Gilt introduction on Danish PRRSV-positive farms

Elisabeth Okholm Nielsen, Lise Kvisgaard and Lars E. Larsen

ESPHM 1th june 2023

SUPPORTED BY
Danish Pig Levy Fund
SEGES INNOVATION

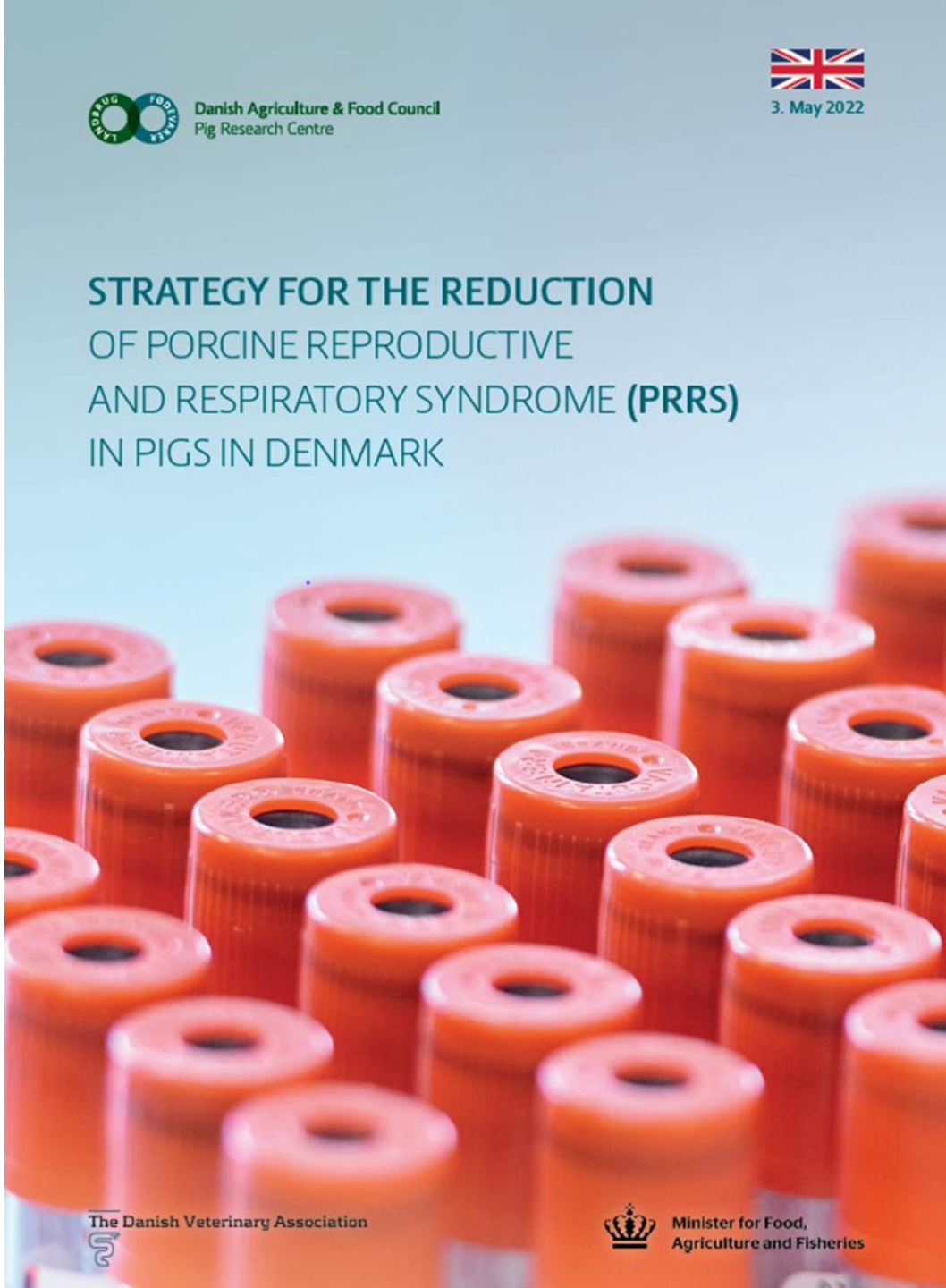
PRRS in Denmark

- PRRS is part of the Specific Pathogen Free declaration system
- 62% of Danish sow herds are declared seronegative for PRRS (May 2023)
- Boar stations and nucleus herds are seronegative for PRRS (monthly test)

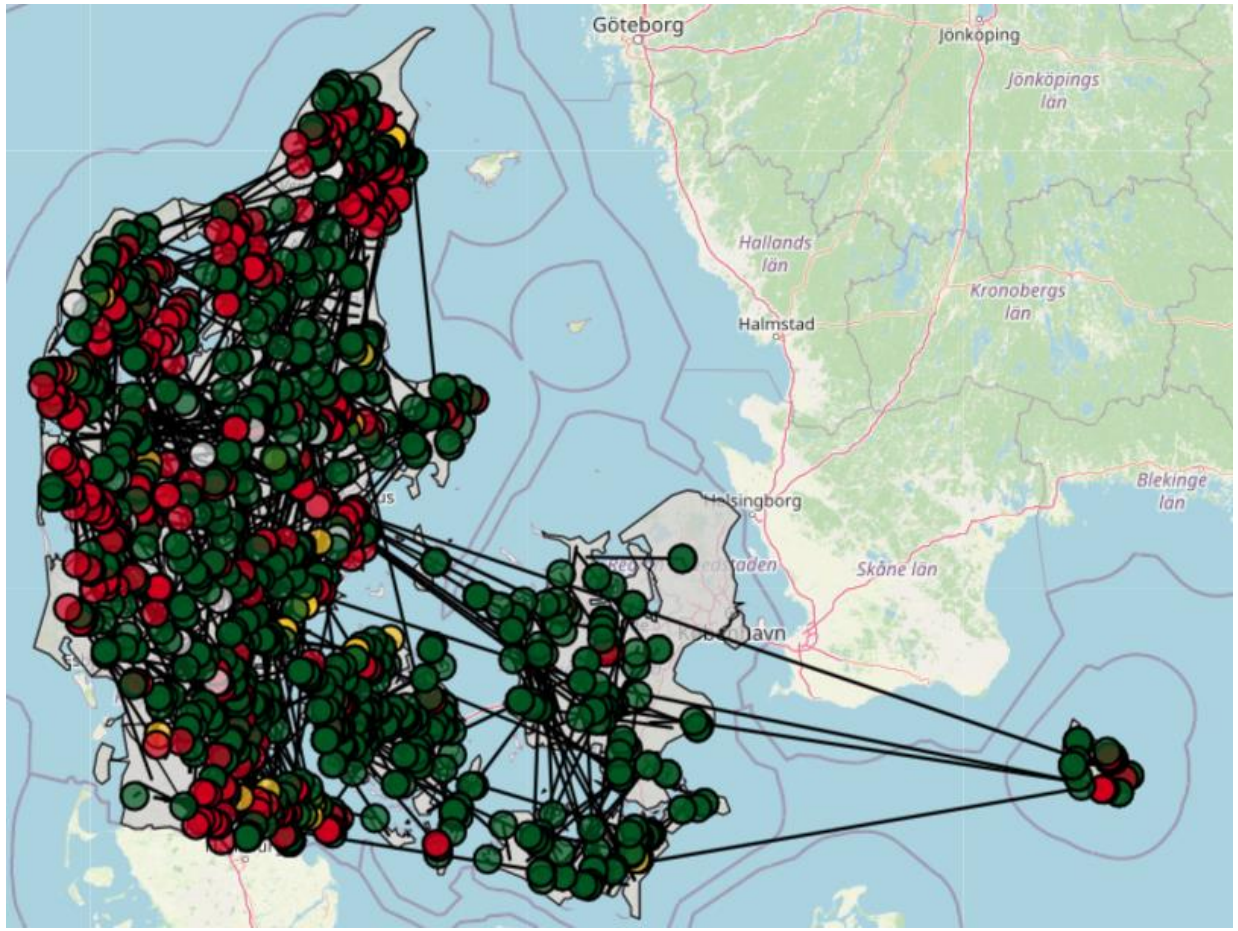
- PRRSV type 1 was diagnosed the first time in 1992
- PRRSV type 2 was introduced in 1996

