

Strategies to lower the number of stillborn piglets

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26 oktober 2022

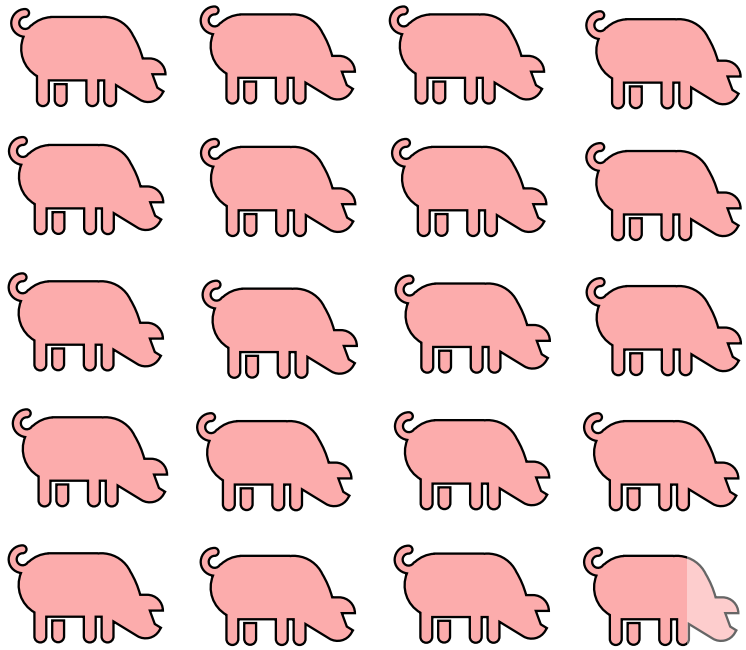
 Ministry of Food, Agriculture
and Fisheries of Denmark

gudp

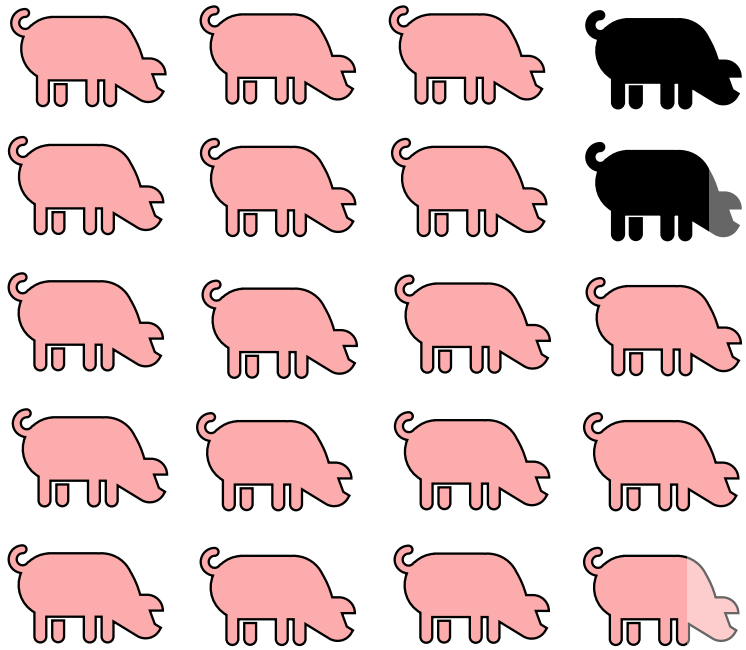
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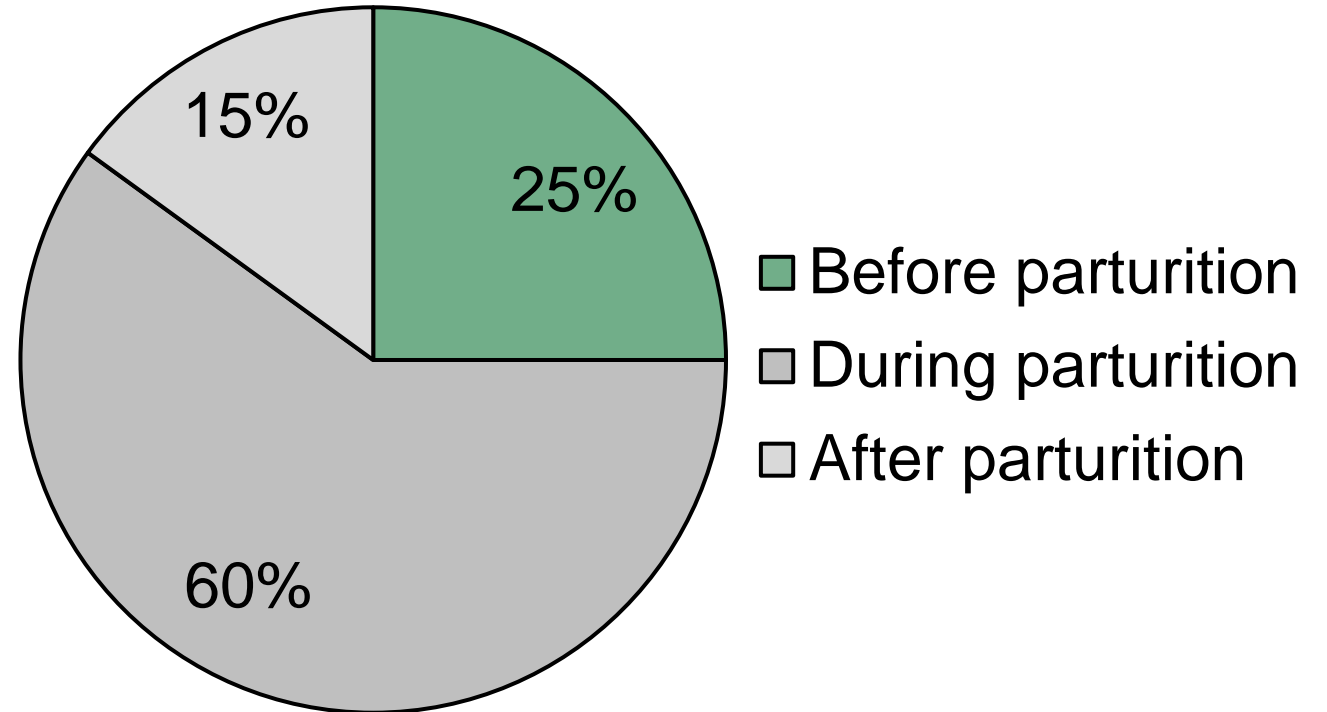
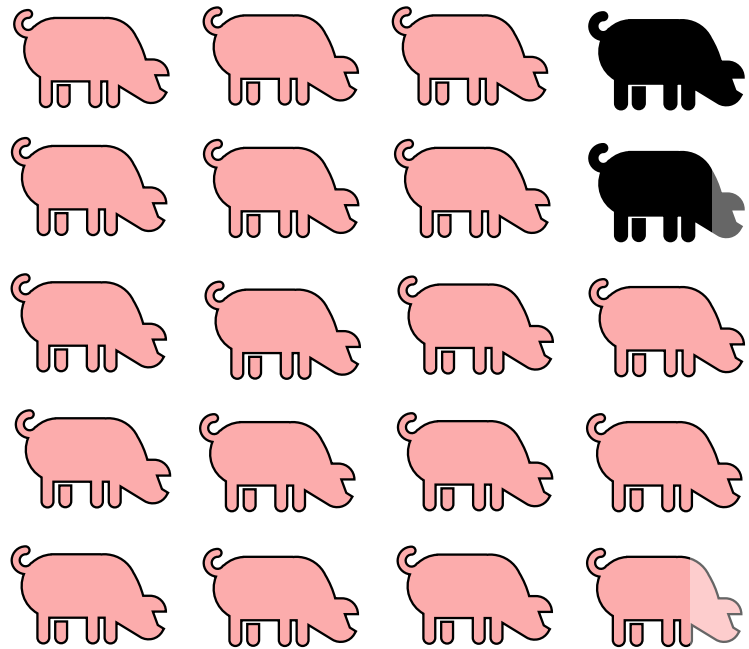
19.8 piglets born in total per farrowing



19.8 piglets born in total per farrowing – 1.9 stillborn



19.8 piglets born in total per farrowing – 1.9 stillborn





Analysis of stillborn

Your way to fewer stillborn

Farrowing assistance

Farrowing surveillance

Fiber

Feeding frequency

Feeding level

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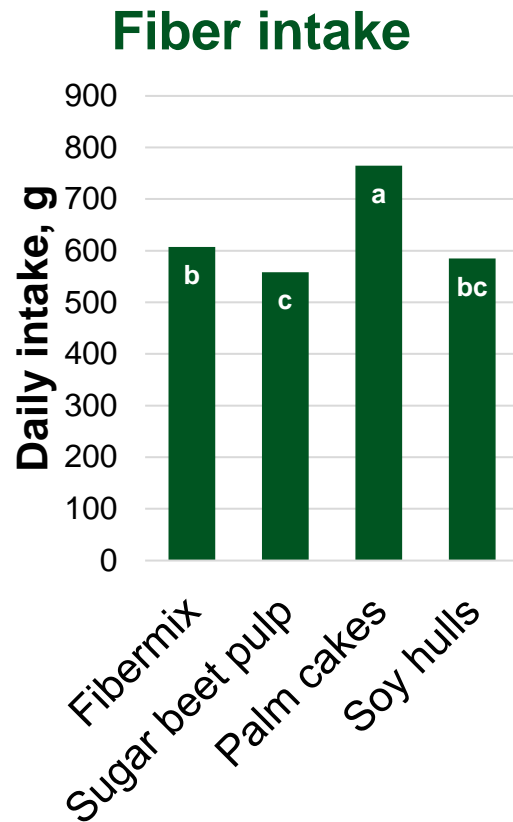
Feeding frequency

Feeding level

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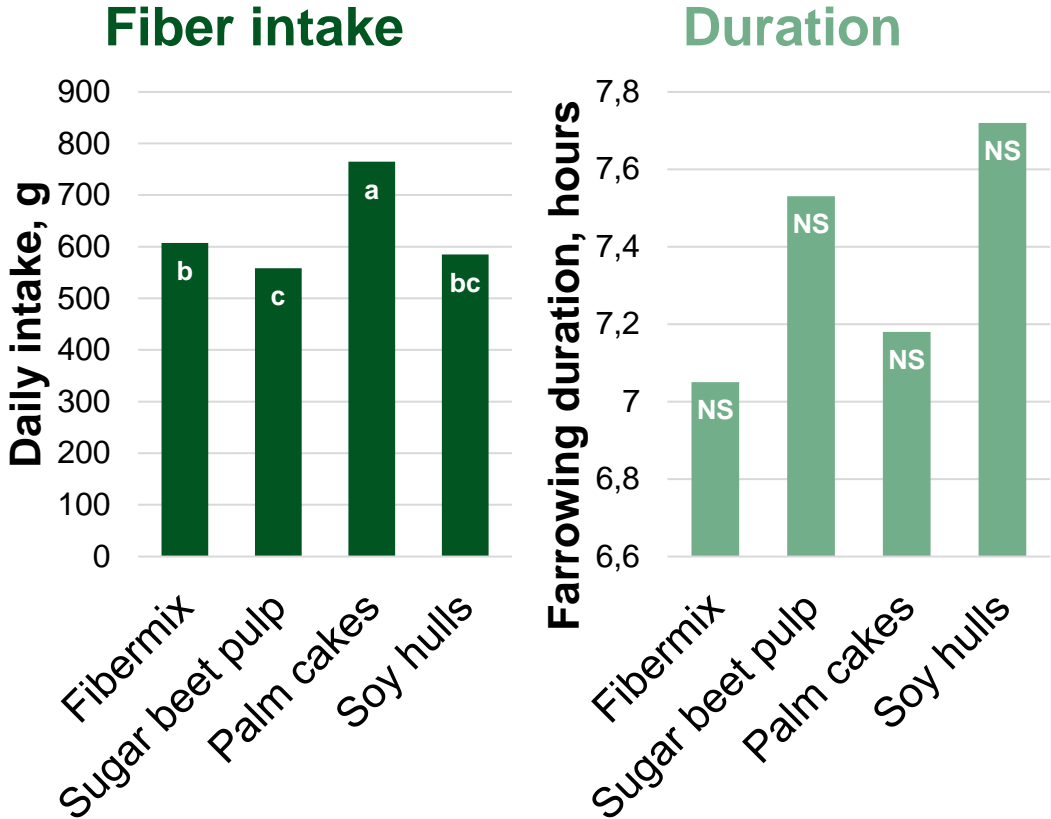
Fiber

