

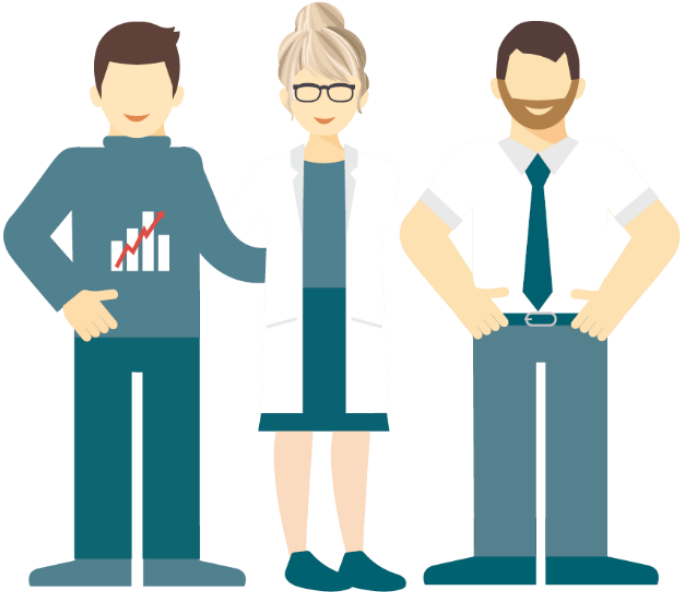
Sow mortality in Denmark

SEGES Innovation

April 12th 2023



Vi connect science to practical farming



SEGES
INNOVATION



Who are we?



Lisbeth Ulrich Hansen
Chief Scientist, MSc Agricultural Science
LUH@seges.dk

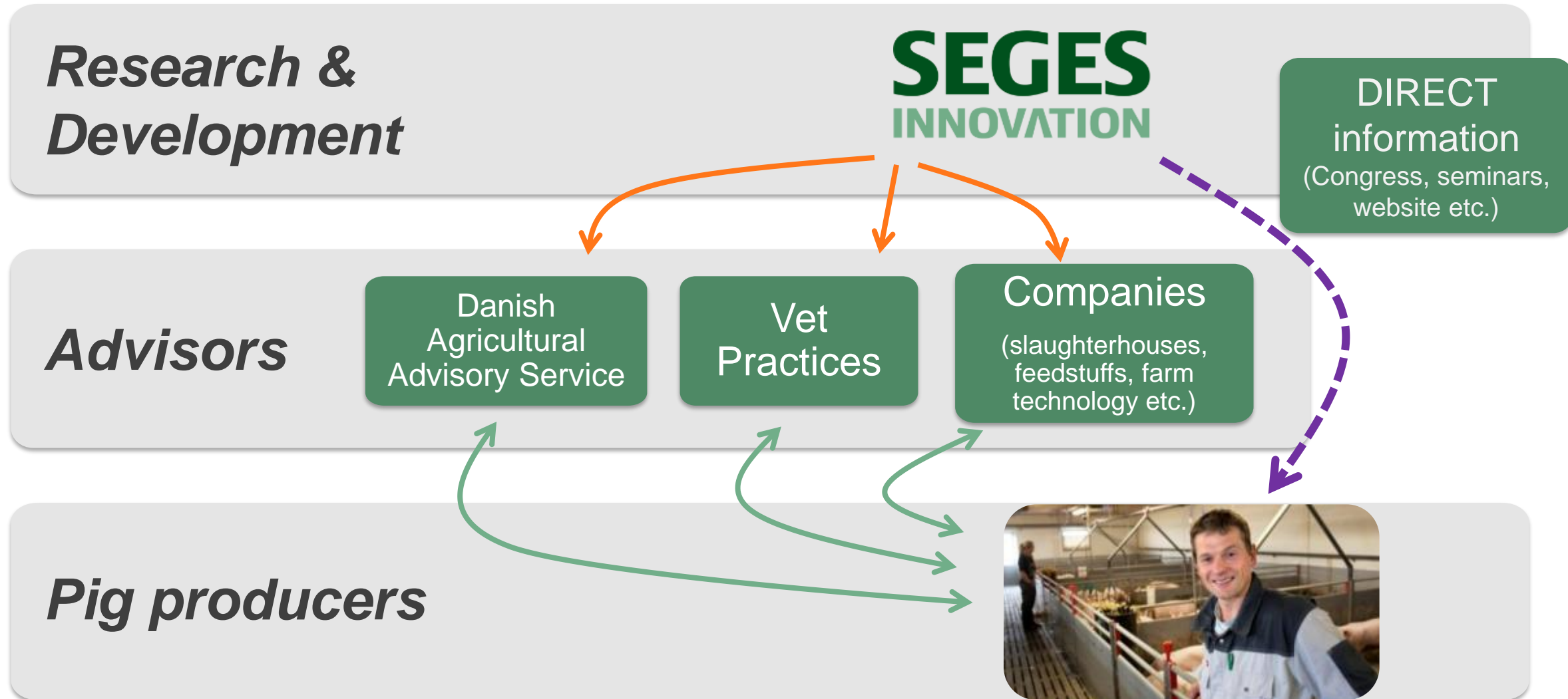


Hanne Bak
Veterinarian, PhD
HABA@SEGES.dk



Tina Birk Jensen
Veterinarian, PhD
TIBJ@seges.dk

Two-level advisory system



Agenda for today

Facts on Danish pig production

How do we keep sows in Denmark?

What do we know about sow mortality in Denmark?

What do we do to increase sow survival?



Facts on Danish Pig production

Facts about Danish pig production


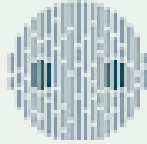


- Approx. 2.900 farmers with a pig production
- Approx. 1.200 sow herds
- Approx. 900.000 sows
- Average number of sows per herd is 850

- 33 mil. weaners at 30 kg
- 1 mil. for replacement
- 15 mil. piglets at 30 kg for export (Germany, Poland)
- 17 mil. finisher for slaughter in Denmark

- Pork for export approx. 80% (EU, UK, Japan)



Pig genetics in Denmark

Breeding companies	Size
 DANBRED	80 %
DANISH GENETICS 	18 %
 Topigs Norsvin	1 %
	1 %