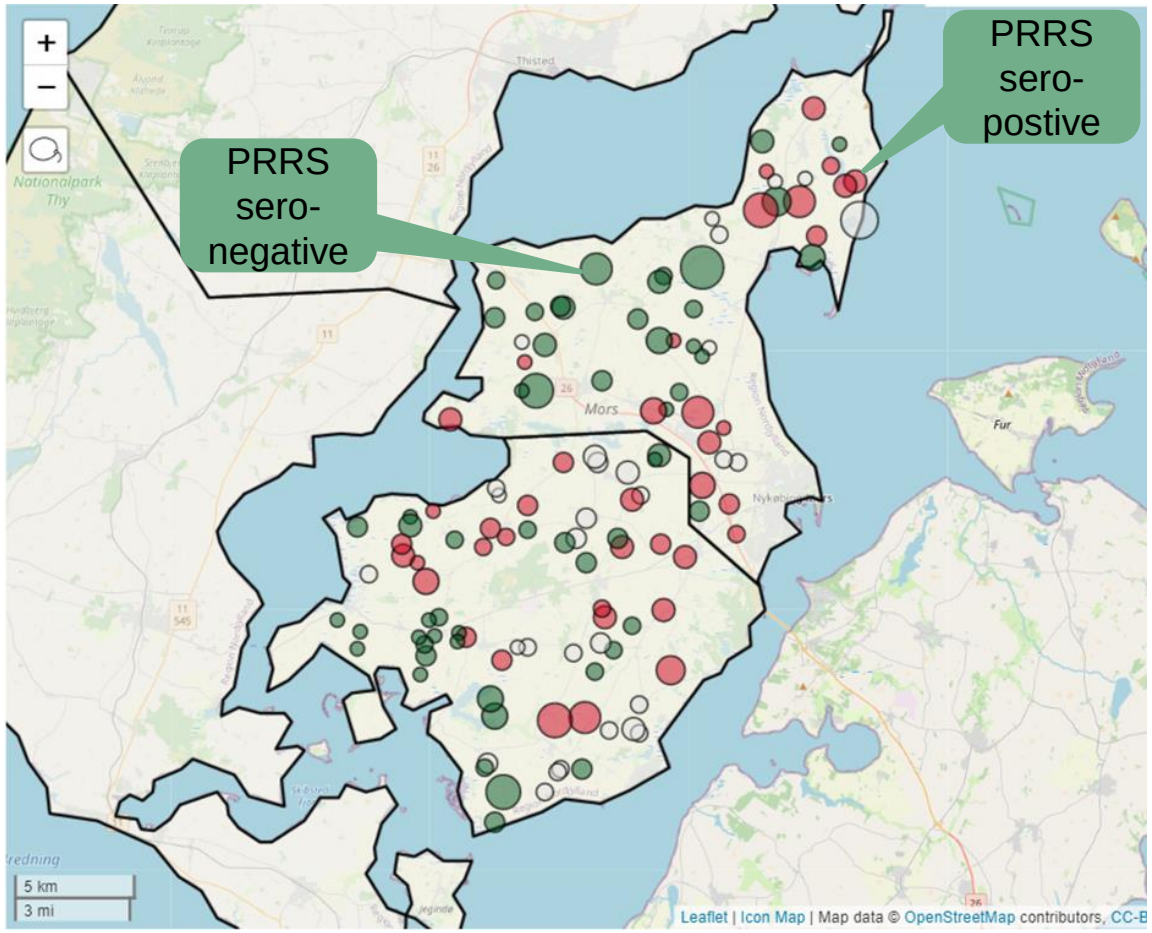
National PRRS reductionplan 2022-25

- Denmark has developed a PRRS control plan to reduce the number of seropositive pig farms
- Cases suspected for PRRS disease must be reported to the authorities
- All farms must declare status with respect to PRRS antibodies by the1st October 2023
- PRRSV positive farms are registered by the authorities – to meet demands from export countries