Effect of different fiber sources on the farrowing process



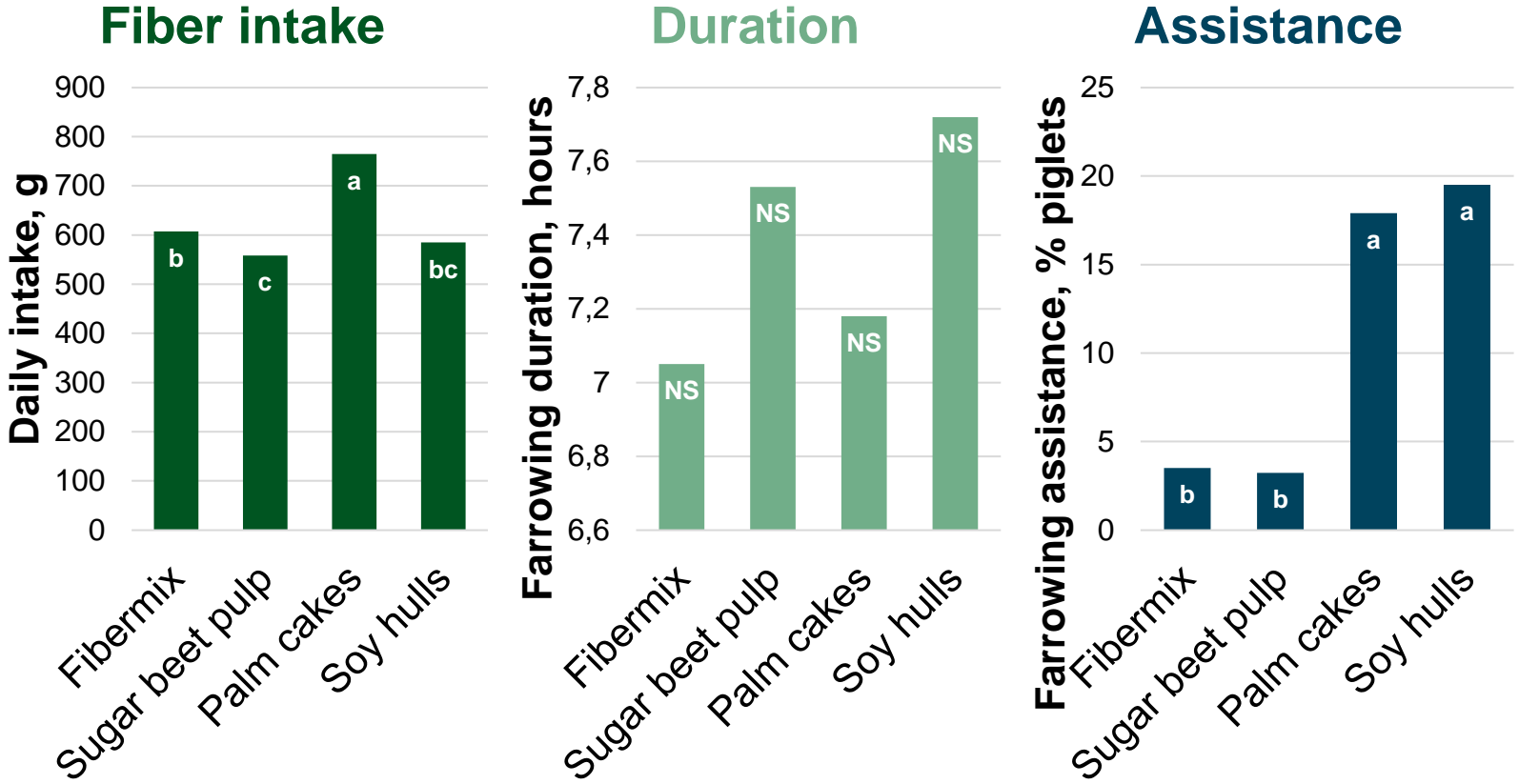
Fiber

Effect of different fibre sources on the farrowing process



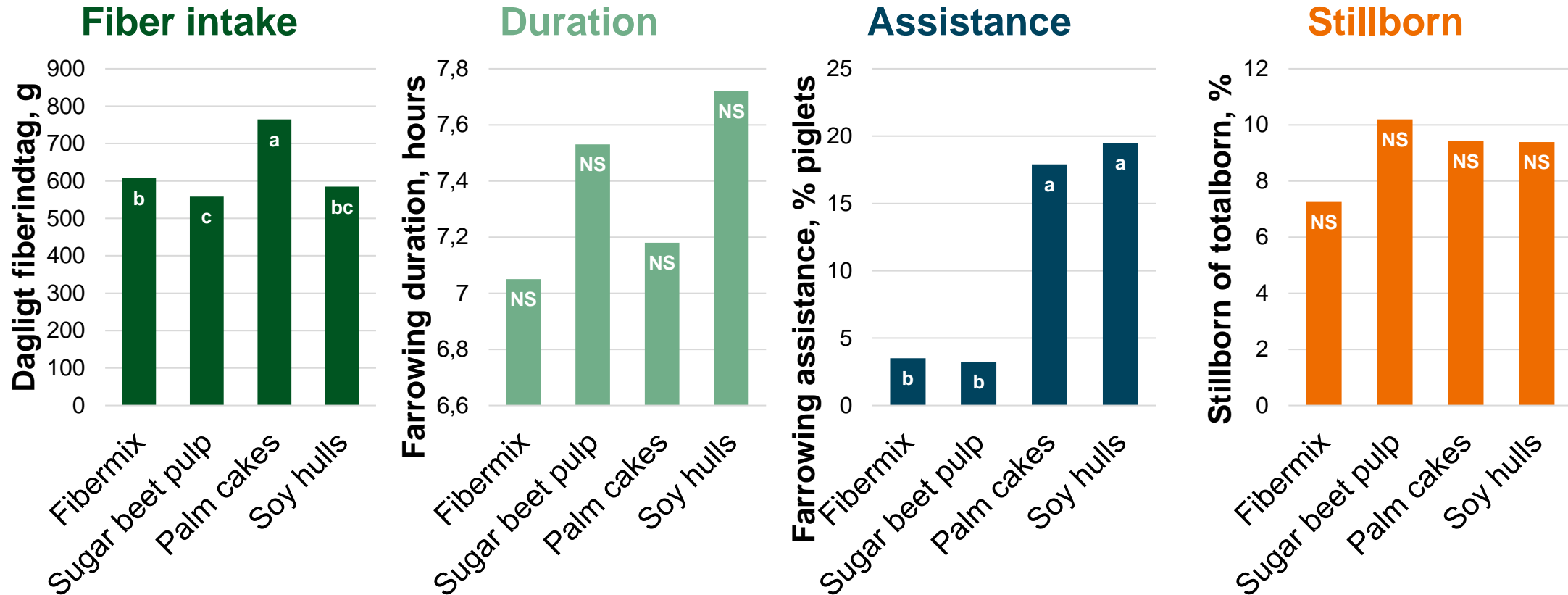
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Effect of different fibre sources on the farrowing process



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Effect of different fibre sources on the farrowing process





Fiber

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Analysis of stillborn

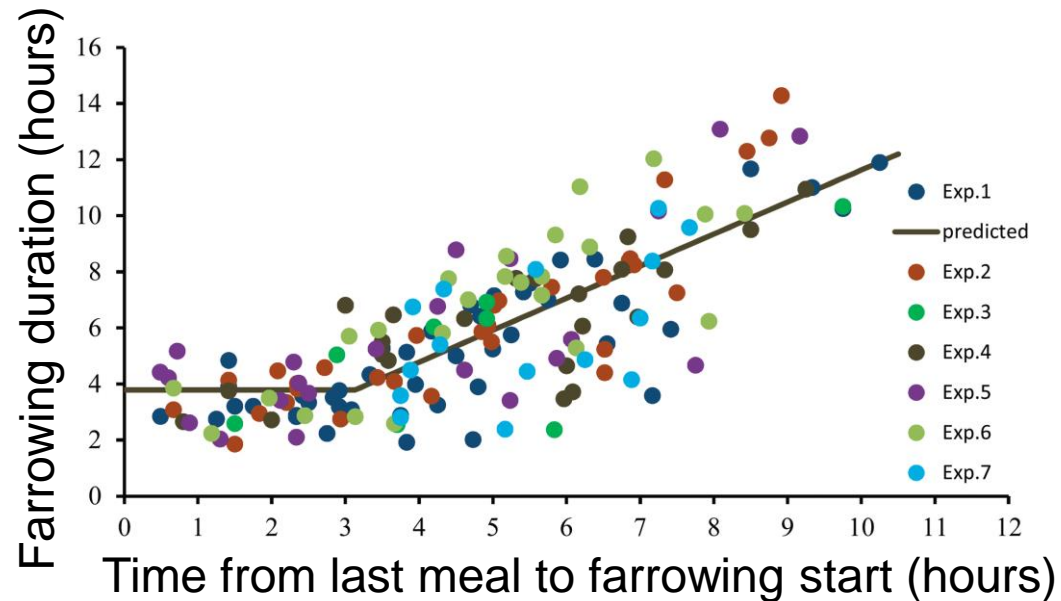
Your way to fewer stillborn

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Feeding frequency

Analysis of several trials at AU indicates a potential

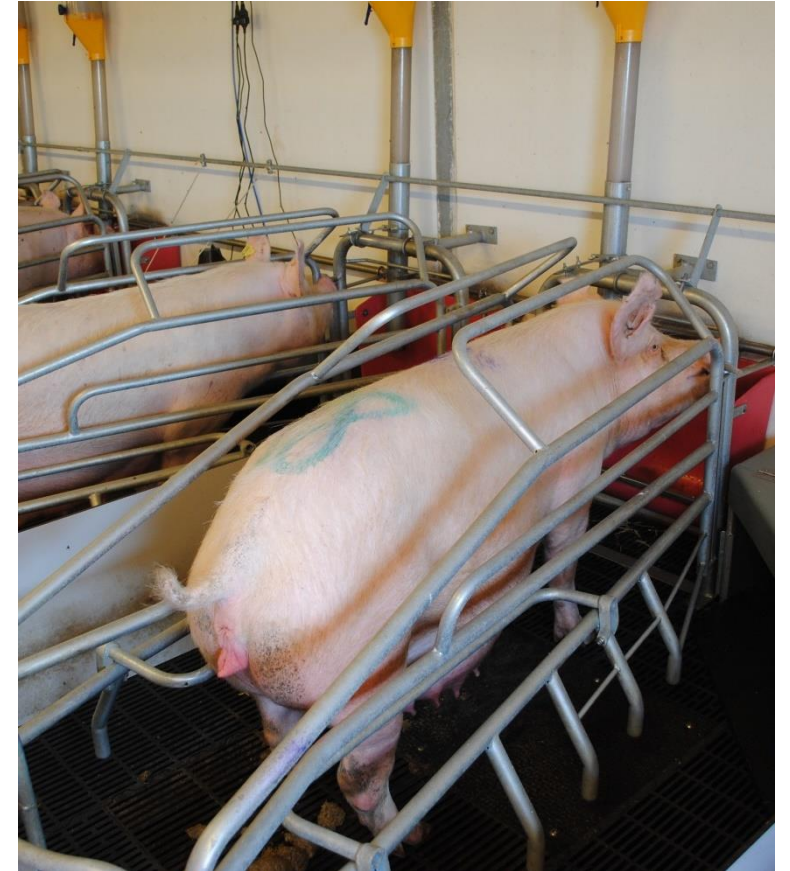
- The duration of farrowing increases linearly from 3 hours after the sow is fed
- Glucose uptake decreases after feeding (0-6 hours)
- Fiber must fulfill the need for energy between two feedings (4-24 hours)



Feeding 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?





