



PIGLET SURVIVAL AND NURSE SOWS

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Alnarps Grisdag
2017 10 04

LOOSE HOUSING OF LACTATING SOWS

- Denmark wants loose lactating sows
 - Pig producers
 - Animal welfare organisations
 - Politicians
 - Society
 - Consumers?
- *Global market?*



App. 500.000 piglets/year born by loose sows indoors
- Will it increase?

LOOSE HOUSING OF LACTATING SOWS

- **Limitations**

- Higher costs
- High mortality
- Premium?



- **Aim** – increase piglet survival rate

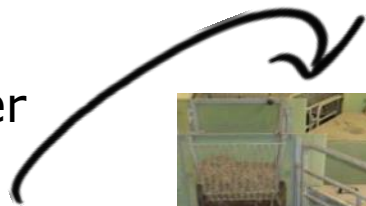
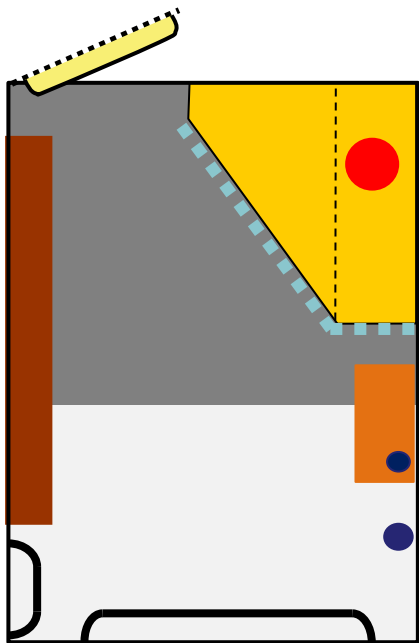
- **Pen**: Sloped flooring, sloped walls, option to confine....
- **Sow**: Calm sows (music and scratching), nest building...
- **Piglet**: Use of creep area.....
- **Staff**: Management....

DESIGNED PEN – BUT...



FF pen

FF = Free Farrower

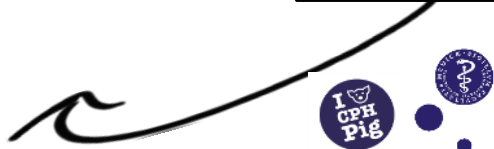
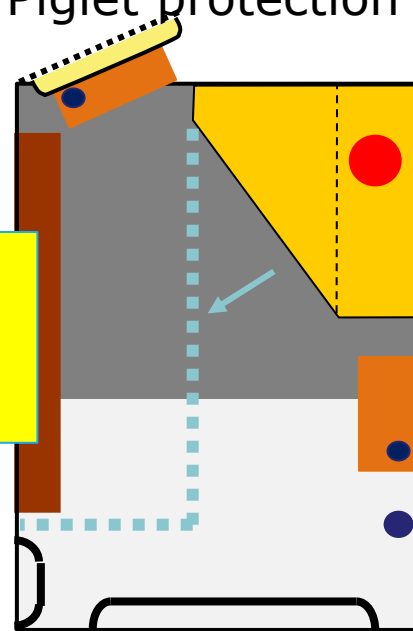