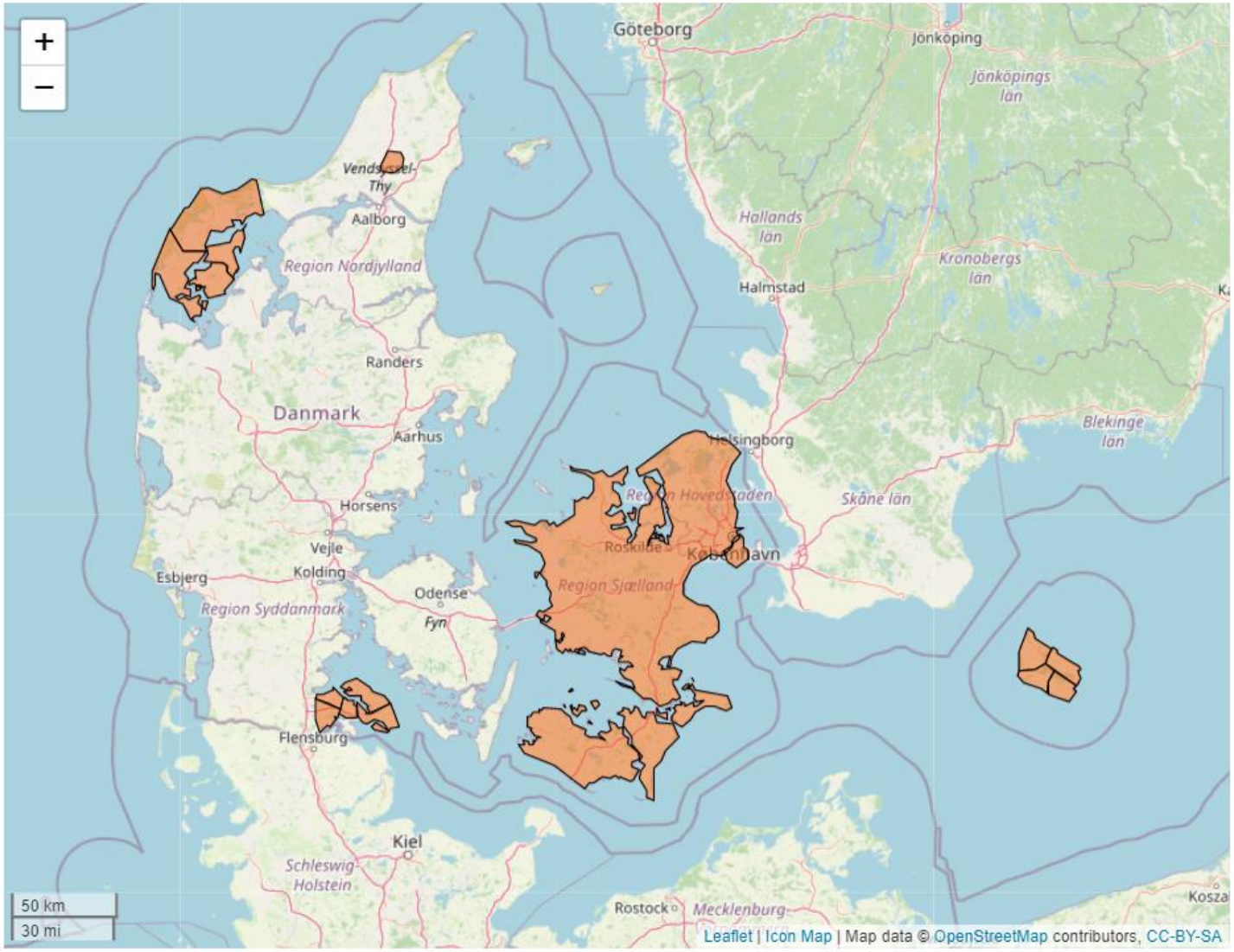


New online maps on PRRS-status and transports of pigs





Local initiatives – since January 2023



Gilt introduction in 23 Danish PRRSV-positive farms

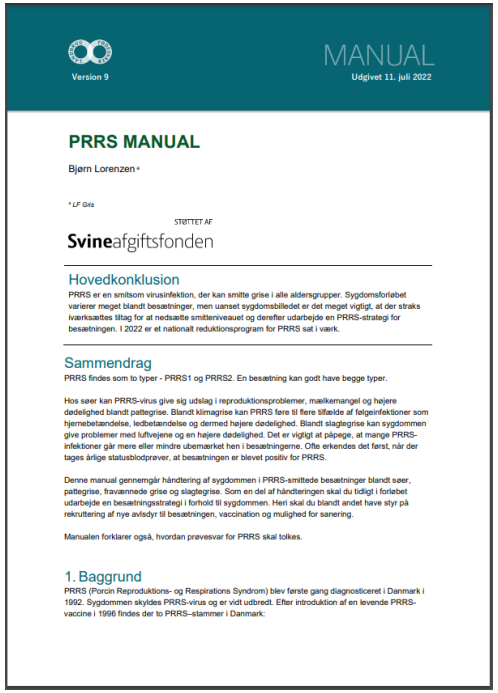
Danish PRRS REDUCTION

UNIVERSITY OF COPENHAGEN

SUPPORTED BY
Danish Pig Levy Fund
SEGES INNOVATION

Danish PRRS guidelines for replacement animals

- Immunisation in a quarantine unit for purchased and own production of gilts
- All-in all-out management
- 12 week quarantine period
- Use of Modified Live Vaccines against the specific PRRSV



Version 9

MANUAL
Udgivet 11. juli 2022

PRRS MANUAL

Bjørn Lorenzen *

* LF Gits

STØTTET AF
Svineafgiftsfonden

Hovedkonklusion

PRRS er en smitsom virusinfektion, der kan smitte grise i alle aldersgrupper. Sygdomsforløbet varierer meget blandt besætninger, men uanset sygdomsbilledet er det meget vigtigt, at der straks iværksættes tiltag for at nedsætte smteniveauet og derefter udarbejde en PRRS-strategi for besætningen. I 2022 er et nationalt reduktionsprogram for PRRS sat i værk.

Sammendrag

PRRS findes som to typer - PRRS1 og PRRS2. En besætning kan godt have begge typer.

