The Perfect Lactation

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Grisekongres – MCH Herning Kongrescenter
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STØTTET AF
Svineafgiftsfonden

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Photo: Rasmus Bendix, Bendix Production

Agenda

- Body condition management BEFORE farrowing (Thomas)
- Feeding curves and feed for gestating sows (Thomas)
- Management to optimize performance in the farrowing section (Mette)
- Results when management is optimized (Thomas)
- Characterization of top performance herds/sows (Thomas)
- 2 × Summary (Thomas and Mette)

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General recommendations about body condition of sows
To ensure top results in the farrowing section

- Aim: 14-17 mm of backfat at farrowing
  - Highest level of weaned piglets per weaning
  - Maximized average daily litter gain
- Split the sows in categories at weaning
  - <12 mm = skinny
  - 12-14 mm = normal
  - >14 mm = fat
- + 1 mm of backfat requires 21-29 FUsow above maintenance

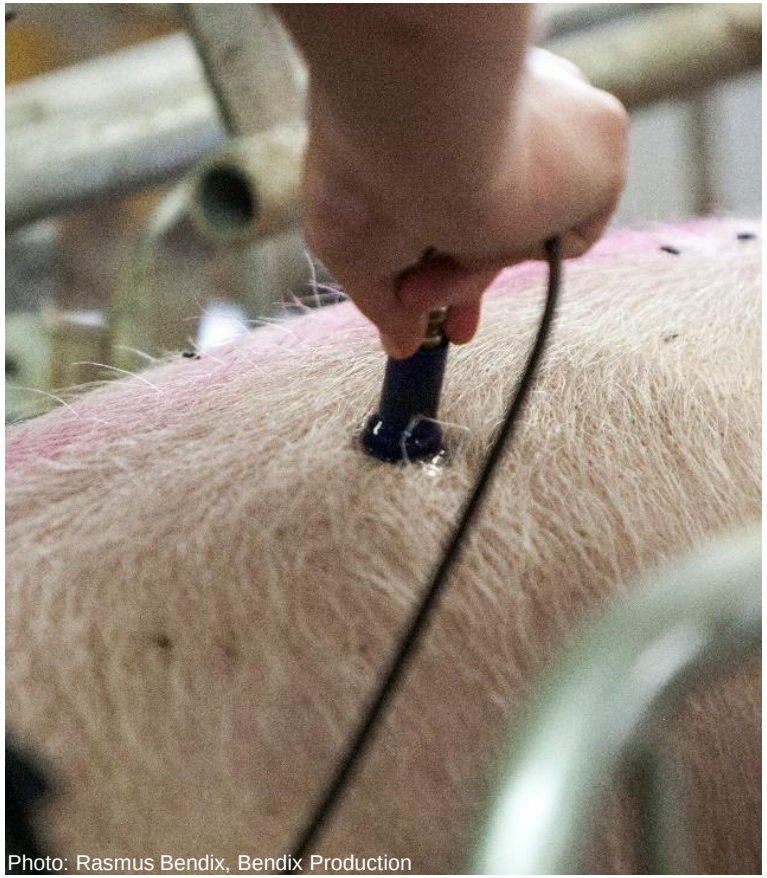
Photo: Rasmus Bendix, Bendix Production

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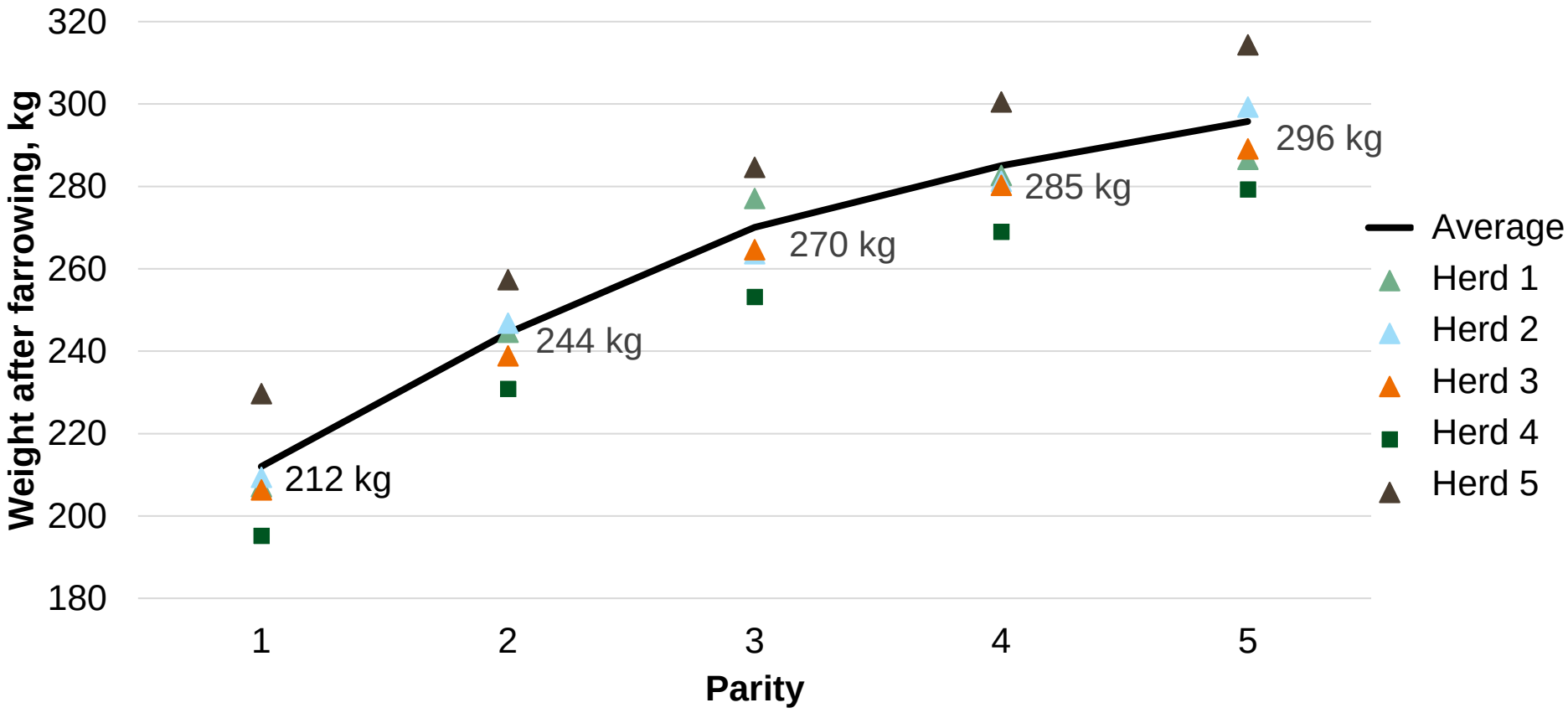
Sources: Højgaard og Bruun (2021): Notat nr. 2130; Wisbech et al. (2022): Journal of Animal Science, 2022, 100: 1-13

Use the optimal feeding curves for gestating sows

Avoid excess maternal gain gestation after gestation



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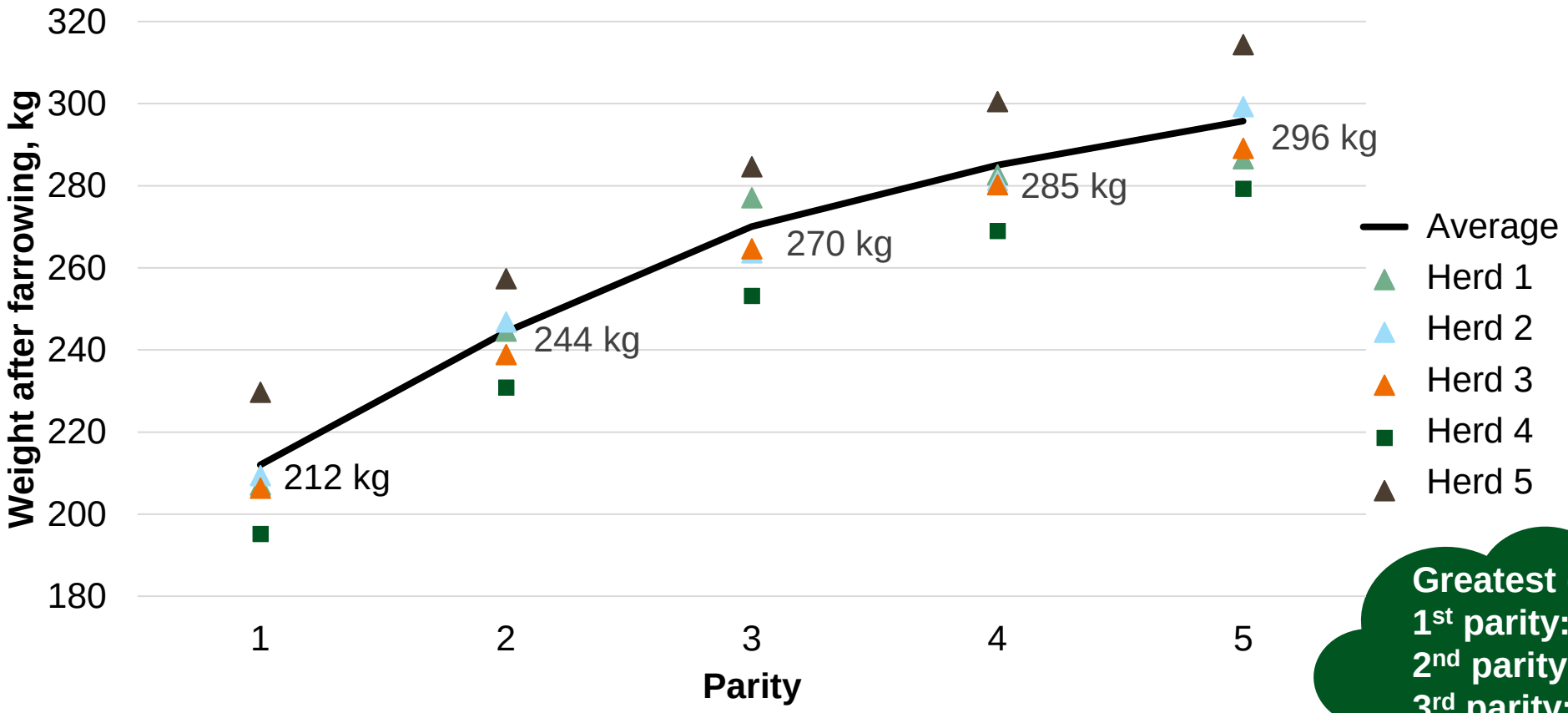

