



Danish Pig Production –

Management and behaviour and how SEGES uses this knowledge



Livestock and Equine Production Science
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Chief Scientist
Vivi Aarestrup Moustsen, PhD, MSc



Affiliate associate professor of
Animal Husbandry, Pigs.
Department of Veterinary and Animal Science

FACULTY OF HEALTH AND MEDICAL SCIENCES
UNIVERSITY OF COPENHAGEN

SEGES
INNOVATION

Illustrate with examples from our work

- Temporary confinement of loose lactating sows
- Supplementary milk supplied in simulated udder
- Water consumption by hyper-prolific sows

Housing of lactating sows

Status:

- 95 % of our sows indoors are housed in crates in the lactation unit
 - In crates sows cannot perform highly motivated species specific behaviours
 - Nest build, bonding, separate pen into functional areas, thermoregulate.....
- But crates reduces risk of crushing of piglets



Question:

- How can we use knowledge of sow and piglet behaviour in development and management of pens for loose sows?

Behaviour

Sows

- Eat, drink, defaecate + urinate - and **not** in the same position
- Rest
- Explore
- Nest build
- Farrow
- Nurse
- Thermoregulate

Piglets

- 'Birth'
- Suckle/nurse
- Rest
- Play and explore

Conditional for success with loose animals



- Understand:
 - What do the pigs do?
 - When do they do it?
 - Why do they do it?
 - How do they do it?
 - ...

Critical points

Before investment

- Decision making
- Key decisions

Daily management

- Calm handling of sows
- Use of confinement



Daily management

- Calm calm calm
- Not just in farrowing unit
- Include 'calmness' in layout
 - Sections
 - Less pens per section
 - Creep alongside passageway
- Include 'calmness' in daily routines
 - Handling of sows and piglets

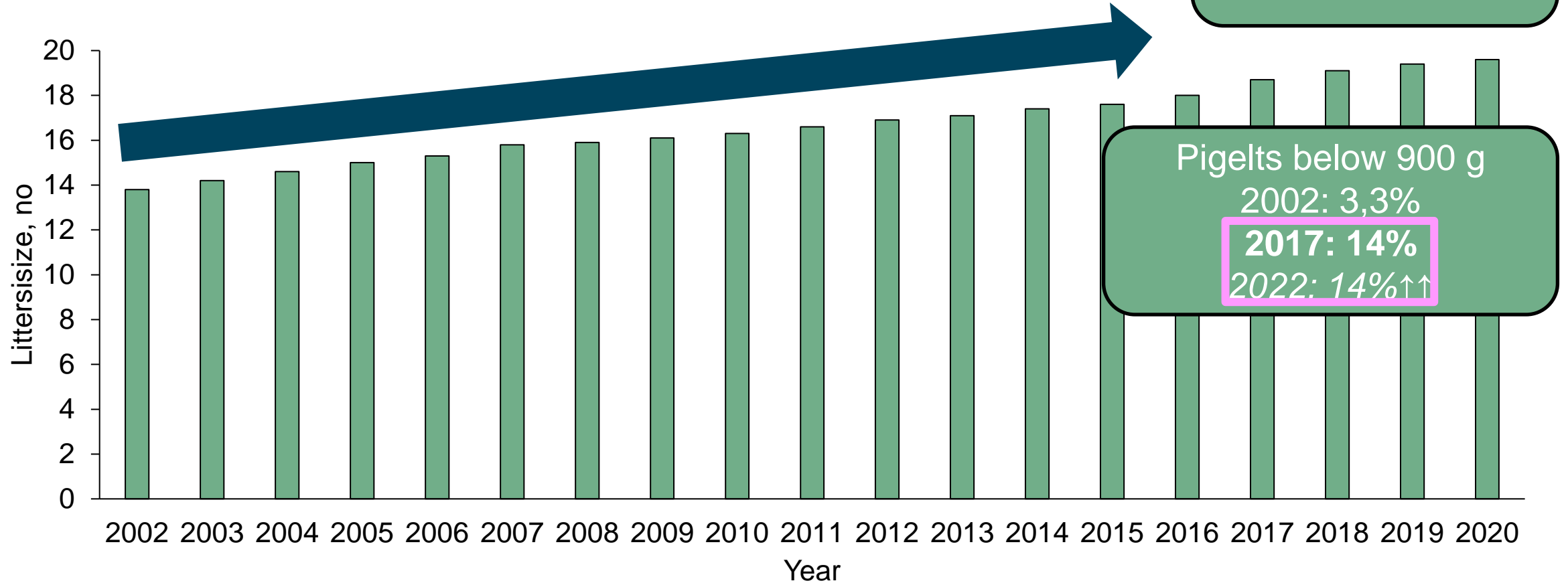


Daily work-routines

- Safe and efficient to work in and with
 - Calm handling of female animals from gilts and until slaughter
- If TC – how many days – many trials
 - Vast majority of studies show a reduction in mortality when some period of crating is imposed (*ref. Goumon et al, 2022*)
 - Confinement to start at the end of nestbuilding and until day 4 (Austria/ProSAU)
 - Confinement to start at day 115 of gestation and until day 4 (Denmark)
- When to open (*ref. King et al., 2019*)
 - Not all at one time
 - Better in the afternoon than mornings



