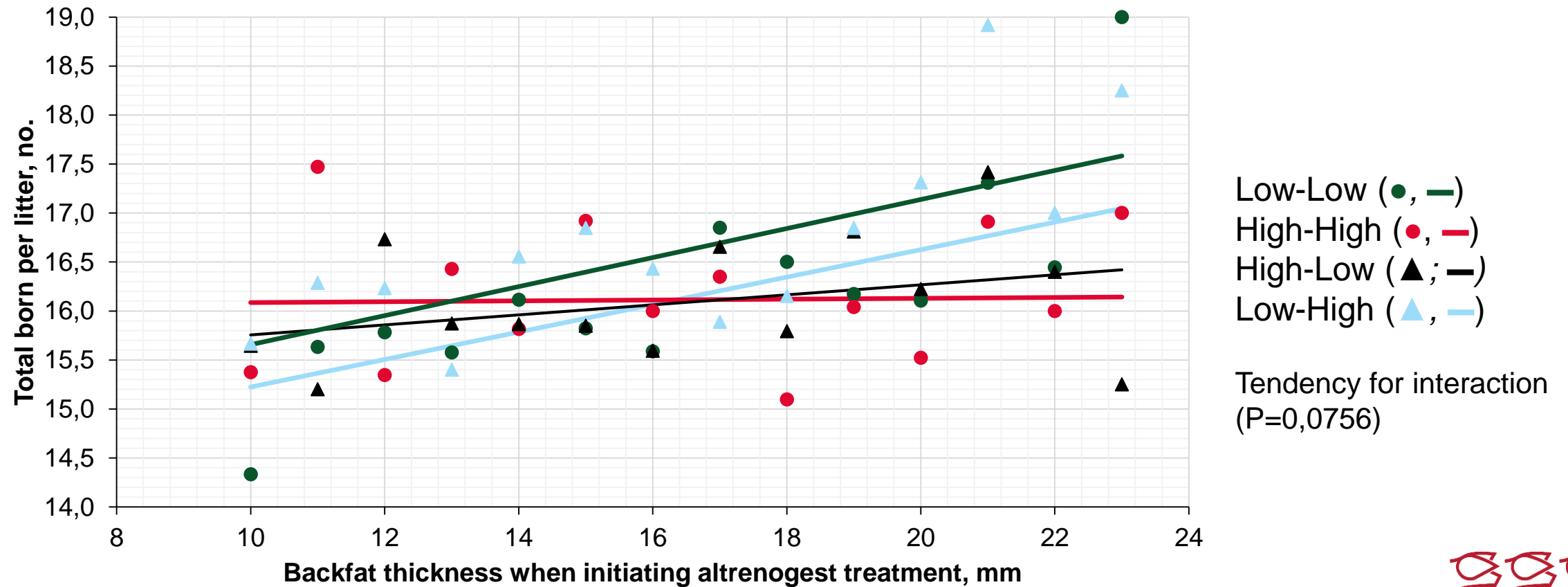
Summary

Flushing makes sense but how?

- The general Danish recommendation
 - Flushing for 5-7 days before first service using around 3.5 kg feed/day
- Prerequisites for succes with flushing
 - No boar contact during the rearing period
 - Age > 190 days when entering the service unit
 - Weight >110 kg when entering the service unit
 - Backfat >12 mm when entering the service unit
- Flushing should be terminated when first service is done
- First service should be done in second heat (+1.0 total born piglet per litter)