Greatest difference
1st parity: 35 kg
2nd parity: 26 kg
3rd parity: 32 kg
4th parity: 31 kg
5th parity: 35 kg

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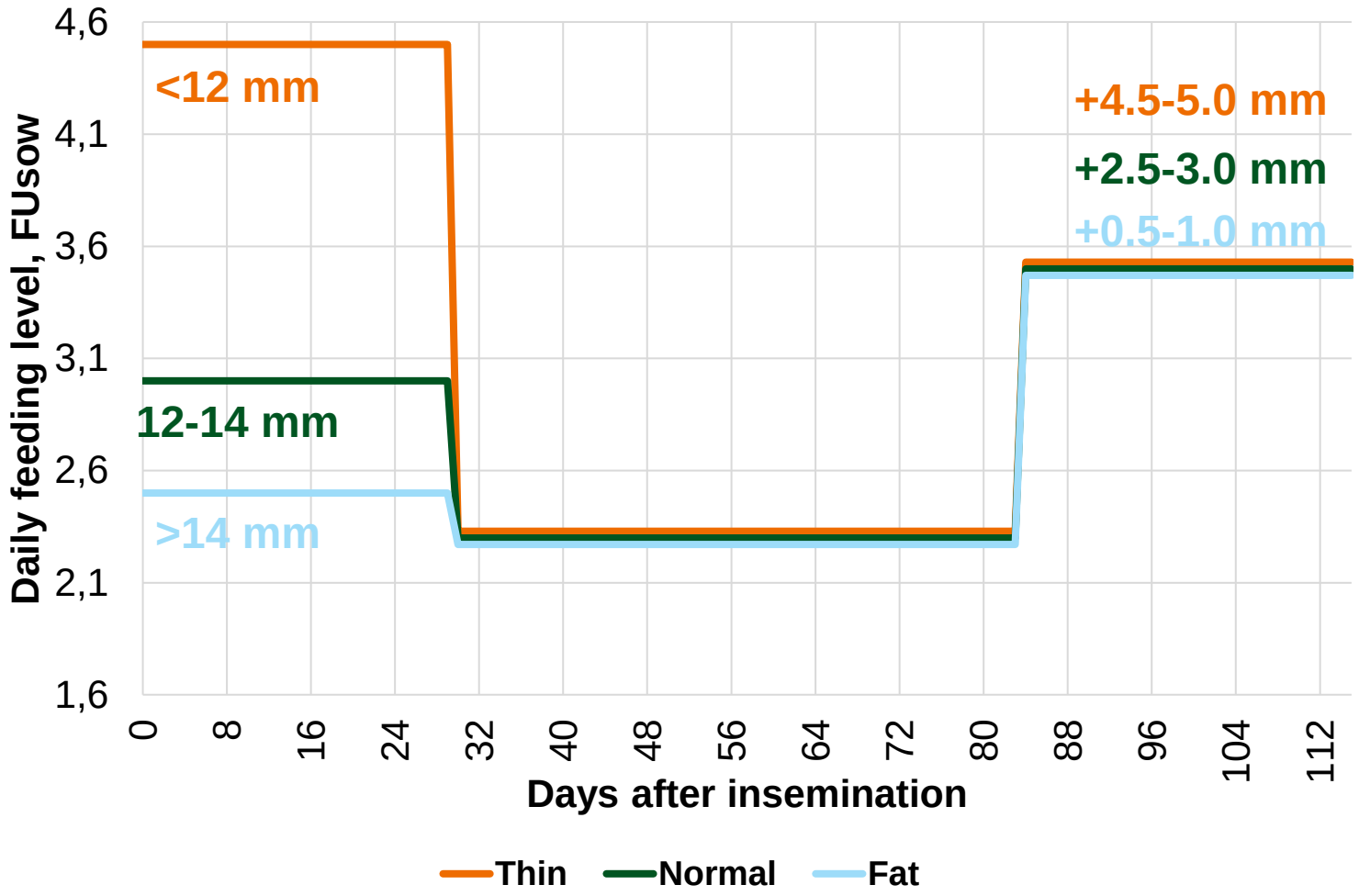
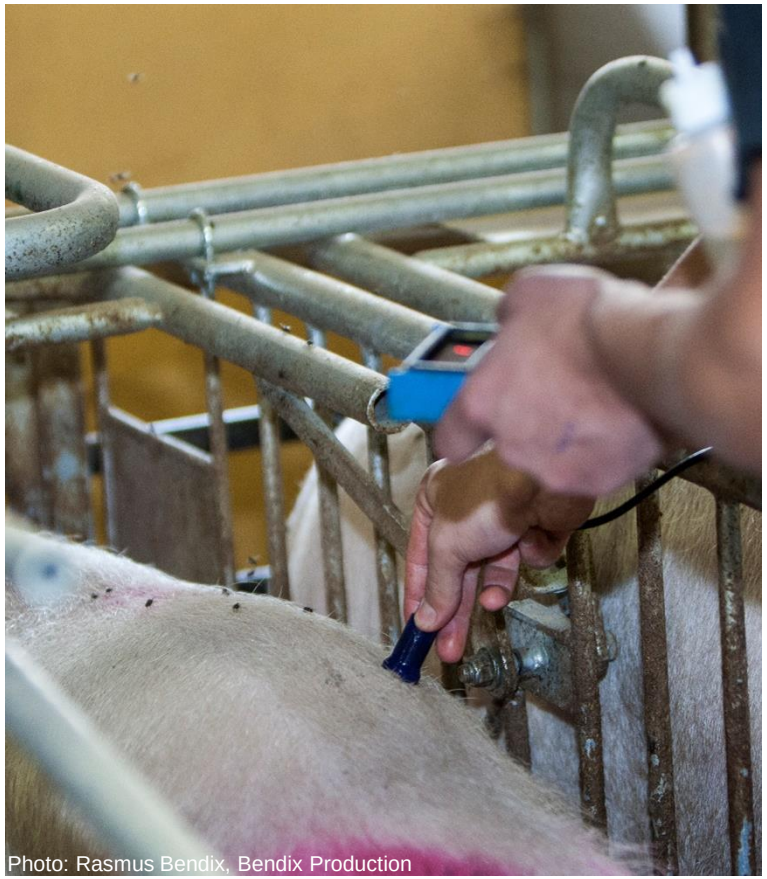
Results from Aarhus University prove our feeding curves

A wish of close to zero gain in fat sows





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Source: Wisbech et al. (2022): Journal of Animal Science, 2022, 100: 1-13

Do not use excess protein and amino acids for gestating sows
No benefits for the fetuses

- No effect of increasing protein and lysine on birth weight
  - 4.2 g SID lysin per FUsow versus 5.8 g SID lysine per FUsow
- No effect of 4.5 versus 3.5 FUsow per day on birth weight
  - At 3.4 g SID lysine per FUsow
- No effect of extra amino acids on birth weight
  - 3.3 vs. 6.0 g SID lysine per FUsow


Photo: Rasmus Bendix, Bendix Production

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Sources: Sørensen og Bache.(2018): Meddelelse nr. 1158; Sørensen (2012); Meddelelse nr. 956; Sørensen (2008): Meddelelse nr. 821

Do not use excess protein and amino acids for gestating sows

Maternal gain will increase too much

- The change in weight gain (maternal gain) by using 5.0 instead of 4.0 SID lysine per FUsow during gestation:
  - Gilt: + 12 kg
  - Older sows: + 6 kg
- Increased weight = increased pressure on bones and joints

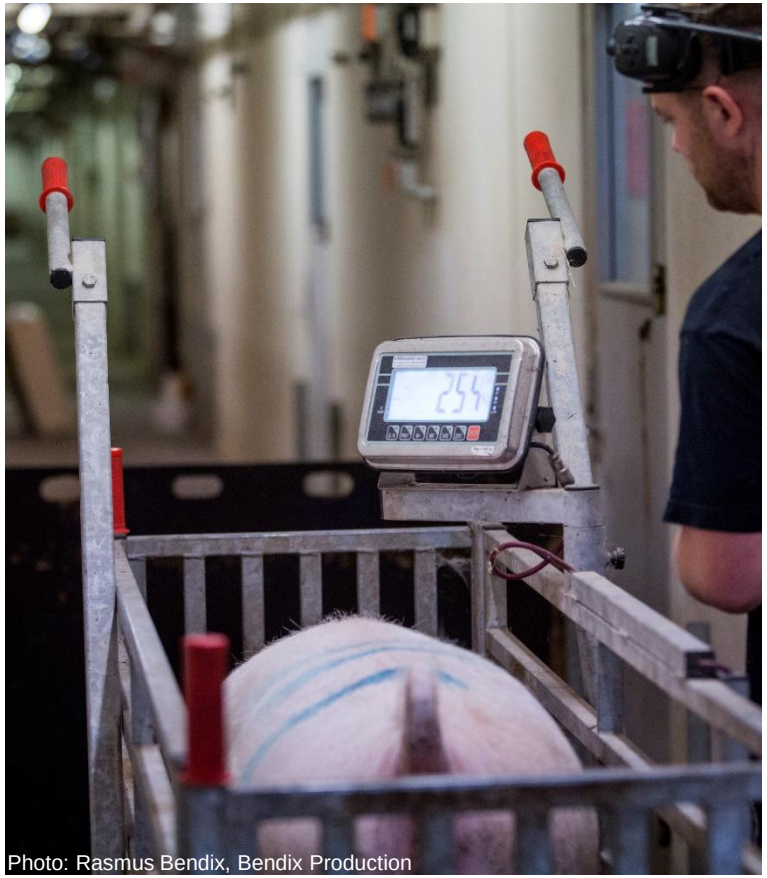

Photo: Rasmus Bendix, Bendix Production

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Dalhus Pigs

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Dalhus

- 600 sows and production of 30 kg pigs
- GenePro and zig-zag inseminations
- To employees and one trainee from January
- Compound feed bought from VA
- Health status: Blue SPF + MYC

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We aim to have a herd with good sows...