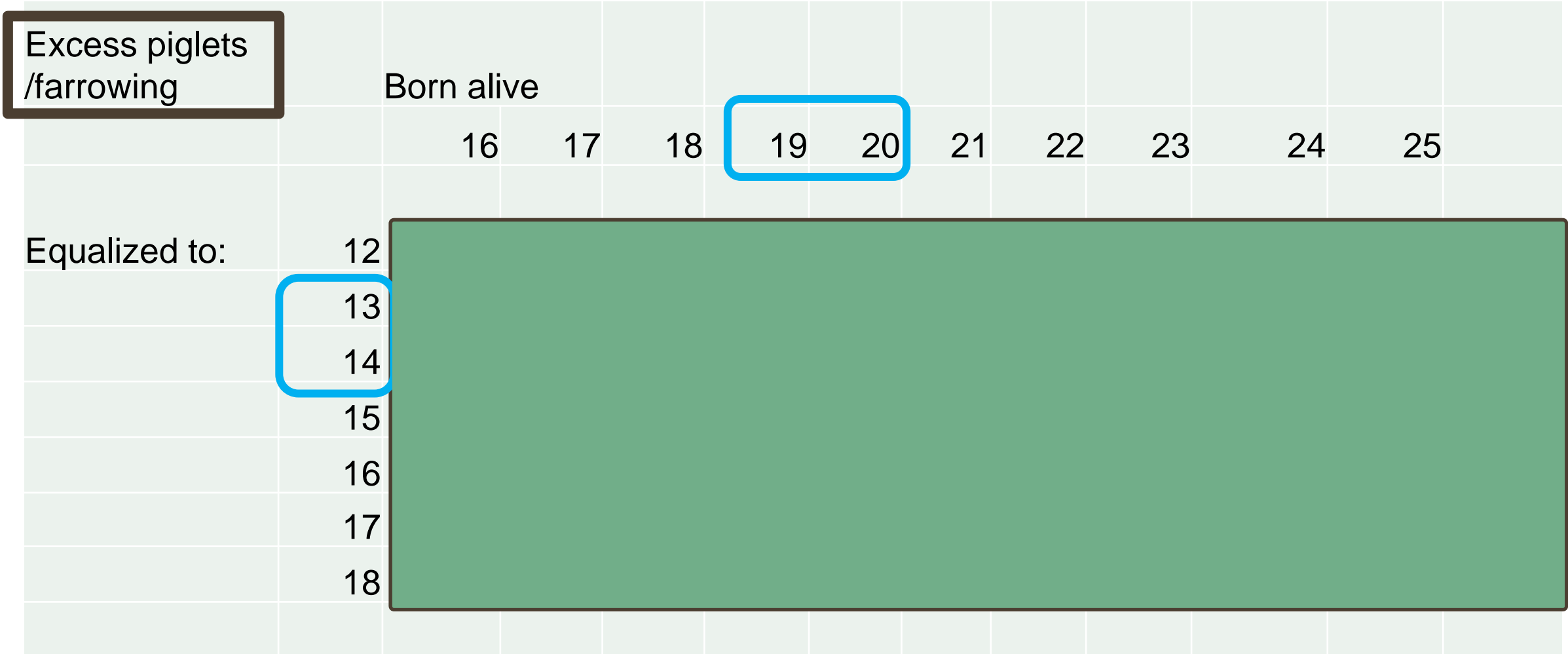
Why a simulated udder? 5,8 more piglets born alive per litter



From 13.8 to **19.6**
piglets per litter

Piglets below 900 g
2002: 3,3%
2017: 14%
2022: 14%↑↑

Piglets - which needs a teat somewhere else...



And....Number of piglets in excess per farrowing * farrowings per week or day
...and same number of piglets being weaned young/younger.....

Nursing capacity of sows

We have

- Measured milk letdown
 - 8-10 seconds per letdown
- Counted teats
 - 50 % of the sows had min. 14 teats; 10 % had min.16 teats
- Challenged the sows a little bit
 - 30% of the sows with 14 teats nursed 15 piglets
- Challenged the sows more
 - Some sows, with litters of 18-20, weaned 18-20 piglets



Early use of supplementary milk?

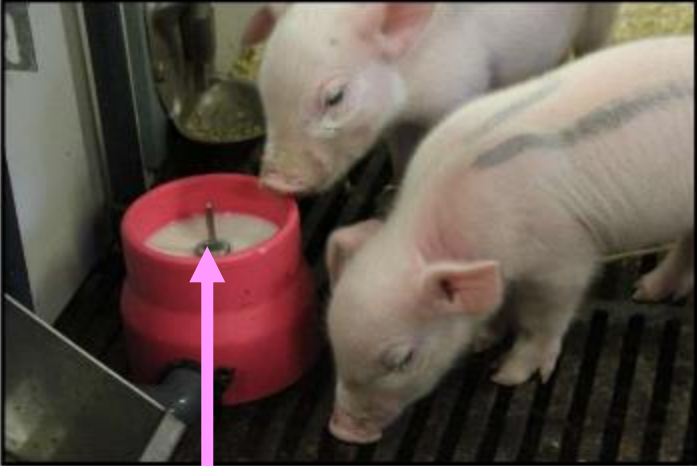


Figure 6 A milk cup was placed inside each farrowing pen. To release milk, the vertical tap needs to be pushed either to the side or downwards. (Photo: Giulia Ciarcelluri).