Loose → With an option to confine



SWAP pen

SWAP = Sow Welfare
And Piglet protection



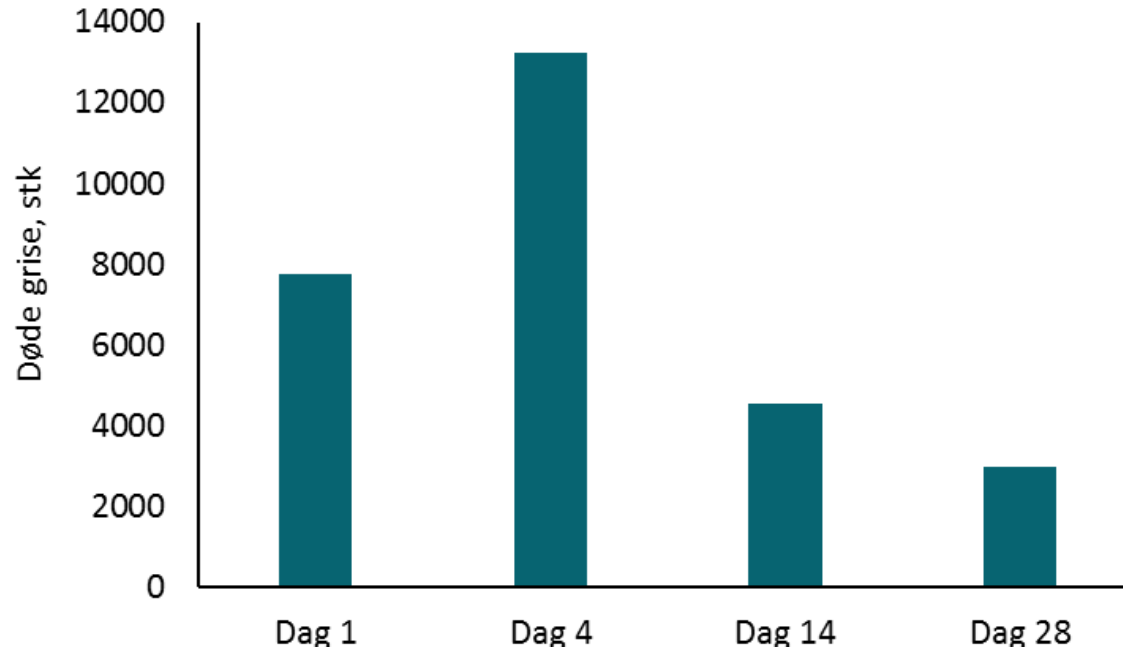
NEONATAL PIGLET MORTALITY

Group	Loose-Loose	Loose- Confined	Confined - Confined	p
Farrowings, no	723	718	698	
Before litterequalization, pct.	12,9^a	12,2^a	8.9^b	<0,001
Litter equal. – day 4, pct	7,8^a	6,9^b	5,8^c	0,001
Day 4 – weaning, pct	4,6	5,2	4,9	NS

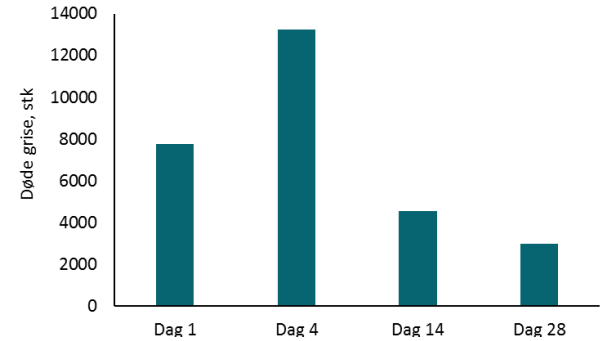
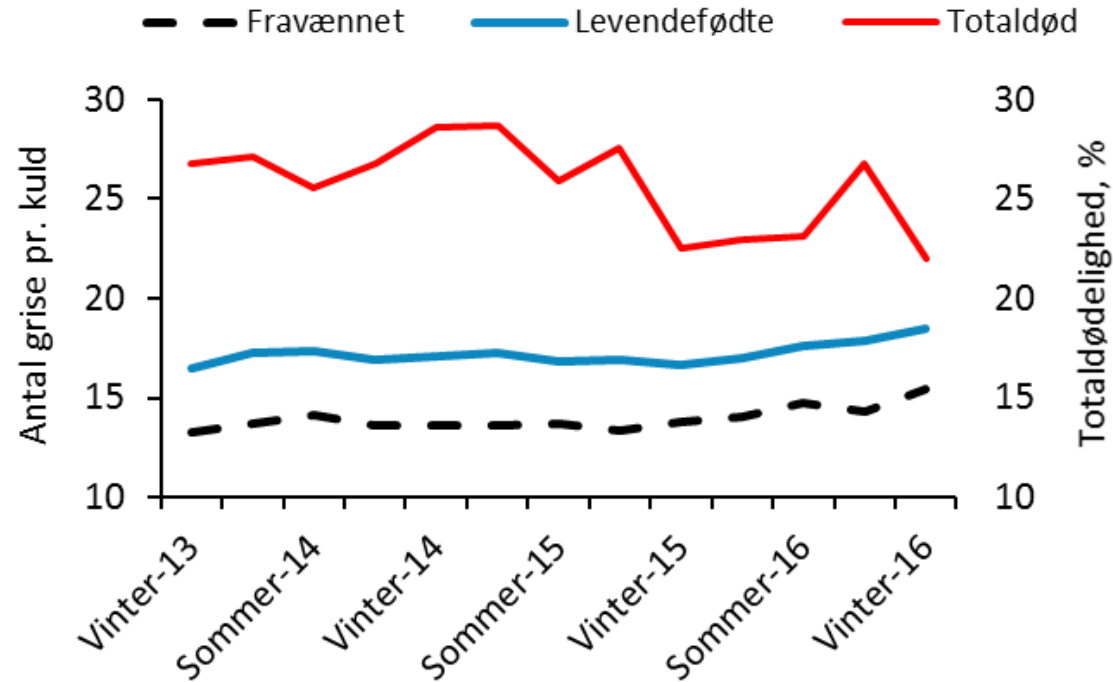
Hales, 2015