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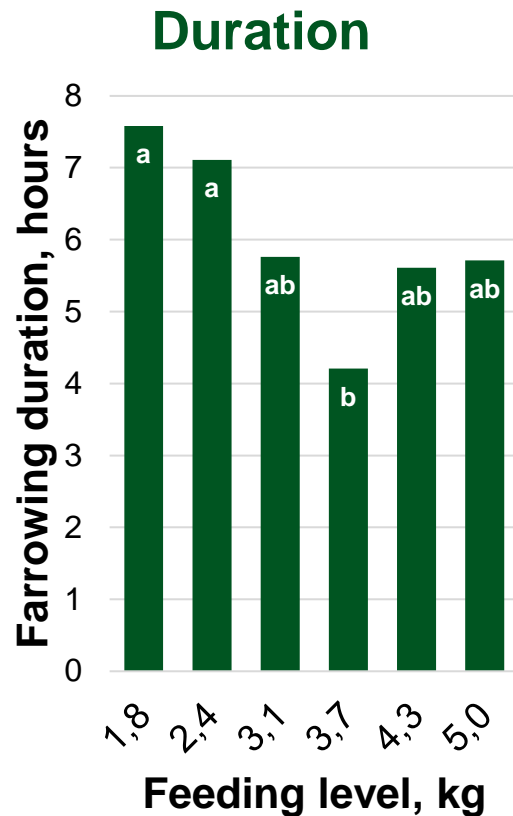
Feeding frequency

Feeding level

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Feeding level

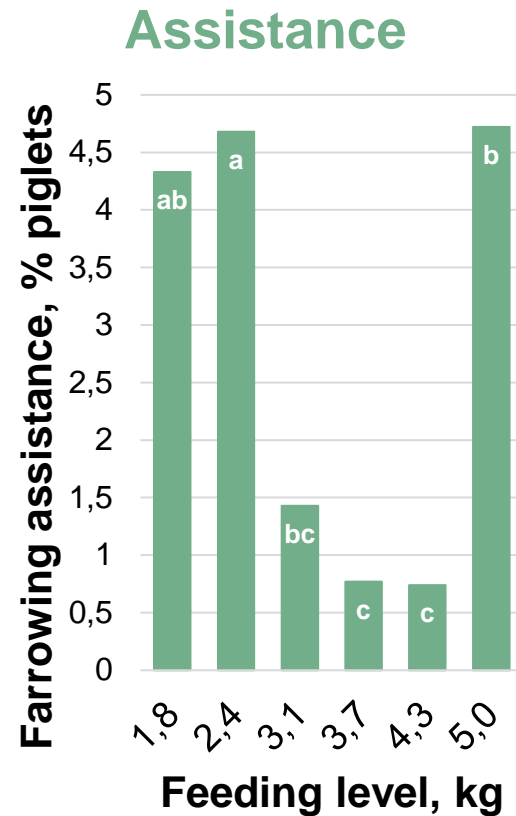
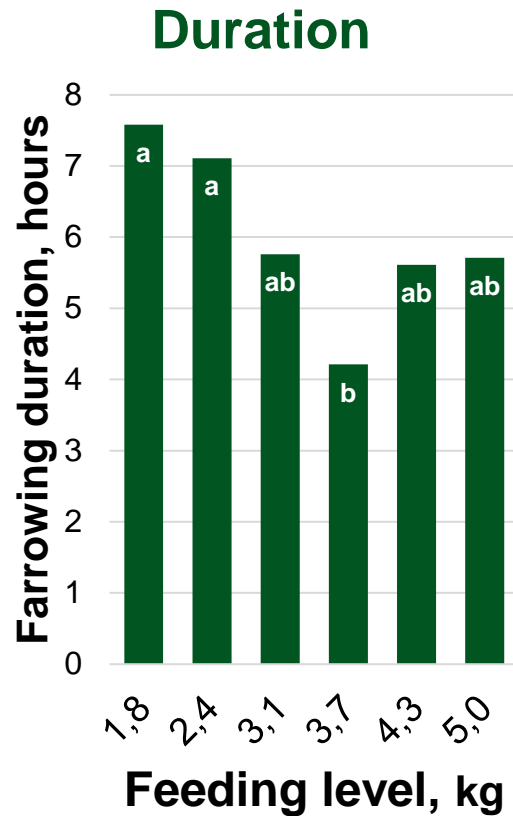
A higher feeding level before farrowing helps the sow



Low and high feeding levels may have same effects as constipation

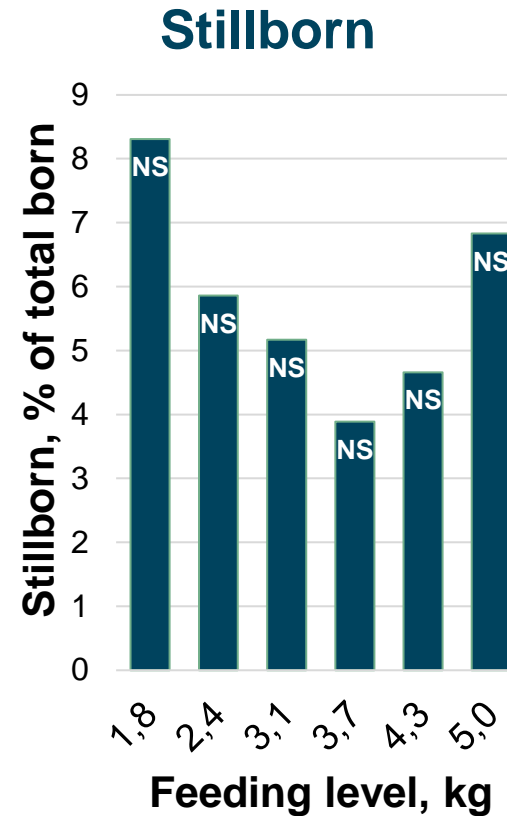
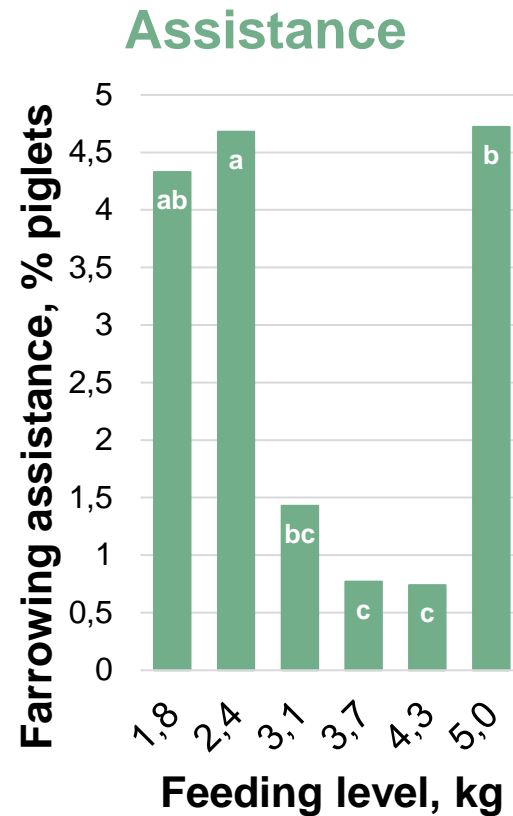
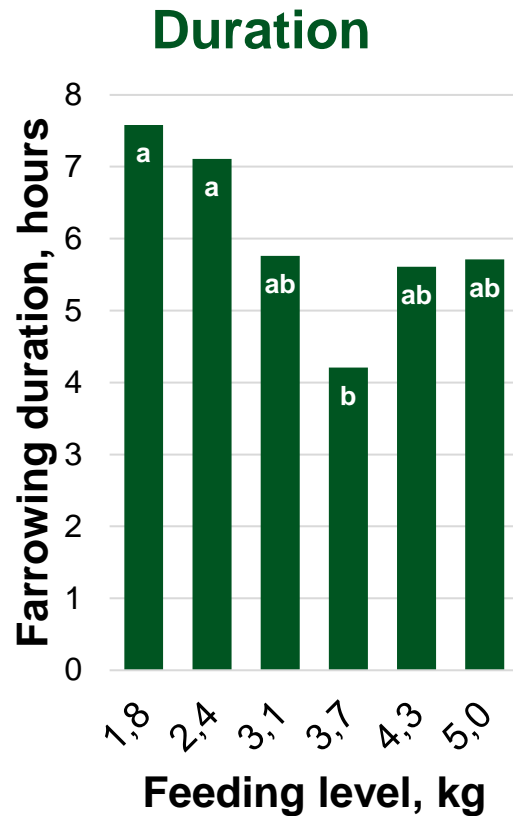
Feeding level