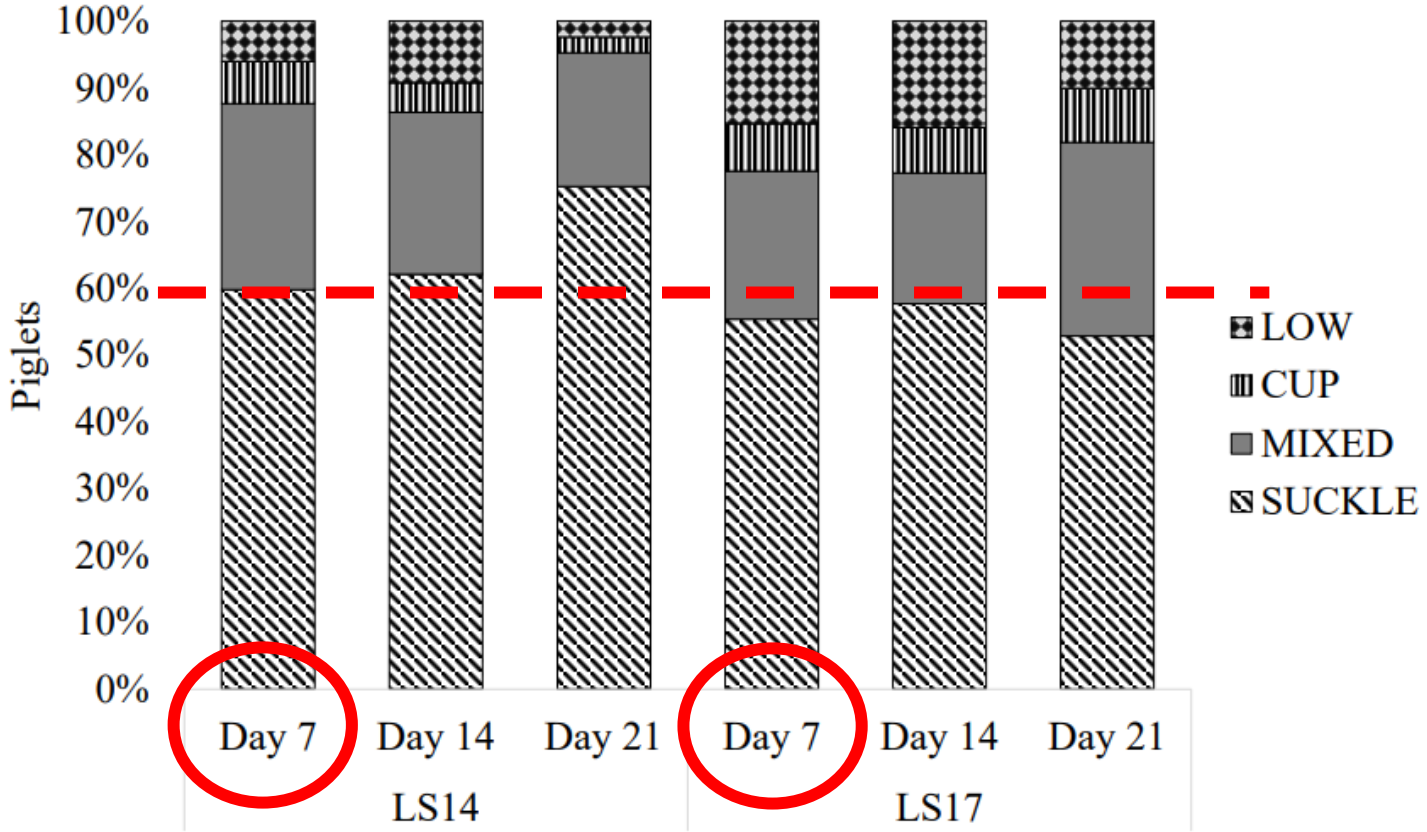


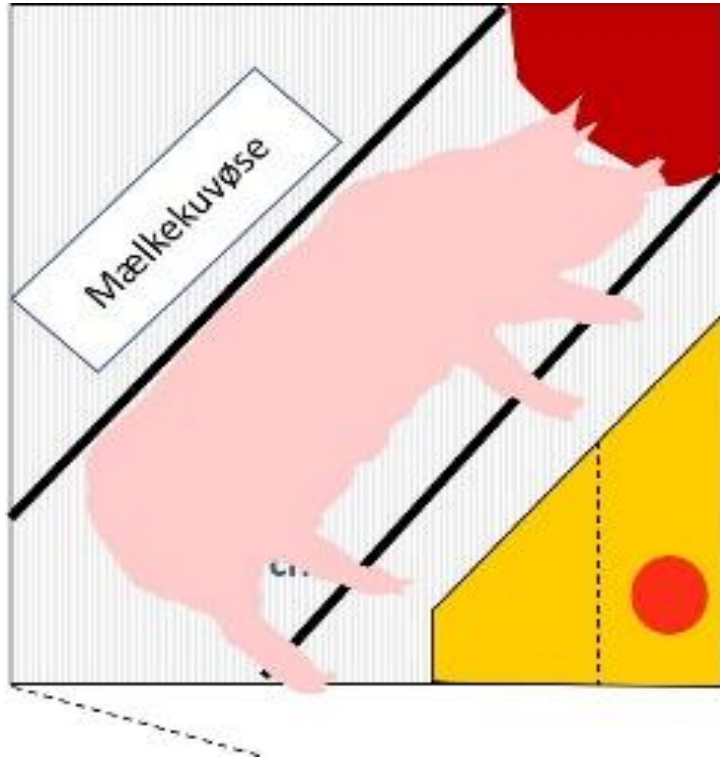
Figure 9 Percentage of piglets in each category of Nutrition Source (NS) on days 7, 14 and 21 according to the standardised litter size on day 1 of either 14 piglets (LS14) or 17 piglets (LS17). (Reproduced from paper IV).

How do we increase early use of supplementary milk? Can we take advantage of the piglets instincts?



Large litters

- *Newborn – had not touch the sow udder - and 8 hours*
- Dry naval cords and three days ahead