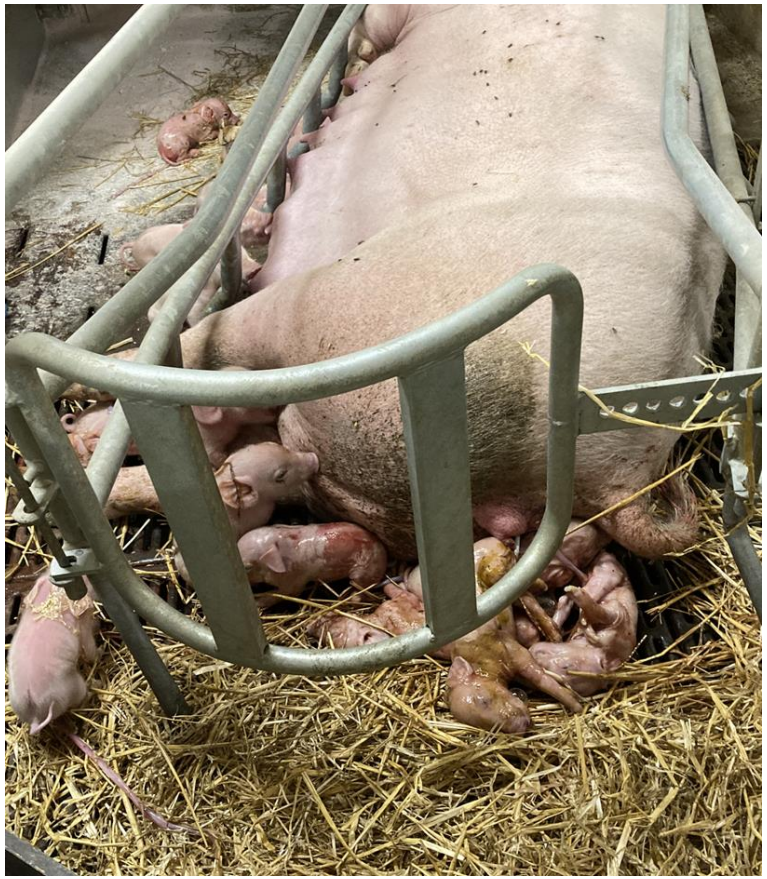
Hos søer kan PRRS-virus give sig udslag i reproduktionsproblemer, mælkemangel og højere dødelighed blandt pattegrise. Blandt klimagrise kan PRRS føre til flere tilfælde af følgeinfektioner som hjernebetændelse, ledbetændelse og dermed højere dødelighed. Blandt slagtegrise kan sygdommen give problemer med luftvejene og en højere dødelighed. Det er vigtigt at påpege, at mange PRRS-infektioner går mere eller mindre ubemærket hen i besætningerne. Ofte erkendes det først, når der tages årlige statusblodprøver, at besætningen er blevet positiv for PRRS.

Denne manual gennemgår håndtering af sygdommen i PRRS-smittede besætninger blandt søer, pattegrise, fravænnede grise og slagtegrise. Som en del af håndteringen skal du tidligt i forløbet udarbejde en besætningsstrategi i forhold til sygdommen. Heri skal du blandt andet have styr på rekruttering af nye avlsdyr til besætningen, vaccination og mulighed for sanering.

Manualen forklarer også, hvordan prøvesvar for PRRS skal tolkes.

1. Baggrund

PRRS (Porcin Reproduktions- og Respirations Syndrom) blev første gang diagnosticeret i Danmark i 1992. Sygdommen skyldes PRRS-virus og er vidt udbredt. Efter introduktion af en levende PRRS-vaccine i 1996 findes der to PRRS-stammer i Danmark:



Quality of gilt introduction on PRRSV-positive farms

Questions

- Purchased or own production of replacement gilts
- How is the quarantine facility and management
- Use of PRRS-vaccination of gilts
- Are the gilts seropositive when they enter the sow unit
- Are the gilts viremic when they enter the sow unit

Quality of gilt introduction on PRRSV-positive farms

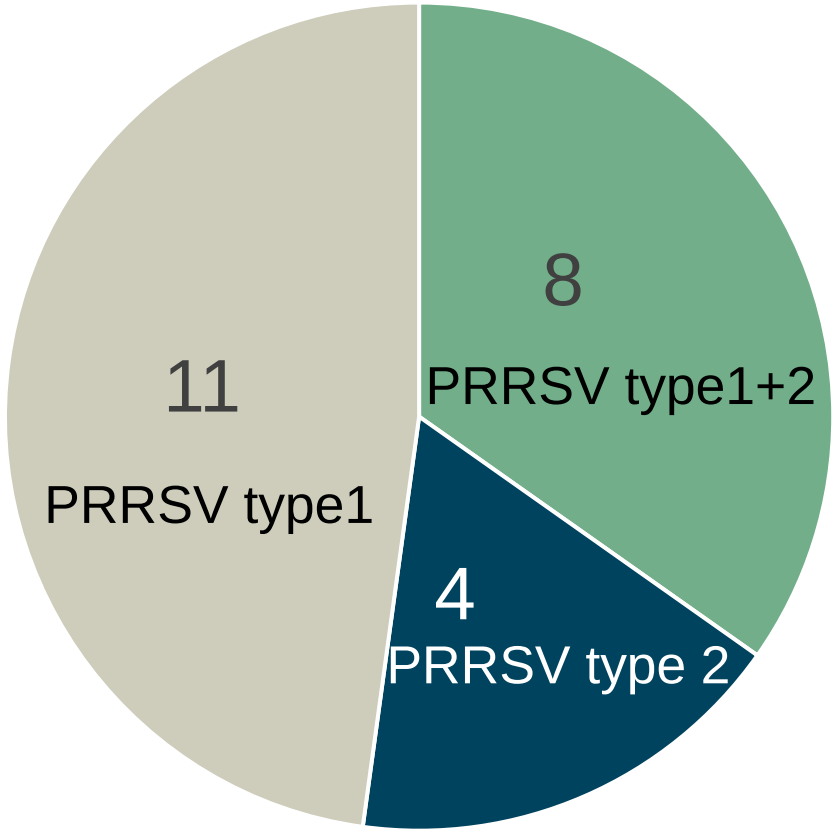
Materials and methods

- Quarantine facility and management in questionnaire
- PRRS vaccination
- Blood sampling in 15 gilts
  - When leaving the quarantine unit
  - Mid gestation
  - Close to farrowing

Quality of gilt introduction on PRRSV-positive farms

- Farm inventory of 775 to 3000 sows
- 21 farms purchased gilts
- 2 farms produced own replacement gilts

PRRSV positive farms are registered by the Danish authorities due to export regulations



Analyses on serum

- The serum samples were analyzed at the University of Copenhagen
- Antibodies against PRRSV using an ELISA test
- Real-time RT-PCR analyses for PRRSV

Definition of optimal quarantine management

- All-in-all-out
- Separated entrance
- No directe air contact to other pigs
  (e.g. a door to another section)