A higher feeding level before farrowing helps the sow



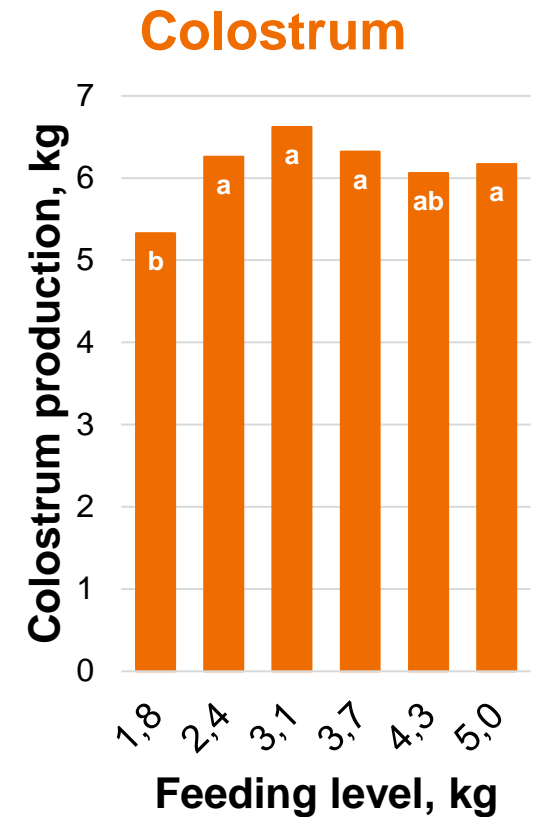
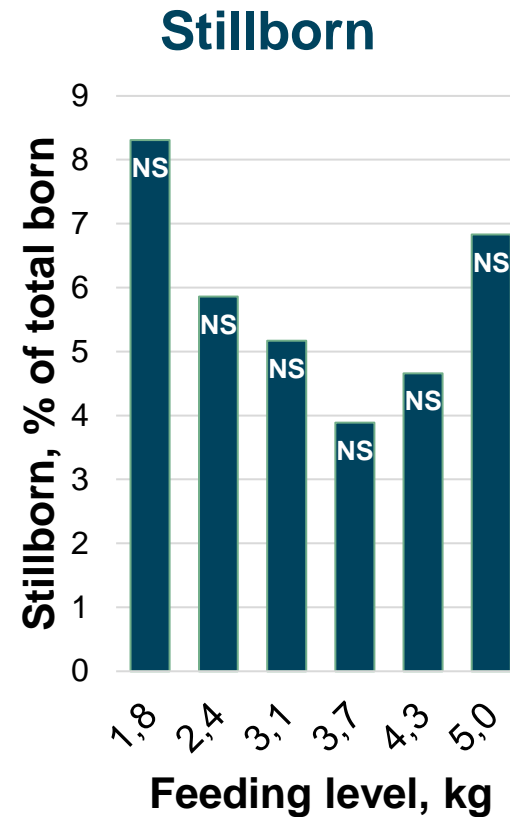
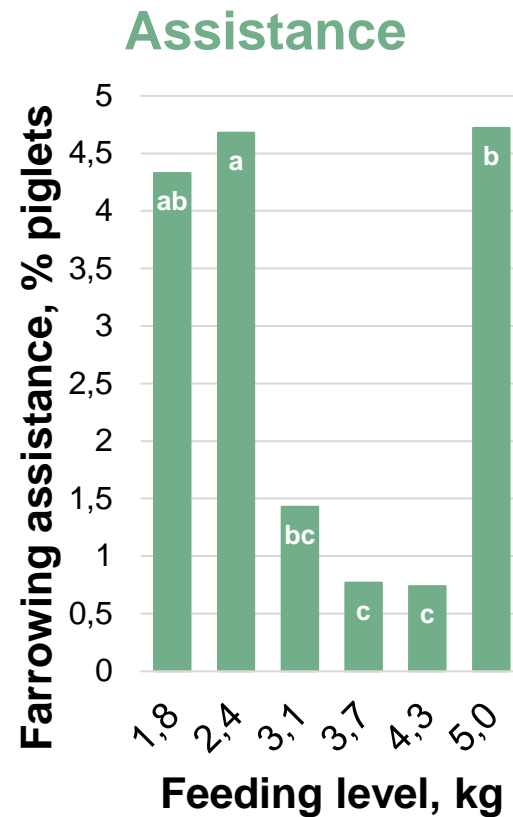
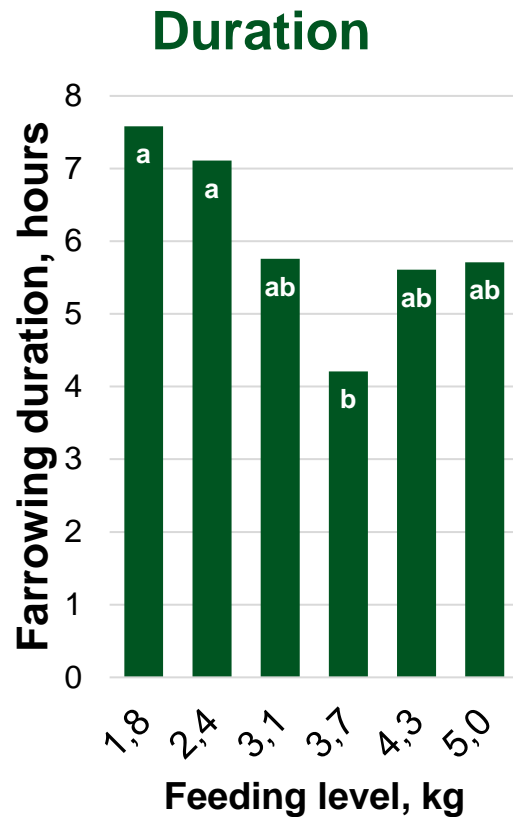
Feeding level

A higher feeding level before farrowing helps the sow



Feeding level

A higher feeding level before farrowing helps the sow

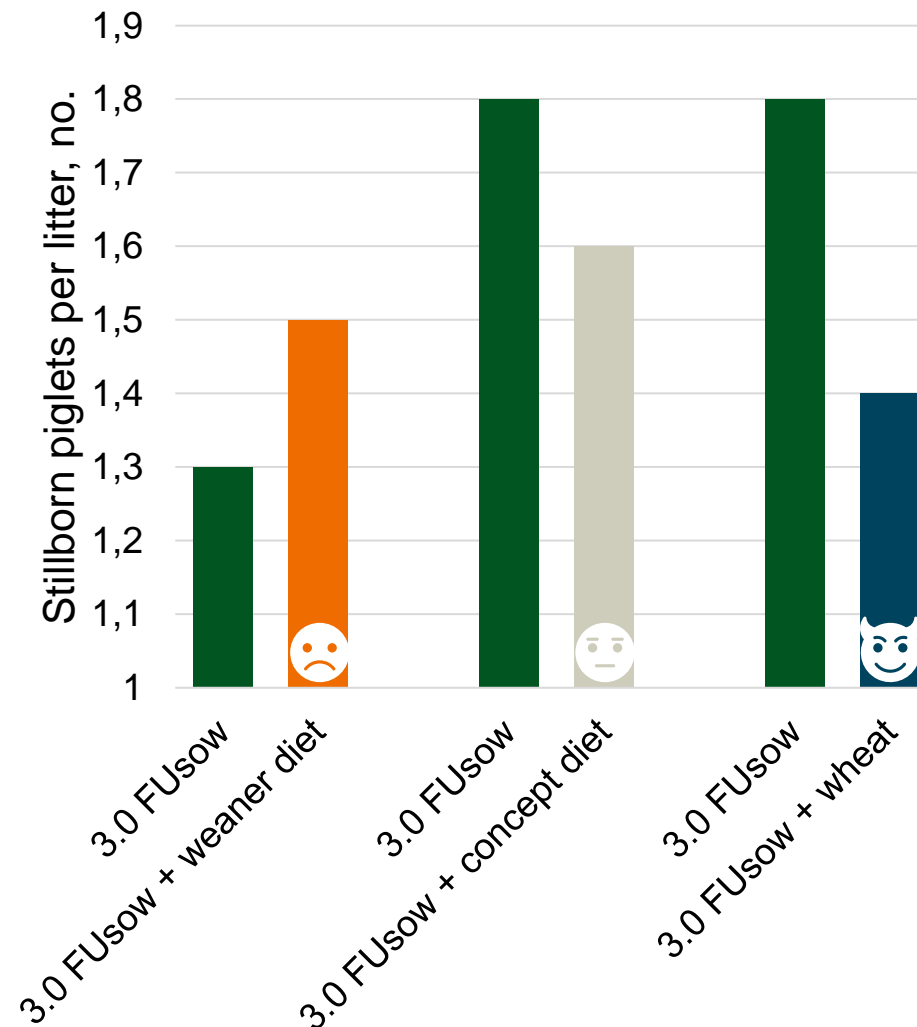


Feeding level

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

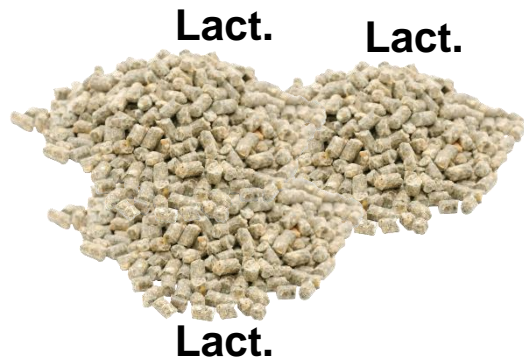
perhaps

- 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

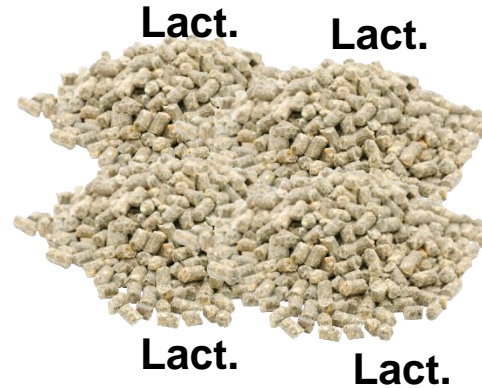


Feeding level

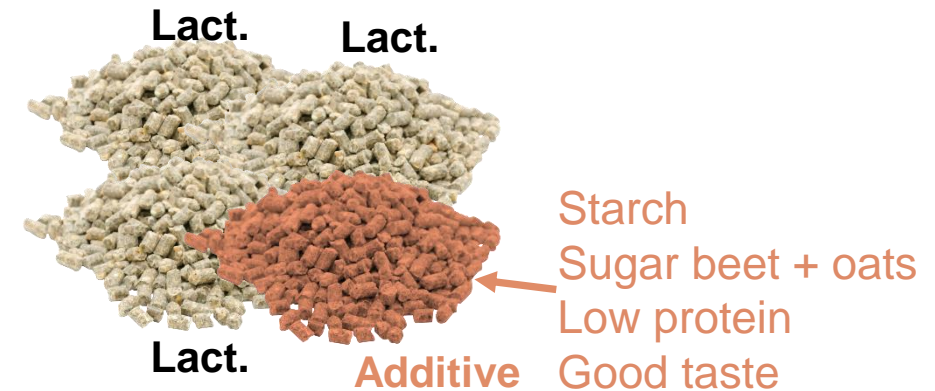
A higher feeding level and less protein before farrowing reduce stillborn



3 FUsow



4 FUsow



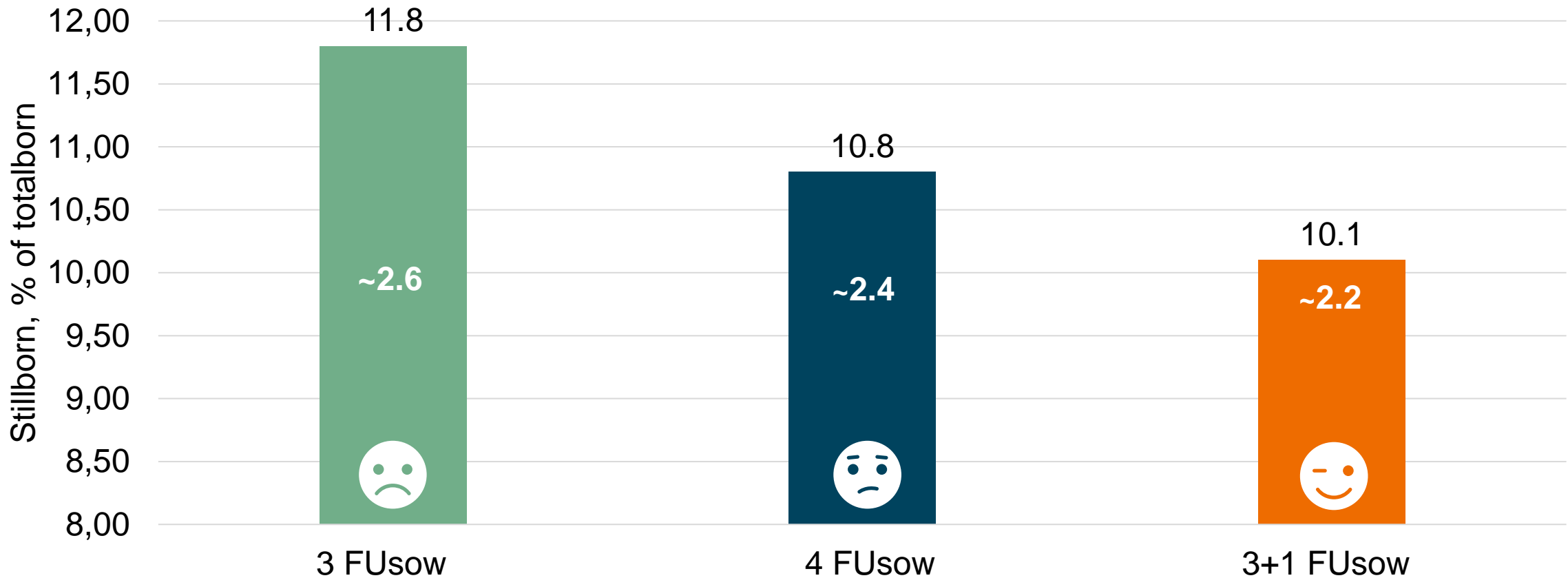
3+1 FUsow

- 2 herds
- 3 daily feedings 5:30/11:30/23:00
- Only 3rd-7th parity sows included