… which can perform optimally throughout many parities!

Our goals are:

- Vital piglets
- 19 live born and 1 still born piglet per litter
- Nursing capacity (weaned per weaning) on 13.5 piglets
- Mortality in farrowing section at maximum 10%
- Sows and piglets that thrive in all sections

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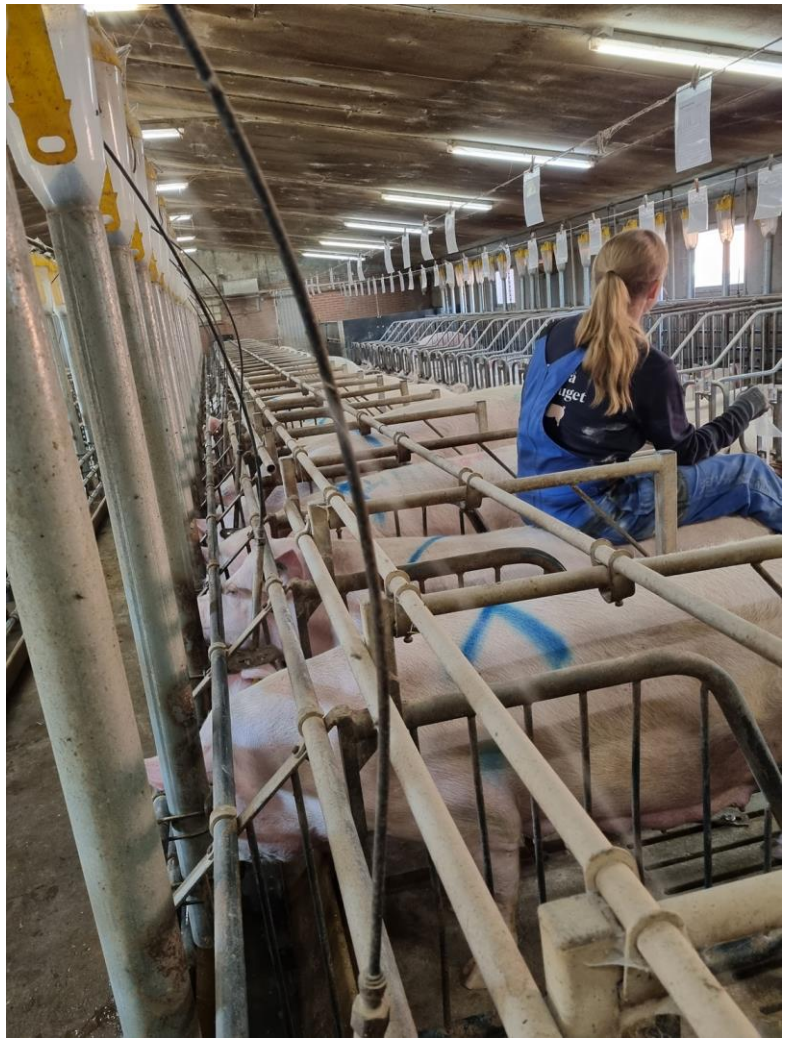
Sows in the service unit (løbestald)



- Sows are fed 5.25 FUsow per day after weaning
- Service and control unit
  - Body condition score are evaluated at insemination and often thereafter
  - When sows have obtained about 14-16 mm of backfat, the feeding level is adjusted to 2.6 FUsow per day
- All sows have normal body condition when moved to the gestation unit (drægtighedsstald)!

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Gestation unit (drægtighedsstald)

Feed

- 0.99 FUsow per kg
- 4.0 g SID lysine per FUsow

Feeding curve for sows

- Day 28-84: 2.75 FUsow per day
- Day 84-114: 3.85 FUsow per day

Feeding curve for gilts:

- Day 28-84: 2.2 FUsow per day
- Day 84-114: 3.3 Fusow per day

Good daily management – fine sows for the farrowing section!

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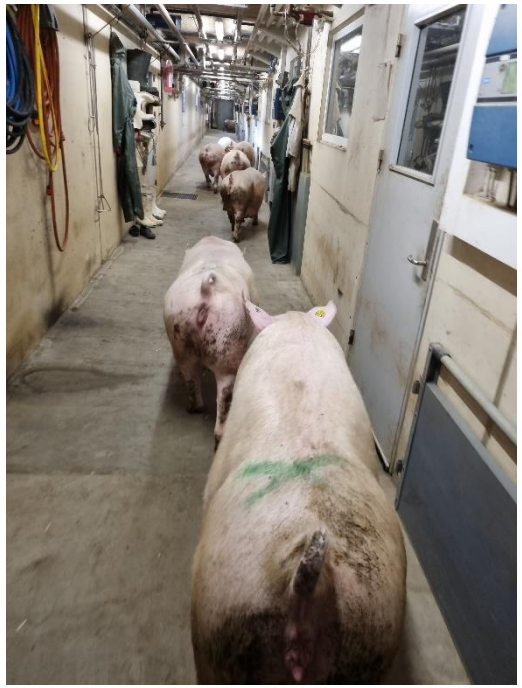
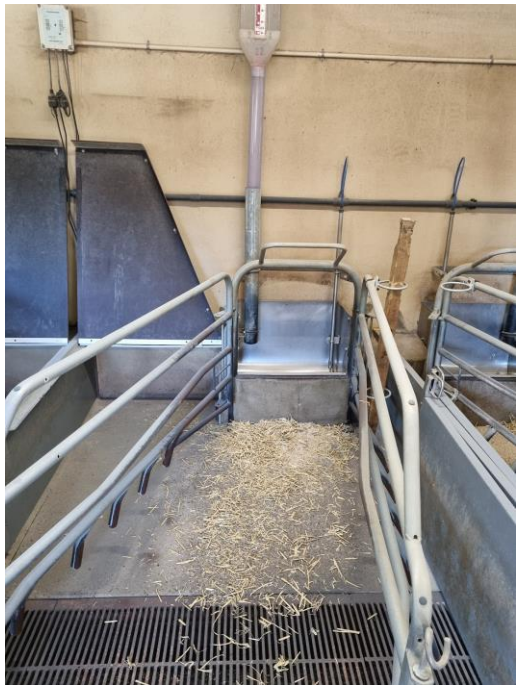
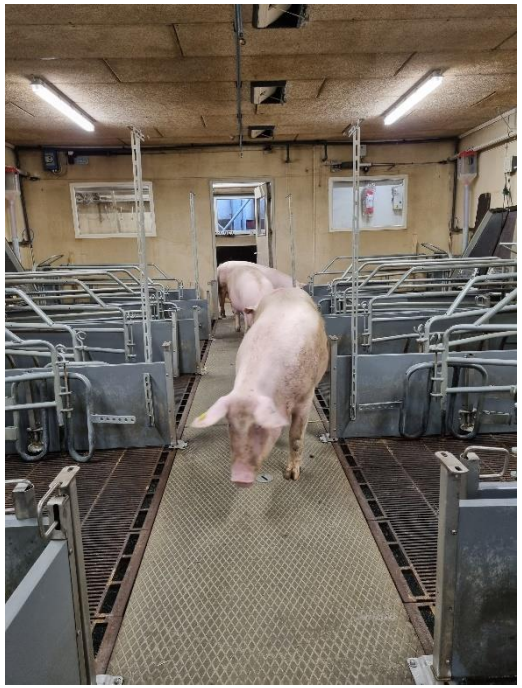
Farrowing section (farestalden)
Washing, drying out and preparation for sows