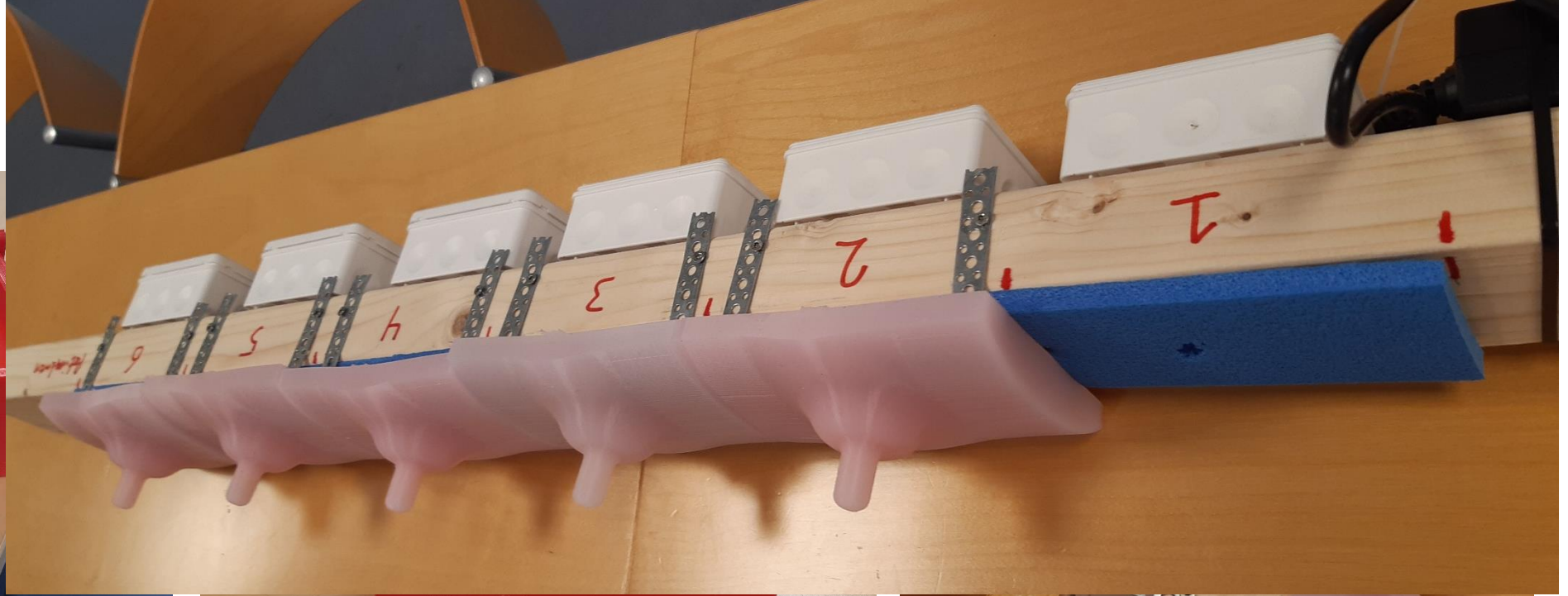
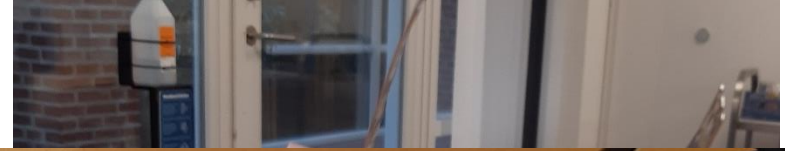
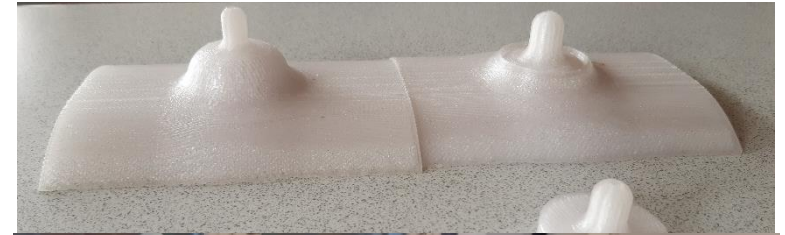
There appears to be a potential

- Pilottrial – avanced split-suckling
 - 99 % survival until day 3



Design of teats – Mogens Hinge

- Dimensions and distance
- Warmth
- Softness



'Pattinator' in first pilot-trial



<https://www.seges.tv/channel/27487274/svin>

Large litters

- Newborn – without having touched the udder – and 8 hours forward
 - Piglets gained weight!!
 - From dry naval cords and the following three days
 - 99 % survival with 18 piglets in the pen
- Make the milk easier accessible



SEGES INNOVATION KVÆG PLANTER GRIS ØKOLOGI VIRKSOMHEDSLEDELS

SEGES INNOVATION

Vi er videre i vores forsøg med at supplere soens ernæring til pattegrisene -

GRIS

Pattegrise dier nu på livet løs på kunstige kirtler

17. februar 2022

I slutningen af 2021 fortsatte vi her på seges tv første gang om forsøget med kunstige kirtler i kuberne. Her får du opfølgning på historien.

Der er nemlig lykkes BIFOPs Innovation og deres samarbejdspartnere at få tilpasset det kunstige yver, så pattegrisene i højere grad dier og tager på i vægt i de første timer efter fødsel. Det var ved de første udgaver af kuberne en udfordring at få mælk nok ud i kuberne.

I hovedmålet med kuberne er forsat at hedtringe betjener, for ammeseer, og sørge for, at suskende kan blive sammen hos egen mor. Til gavn for grisene og de ansatte.

Grisene i videoen er seks timer gamle – og godt mætte – og klar til en ret af komme retur til søen og byde på mælk med nogle af de andre grise i kuddet.