- Quarantine time > 10 weeks

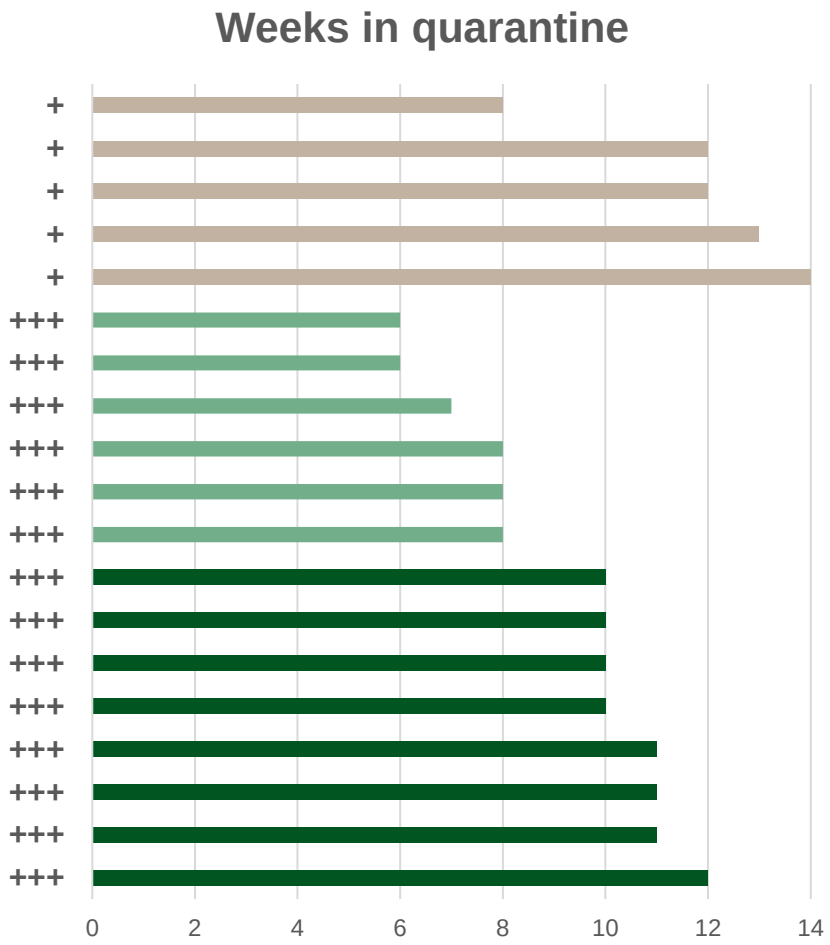
Foto DanBred

Quality of gilt introduction - Results

Not optimal

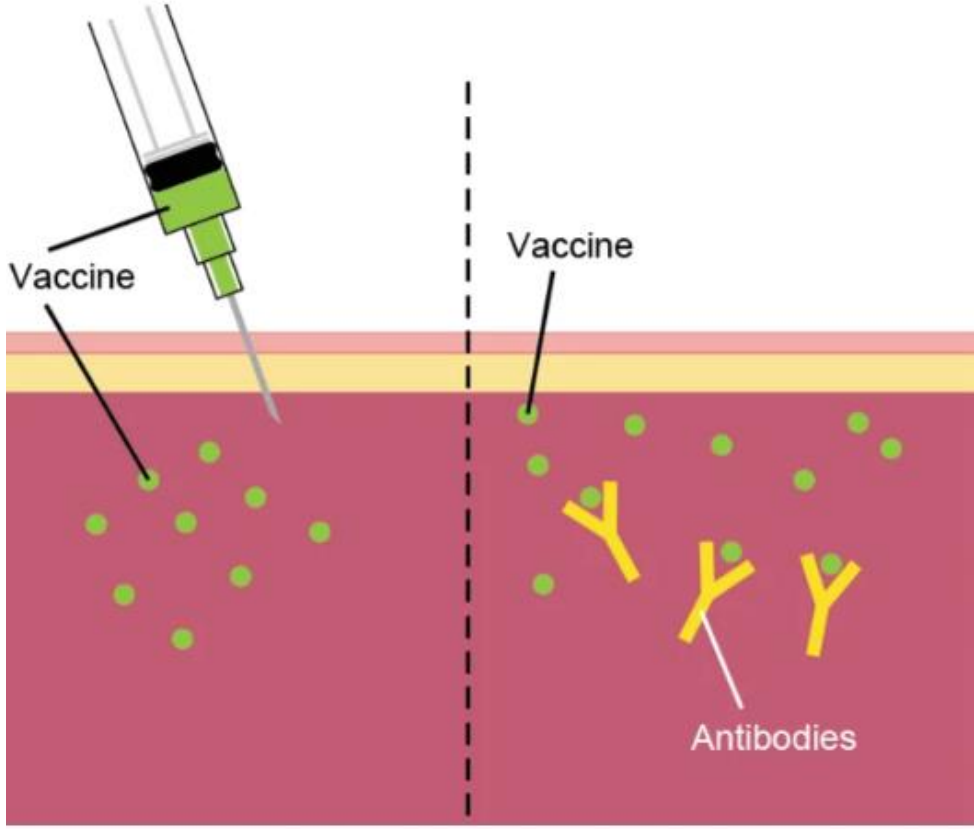
Good

- ✓ Separated entrance
- ✓ No contact to other pigs
- ✓ All-in/all-out



- Nineteen farms used a quarantine unit for 6-14 weeks
- Good physical quarantine facility in 14 farms
- Ten weeks or more in 8 farms
- Not optimal physical facility in 5 farms