Pig genetics in Denmark



From 2023 sow and piglet survival is included in the breeding goals

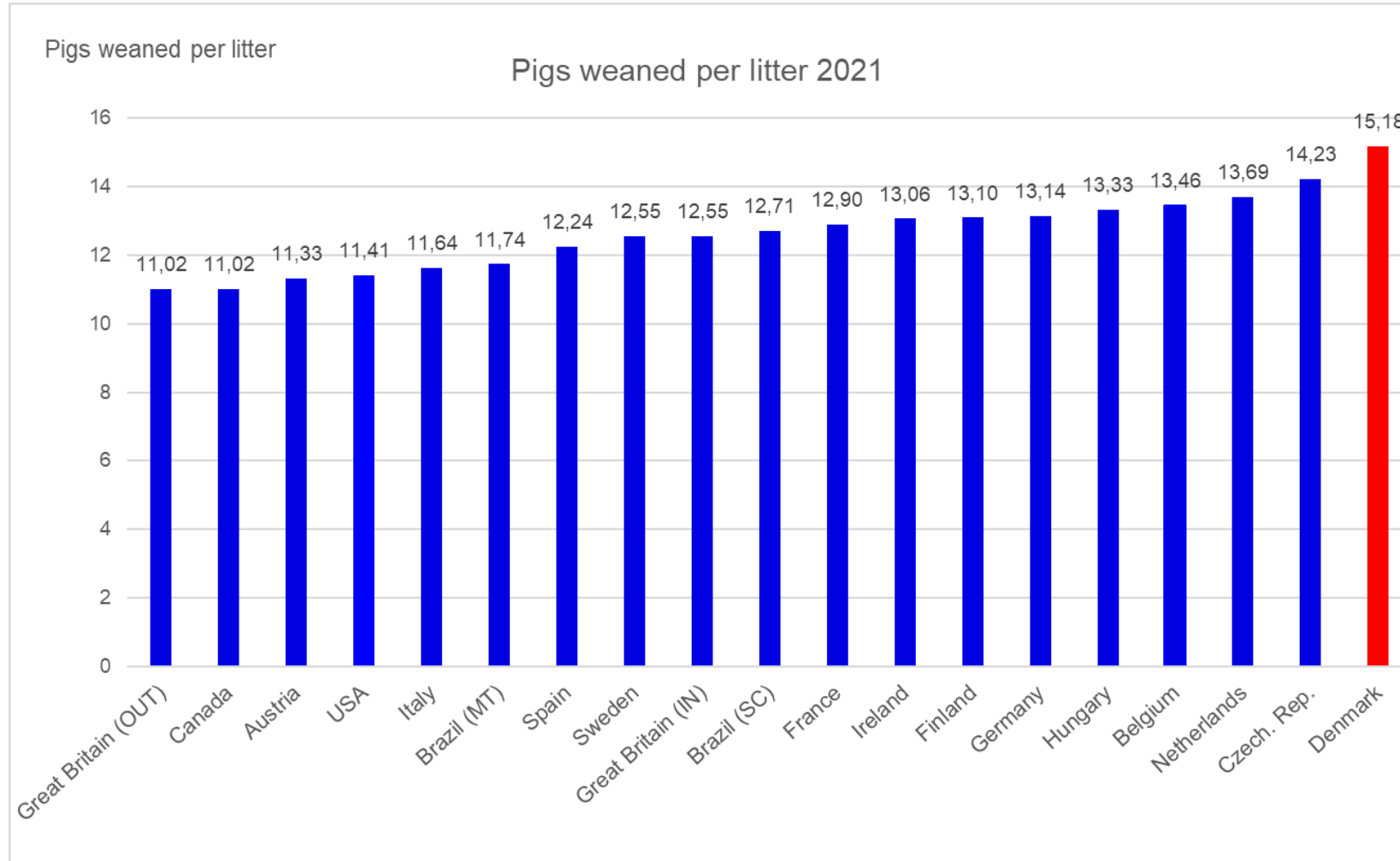


COMPLETE THREE-WAY CROSS-BREEDING SYSTEM

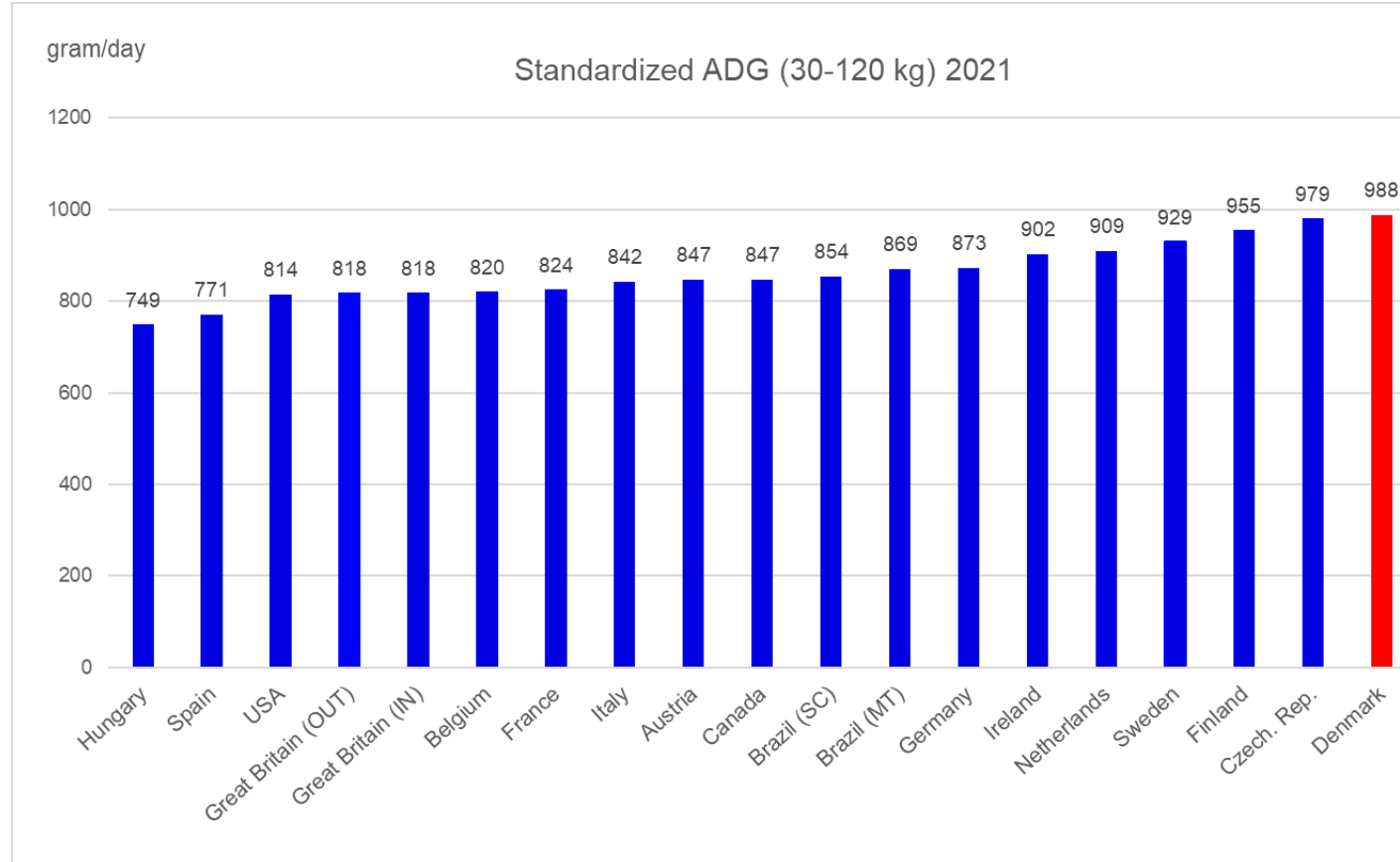
Facts about Danish pig production | 2021

Average Danmark 2021	Sows (Average)	Max. (25%)	Min. (25%)
Piglets per sow per year, no.	34.0	36.8	30.1
Litter per sow per year, no.	2.24	2.30	2.15
Nursing period, days	31	30	32
Farrowing rate, %	87.3	90.6	84.1
Liveborn piglets per litter, no.	17.9	18.6	16.9
Weaned piglets per litter, no.	15.0	16.2	13.9
Weight at weaning, kg	6.4	6.0	6.8