Feeding level

A higher feeding level and less protein before farrowing reduce stillborn

significantly



P-value 3 FUsow vs 4 FUsow: 0.23 (NS)

P-value 3 FUsow vs 3+1 FUsow: 0.03(★)





Analysis of stillborn

Your way to fewer stillborn

Farrowing assistance

Farrowing surveillance

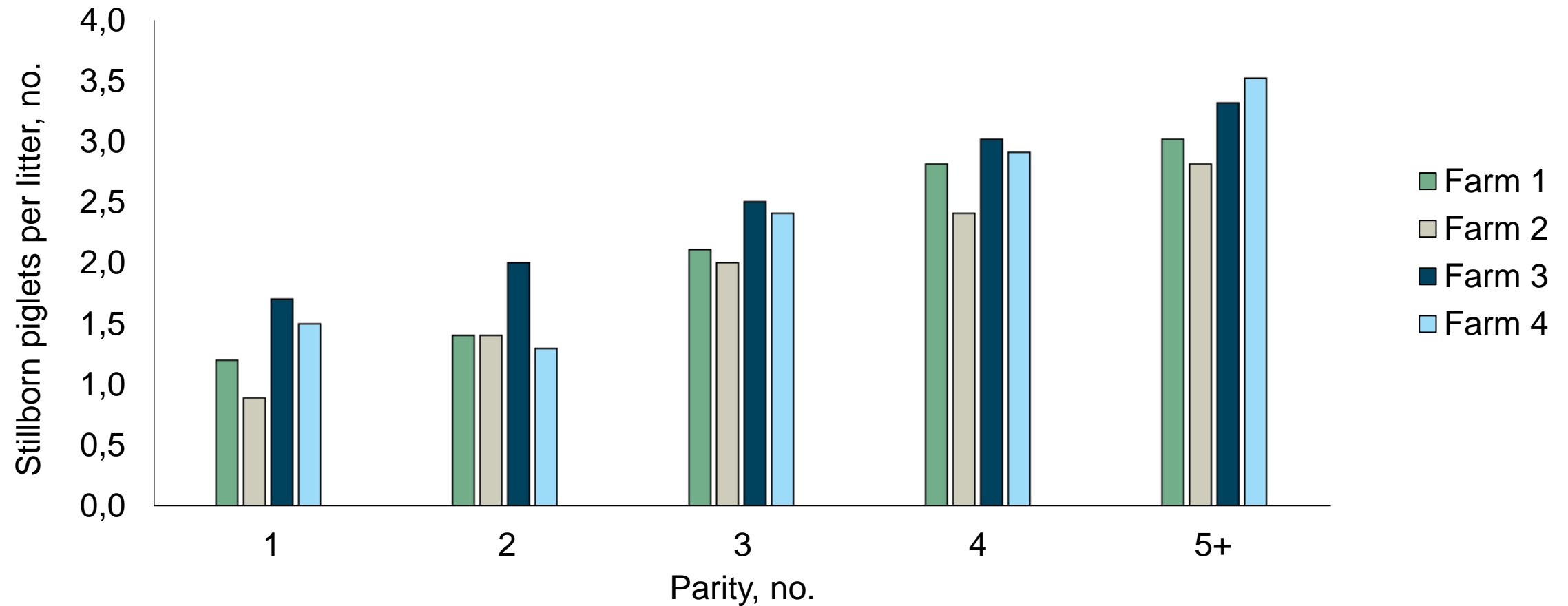
Fiber

Feeding frequency

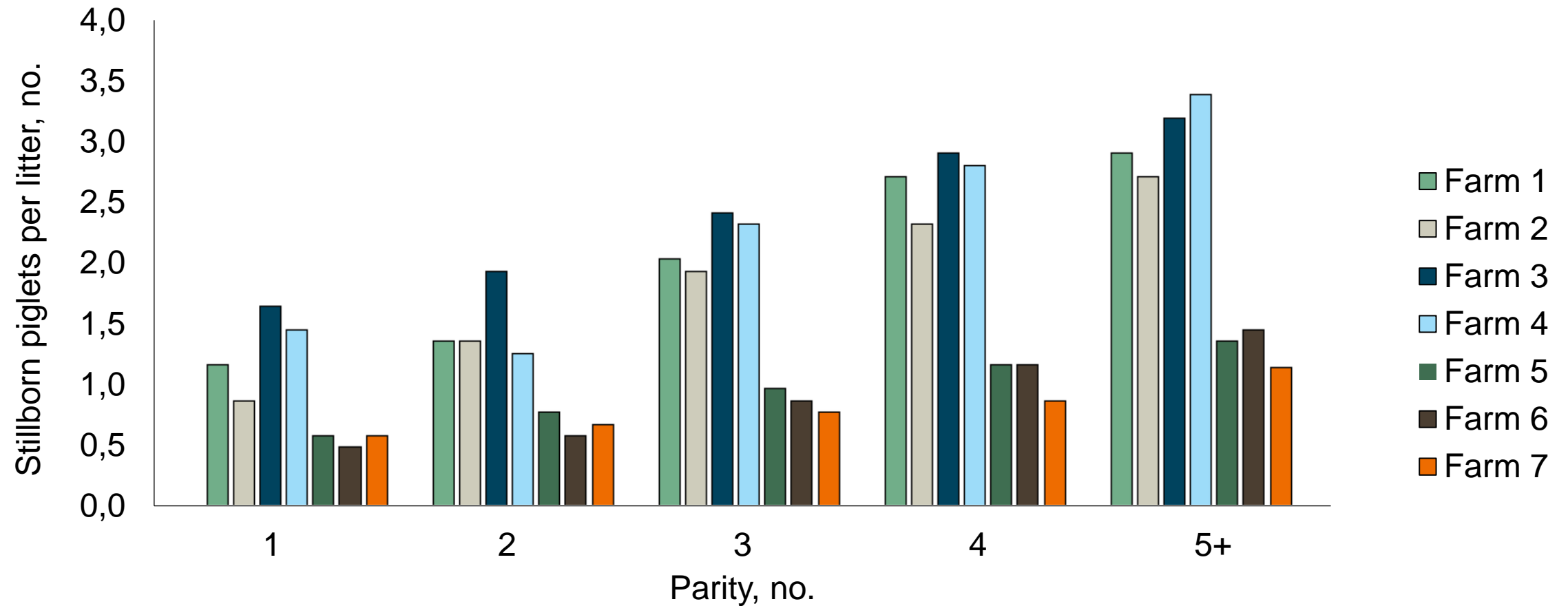
Feeding level

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Stillborn piglets in each parity on farms without extra surveillance



Stillborn piglets in each parity on farms with extra surveillance



Examples of surveillance on two farms with extended surveillance

Farm 1

0.9 stillborn, 18.0 liveborn

10% pre-weaning mortality

80 farrowings per week

- Surveillance day:
 - 07.00-15.30
- Surveillance night:
 - Mon: 20.00-22.30
 - Tue + Wed: 18.00-02.00
 - Thu: 17.00-23.00

Farm 2

0.9 stillborn, 18.4 liveborn

12% pre-weaning mortality

150 farrowings per week

- 24 hours surveillance all week
- A day is shared by 3 people
 - 06.00-14.00
 - 14.00-20.00
 - 20.00-06.00

Organize farrowing surveillance

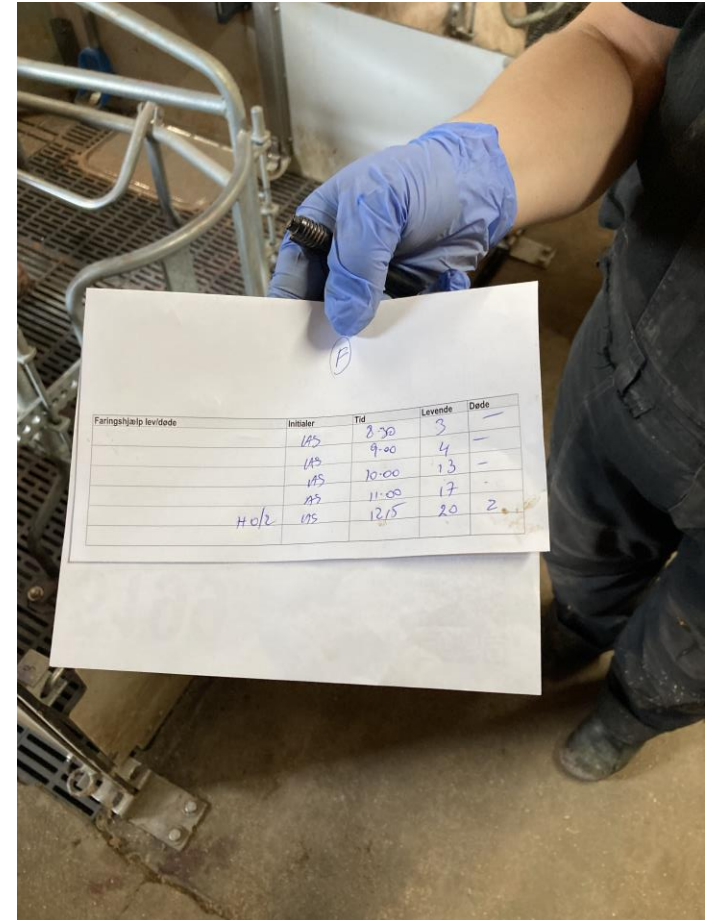
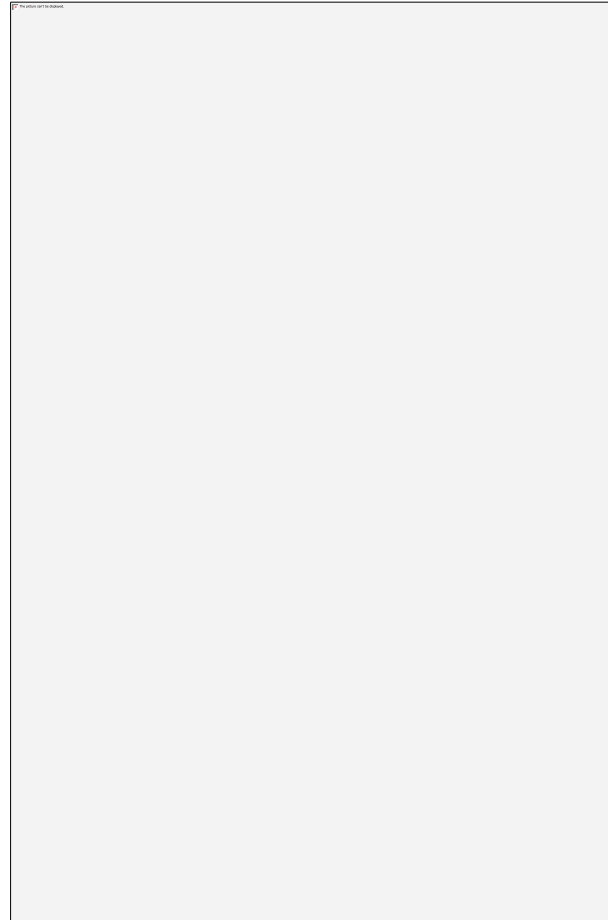
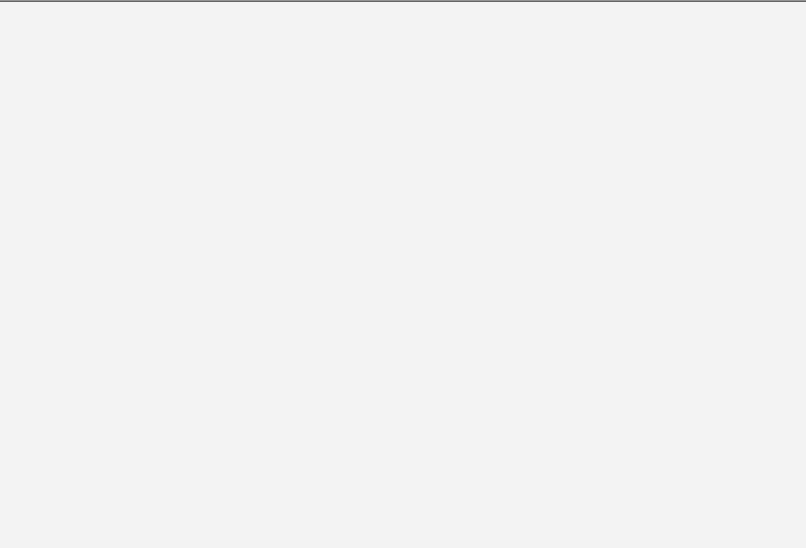
When farrowing is in progress → Farrowing surveillance