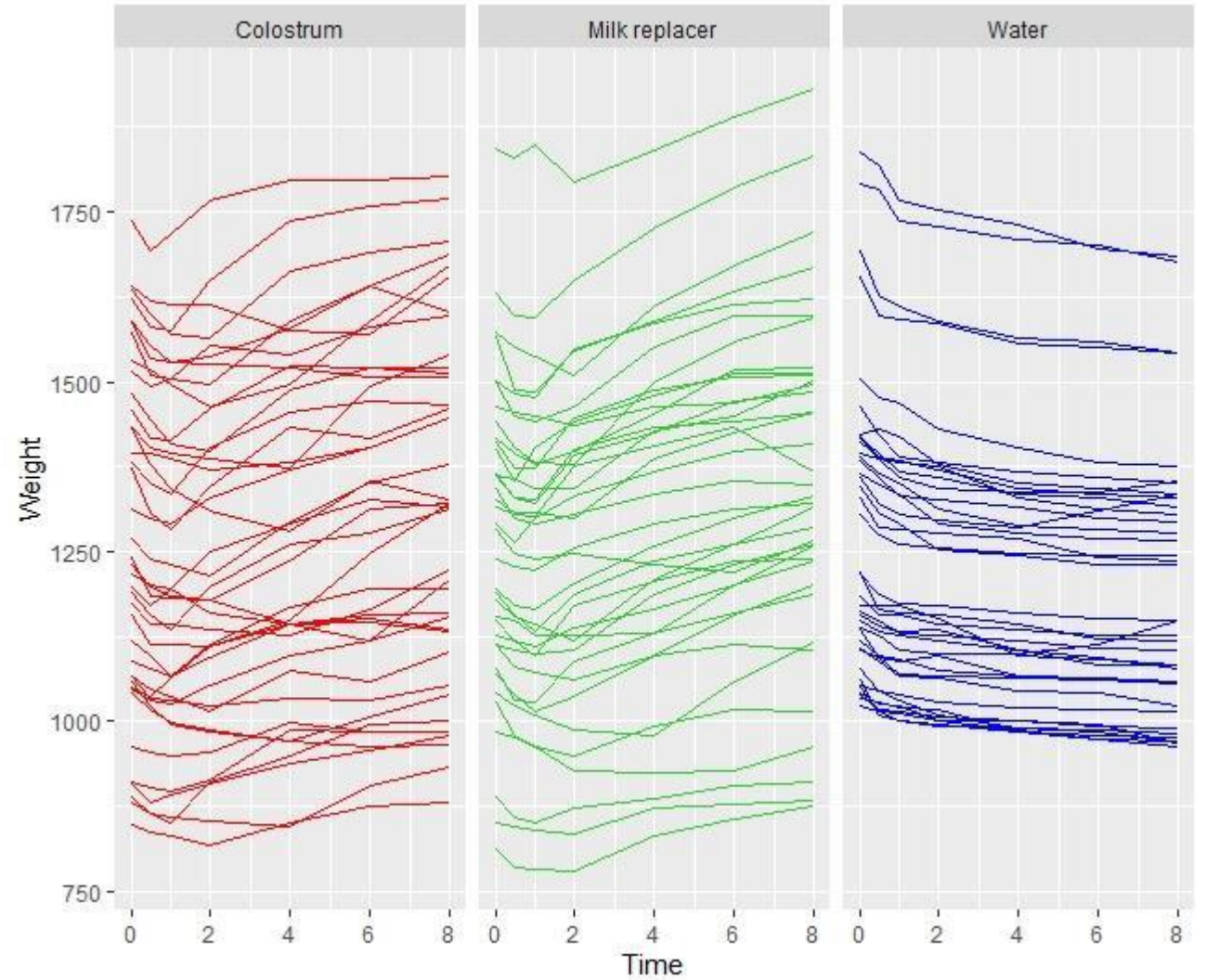
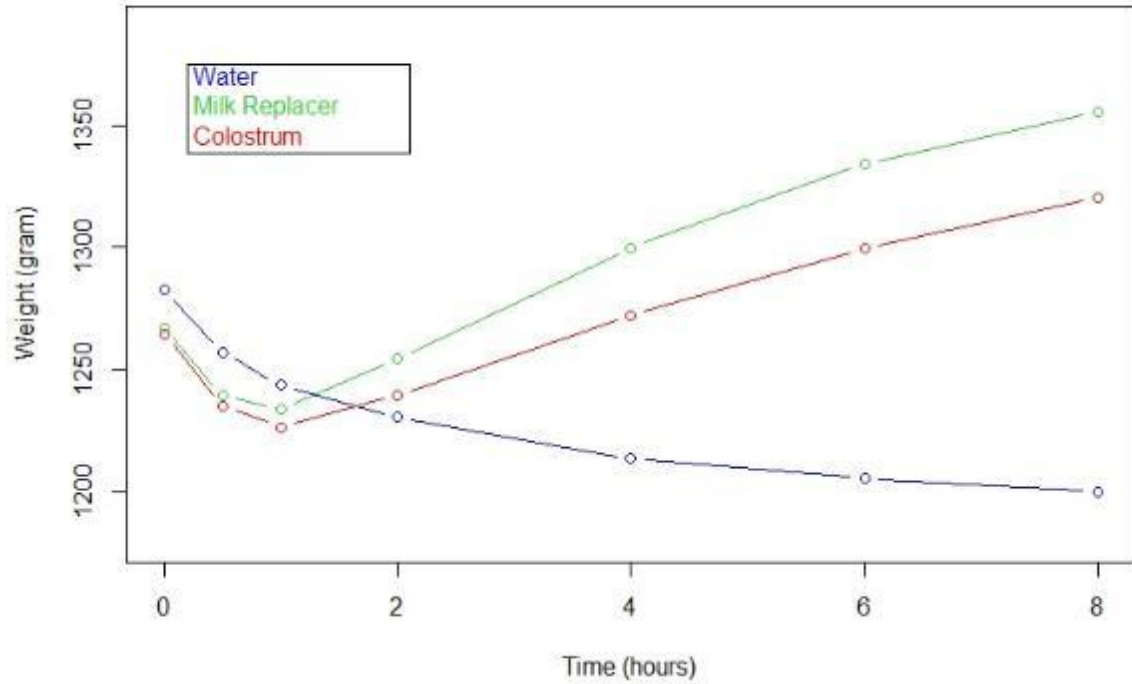
Et af de næste skridt i projektet er at frigøre indholdet i mælkesækkene, så pattegrisene får den helt rigtige