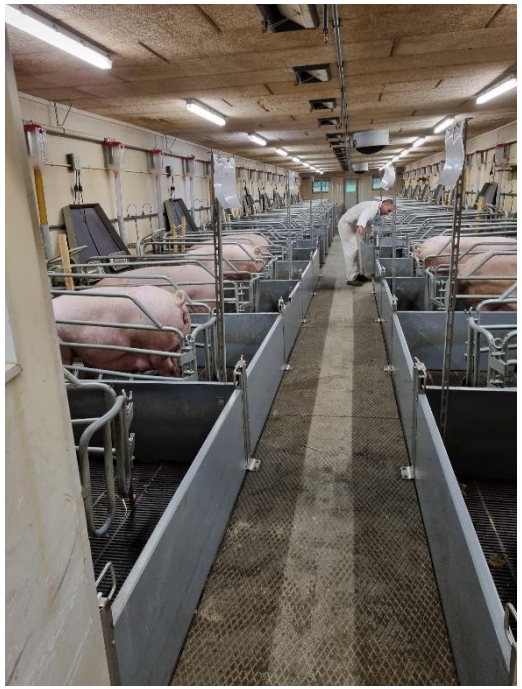


Sows are moved in a calm pace



Pens are prepared with feed and straw





The crate (bøjle) must be max. open

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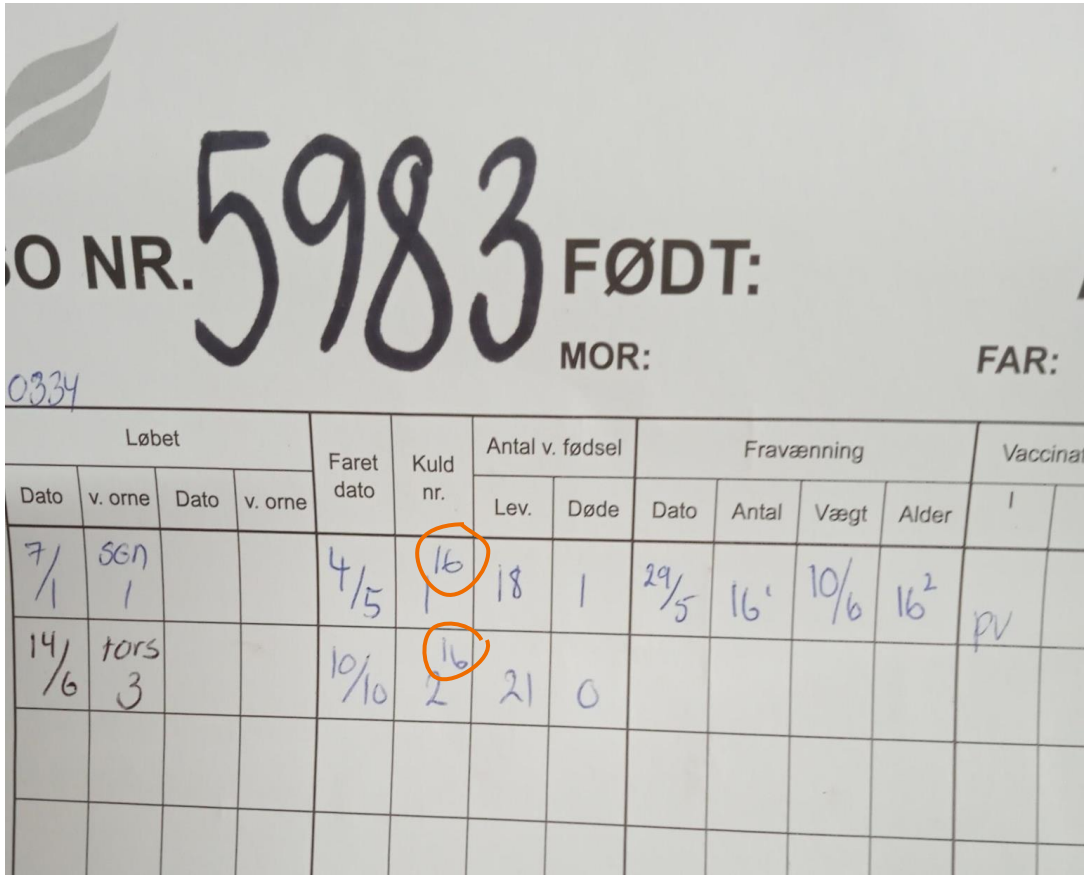
Focus to ensure that the sow is ready for farrowing

Insert to the farrowing section 3 days before farrowing

- Nest building material – plenty of straw
- Rubber mat for sows with vulnerable shoulders/OBS sows
- Count the number of teats
- Backfat 14-17 mm
- Beddings in the corner – wood flour and Staldren
- Feeding allowance: 3.3 Fusow per day
  - Reduction to 3.0 FUsow per day 2 days before expected farrowing



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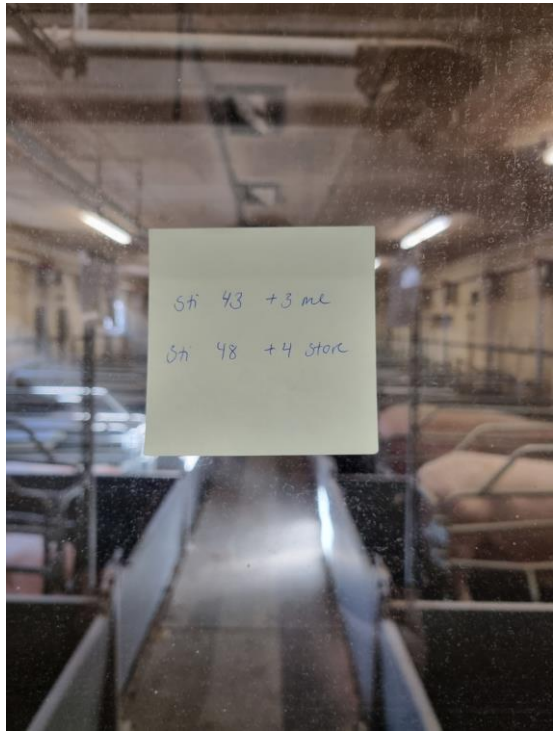
Focus on the farrowing process

- Good hygiene in the pen
- Flow of the farrowing
- 14-17 mm of backfat at farrowing
- Evening inspection
  - Farrowing assistance?
  - Possible moving of excess piglets



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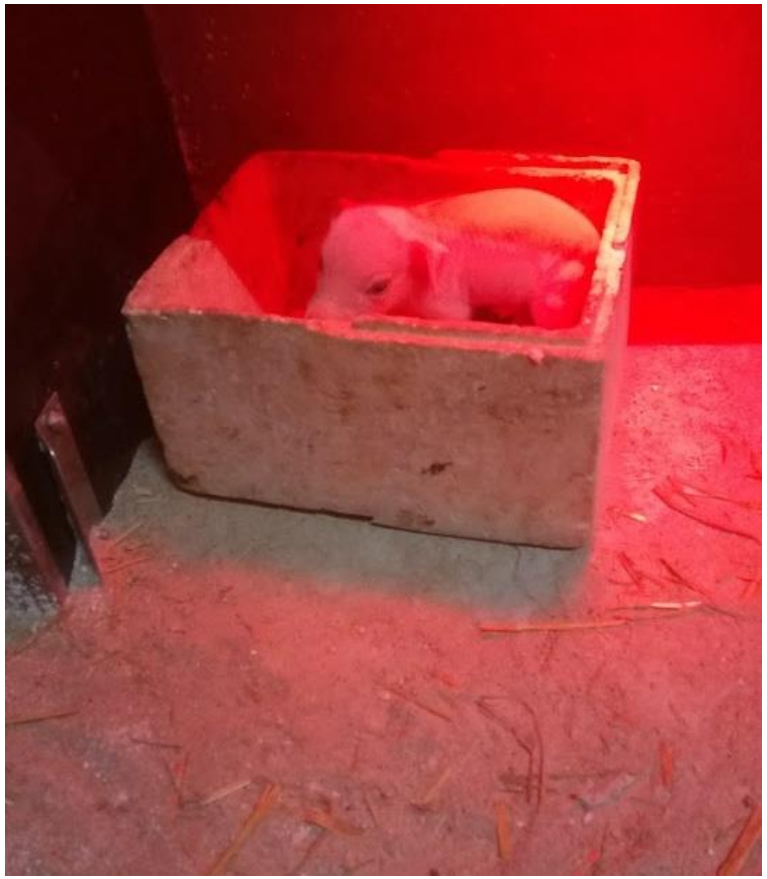
Focus on the piglets

- First feeding of the sow
  - Handling of umbilical cords
  - Training in using the corner (3 feedings)
- Cold piglets in styrofoam box (kuvøse)
- Making nurse sows
- Quick litter equalization – right after the morning feeding!
  - Rest for the individual sow – she gets the piglets to nurse!
  - Ensure colostrum/milk for all piglets
  - Best chances of survival



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Two-step nurse sows
Our strategy

<u>2nd parity sow with 7 days old piglets:</u>

⇨ gets big 0-1 day old piglets with dry umbilical cords

⇨ has new piglets along with old piglets for about 1.5 hour = continuous milk letdown