- Around the clock
- Or at specific times (targeted)

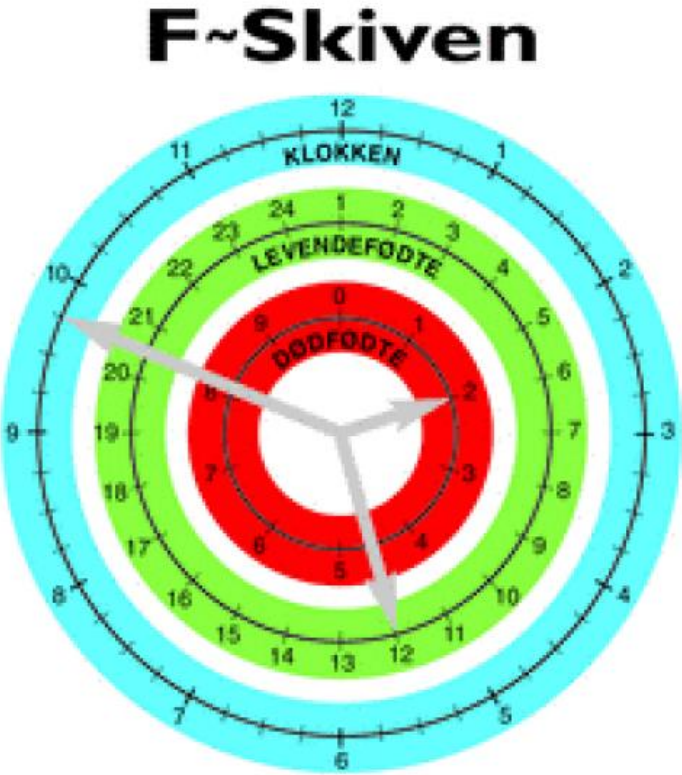
- Put one person in charge
- Set an alarm for every 30 min
- Supervise all farrowing sows



Keep track of farrowings with simple registrations



Keep track of farrowings with simple registrations



Search bar: f-skiven [X] Annuller

F-Skiven
Produktivitet ÅBN

Opret faring i Stald 1
Date: 25/06-2015
Tidspunkt: 11:04
146 23365

Levendefødt	Dødfødt
16	02
17	03
18	04
19	05
20	06

Fødselshjælp:
Måske færdig:
Færdig:

Gem & Ny
Gem & Luk
Abryd

Stald 1
Sti Nr: 142 - So 10562
Sti Nr: 146 - So 23365

Tilføj Faring Slet Stald
Luk & Tilføj Alarm

Tilføj Alarm til Stald 1
Alarm om 30 minutter
Alarm om 45 minutter

Antal aktuelle faringer med fødselshjælp i Stald 1: 2

CLouDFARMS

20.20 [Icons] 12:16

Faring

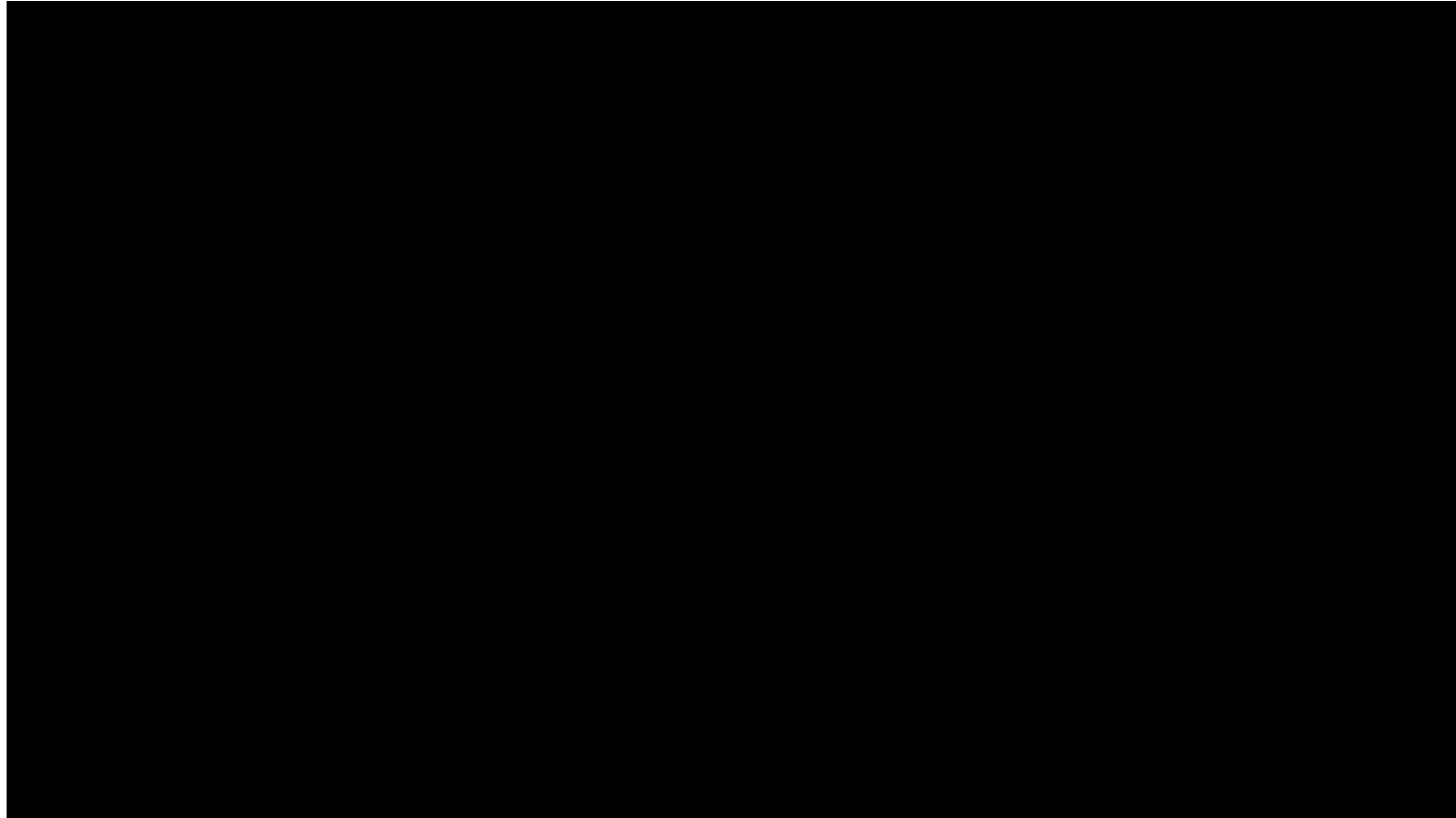
So Faring: 3826 Farestald/: 142/5
15 5
Mumm.

Ingen problemer Startet

Gem

0 1 2 3 4
5 6 7 8 9
10 11 12 13 14
15 16 17 18 19
>

Video from a farm with extended farrowing surveillance





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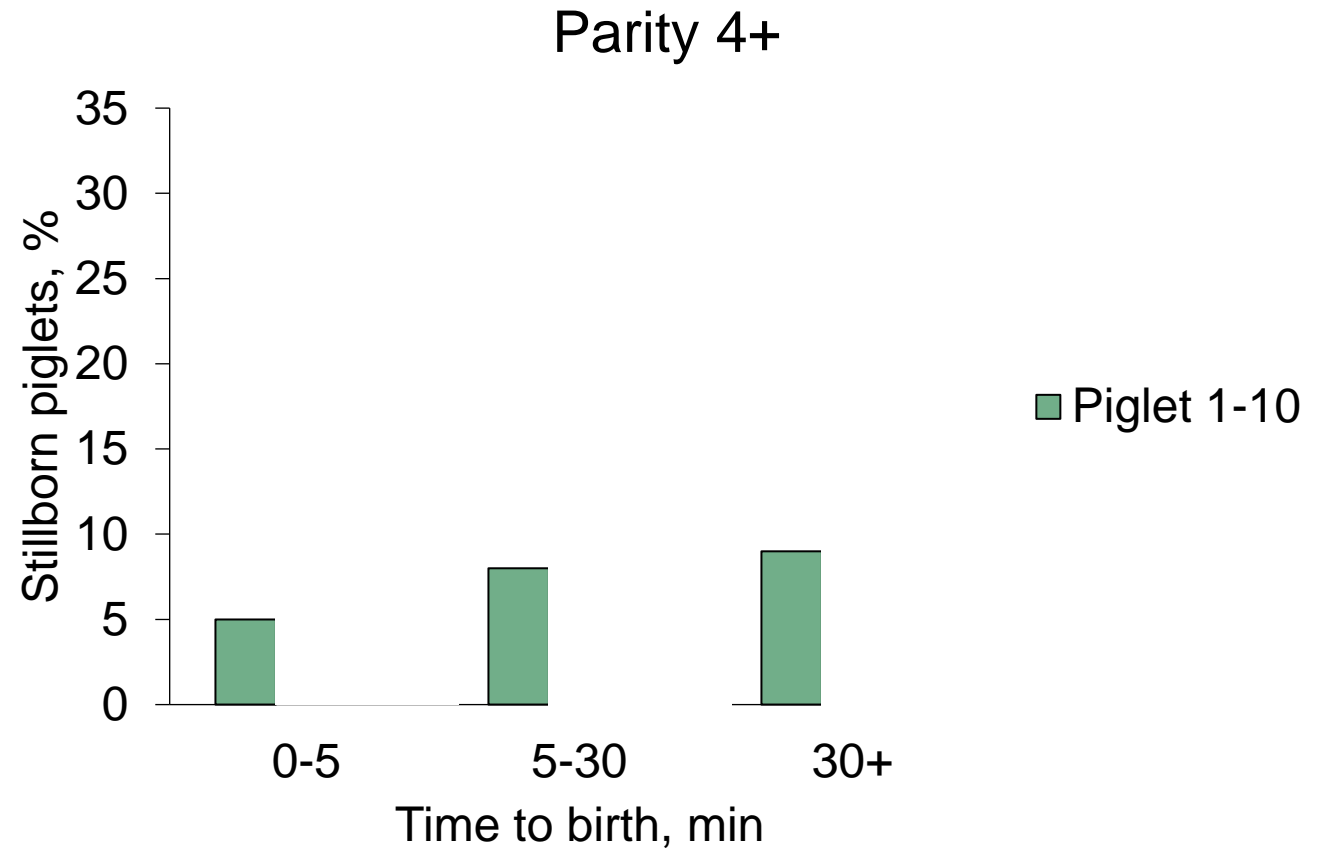
A close-up photograph of a piglet lying on a dark metal grate. The piglet is pink and appears to be a newborn, with its body positioned near the tail of a larger pig, likely its mother. The larger pig's tail is visible, and its fur is light brown. A blue-handled tool is partially visible on the left side of the frame. The scene is set in what appears to be a farm or a processing facility.