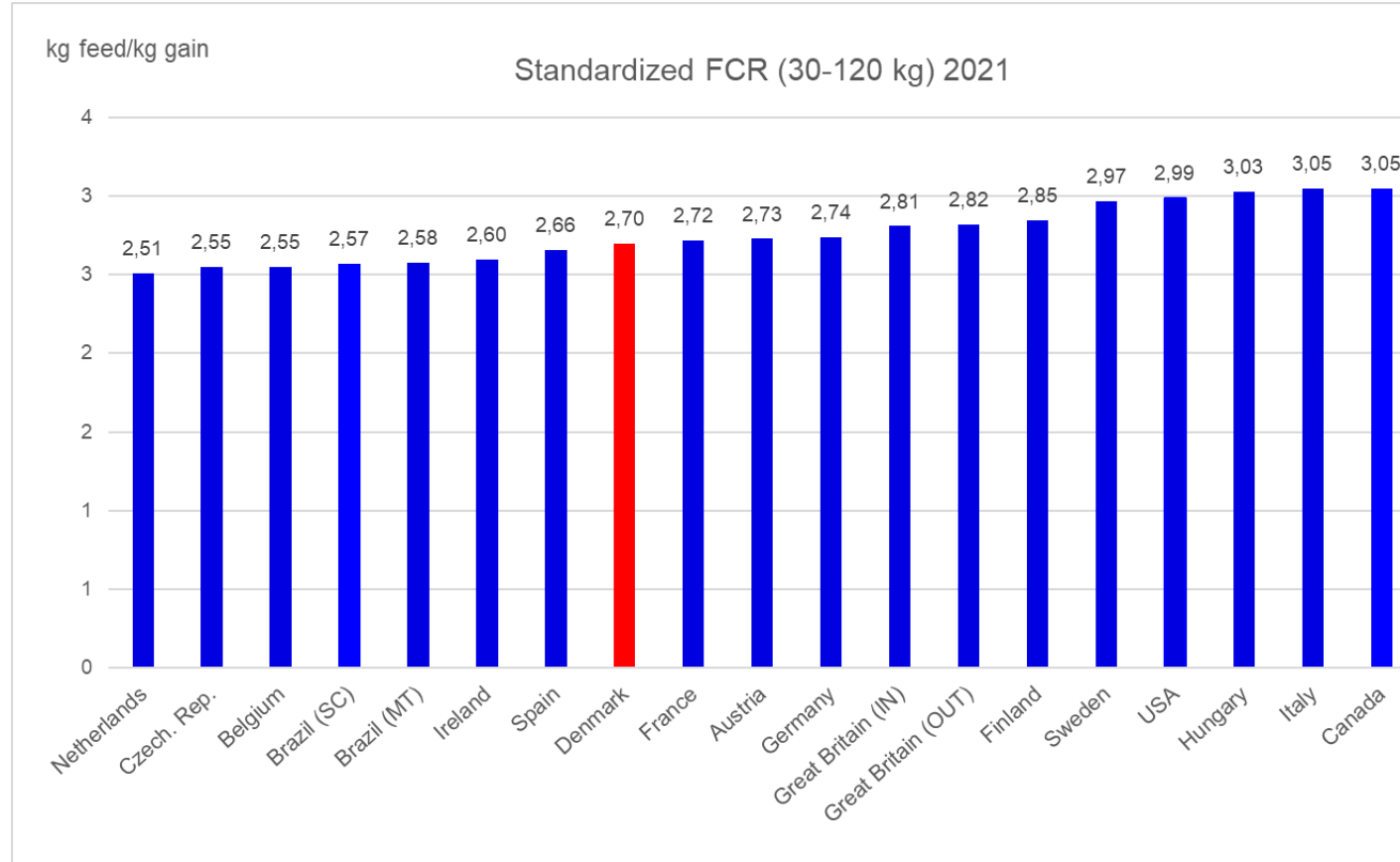
Pigs weaned per litter - 2021



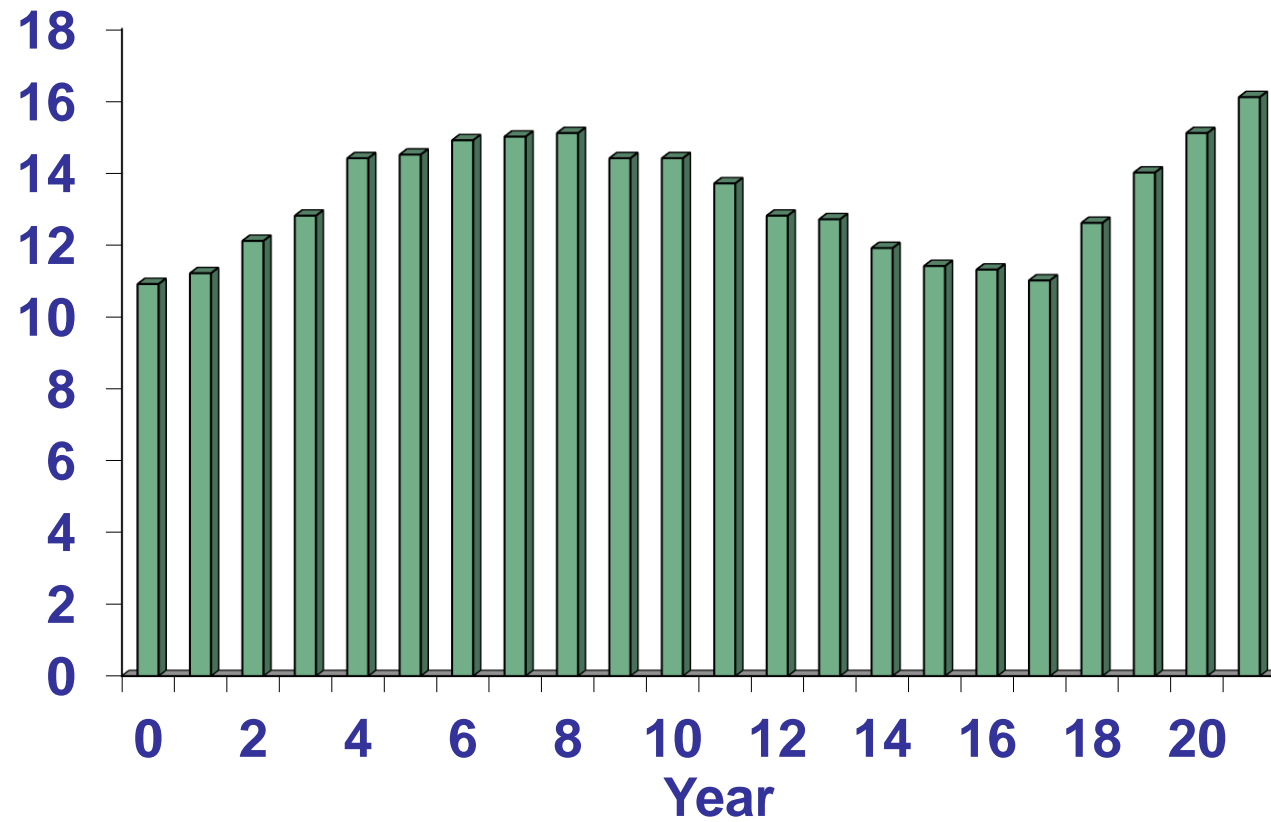
Daily gain fattening - 2021



Feed conversion kg feed/kg gain - 2021

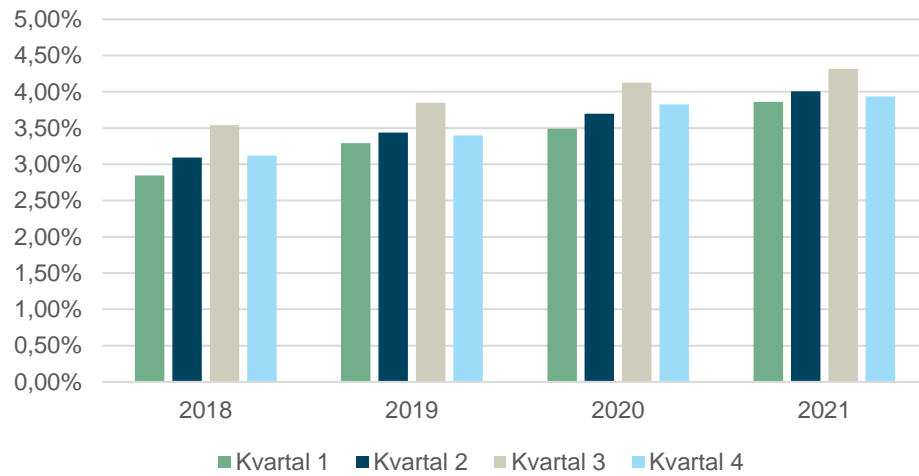


Sow mortality in Denmark

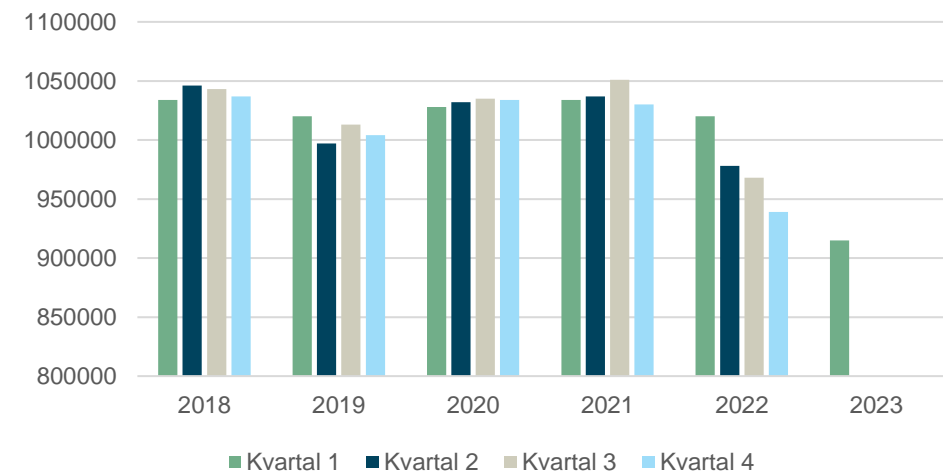


Sow mortality in Denmark

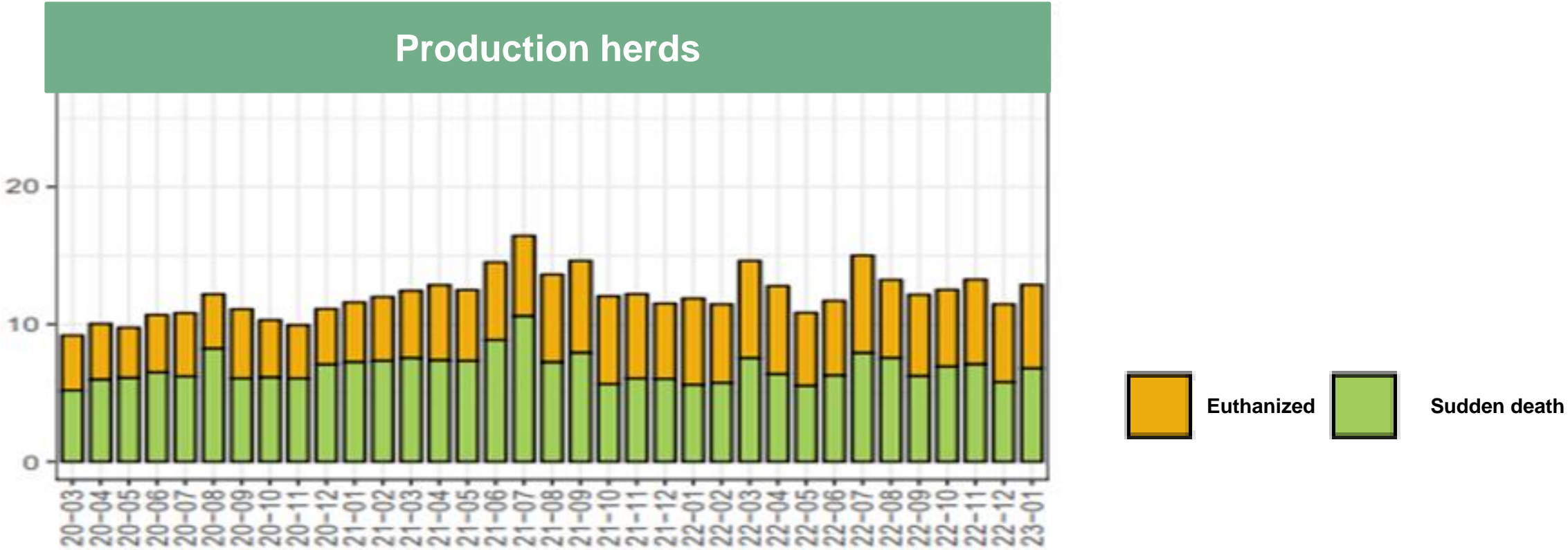
Sow mortality