<u>1st parity sow with min. 21 days old piglets:</u>

⇨ piglets are moved to climate section

⇨ the sows receive 7 days old piglets from the 2nd parity sow

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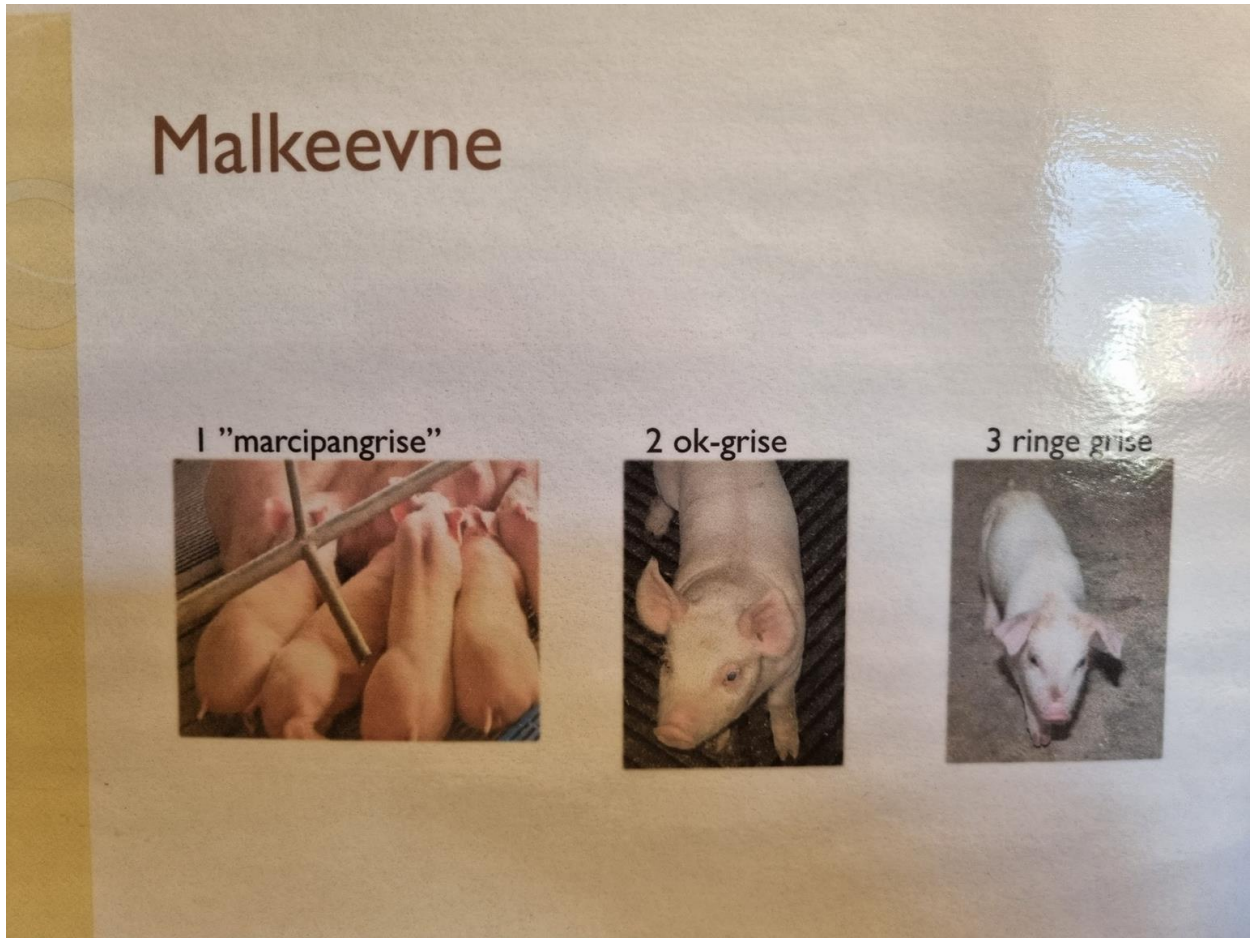
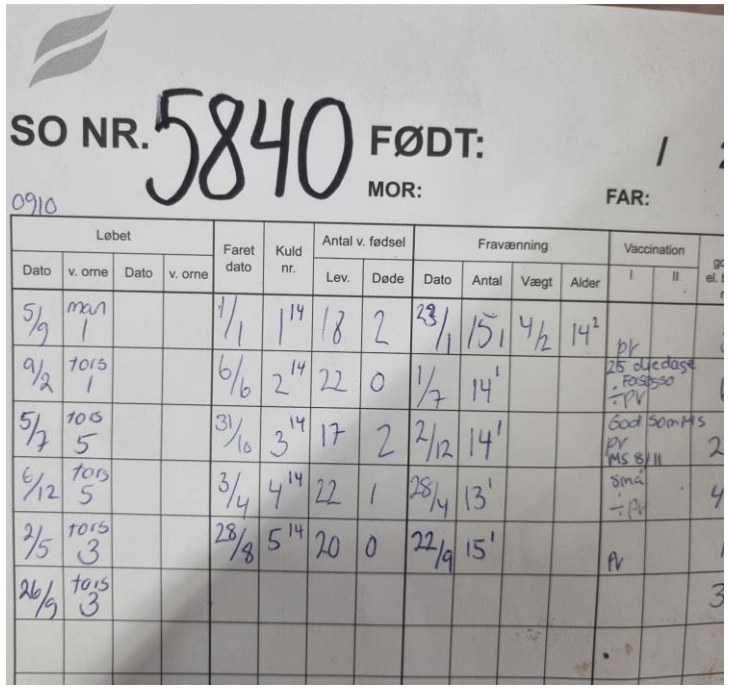
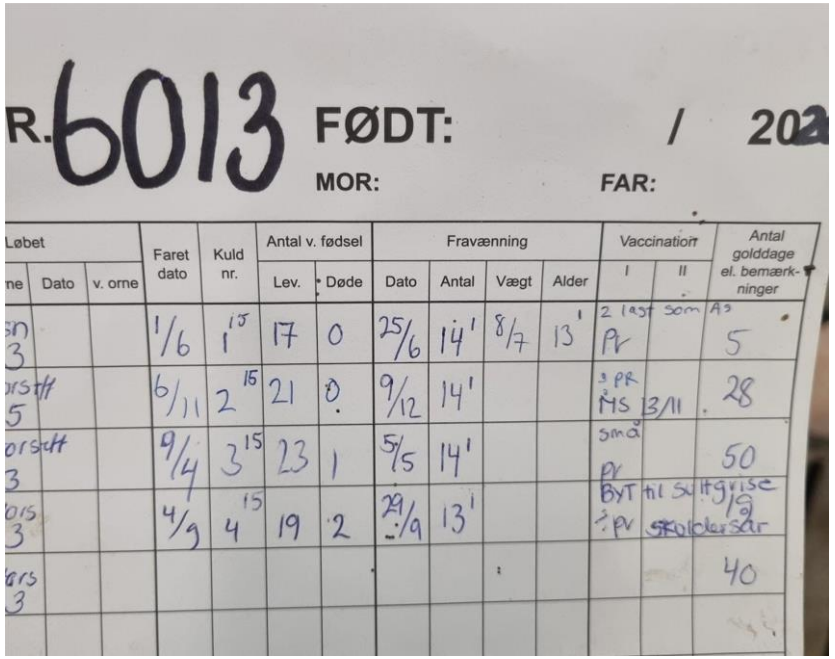
Know your super milking sows!







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Litter equlization
Fixed routines at all farrowings

Which piglets for which sows?

- 1st parity: Big or medium-big piglets
- 2nd parity: Medium-big or medium piglets
- 3rd and 4th parity: Small piglets
- 5th parity and older: Medium piglets
  (look at their nursing capacity)

Fast and accurate litter equalization = the sow needs rest so she can focus on milk production for the piglets!

An extra piglet in the litter is better than a missing piglet in the first days

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Sow in the center
Check all farrowing pens every day!

Look at the sow
- Has she eaten her feed, if not – why?
- Medicine?
- Udder and teats?
- Red shoulders/shoulder ulcers?
- Farrowing crate (bøjle)?

Look at the feed
- Adjust every day when needed

Look at the piglets
- Diarrhea?
- Arthritis (ledbetændelse)?
- Starvation (sult)?
- Is the corner dry?
- Still the need for heating lamp (varmelampe)?

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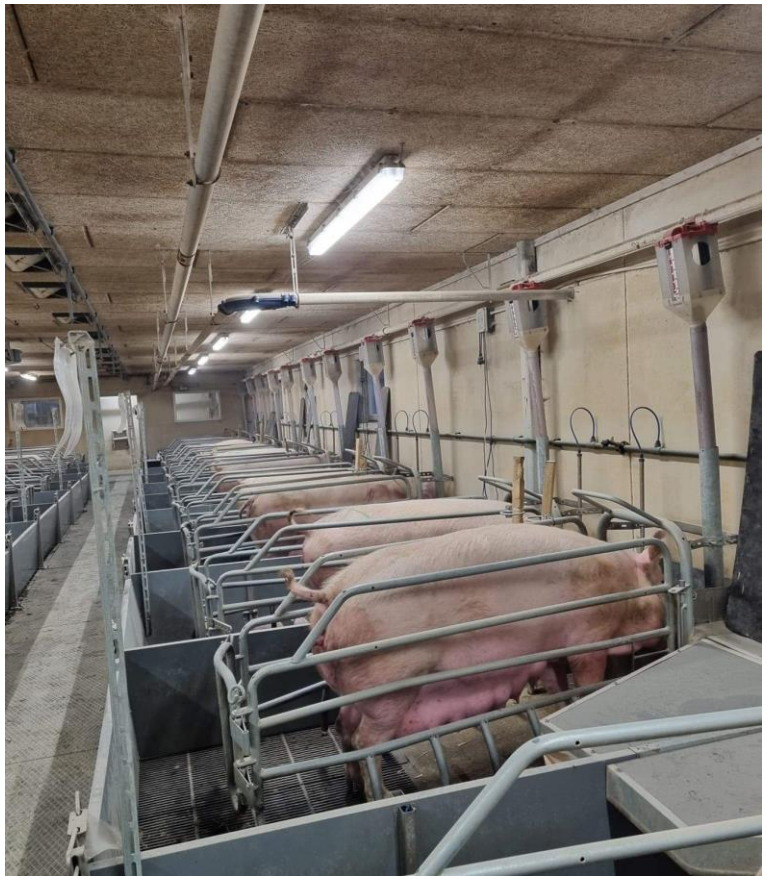
Feeding curve in the farrowing section

- First feeding after farrowing
  - Just a bit of feed
- Second feeding after farrowing = 1.0 FUsow
- One week after farrowing = 4.1FUsow
- Two weeks after farrowing = 7.9 FUsow

- Lactation feed with 1.06 FUsow per kg and 7.7 g SID lysine per FUsow

Foderkurve i farestald

Dage	Kg. pr. fodring	Kg. pr. dag	Fe pr. dag
Indsæt- 115	1,06 kg	3,2 kg	3,5 fe
116 - faring	0,9 kg	2,7	2,97 fe
1	0,3 kg	0,9 kg	0,99 fe
2	0,5 kg	1,5 kg	1,65 fe
3	0,6 kg	1,8 kg	1,98 fe
4	0,75 kg	2,5 kg	2,47 fe
5	0,9 kg	2,7 kg	2,97 fe
6	1,1 kg	3,3 kg	3,63 fe
7	1,25 kg	3,75 kg	4,12 fe
8	1,4 kg	4,2 kg	4,62 fe
9	1,55 kg	4,65 kg	5,1 fe
10	1,7 kg	5,1 kg	5,61 fe
11	1,85 kg	5,55 kg	6,1 fe
12	2,0 kg	6,0 kg	6,6 fe
13	2,15 kg	6,45 kg	7,1 fe
14	2,30 kg	6,9 kg	7,6 fe



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Dalhus

How do results look when the management is successful?