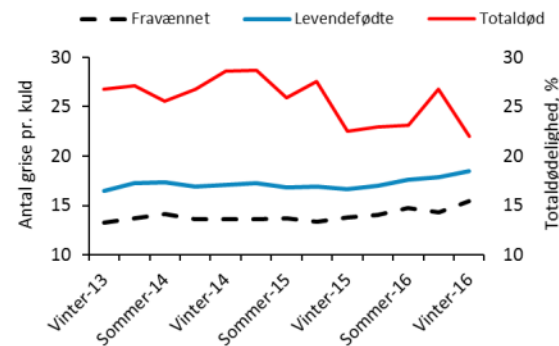
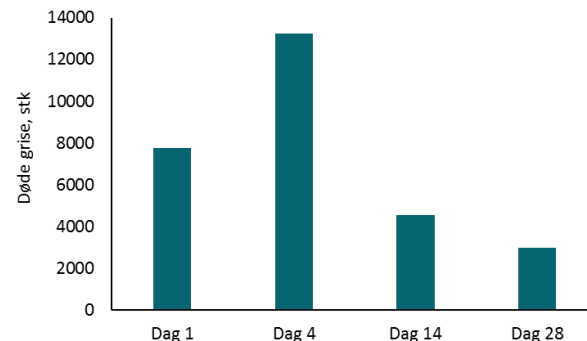
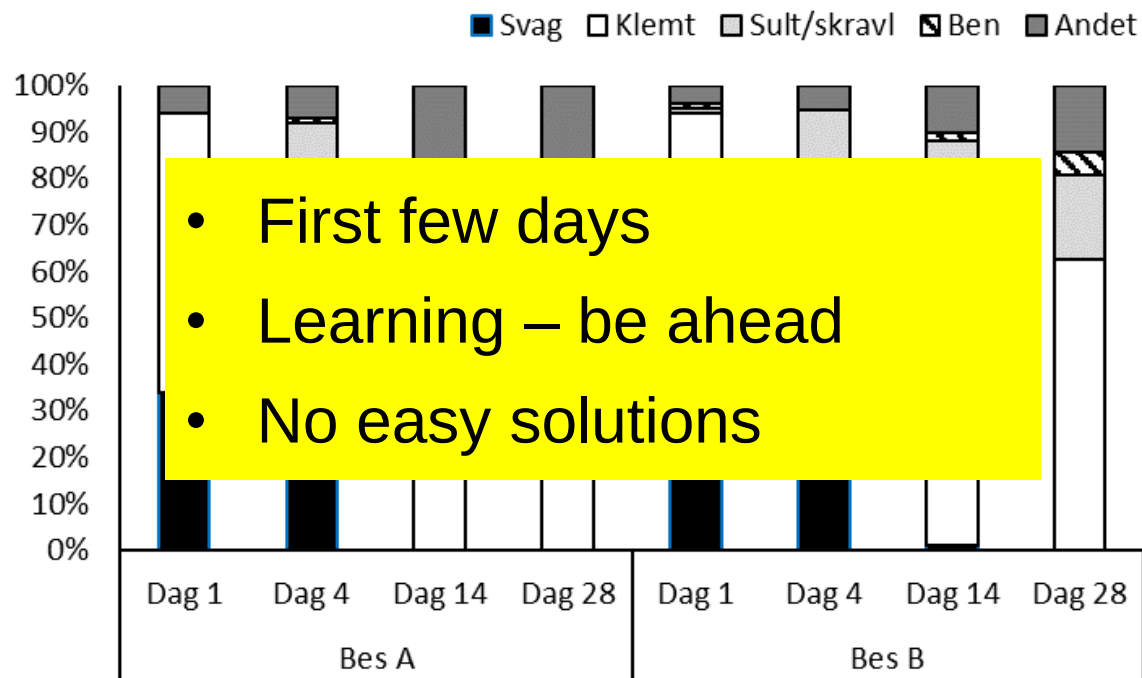
PIGLET MORTALITY – TWO HERDS, TWO YEARS