Generation x

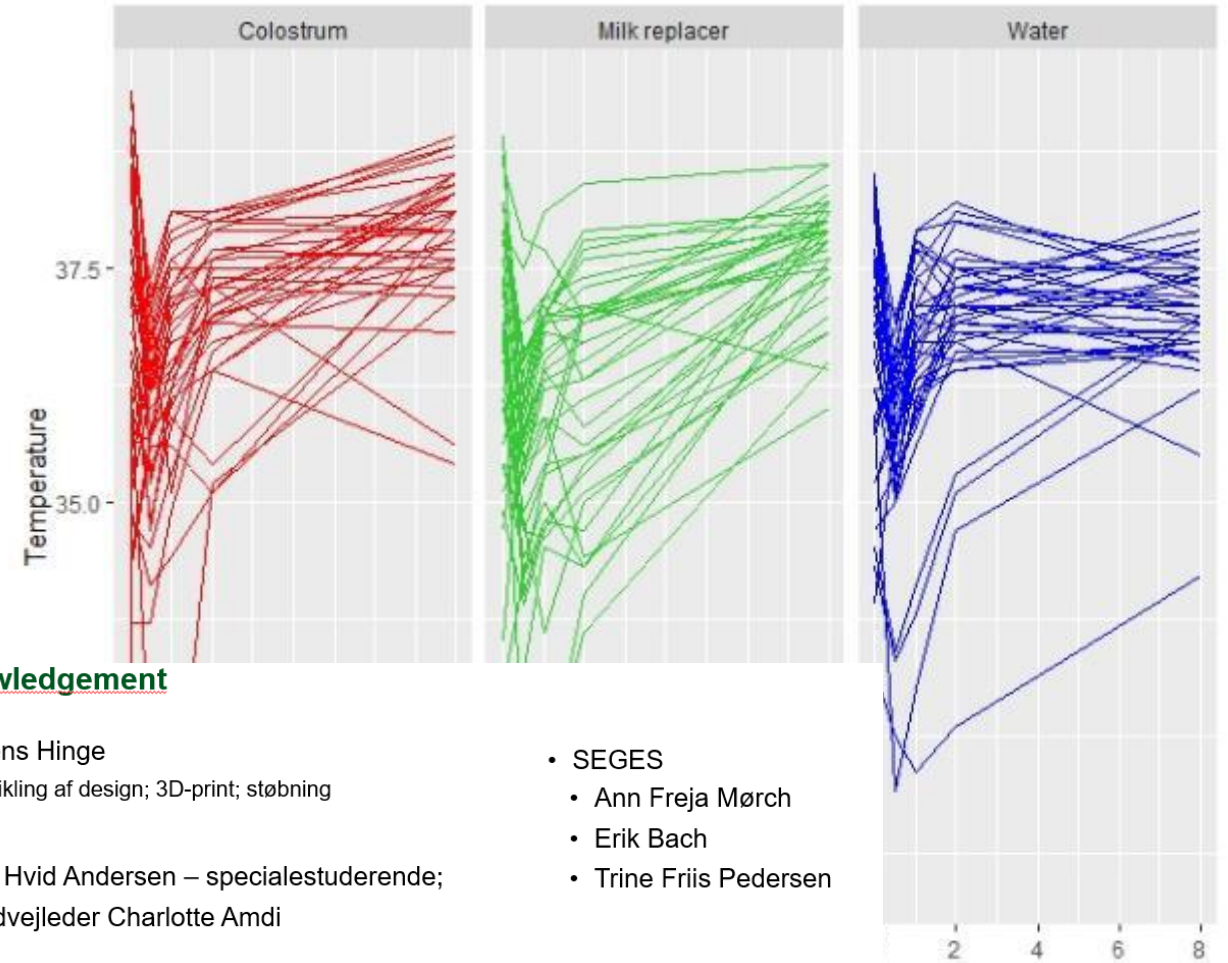
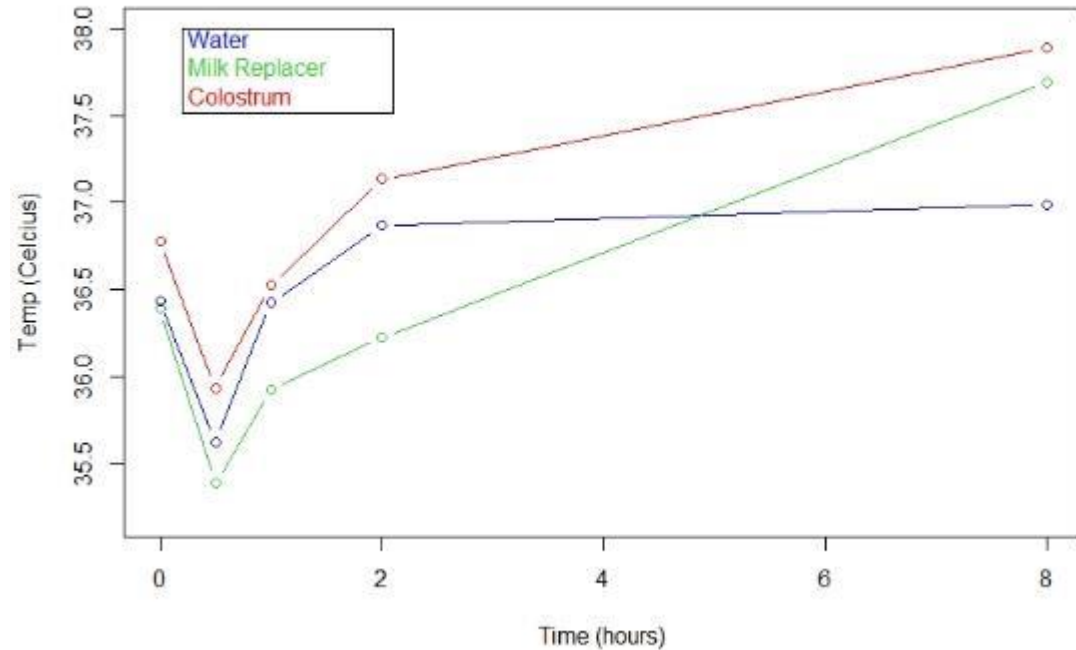
Pattegrise dier nu på livet løs på kunstige kirtler - SEGES TV