Looking at farrowing results in terms of stillborn piglets

Dødfødte \ Kuld nr.	-1	2	3	4	5	6	7	8	9-	Sum	%	Akk. %
0	18	68	52	23	17	9	4	2	1	194	31,5	31,5
1	21	41	42	35	17	12	3	4	1	176	28,6	60,2
2	4	16	28	21	19	9	9		2	108	17,6	77,7
3	5	5	14	20	15	8	4	1		72	11,7	89,4
4	3	3	4	5	6	2	1	1		25	4,1	93,5
5-9	3	6	5	7	8	4	4	1		38	6,2	99,7
10-25			1				1			2	0,3	100,0

SEGES INNOVATION

Found here: PigVision > Analyse Søer > Effektanalyse > PigVision > Fordelingskurver
Cloudfarms > Betafunktioner > Kuldfordelingsanalyse

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Dalhus

How do results look when the management is successful?

Looking at lacation results in terms of weaned per weaning

Antal \ Kuld nr.	-1	2	3	4	5	6	7	8	9-	Sum	%	Akk. %
0	3	1	5			1				10	1,6	1,6
1-9				1		1				2	0,3	1,9
10		1	1			3				5	0,8	2,7
11			5	2	2		1	2		12	1,9	4,6
12	2	9	20	10	16	11	8	4	1	81	12,9	17,5
13	1	25	45	35	25	17	6	3	3	160	25,4	42,9
14	8	52	47	39	33	11	6	4	1	201	31,9	74,8
15	8	54	22	21	10	6	3			124	19,7	94,4
16	2	12	7	8	2	1				32	5,1	99,5
17-30		1	1	1						3	0,5	100,0

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Dalhus

How do results look when the management is successful?

Looking at output from the service unit (løbestald)

Dage fra Fravænning til Løbning \ Kuld nr.	-1	2	3	4	5	6	7	8	9-	Sum	%	Akk. %
2		1								1	0,2	0,2
3		1	5	3	1	2				12	2,5	2,7
4		43	82	70	51	28	10	4	2	290	61,1	63,8
5		71	34	21	9	4	3		1	143	30,1	93,9
6		7	1	1	3					12	2,5	96,4
7		1				1				2	0,4	96,8
8-10			1							1	0,2	97,1
11-16		7	1							8	1,7	98,7
17-20		3	1							4	0,8	99,6
21-28 (+ 21 dage)				1						1	0,2	99,8
29-100		1								1	0,2	100,0

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21-28 (+ 21 dage)				1						1	0,2	99,8
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Nurse sows ??

Oops…

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Feeding level and phase-feeding during lactation
Not the easy way to a higher milk production or nursing capacity

- No significant effects on nursing capacity or average daily litter gain
  - At high or low feeding level in early lactation (day 0-14)
  - High, medium or low feeding level in late lactation (day 15 to weaning)
  - Extra soybean meal on top of lactation feed

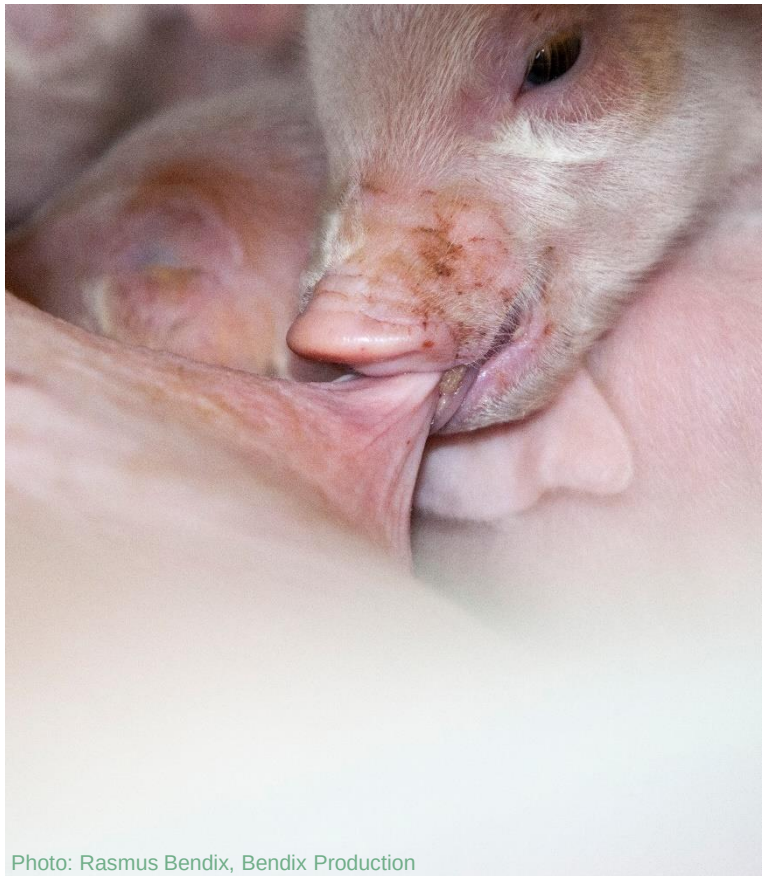

Photo: Rasmus Bendix, Bendix Production

SEGES INNOVATION

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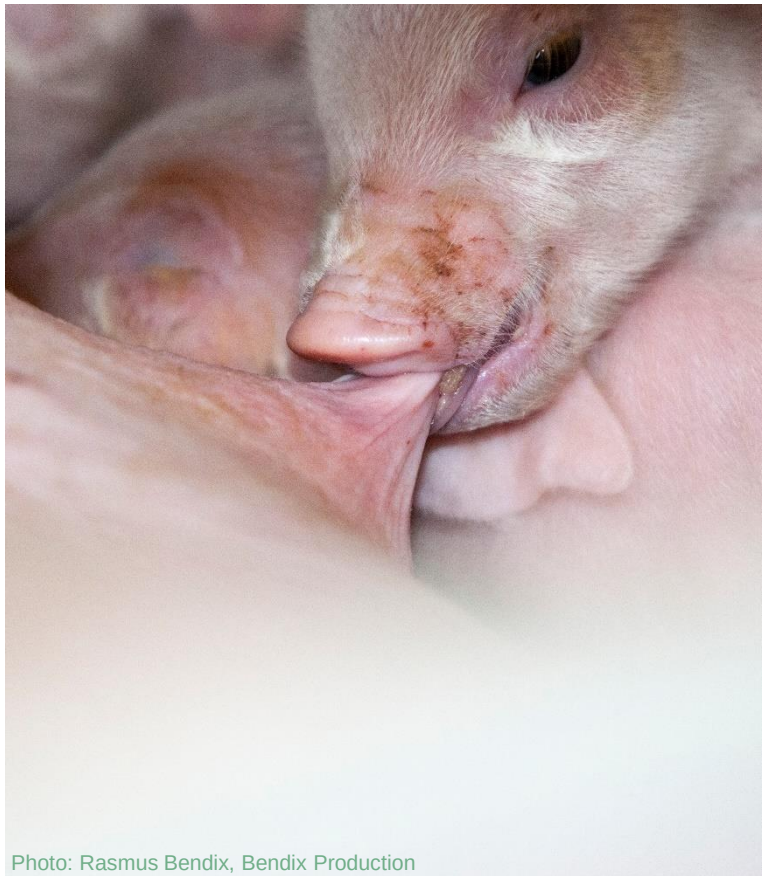
  - At high or low feeding level in early lactation (day 0-14)
  - High, medium or low feeding level in late lactation (day 15 to weaning)
  - Extra soybean meal on top of lactation feed
  - Phase-feeding – firstly with low protein and then with high protein (change at day 10)
  - Reverse phase-feeding – firstly with high protein and then with standard (change day 10)
- But the feeding level is important for the sow
  - To control sow weight loss
  - To control loss of backfat