Flushing should take body condition into consideration

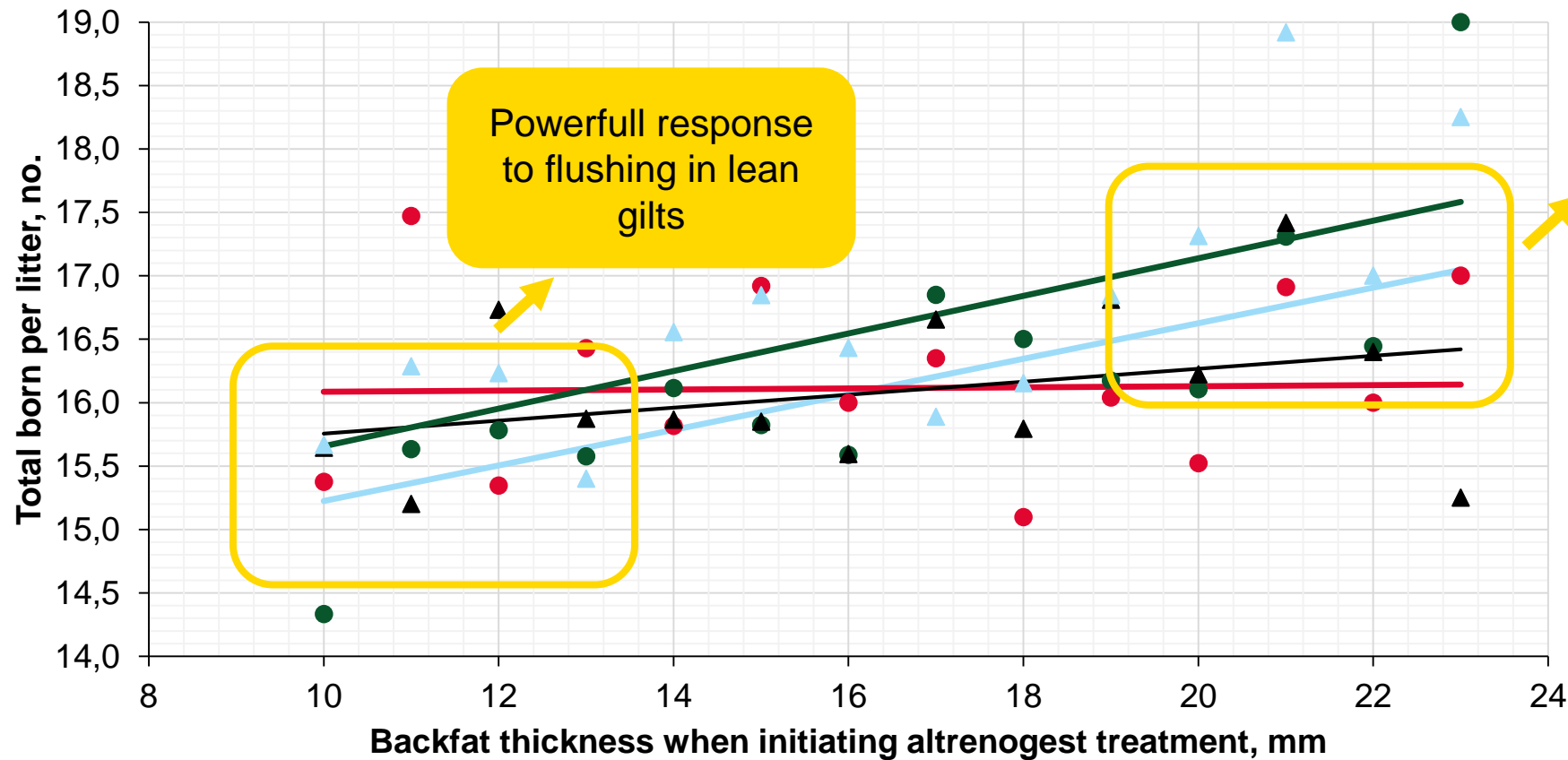
The response to flushing is greater in lean gilts



Source: Bruun *et al.* (2020): Translational Animal Science (under review)

Flushing should take body condition into consideration

The response to flushing is greater in lean gilts



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Which gilts should enter the breeding unit? Your decision only...



Uniform gilts sorted by size and body condition **BEFORE** entering the breeding unit



Gilts moved pen by pen to the breeding unit **WITHOUT** any sorting **BEFORE** entering

Quality check and size selection at an average weight around 100 kg

To ensure an optimal "gilt flow" in the breeding unit

Fast growing gilts ⇒ move forward

- First service at a younger age to control weight variation
- OK when looking at research results (weight vs. age)

Slow growing gilts ⇒ move to special care

- 3.4 kg of feed with 3.6-4.2 g SID lysine/kg
- To ensure a higher body condition at the optimal weight at first service



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Summary

- Use the recommended nutrient contents and feeding curves
- Management is of great importance
 - Move fast growing gilts forward
 - Special care for slow growing gilts
- Optimal conditions when entering the breeding unit
 - Age >190 days
 - Backfat >11-12 mm
 - Weight > 110 kg
- Aims at first service in second heat
 - Age 230-240 days
 - Backfat 14-15 mm
 - Weight 140-160 kg
- Flushing for 5-7 days or +21 days dependent on body condition



Foto: Colourbox

Thank You for listening