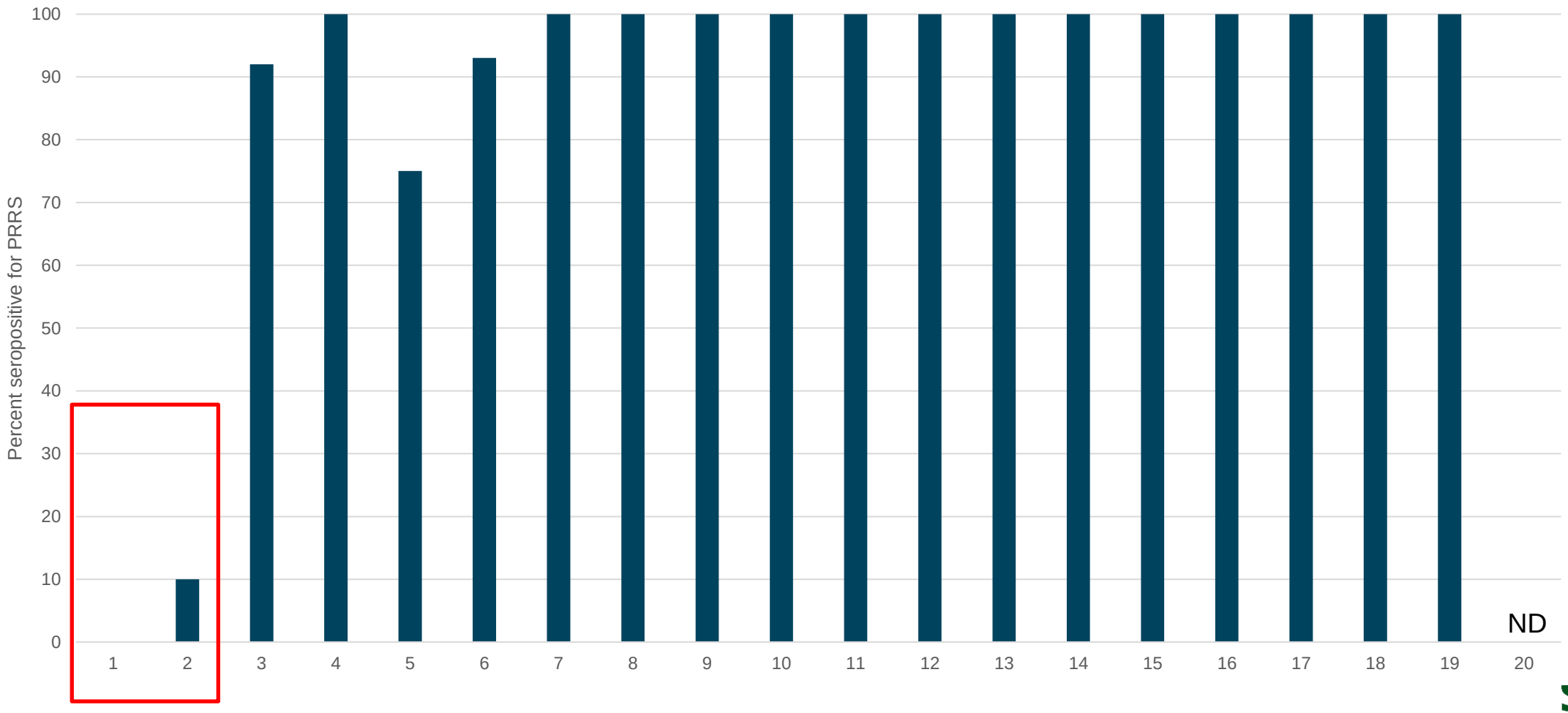
PRRS immunization in quarantine unit



- 20 of 23 farms used MLV vaccines for gilts
- One herd use an inactivated vaccine for gilts (4%)
- Two herds did not vaccinate the gilts against PRRS-virus (9%)