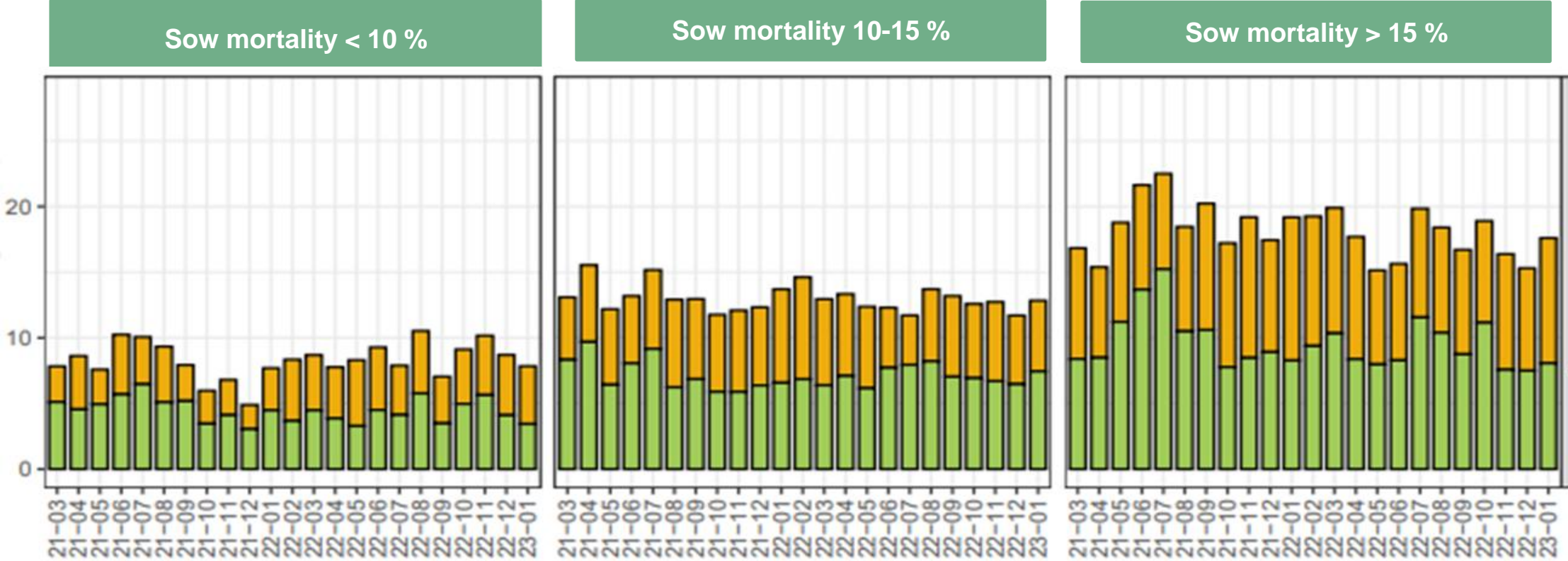
Number of sows in Denmark



Sow mortality in production herds

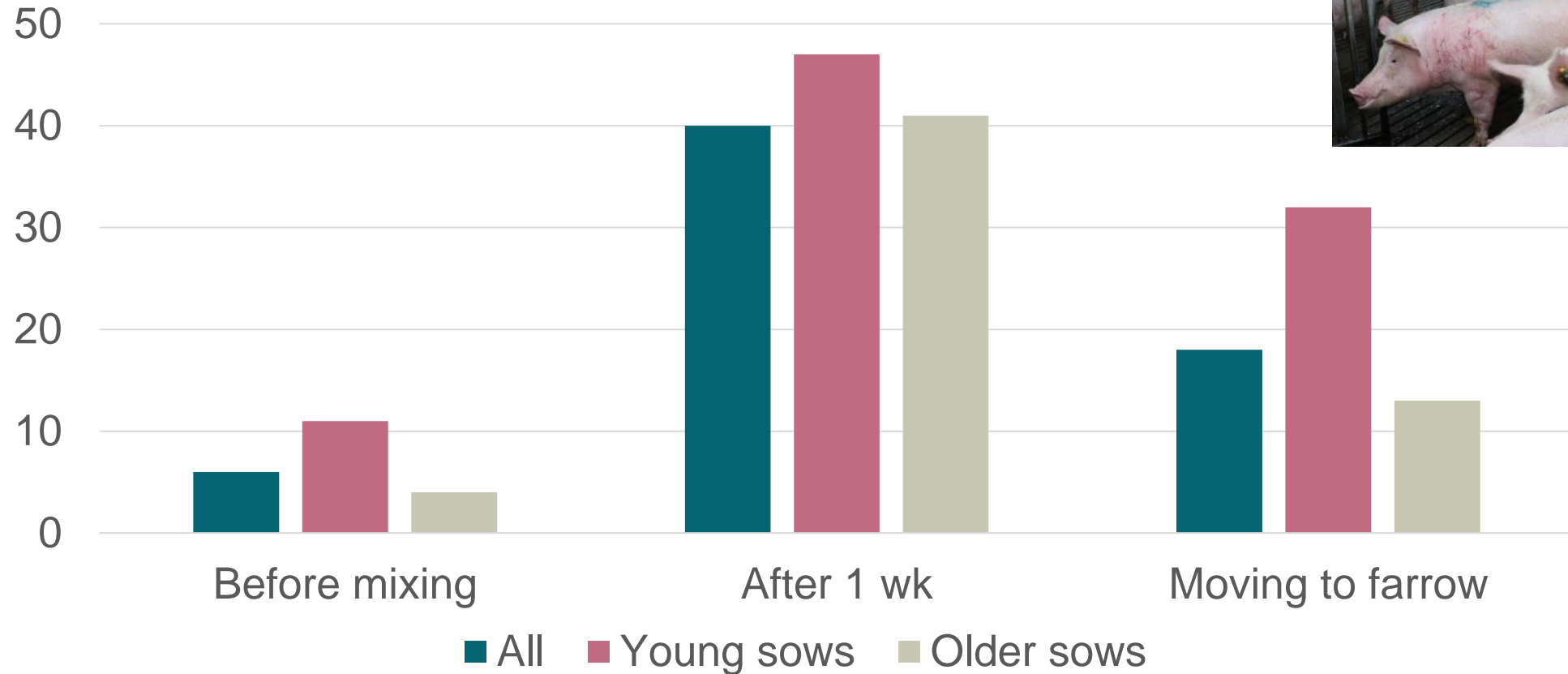


Dead and euthanized according to mortality level



Euthanized
 Sudden death

Sows with leg problems – mixing

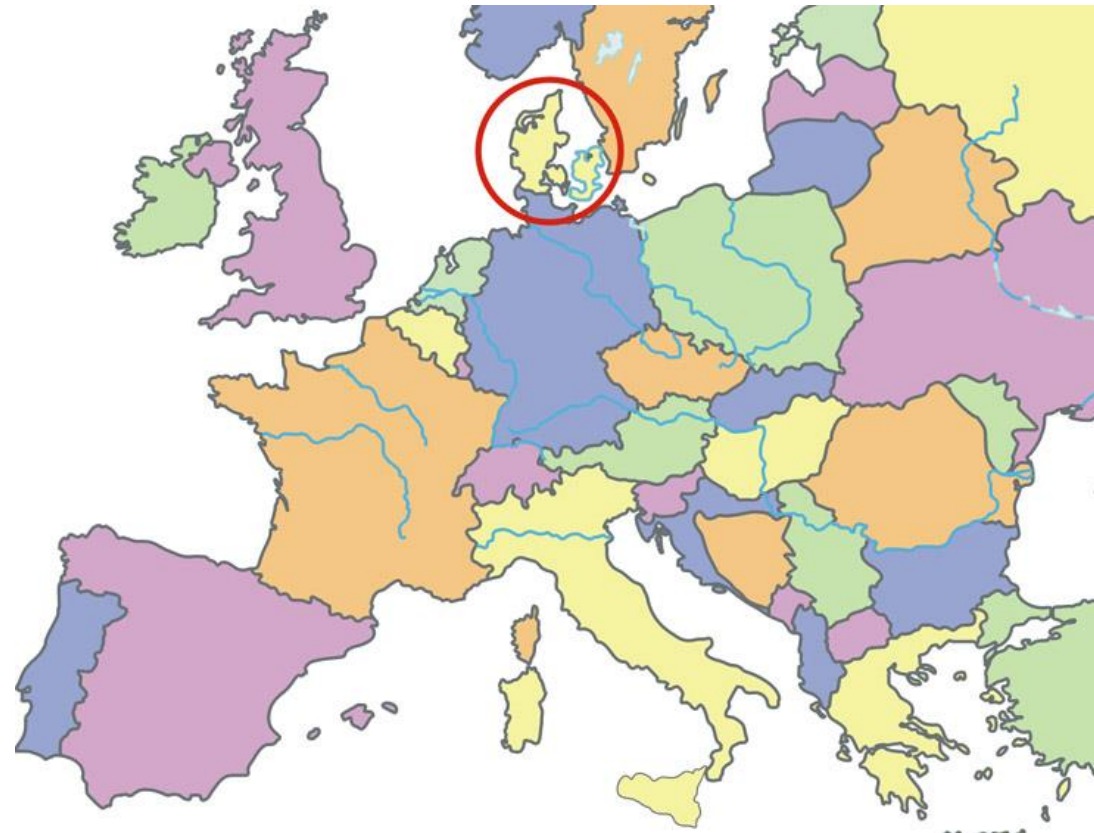
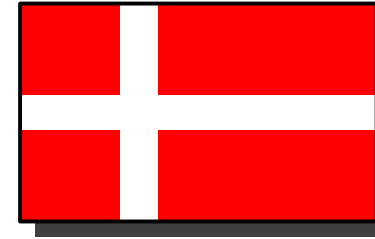


Hansen, 2020



How do we keep sows in Denmark?