Weight gain 8 hours after birth



Rectal temperature 8 hours after birth



Acknowledgement

- AU
 - Mogens Hinge
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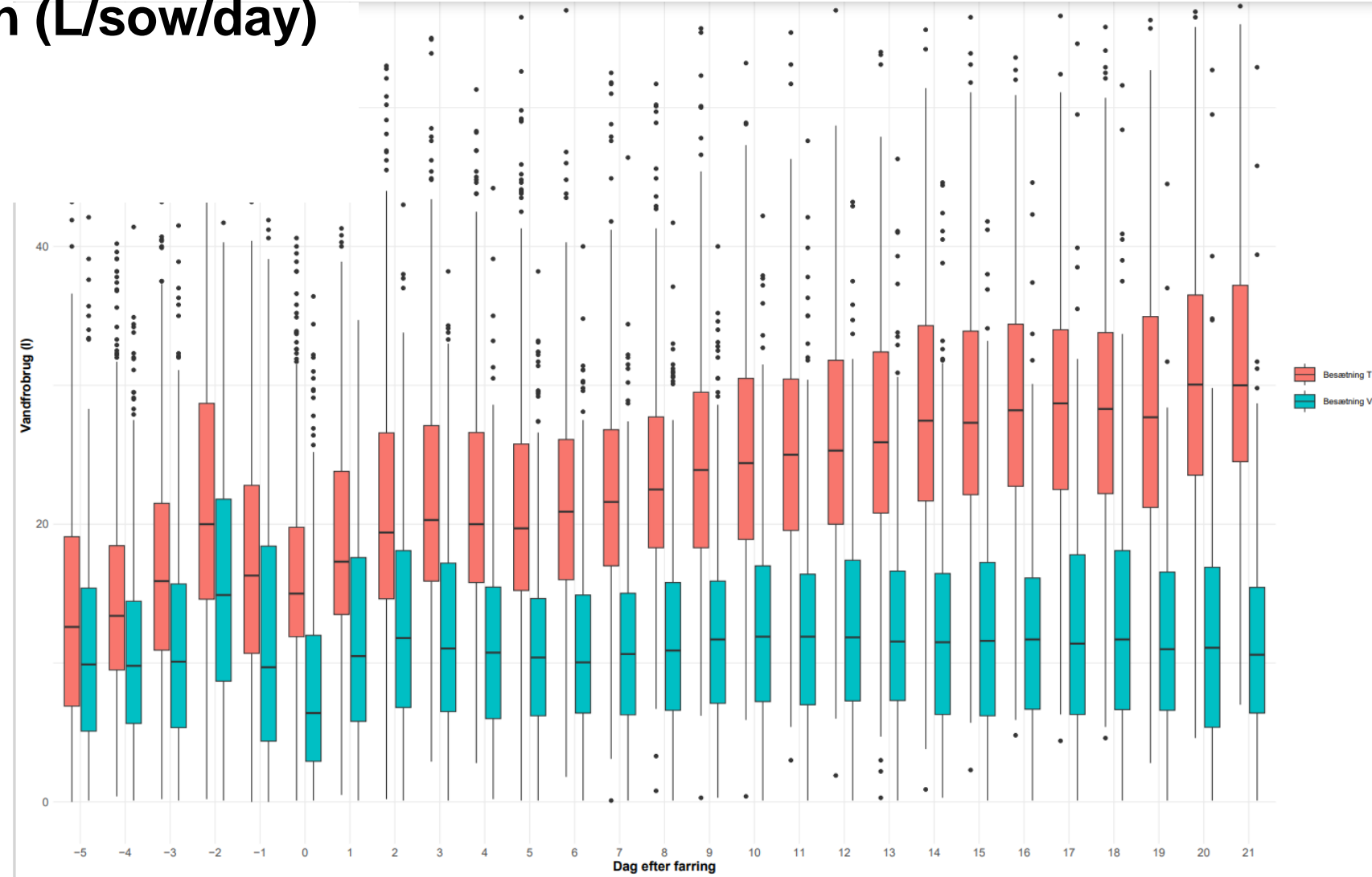
Water consumption yields valuable information

Daily water consumption (L/sow/day)