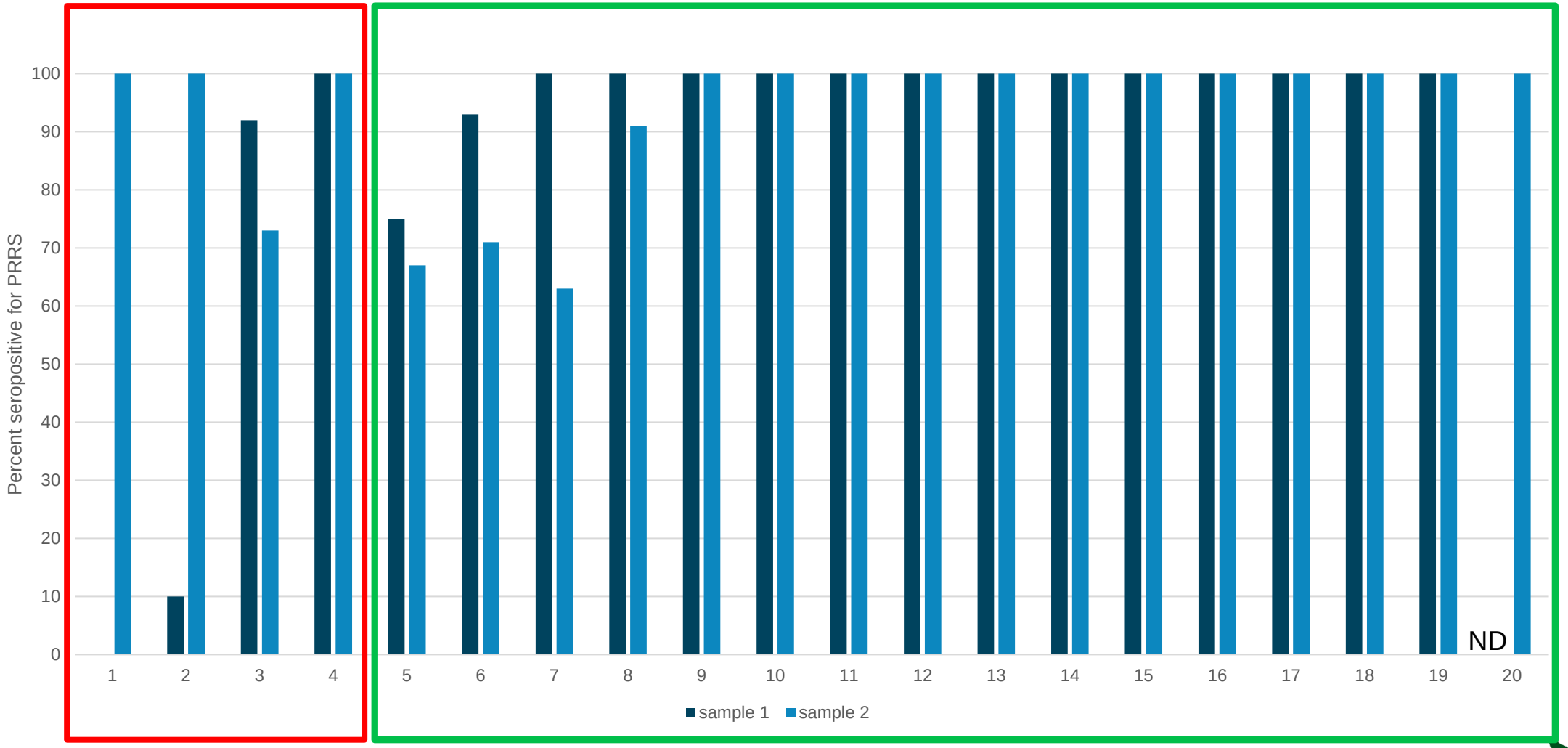
SEGES INNOVATION

PRRS antibodies in MLV vaccinated gilts – sample 1



Blood sample taken prior to MLV vaccination

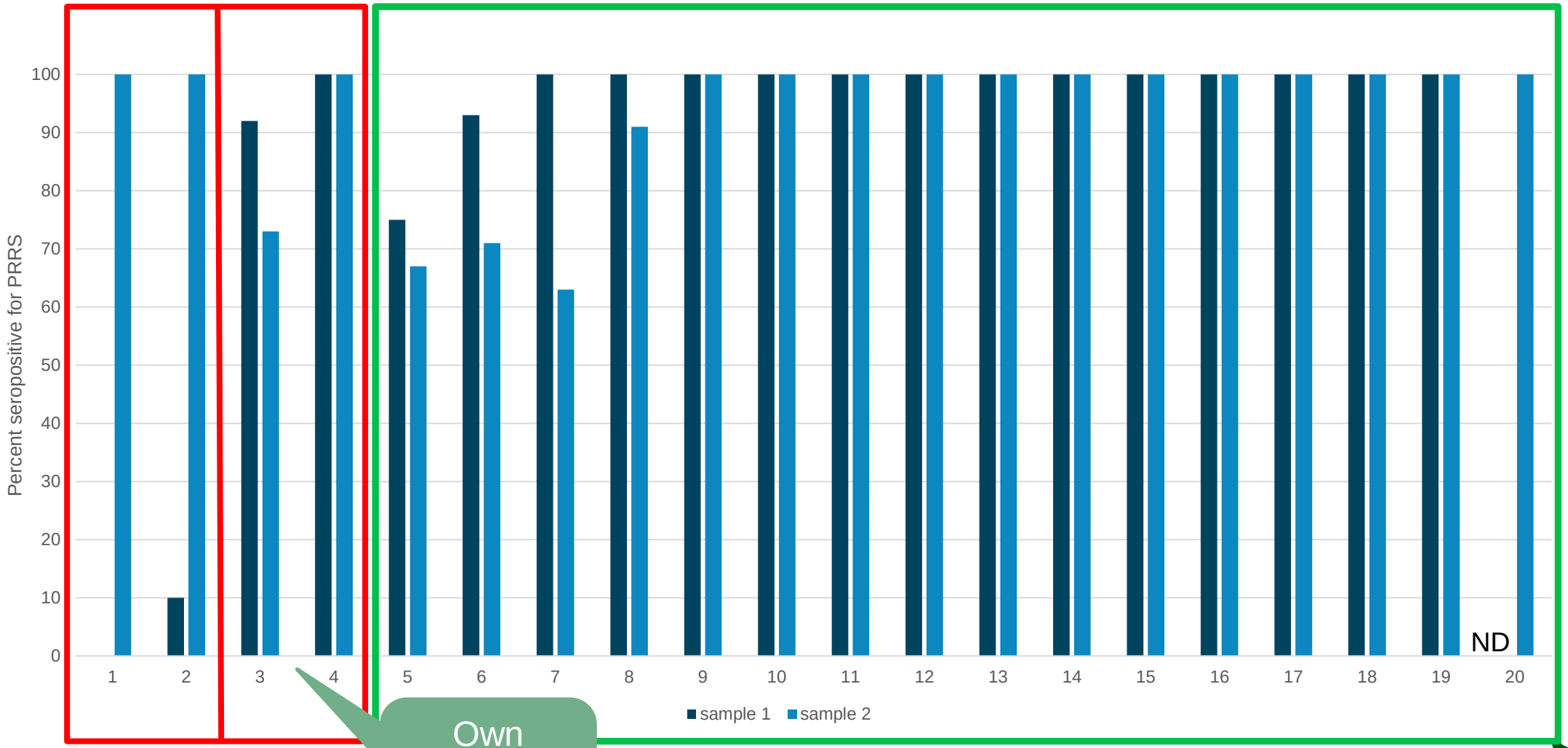
PRRS antibodies in MLV vaccinated gilts – sample 1-2