Denmark is a part of the European Union



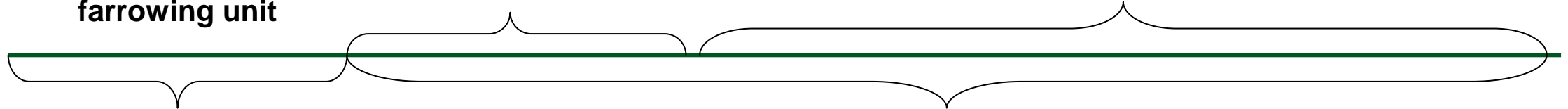


4 – 5 weeks in farrowing unit



1-4-week service period

Gestation period



Group-housed throughout the service and gestation periods



202x? (DK)



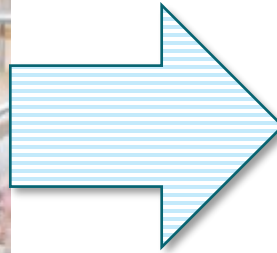
2015 – 2035 (DK)



1999 (DK) – 2013 (EU)



Service unit



- New housing from January 2015
- All housing from January 2035
- Today ~ 1/3 loose in service unit
- Dry sows can be housed in crates for up to three days

Feeding systems for sows



Floor feeding



Electronic sow feeding

Free access stalls



Gestation unit



- In Denmark there must be straw on the solid/drained floor
- Sprinkling system required



Danish legislation on sows and gilts

■ Area:

- First 1 – 4 sows/group 2.8 m² per sow
- Next 5 – 10 sows/group 2.2 m² per sow
- Next 11 – 17 sows/group 2.0 m² per sow

- If 18 - 39 sows/group 2.25 m² per sow
- If 40 - 2.025 m² per sow

- 1 – 10 gilts 1.9 m² per gilt
- > 10 gilts 1.7 m² per gilt

■ Lying area (solid/drained flooring and bedding/straw)

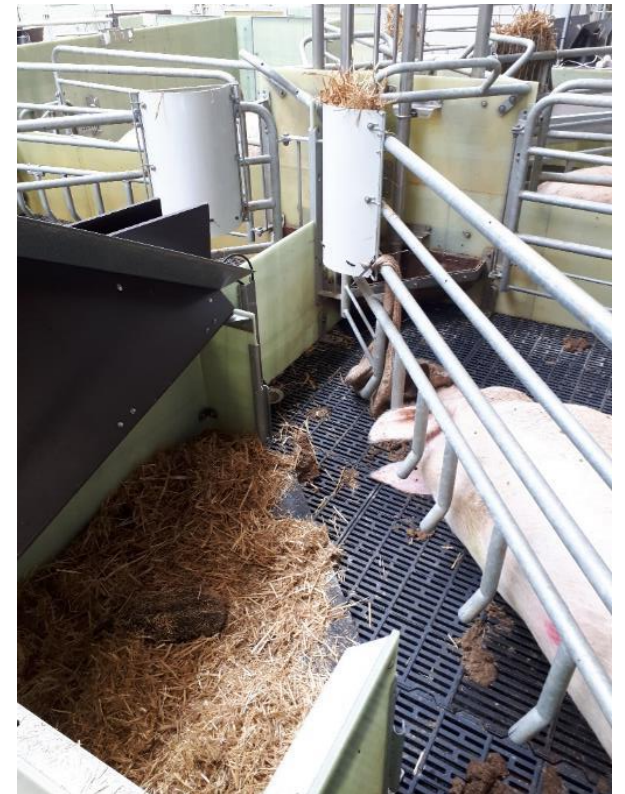
- Sows 1.30 m² per sow
- Gilts 0.95 m² per gilt

Farrowing unit – traditional



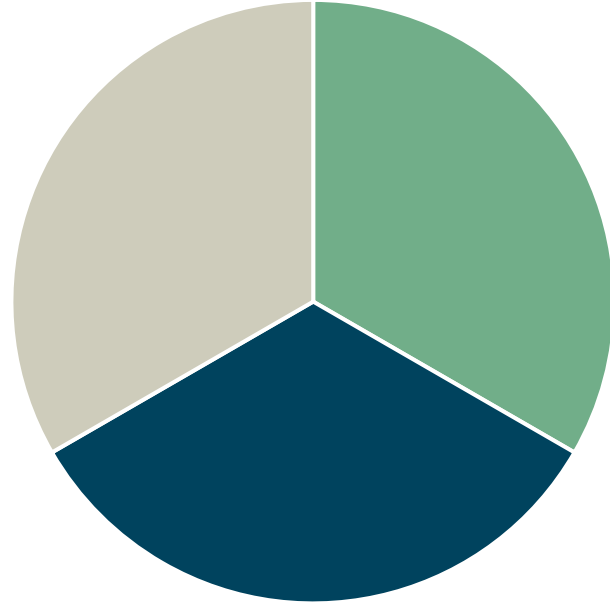
Farrowing unit – loose

Danish industry objectives is to move away from traditional farrowing crates towards free-farrowing



Feeding systems in Denmark

Free access stalls



Electronic sow feeding



Floor feeding



Wet feed in trough



Danish Pig Production - Animal Welfare Goals

Loose sows in all sections

Production of pigs with intact tails

Better handling of sick pigs

Increase sow and piglet survival





What do we know about sow mortality in Denmark?

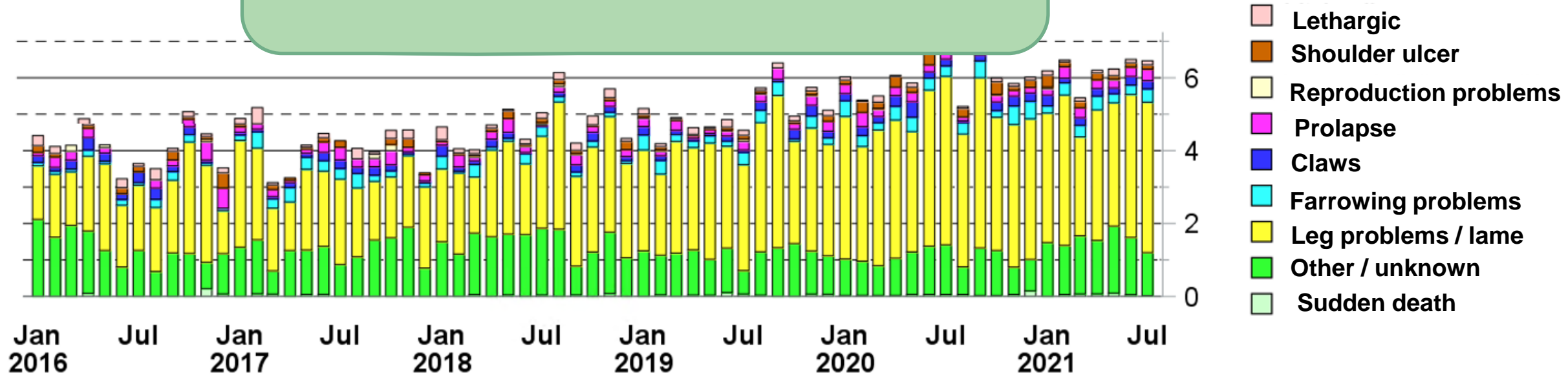
We continuously collect information from Danish sow herds

- Today we gather information from 200 Danish sow herds
- Those are both production herds and breeding herds
- We identify and analyze patterns in data



Sow mortality - causes of euthanization

60-70 percent of the sows are euthanized due to claw or leg problems



Why are Danish sows euthanized and not send to slaughter?


Fitness for transport

EU regulations and Danish regulations

Not fit for transport:

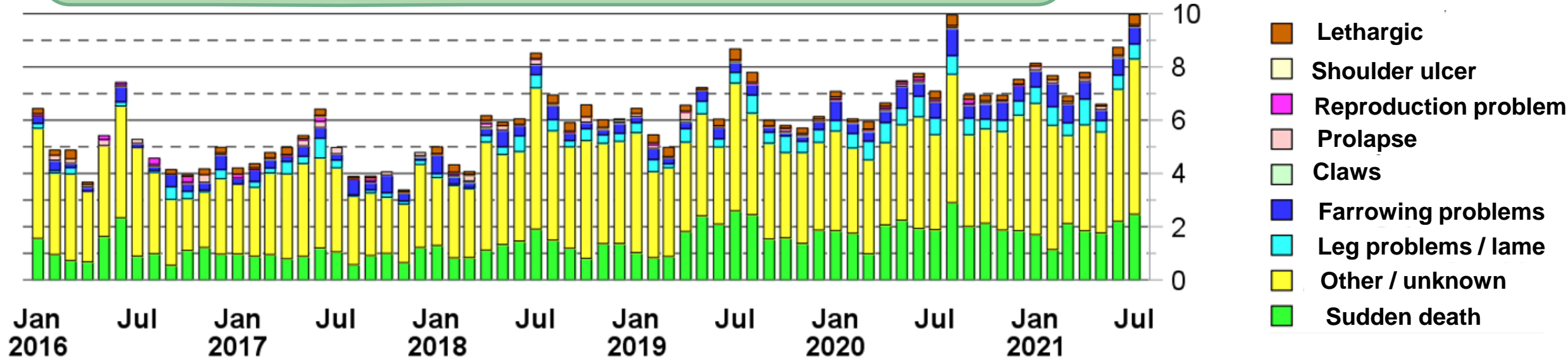
- Lame sows
- Sows with severe wounds
- Sows with a prolapse
- Sows who are generally affected

Where is the limit?