Day -5 to Day 21

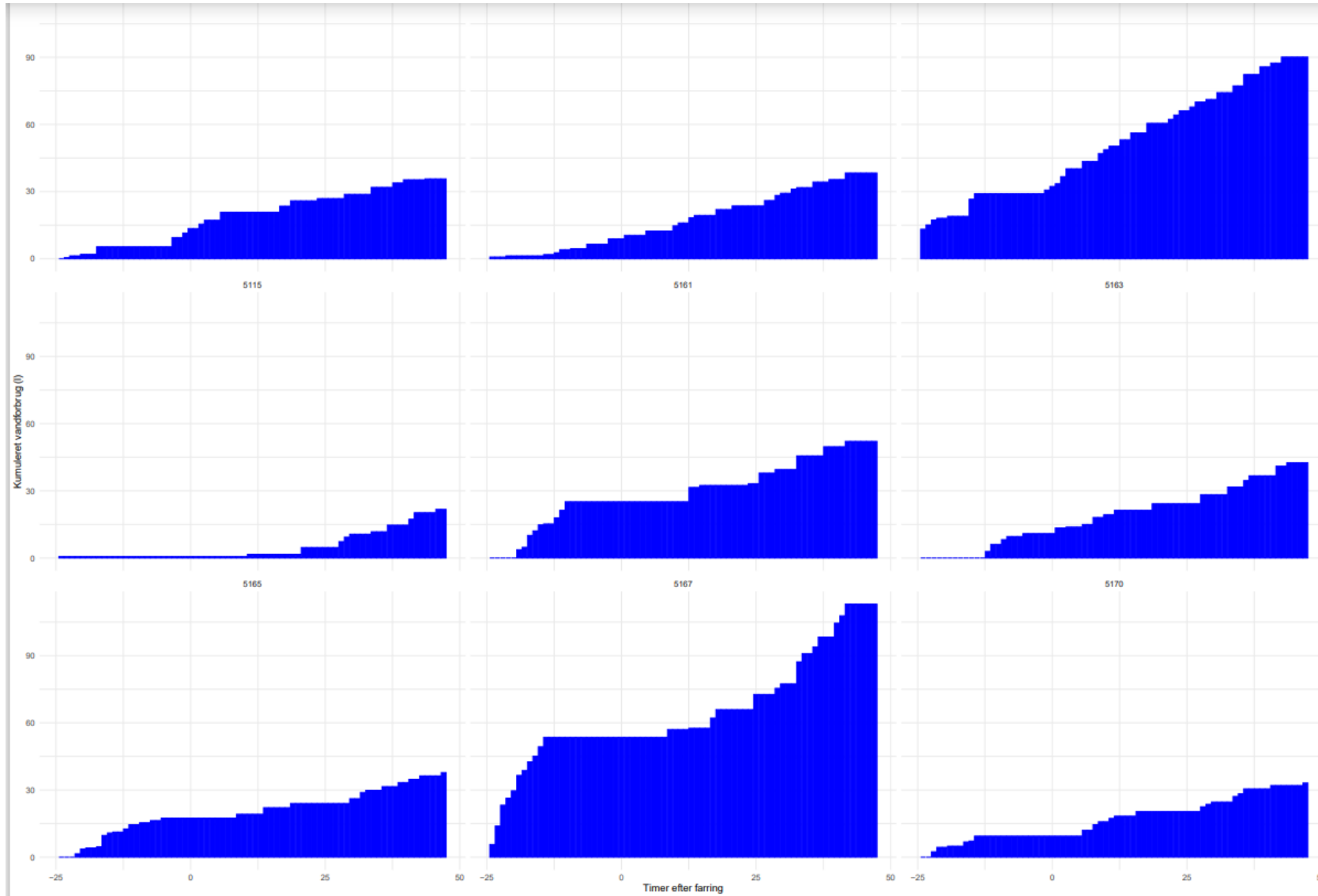
Dry fed

Liquid fed

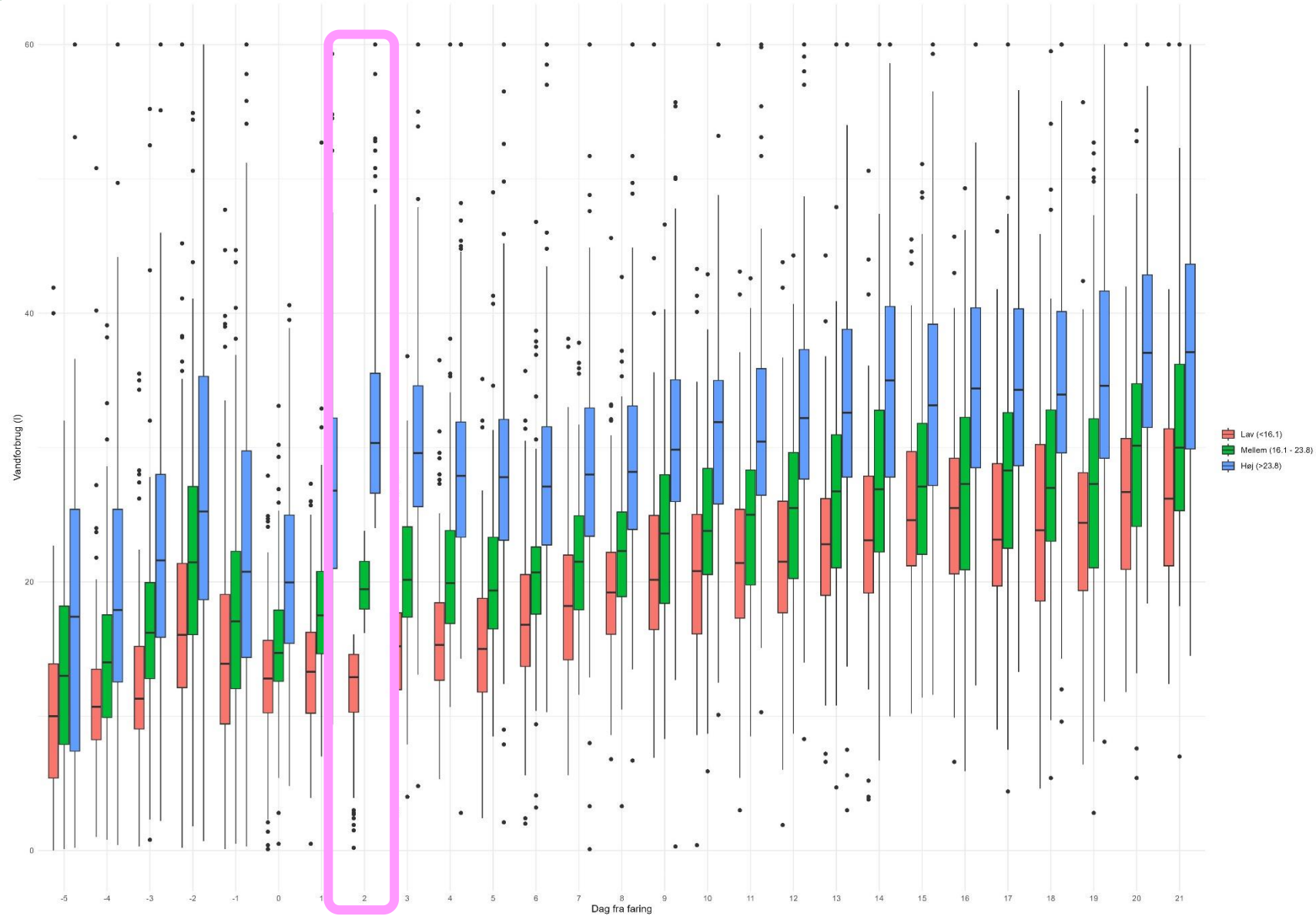


[Measuring sows' water consumption yields valuable information \(pigprogress.net\)](http://pigprogress.net)

Periods of no-drinking \approx duration of farrowing?



Water consumption (L/sow/day) day 2 indicator of water consumption later



Take home

- Important to understand pig behaviour to be successful in management
- Today – three examples
 - Temporary confinement
 - Sows are very little active during first few days post farrowing – management -> Temporary confinement and safe work condition
 - Simulated udder
 - Newborn piglets gain weight
 - Water consumption
 - Realtime and individual information about sows well being and performance
- There are many more
- Highly motivated species specific behaviours
 - Design of housing systems
 - Management