MORTALITY – OVER TIME



MORTALITY



PERFORMANCE



	Free Farrower		SWAP		
	Herd A	Herd B	Herd C	Herd D	Herd E (Australia)
Prewaning mortality, %	15-20	12-14		10-13	10
Pigs/sow/year, no.	28-33		34-37	35-38	30

PRELIMINARY RESULTS

UPCOMING – CONFINED TWO OR FOUR DAYS



♥♥: Up to 2 days confinement
♥: Up to 4 days confinement

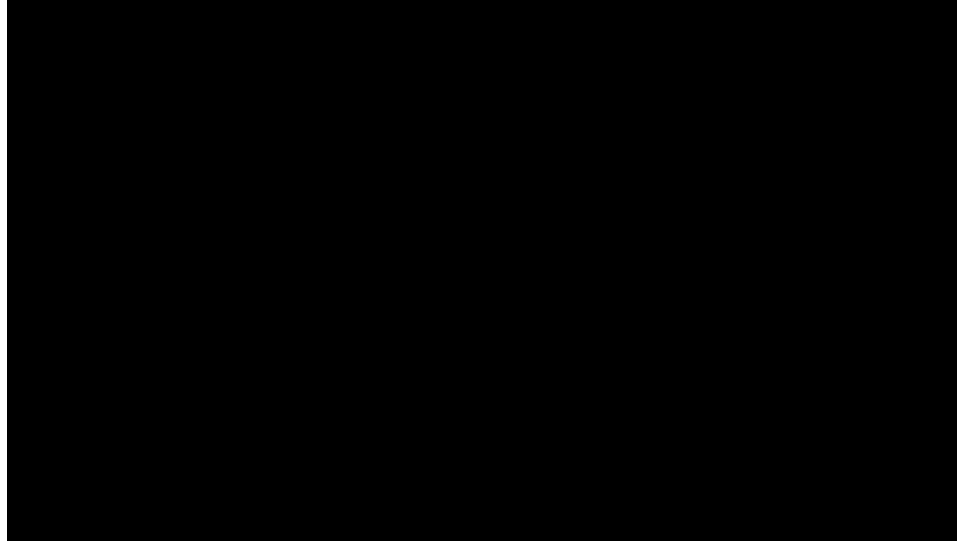


	Loose	♥♥	♥
Sows, no	21	21	21
Hours confined after farrowing, no	-	4	85
Dead piglets, no	82	62	48
Age at death, day	1,23	1,32	1,58
Weight at death, kg/piglet	1,14	1,15	1,22

PRELIMINARY RESULTS



CLASSICAL MUSIC AND DAILY SCRATCHING



- Scratch 15 seconds daily for 5-6 days prior to farrowing
 - Less likely to withdraw
- Treated sows easier to handle