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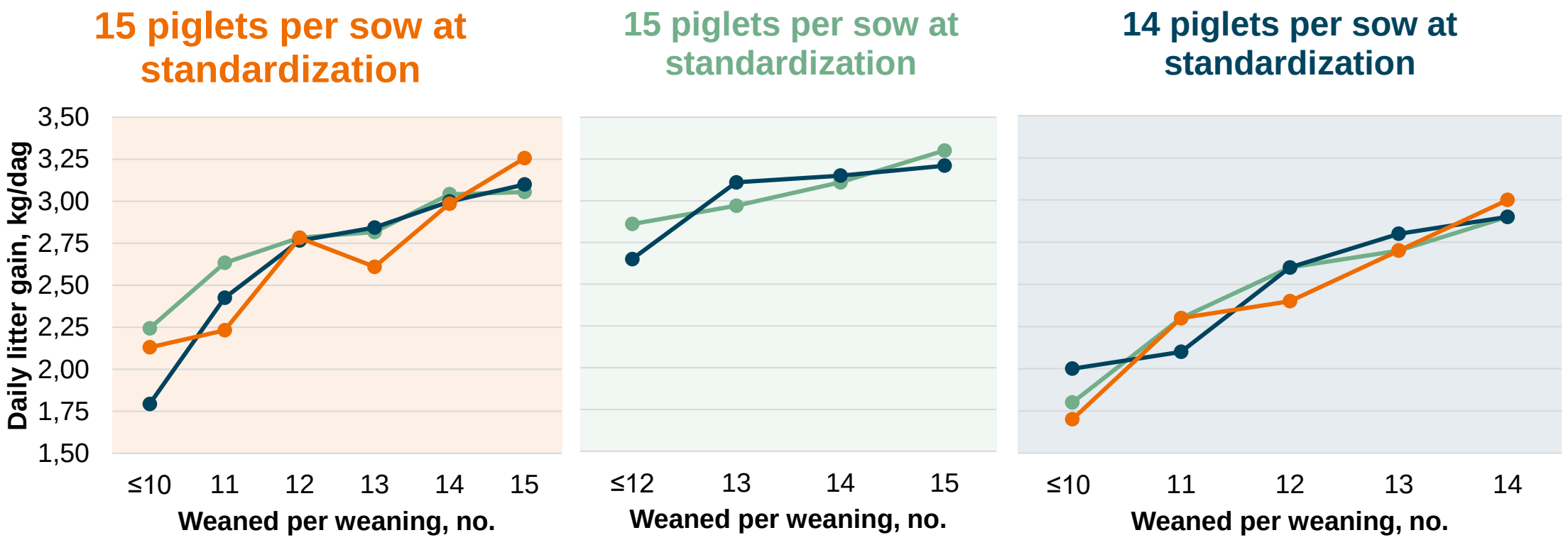
Correlation between number of piglets and litter gain

A high litter gain is achieved by having many piglets at the udder



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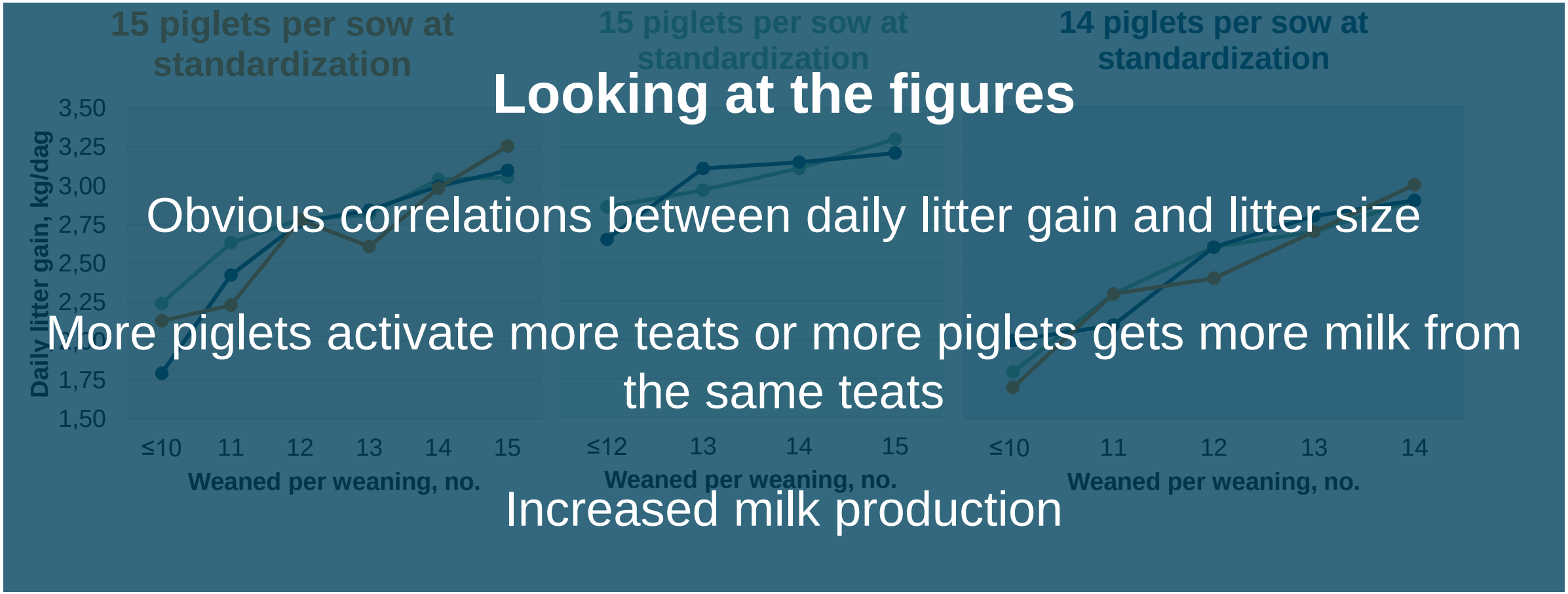
Sources : Bruun et al. (2022): Meddelelse nr. 1249; Bruun & Bache (2022): Meddelelse nr. 1250; Bruun et al. (2021): Meddelelse nr. 1236

Correlation between number of piglets and litter gain

A high litter gain is achieved by having many piglets at the udder

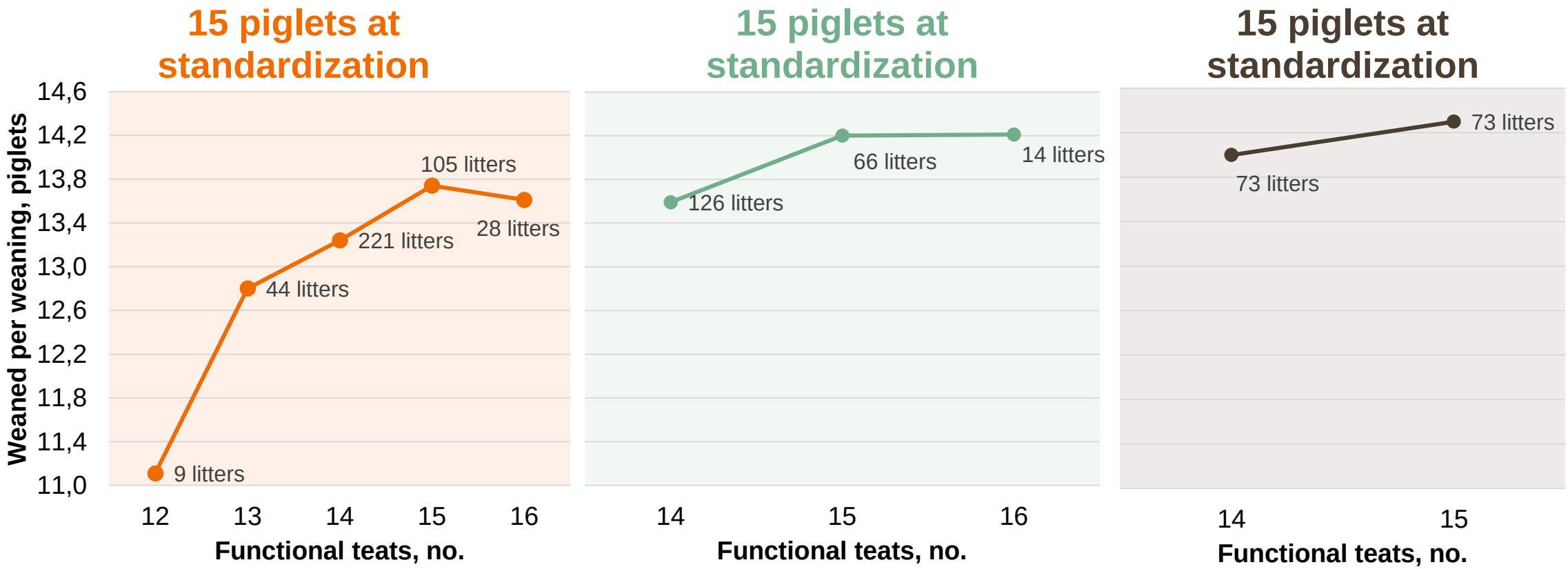


SEGES INNOVATION

Sources : Bruun et al. (2022): Meddelelse nr. 1249; Bruun & Bache (2022): Meddelelse nr. 1250; Bruun et al. (2021): Meddelelse nr. 1236

Association between the number of teats and the nursing capacity

Something to look out for in the best herds



Sources: Bruun et al. (2022): Meddelelse nr. 1249; Bruun & Bache (2022): Meddelelse nr. 1250; Moustsen og Nielsen (2020): Meddelelse nr. 1197