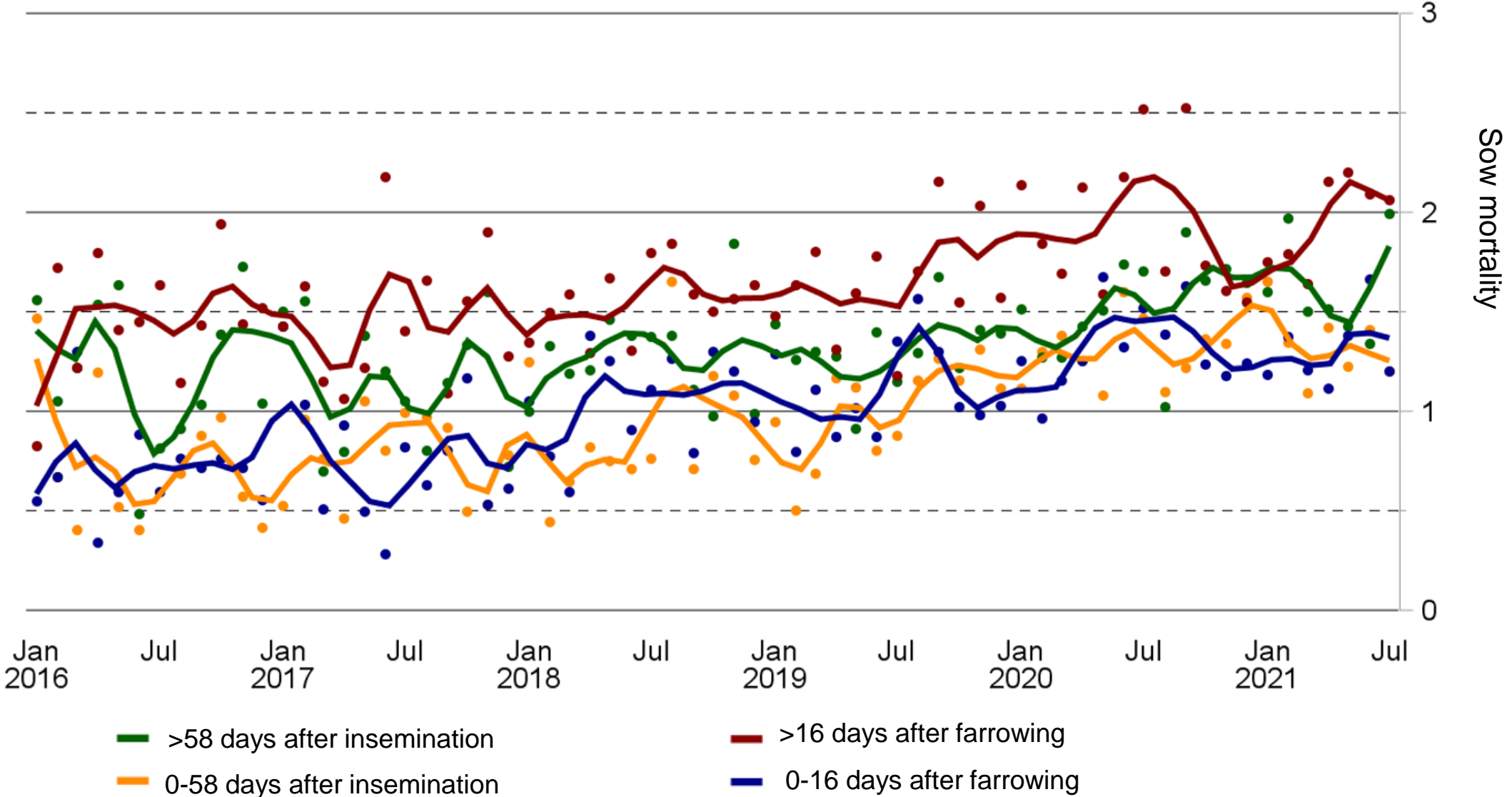
		
Buckled forelegs (knuckling) Assessment: Fit for transport	Deformed hooves Assessment: Fit for contingent transport	Hock inflammation Assessment: Fit for contingent transport
		
Hoof anthrax Assessment: Not fit for transport	Dislocation Assessment: Not fit for transport	Lame support on foreleg Assessment: Not fit for transport

Sow mortality – causes of sudden deaths

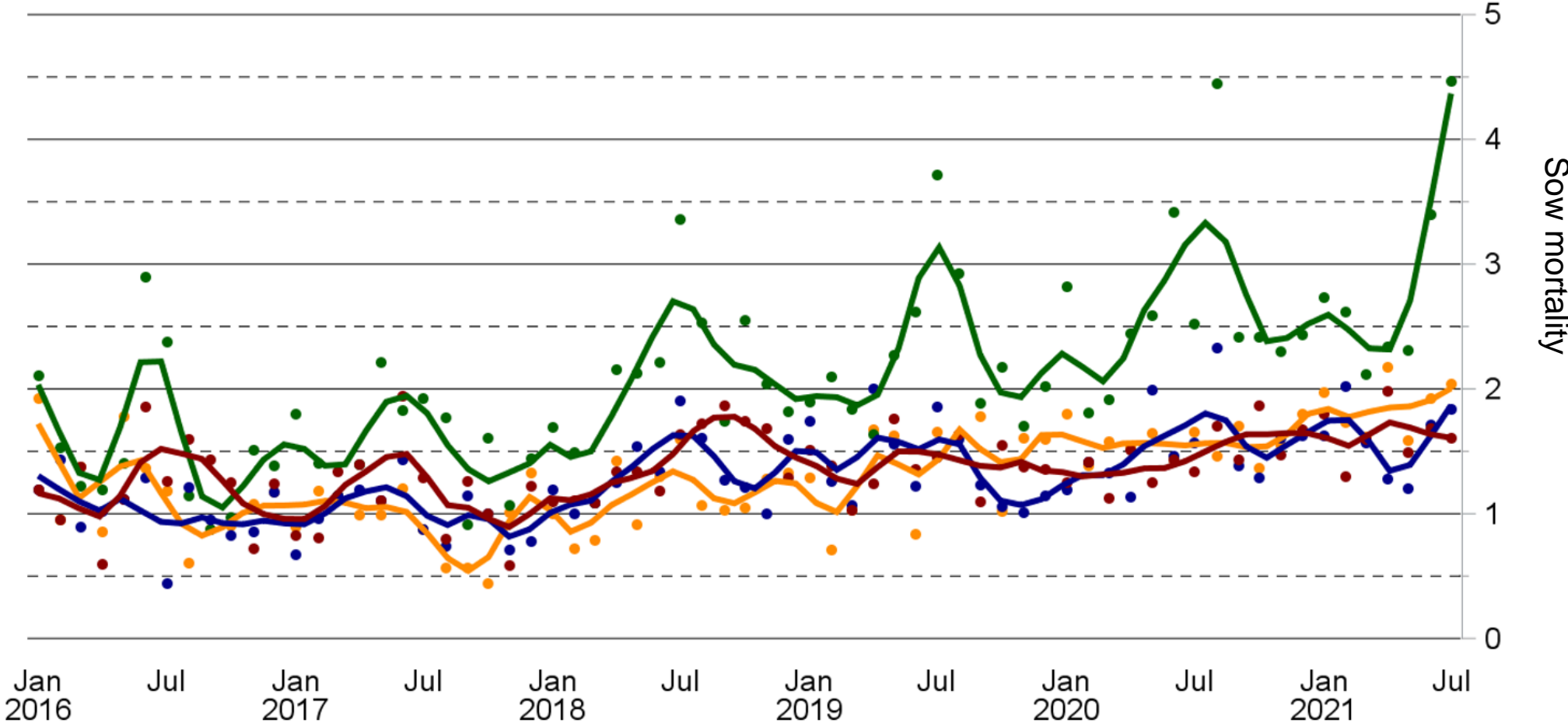
80 percent of sudden deaths are of unknown reasons



Euthanized sows at different times in the production cyclus



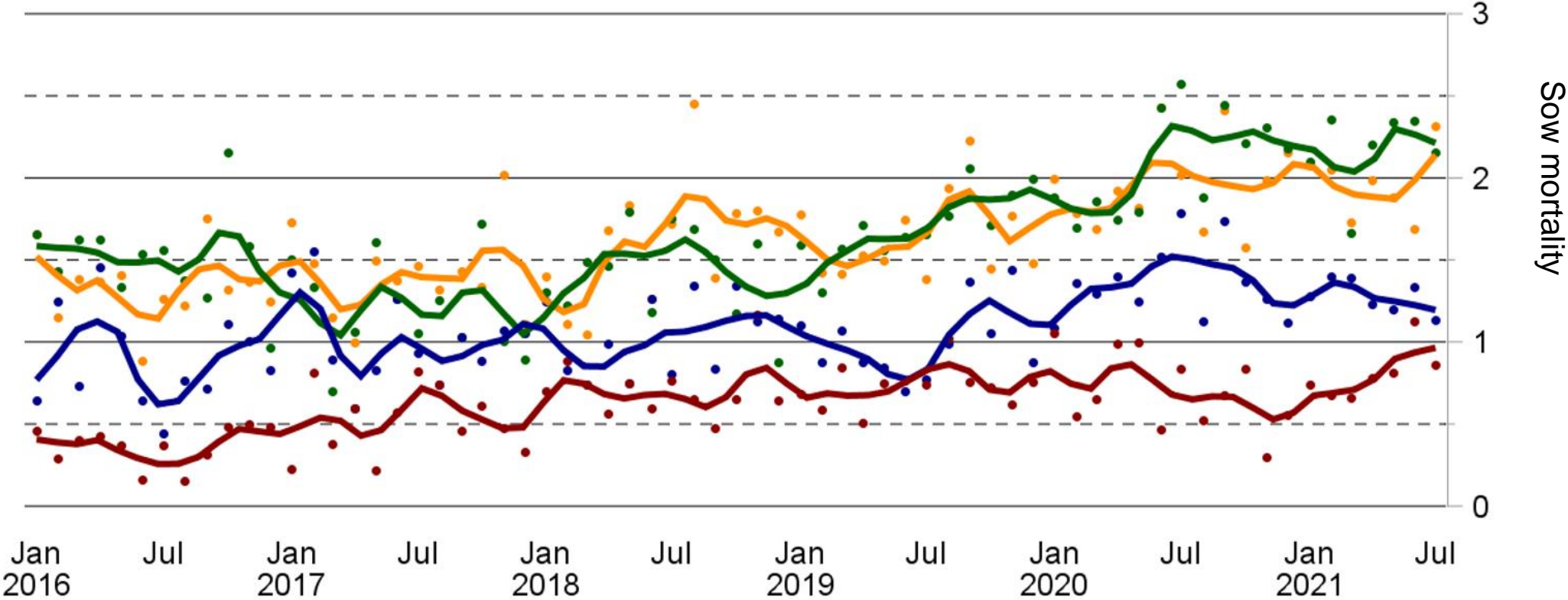
Sudden deaths at different times in the production cyclus