LATEST – NEST BUILDING



Strategic supply of straw

Strawrack / + 5kg / + 10kg

- Reduced stillborn
 - From 1,9 to 1,4 piglets/litter



Did not work when
no scrubbers in
slurry channel



HOME AND ABROAD – CREEP AREA



PigSaver – feed, apples, pellets, straw



Light – later first time in creep – but then more in creep



HOT OR NOT – REDUCE MORTALITY



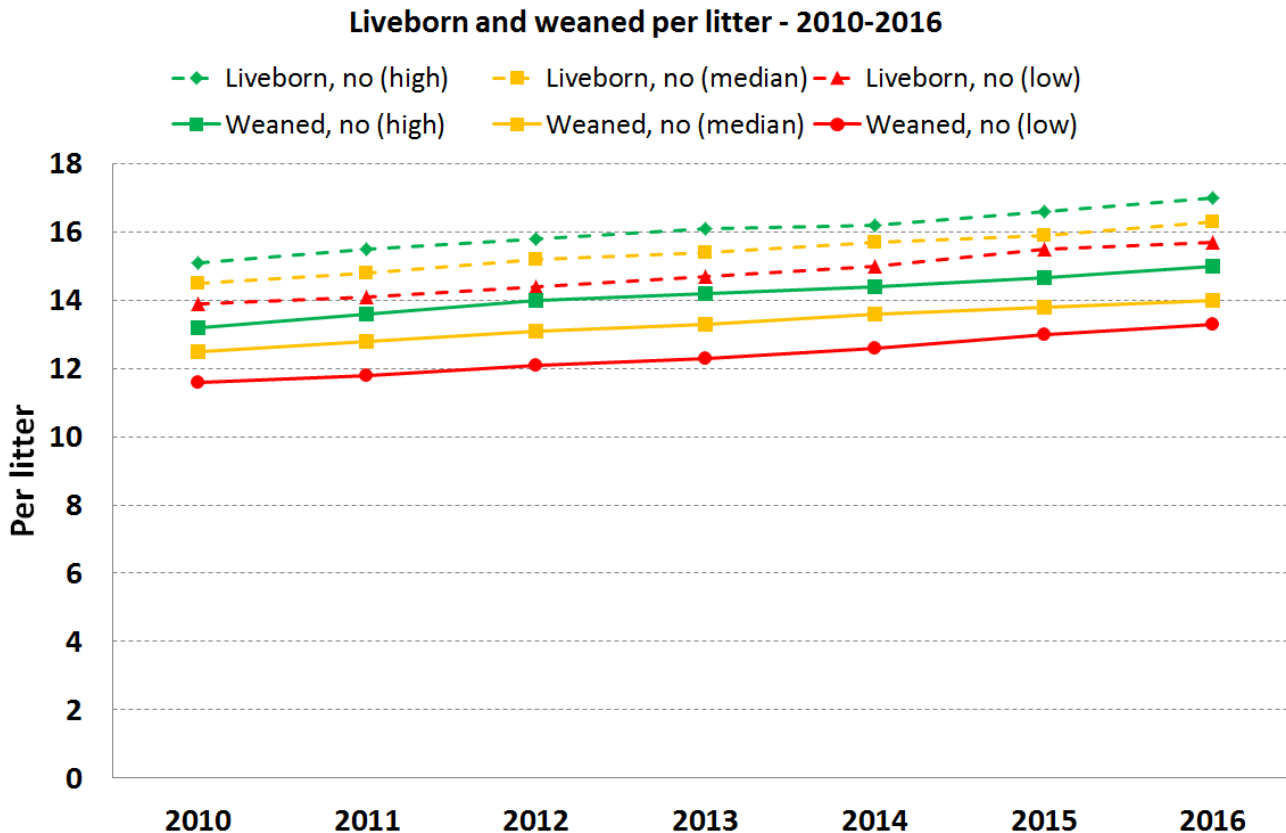
Pen	{	Sloped floor		No impact
		Sloped wall		Less risk situations
		Confinement	Lower mortality	Sow – ‘no’ impact
Sow	{	Music and scratch		Calmer sows
		Strategic straw	Reduced stillborn	Flies
Piglets	{	Feed piglets in creep		No impact
		Light in creep	Surveillance	Use of creep

SOW NURSING CAPACITY

- Need for nurse sows
 - Litter size – born alive
 - Sow capacity (and supplementary milk)
- Method
 - Farrowing crates - two step
 - Herds with loose sows
- Outcome (crated sows)
 - Stress ?
 - Next reproduction cycle