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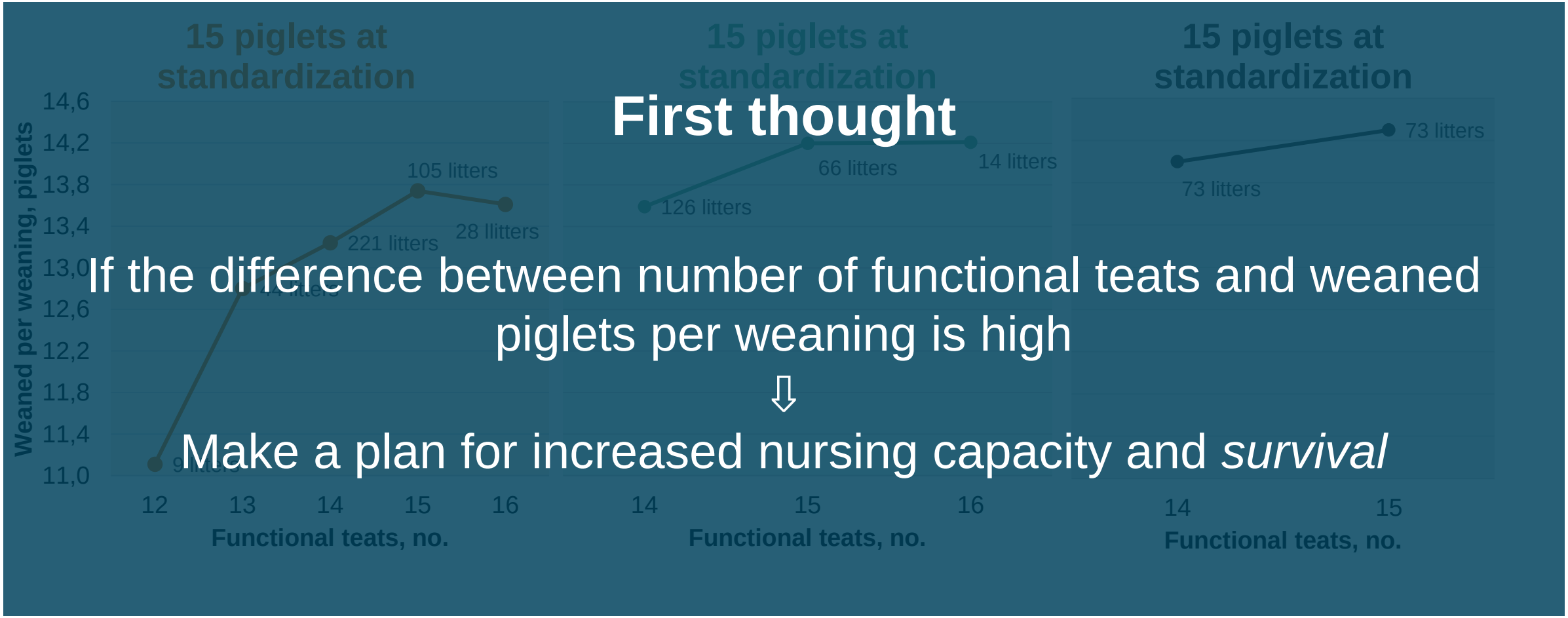

First thought

If the difference between number of functional teats and weaned piglets per weaning is high

⇩

Make a plan for increased nursing capacity and *survival*

SEGES INNOVATION

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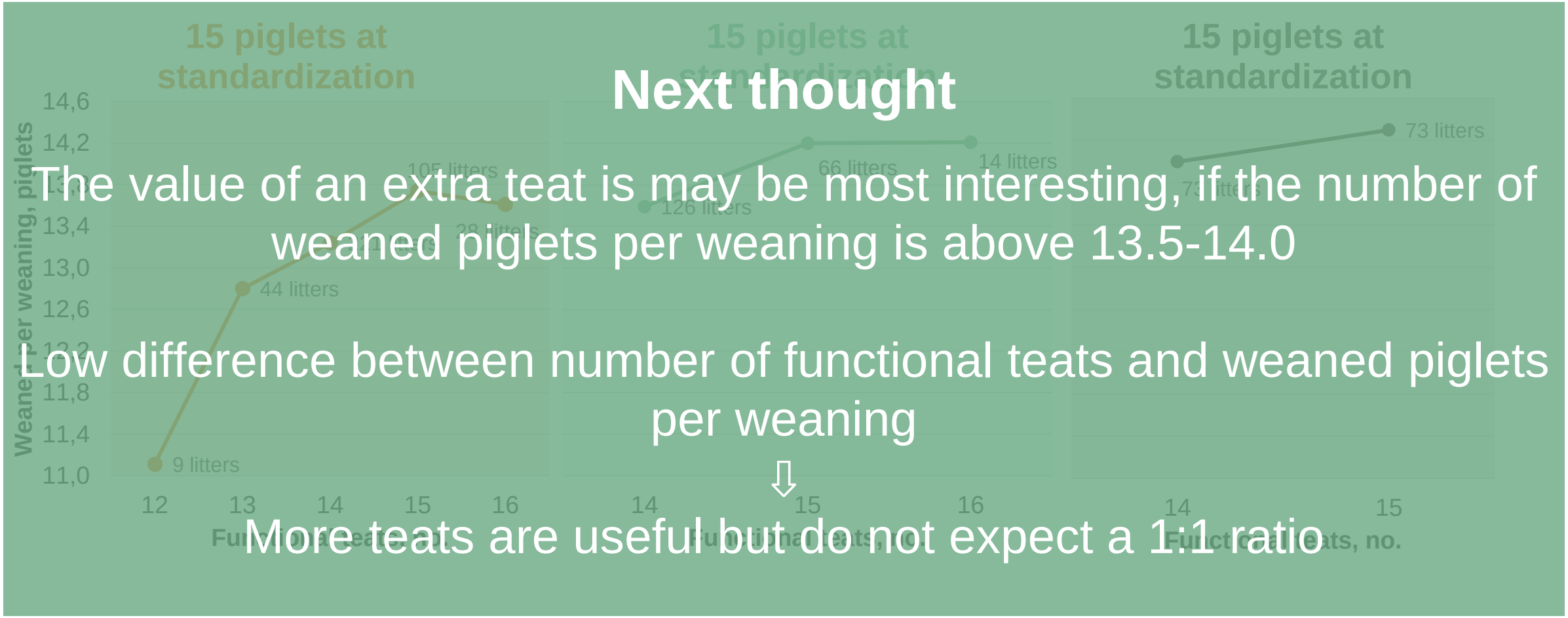

Next thought

The value of an extra teat is may be most interesting, if the number of weaned piglets per weaning is above 13.5-14.0

Low difference between number of functional teats and weaned piglets per weaning

⇩

More teats are useful but do not expect a 1:1 ratio

SEGES INNOVATION

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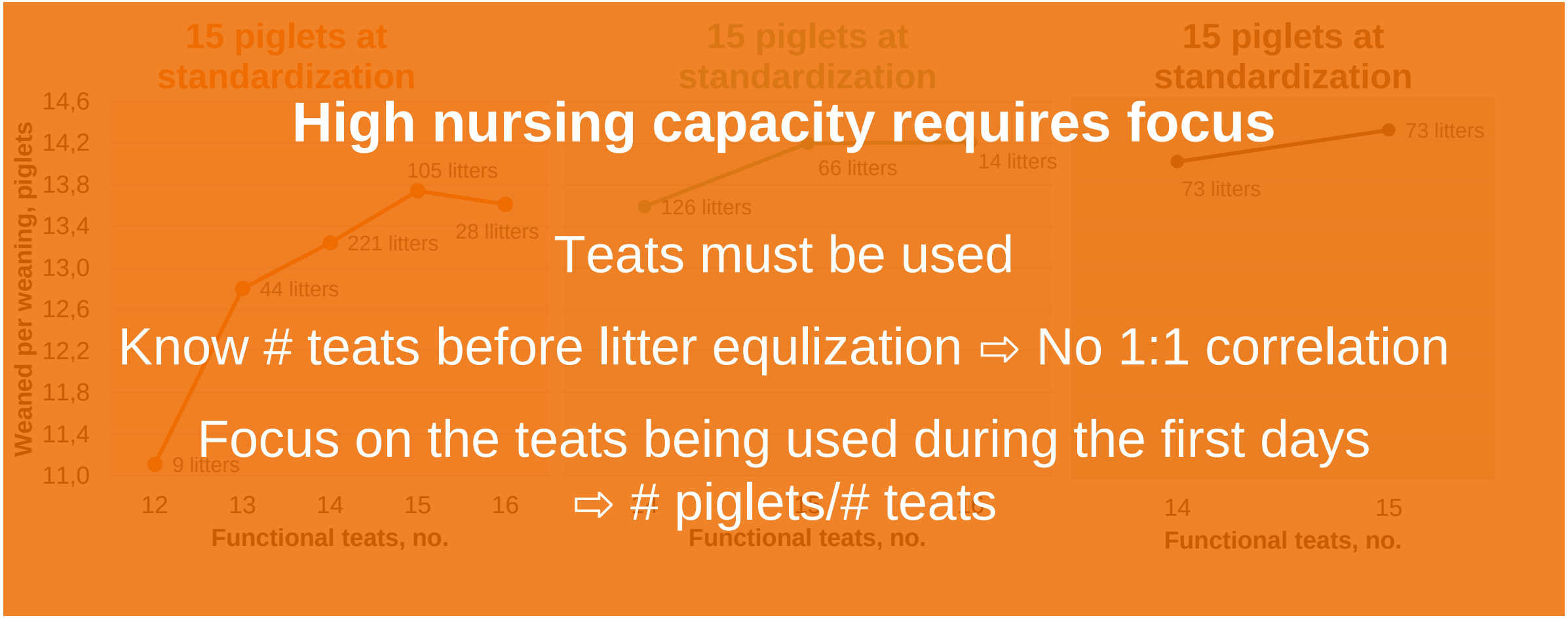

High nursing capacity requires focus

Teats must be used

Know # teats before litter equlization ⇨ No 1:1 correlation

Focus on the teats being used during the first days ⇨ # piglets/# teats

SEGES INNOVATION

Sources: Bruun et al. (2022): Meddelelse nr. 1249; Bruun & Bache (2022): Meddelelse nr. 1250; Moustsen og Nielsen (2020): Meddelelse nr. 1197

Summary

3 most important general routines to achieve succes in the farrowing unit

1. Sows with 14-17 mm backfat at farrowing (minimize variation)
2. Avoid getting heavy and bodybuilder sows (feeding levels and feed composition)
3. Know the number of teats and try to keep them busy during lactation (high litter gain)

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Summary

The 5 most important routines to be sucessful at Dalhus

1. Fine uniform sows are inserted to the farrowing sections
2. Calm and respectful handling of sows
3. Fast and accurate litter equalization with uniform piglets
4. Let the nurse sow stay in her own pen, and her let own litter and the new litter to get continuous milk letdown
5. Daily inspection of all sows and all piglets!

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Questions…

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Photo: Rasmus Bendix, Bendix Production