— >58 days after insemination
— 0-58 days after insemination

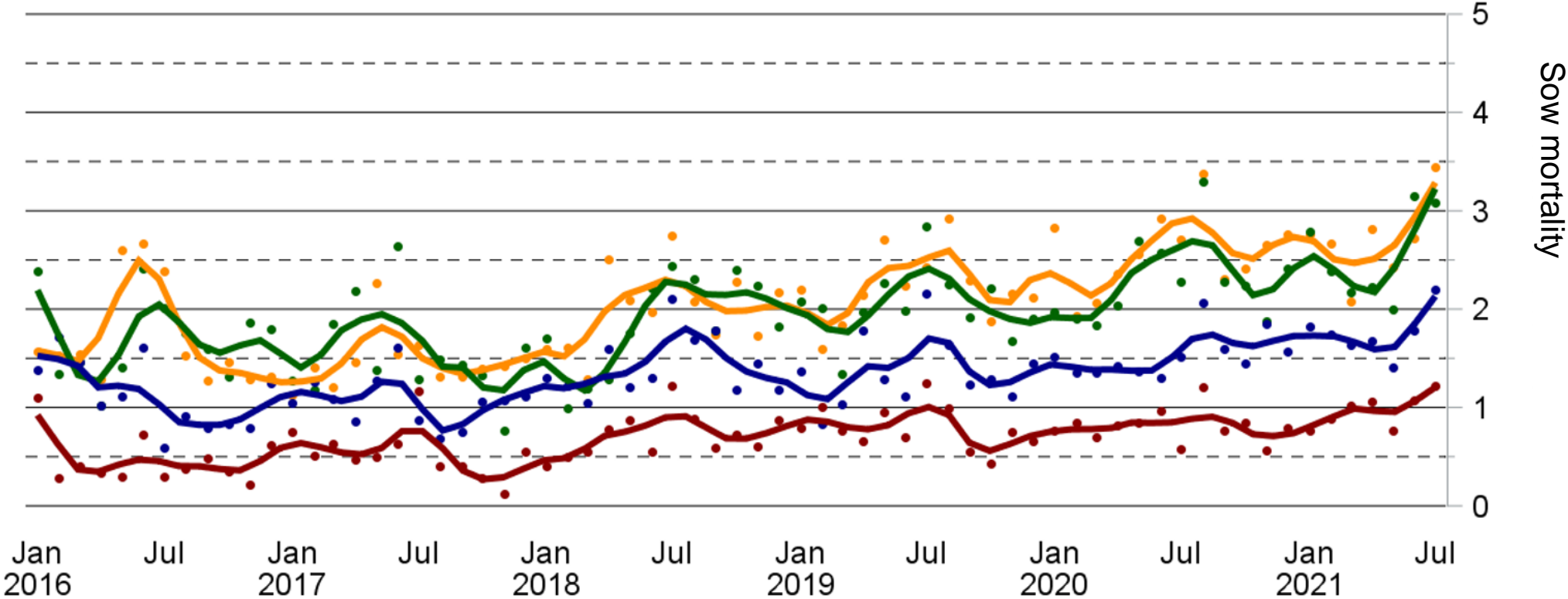
— >16 days after farrowing
— 0-16 days after farrowing

Euthanized sows in different age group



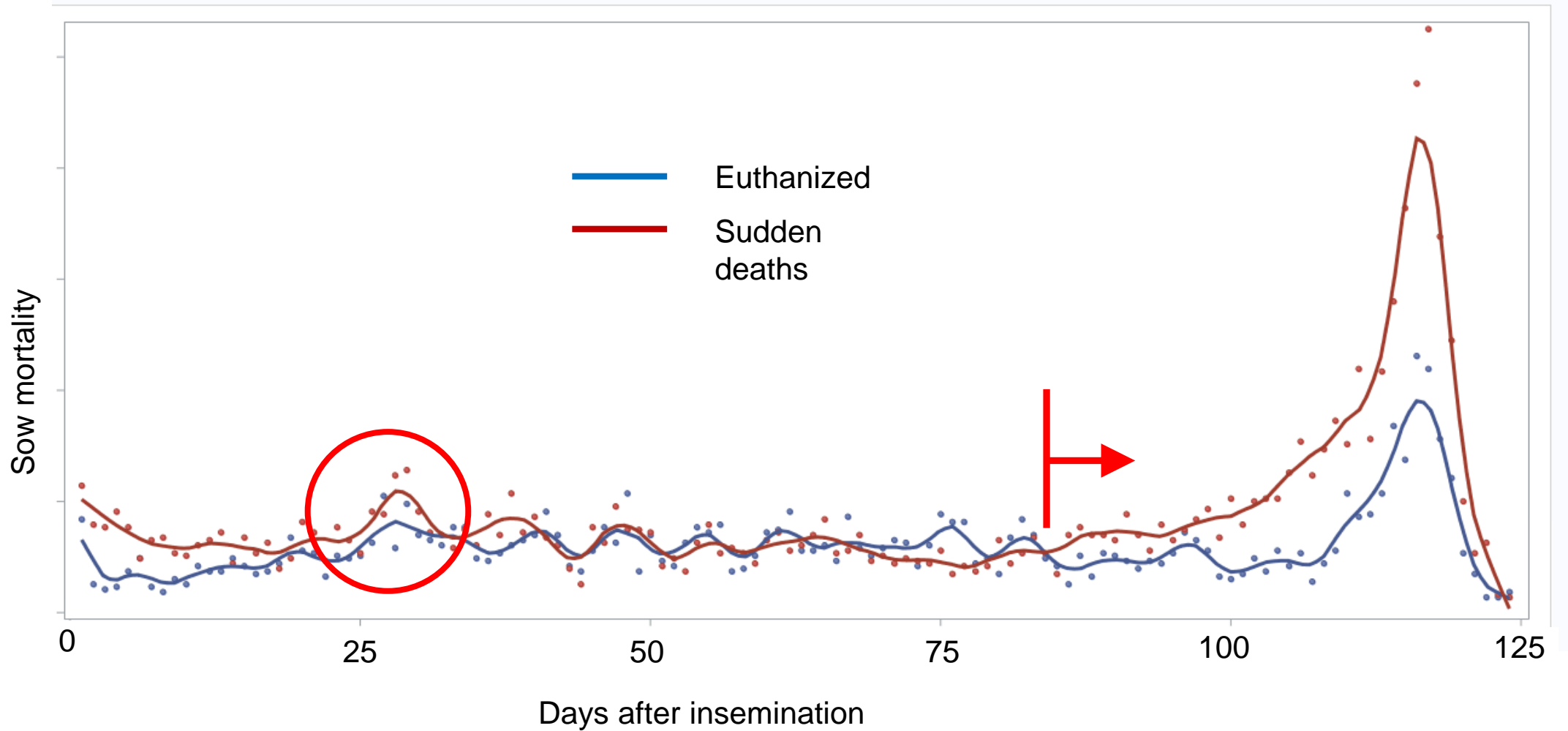
- 2-3. parity sows
- 0-1. parity sows
- 6. parity sows or older
- 4-5. parity sows

Sudden death in different age groups



- 2-3. parity sows
- 0-1. parity sows
- 6. parity sows or older
- 4-5. parity sows

Sow mortality in the gestation barn



In summary

- In 2021 – 16 % of Danish sows were euthanized or died suddenly
- Approximately 50 % die suddenly and 50 % are euthanized
- Unknown causes of sudden deaths
- Leg and claw problems are the main causes of euthanization
- Sudden deaths have a seasonal variation
- Sows in late pregnancy have increased risk of sudden death



SoLiv 2.0

What do we do to increase sow survival?

SEGES
INNOVATION

SEGES Innovation – sow mortality campaign since 2020



Management of gilts



Inspection of sows



Housing of sows



Sow mortality in summer

Campaign on sow mortality



SOLIV 2.0 - TAG HÅND OM DINE SØER

FLERE SØER SKAL OVERLEVE: TEMASIDE OM HØJERE SO-OVERLEVELSE

Dødeligheden blandt danske søer er i de seneste år steget. Der er flere ting, du kan gøre i stalden for at nedbringe andelen af døde søer. Godt management med fokus på udvælgelse af polte og dagligt tilsyn i stierne er helt afgørende for at få en højere so-overlevelse.

En målrettet indsats og en viden om, hvorfor dine søer dør, kan gøre en forskel på at få hævet so-overlevelsen. På denne side får du viden om, hvad du skal være opmærksom på - og hvor du skal sætte ind, hvis du ønsker at hæve so-overlevelsen i din besætning.