Disclaimer

It is not enough to supervise sows
You also must carry out assistance

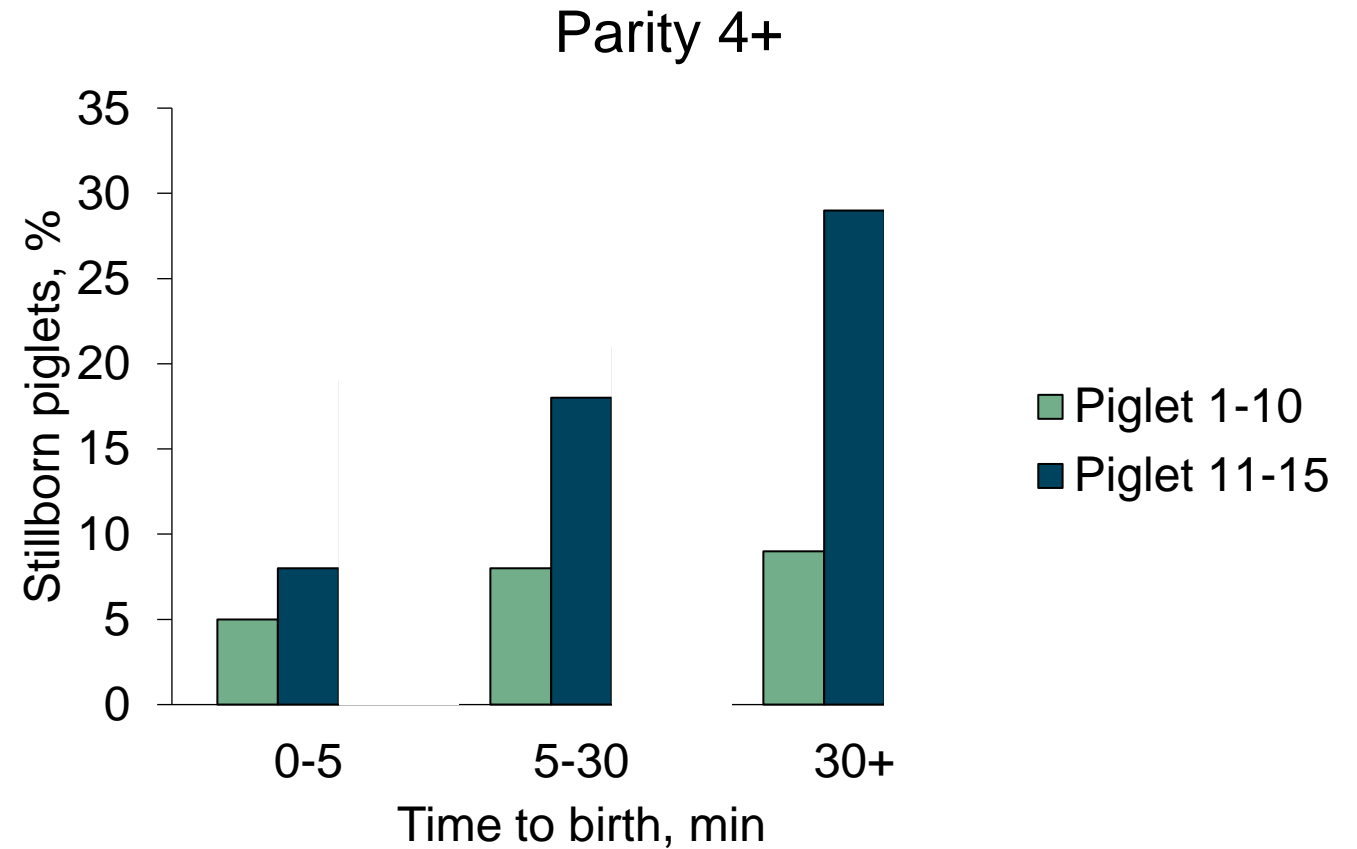
Risk of being stillborn

- Older sows
- Piglet 1-10



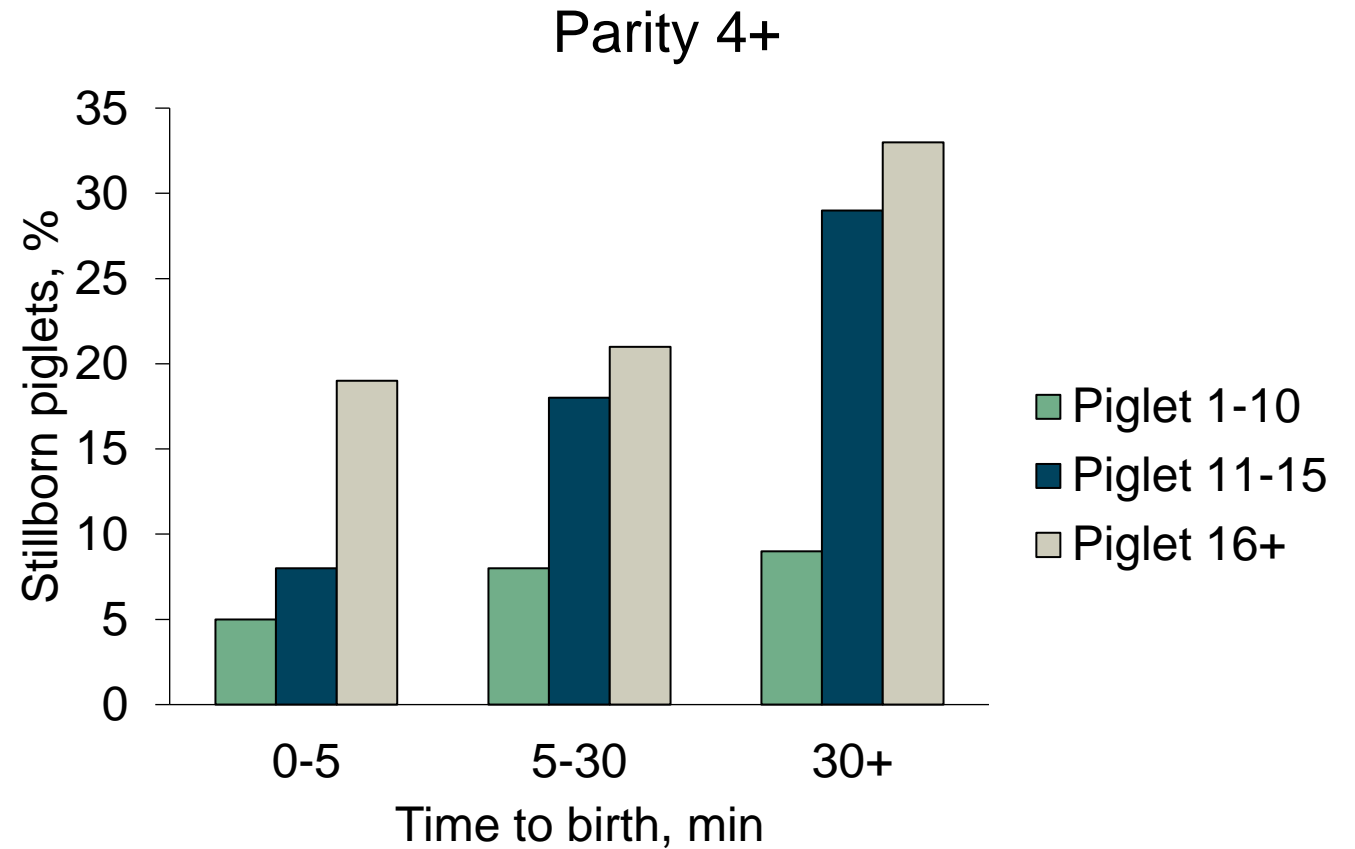
Risk of being stillborn

- Older sows
- Piglet 11-15



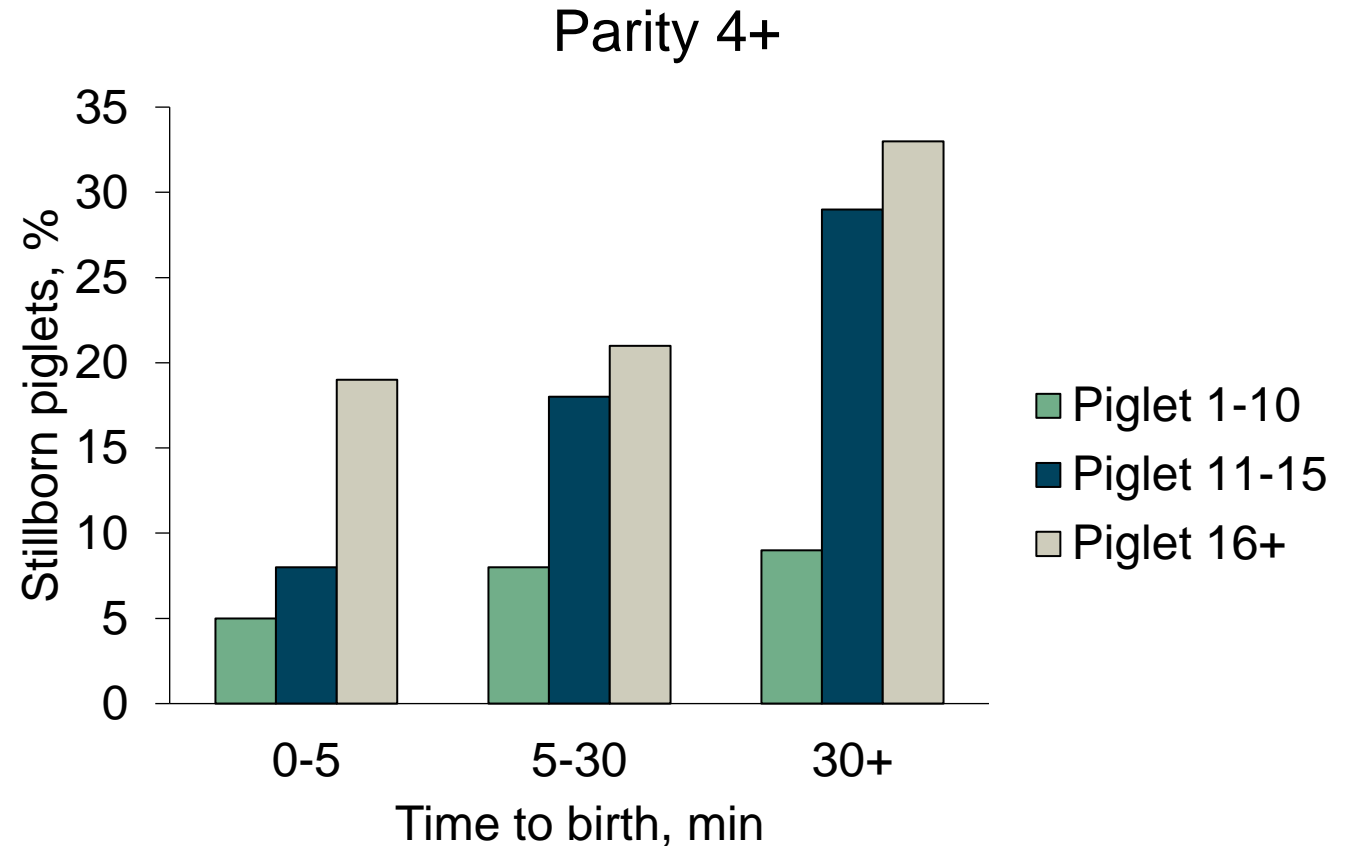
Risk of being stillborn

- Older sows
- Piglet 16+



Rule of thumb for farrowing assistance

- 1 hour between the first 1-3 piglets
- Hereafter every 30 min
- Count the number of piglets
- Hygiene is fundamental