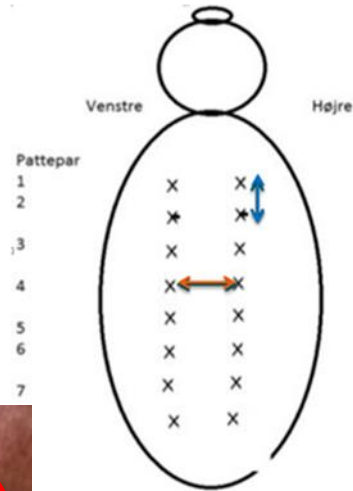


LARGE LITTERS

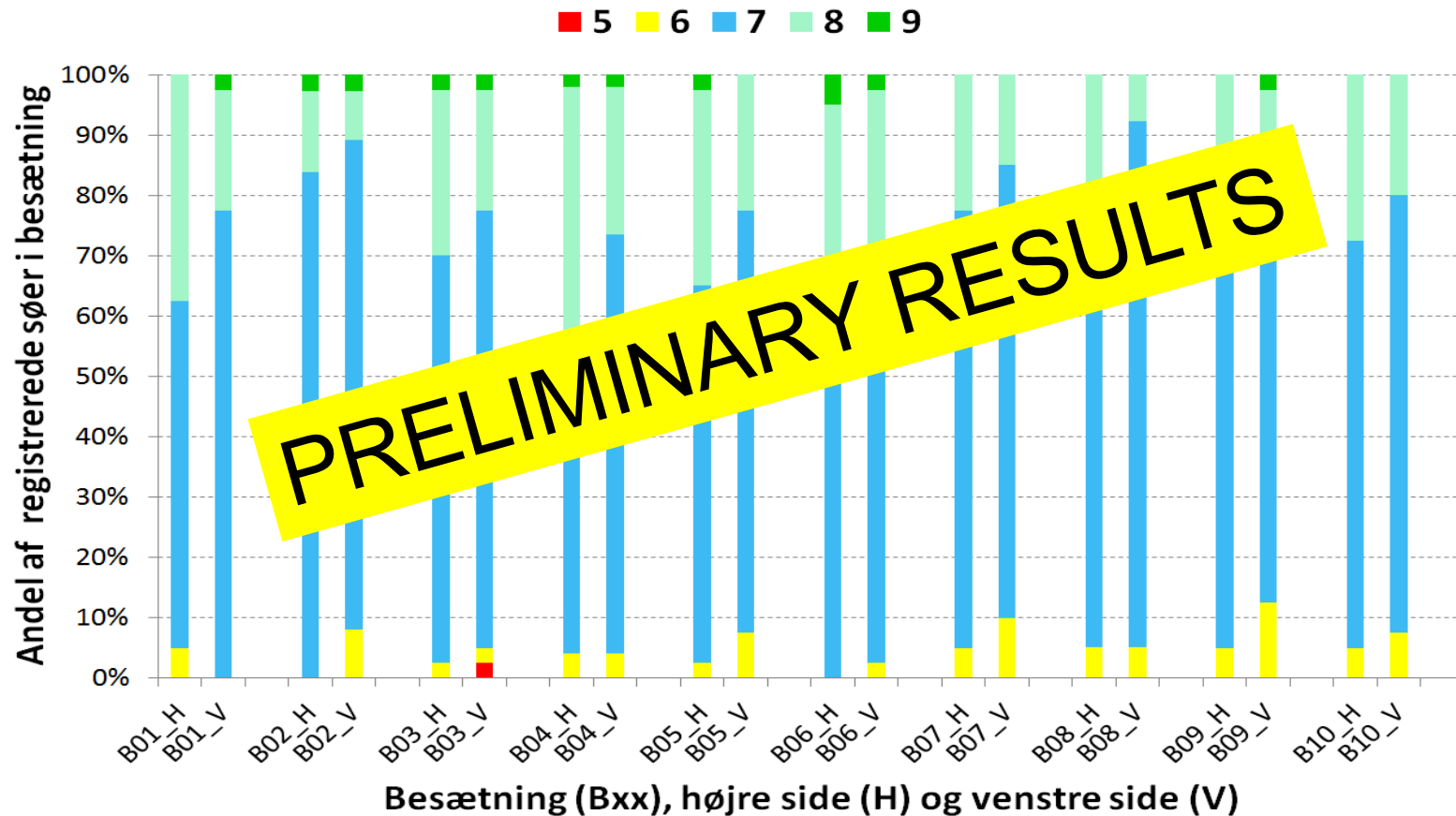


UDDER, GLANDS AND TEATS

- 10 herds
- App. 40 sows in each herd
- App. 8 days post farrowing
- Number of glands and teats – right and left
- Distance between teats
- Score glands and teats