No quarantine unit

Herds with quarantine unit for gilts

PRRS antibodies in MLV vaccinated gilts – sample 1-2

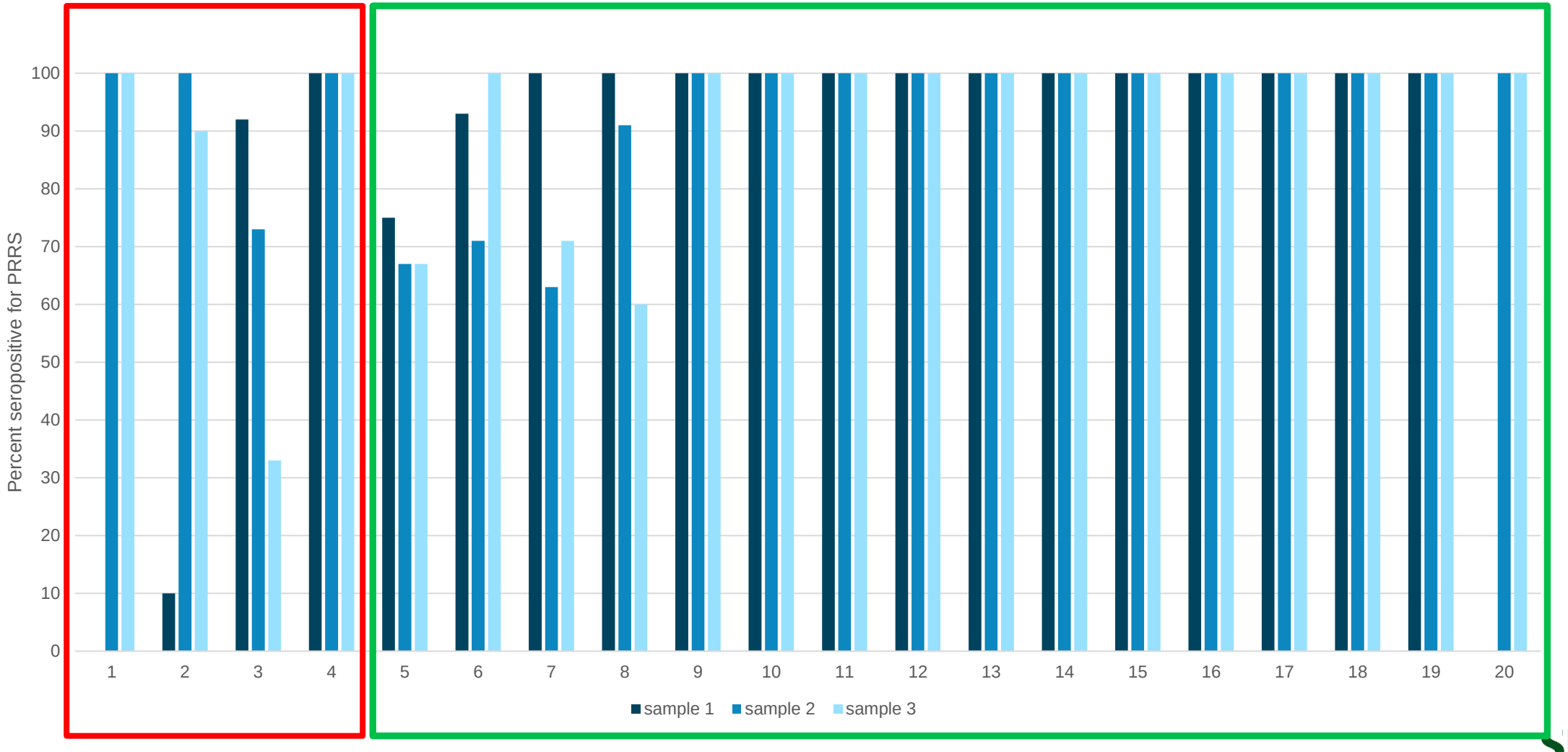


No quarantine unit

Own production of gilts

Herds with quarantine unit for gilts

PRRS antibodies in MLV vaccinated gilts – sample 1-3

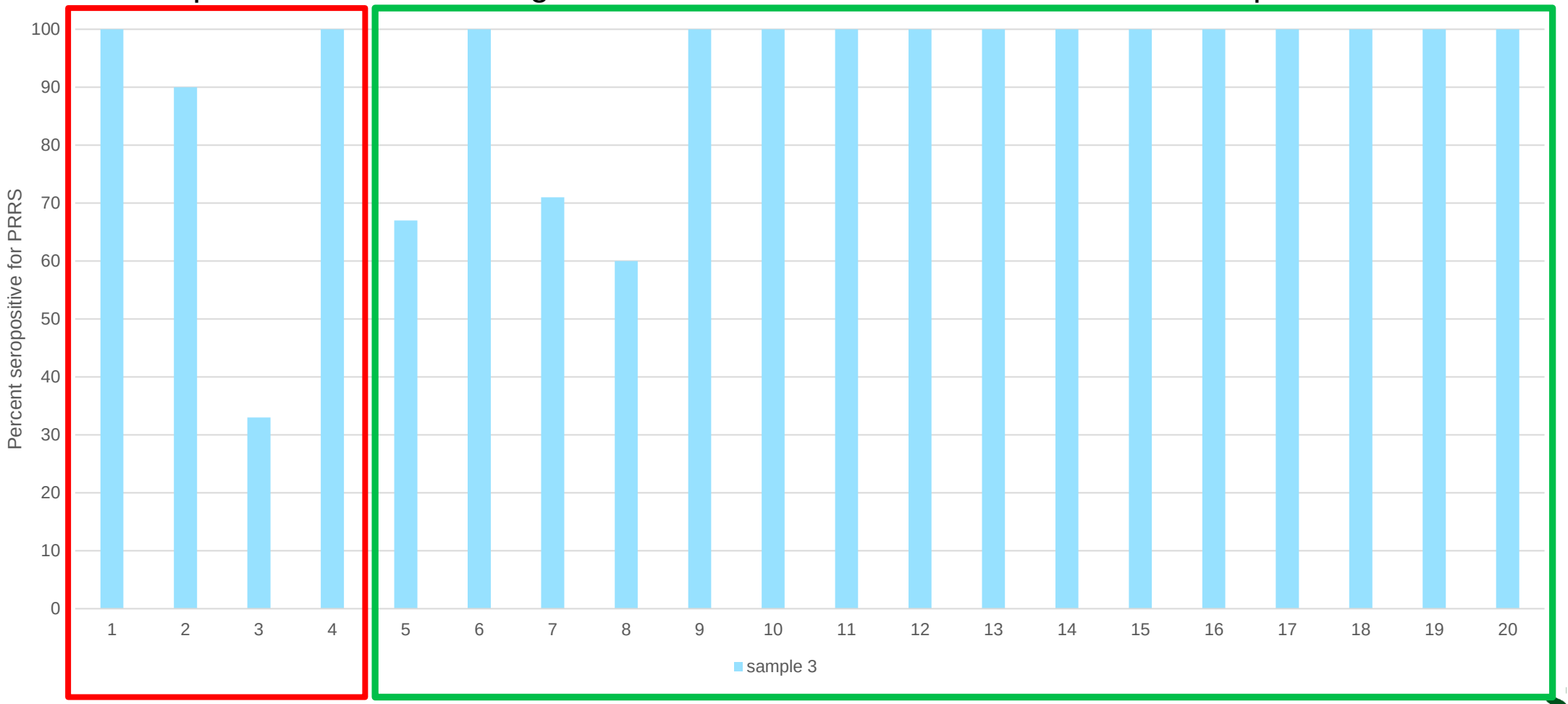


No quarantine unit

Herds with quarantine unit for gilts

PRRS antibodies in MLV vaccinated gilts – sample 3

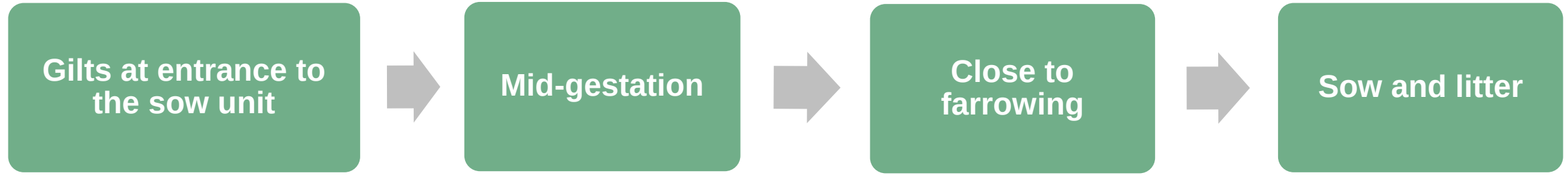
Sample 3 close to farrowing – Sows in 16 of 20 herds were 90-100% seropositive for PRRS



No quarantine unit

Herds with quarantine unit for gilts

Results from real-time RT-PCR analyses for PRRS-virus



Gilts at entrance to the sow unit	Mid-gestation	Close to farrowing	Sow and litter
No PRRS-virus	One isolate from a gilt in one farm	Four isolates from gilts in farm A	Isolates from two sows/litter farm A
			Isolate from one litter in farm B
			Isolate from udder skin in farm C

All findings were PRRS virus type 1

Results summarized

- 21 of 23 PRRSV positive farms purchased replacement gilts
- 19 farms used a quarantine facility for 6 to14 weeks
- Good physical quarantine facility in 14 of 19 farms (74%)
- MLV PRRS-vaccination of gilts in 20 farms (87%)

- The frequency of PRRS-seropositive gilts was 90-100% when they entered the sow unit after MLV vaccination on 16 of 20 farms (80%)
- None of the tested gilts was positive in RT-PCR for PRRS when they left the quarantine unit

- On most farms, an immunization of the gilts was achieved after vaccination with modified live PRRS vaccines


Danish
PRRS
REDUCTION
Time for questions?
UNIVERSITY OF
COPENHAGEN
SUPPORTED BY
Danish Pig Levy Fund
SEGES
INNOVATION