Intake of colostrum is higher when piglets are born fast



	Fast farrowing sow	Average farrowing sow	Slow farrowing sow
Firstborn piglet			
Mid-born piglet			
Lastborn piglet			

Intake of colostrum is higher when piglets are born fast



Bachelor
Malene Hald
Aarhus University

	Fast farrowing sow	Average farrowing sow	Slow farrowing sow
Firstborn piglet	100%		
Mid-born piglet	91%		
Lastborn piglet	95%		

Intake of colostrum is higher when piglets are born fast



Bachelor
Malene Hald
Aarhus University

	Fast farrowing sow	Average farrowing sow	Slow farrowing sow
Firstborn piglet	100%	80%	85%
Mid-born piglet	91%	72%	76%
Lastborn piglet	95%	74%	69%

Intake of colostrum is higher when piglets are born fast



	Fast farrowing sow	Average farrowing sow	Slow farrowing sow
Firstborn piglet	100% ←	80% ←	85%
Mid-born piglet	91% ←	72% ←	76%
Lastborn piglet	95% ←	74% ←	69%

Extra things to do during farrowing surveillance

- Split suckling
- Small nurse
- Move small and weak piglets to udder/creep
- Litter equalization and/or preparation
 - Mark piglets
 - Overview → need for nurse sows
- Sow ready for lactation (raskmelding)



Mark piglets

Codes for marking

- At 20-02 Blue → litter eq. at 8.00
- At 02-07 Red → litter eq. at 14.00
- At 07-15 Green → litter eq. at 20.00
- At 15-20 Black → litter eq. at 02.00



An aerial photograph of a winding asphalt road through a dense forest of green trees. The road curves in a series of S-shapes. Several text overlays are placed along the road, including a white rectangular box containing the title 'Analysis of stillborn'. The text 'Your way to fewer stillborn' is written along the top curve. Further down, 'Farrowing assistance' and 'Farrowing surveillance' are written on the middle curve. The bottom curve features 'Feeding frequency' and 'Feeding level'. On the left side of the road, the word 'Fiber' is written. The overall scene is brightly lit, suggesting a sunny day.

Analysis of stillborn

Your way to fewer stillborn

Farrowing assistance

Farrowing surveillance

Fiber

Feeding frequency

Feeding level

Analysis of stillborn piglets

Overview with distributions – 1.9 stillborn on average on this farm

Dødfødte \ Kuld	1	2	3	4	5	6	7..12	Sum	%	Akk. %
0	93	73	26	24	17	10	11	254	29,4	29,4
1	43	48	39	33	5	18	15	201	23,2	52,6
2	23	36	23	39	21	10	9	161	18,6	71,2
3	18	11	16	18	19	12	8	102	11,8	83,0
4	5	5	14	18	8	6	6	62	7,2	90,2
5..9	5	4	12	12	14	16	11	74	8,6	98,7
10..25			2	3	1	2	3	11	1,3	100,0
Sum	187	177	132	147	85	74	63	865	100,0	
%	21,6	20,5	15,3	17,0	9,8	8,6	7,3	100,0		
Akk. %	21,6	42,1	57,3	74,3	84,2	92,7	100,0			
Gns.	1,0	1,1	2,1	2,3	2,8	2,9	2,8			

In 17% of the farrowings ≥ 4 stillborn piglets per litter

Analysis of stillborn piglets

Overview with distributions – 0.9 stillborn on average on this farm

Dødfødte \ Kuld	1	2	3	4	5	6	7..12	Sum	%	Akk. %
0	110	96	77	51	52	35	39	460	49,8	49,8
1	42	46	45	33	22	32	24	244	26,4	76,3
2	21	22	24	20	19	19	19	144	15,6	91,9
3	5	4	12	7	9	11	5	53	5,7	97,6
4			1	2	2	2	4	11	1,2	98,8
5..9	1	1	2	1	1	2	3	11	1,2	100,0
10..25								0	0,0	100,0
Sum	179	169	161	114	105	101	94	923	100,0	
%	19,4	18,3	17,4	12,4	11,4	10,9	10,2	100,0		
Akk. %	19,4	37,7	55,1	67,5	78,9	89,8	100,0			
Gns.	0,6	0,6	0,9	0,9	1,0	1,2	1,1			

+ 20%-points

Largely the same

In 2.6% of the farrowings ≥ 4 stillborn piglets per litter

Change in stillborn

-0,4 -0,5 -1,2 -1,4 -1,8 -1,7 -1,7

Analysis of stillborn piglets

Known risk factors or ?

- Increasing percentage of stillborn piglets with increasing parity?
 - Sow cards in different colours to indicate risk ■ ■ ■
- Increasing percentage of stillborn piglets with increasing percentage of stillborn piglets in previous parity?
 - A certain threshold?
- Sow body condition
 - Very skinny sow is a risk factor
- Keep it simple
 - Assume that farrowing surveillance will benefit all sows and all born piglets

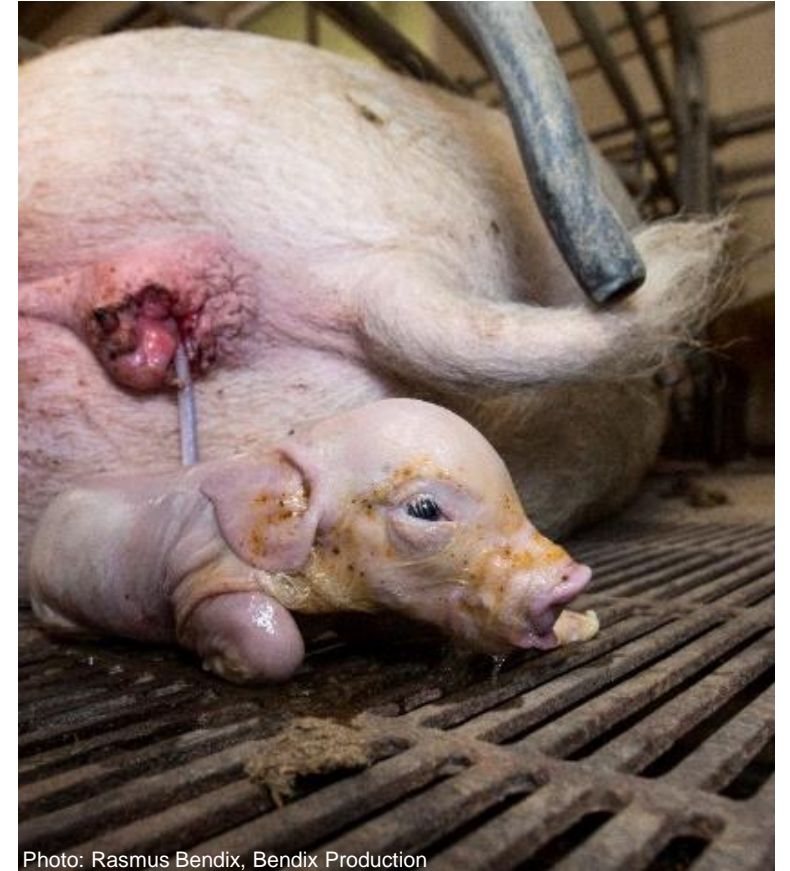


Photo: Rasmus Bendix, Bendix Production



Your way to fewer stillborn

Analysis of stillborn

Farrowing assistance

Farrowing surveillance

Fiber

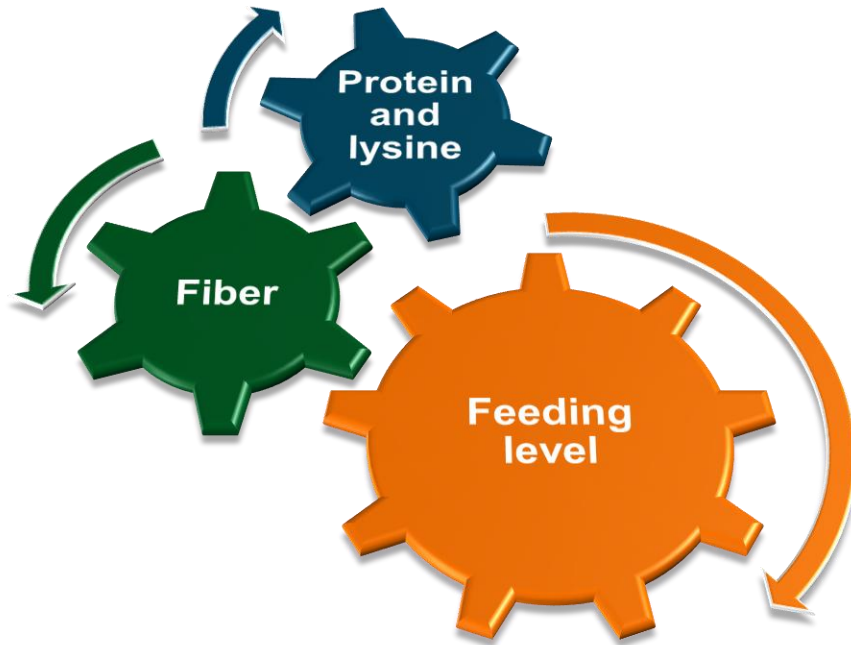
Feeding frequency

Feeding level

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Your way to fewer stillborn piglets

Focus on feeding and feeding strategy



1st step: Feeding level ★★★

- Most important tool (4.0 FUsow per day)
- Easy and worth trying

2nd step: Fiber ★★

- From lactation feed (sugar beet + oats + barley + wheat)
- Manual additive before farrowing (OBS: weekends)

3rd step: Protein and lysine ★

- Dilution of lactation feed requires manual additive
- Simple dilution with wheat

Your way to fewer stillborn piglets

Focus on management around parturition



Farrowing surveillance

24 hours or partly when most sows farrow



Check for every 30 min

Note number of liveborn and stillborn at every check
No new piglets since last check → assistance
Mark piglets



Extra

Split suckling
Litter equalization
Handling weak and small piglets
A sow ready for lactation (raskmelding)

Questions