NUMBER OF TEATS



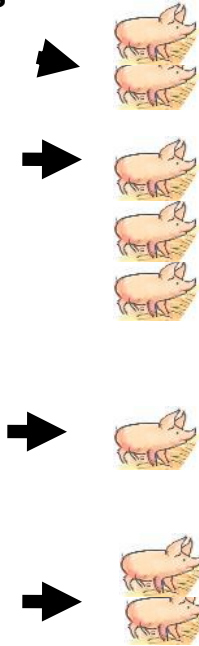
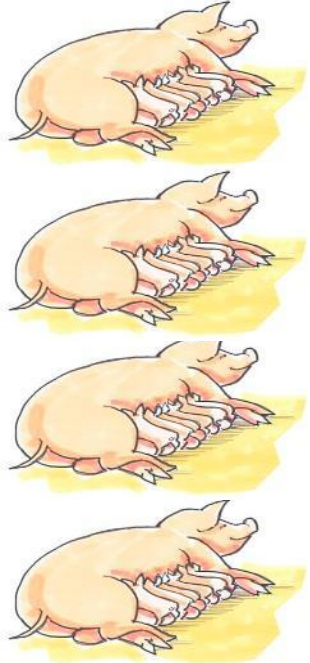
SOW'S NURSING CAPACITY?



TWO-STEP NURSE SOW

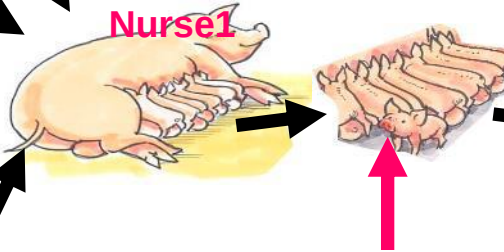
Excess large piglets
are moved to
Nurse1

Sows with more
liveborn than teats



Sow that
farrowed 4-7
days ago

Nurse1



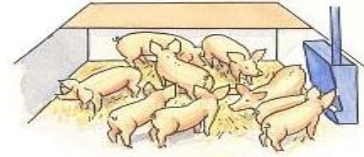
4-7 days old piglets are
moved from Nurse1 to
Nurse2

Sow that
farrowed at
least 21 days
ago

Nurse2



Piglets from Nurse2
are weaned and
moved to cleaned and
desinfected weaner
facility



What does it mean for the sow?

- No difference in heart rate, cortisol or milk let-down between the non-nurse and nurse sows
- Heart rate increases through lactation
- Cortisol decreases through lactation

Amdi et al., 2017

Livestock Science 198 (2017) 174–181



REPRODUCTIVE PERFORMANCE OF 'NURSE SOWS' IN DANISH HERDS IN THERIOGENOLOGY

- Data (2012-2013) from 20 herds (79,868 litters) was used
- All herds produced more than 14.5 live born piglets per litter
- The herds selected the nurse sows



SUBSEQUENT REPRODUCTION



- Nurse sows on average had 0,58 total born piglets ($P < 0.001$) more in the subsequent litters compared to non-nurse sows
- The odds ratio for a non-nurse sow to be culled between their first and second farrowing was 1.17 higher (95% CI [1.11; 1.23]) ($P < 0.001$) compared to a nurse sows.
- The re-service rate was not different between nurse and non-nurse sows

PRACTICE IN HERDS WITH LOOSE SOWS

Herds differ in:

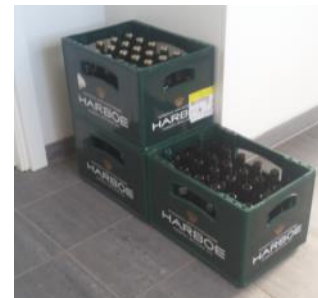
- Liveborn per litter
- Farrowings per week
- Sow capacity
- Surplus milk
-



PRACTICE IN HERDS WITH LOOSE SOWS

- Most use two-step nurse sows
- More than half use the young sows as receiver of newly born
- More than half enclose the piglets in the creep ($\frac{1}{2}$ – 2 hours)
- Nearly half establish nurse sows twice daily
- Nearly half of the herds give pain relief, hay or beer to the sows
- If they have an option to confine – they confine the sows (1-5 days)
- Some leave sows' own piglets for $\frac{1}{2}$ - 2 hours

Not 'the way' – but a number of ways



CITATION

**The stoneage didn't end because we
ran out of stones**

- **It ended because it was time to
reconsider how we were living**



FUTURE – LOOSE SOWS