- UDVÆLG DE RIGTIGE POLTE +
- DET DAGLIGE TILSYN +
- NÅR SOEN ER SYG: SYGESTI OG SYGEJOURNAL +
- FOREBYG BEN- OG KLOVSKADER +
- FÅ FÆRRE SELVDØDE SØER +



SEGES

Mikael Andersen
Svineproducent, Dalmose

Tre 1000-ton siloer.

Video: Forebyg skader ved at gå fra dynamiske grupper til stabile grupper



SoLiv 2.0

Når vi siger dynamiske grupper, så betyder det, at hver uge kommer der søer ind i flokken og hver uge -

Stabile grupper kan være med til at forebygge ben- og klovskaeder hos søerne, fordi der ofte kun være væge rangkampe de første dage.

Video: Highlights fra So-seminar 2021 om avl, opformering og selektion af polte



REDUCER DIN SODØDELIGHED MED HOLDBARE POLTE

Gunner Sørensen, Thomas Bruun, Martin Mølgaard fra SEGES Svineproduktion og Tanja Jensen, Danbred

13. april 2021



Webinar: Bliv sommer klar i soholdet



Dette webinar handler om, hvordan du bedst går de varme måneder i møde i dit sohold, og hvordan du tømmer din silo og undgår toksiner i foderet. Begge dele kan være med til at hæve so-overlevelsen.



SEGES Svineproduktion
21. august

SEGES Svineproduktion har spurgt dyrlæge Andreas Birch, hvordan du som svineproducent kan reducere din sodødelighed 🐷🐷
Se hans gode råd i videoen 📺

Andreas Birch
Dyrlæge, Ø-Vet

Det allerførste man skal gøre er at være opmærksom på, når man ønsker at reducere sodødeligheden. -0:47

SVINEPRODUKTION DK
Læs mere på vores temaside SoLiv 2.0

Charlotte Sonne, Lola Kathe Tolstrup og 33 andre · 1 kommentar · 2 delinger

Designing the young gilt

Age, dage	77	91	105	119	133	147	161	175	189	203	217	231
Weigth, kg	30	38	48	59	72	83-86	96-100	109-112	123	133	143	153
Backfat, mm									11-12	>12		13-15
Feed/day, FEsv*	1,4	1,65	1,95	2,25	2,55	2,8	2,9	2,9	2,9	2,9	2,9	3,5



Evaluation of the gilts – leg and claws

Prevention by culling gilts/sows with leg/claw problems



Select gilts with correct leg position and healthy, uniform claws

Assess leg position every time you move gilts/sows



Cull gilts and sows with :

- Forelegs: buck-kneed or "turned outwards"
- Hind legs under position
- Upright forelegs/hind legs
- Non-uniform/long claws

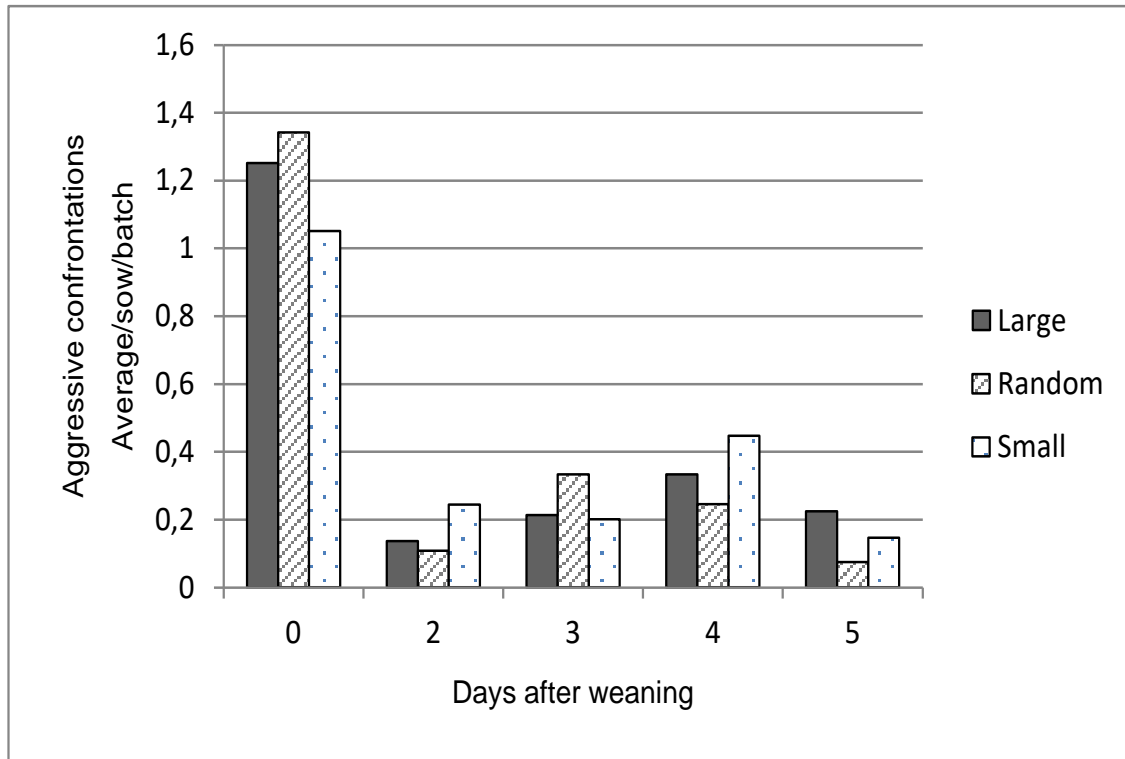


Area requirements – gilts

	Legislation	Recommended
7-30 kg	0,3 m ² /gilt	+ 20 %
30-50 kg	0,4 m ² /gilt	+ 20 %
50-85 kg	0,55 m ² /gilt	0,75-1,0 m ² /gilt
85-110 kg	0,65 m ² /gilt	1,0-1,5 m ² /gilt
110 kg +	1 m ² /gilt	1,5-2,0 m ² /gilt



Mixing sows



Leg problems



Significant higher frequency of leg problems on slatted floor compared to deep litter



- Stocking density had an impact on the frequency of sows treated for leg problems
- 1,8 m²/sow respectably 3,5 m²/sow in the activity area

Provide extra care to gilts/young sows



Stable groups

Transfer gilts 1-3 days before sows

Good lying areas for all gilts/sows in the pen (low lying walls)



Sick pens play an important role

- 15-20% of all sows receive treatment during gestation
- 90% of all treatments are related to legs/claws
- 8-10% are moved to sick pen
- 80% were able to return to production

Report no. 0803

- Legal requirement: 2.5% sick place units
- Recommendation:
 - Feeding stalls and ESF 3-5% sick place units
 - Competitive feeding approx. 10% sick place units



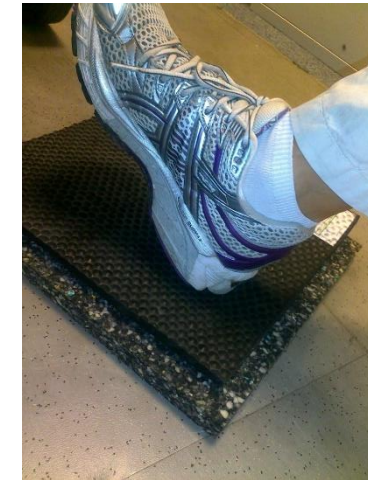
Sick pens with drained, straw mat are recommended



- Soft rubber mat
- Sloping floor
- Fasten the mat



- Soft, drained area
- Not necessary to remove straw mat
- Wire-type cleaning under the entire pen

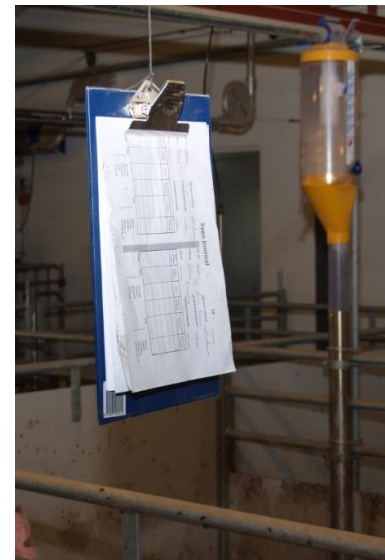


Easy access to sick pens



- Short distance from gestation pen to sick pen
- Sick pen may be part of gestation pen area

- Sows are recovered – then what?
- Back to "own pen" or collection pen
 - 1-2% place units



Identify sows in need of a sick pen

- Daily supervision means every day!
 - Focus on the most important tasks
 - Have enough resources
- Experienced staff trains new colleagues
- Two persons for supervision
- Clear agreements
 - Staff are included
 - Herd vet advises on treatment strategy
- Assess if leg/claw problems can be prevented
- Learn to identify and assess sows with challenges



Prevention of leg and claw injuries during hierarchy fights



Fights for access to feed and good lying areas
Increased tendency to slip and damage to claws

Stable groups
Non-skid bedding
Escape options (area, distance)
Extra feed in the first couple of days
Early intervention
Identify and know signals



Maintain a continuous flow in the sick pens

Prevention and early intervention



Sick pens and collection pens



Transfer to the farrowing pen



Prolapses in Danish sows

Sporadic occurrence in Danish sows

What can cause a prolapse?

- Bad feed
- Poor feed hygiene
- Mycotoxin Zearalenone
- Constipation
- Low water intake
- Infections (coughing/diarrhea)
- Treatment with antibiotics (tylosin, lincomycin, florfenicol)



Prolapses – prevention and treatment

Prevention of prolapses

- High structured feed
- Good feed hygiene
- Ensure sufficient water intake
- Reduce the infection pressure

Treatment of Danish sows with prolapses

- Sick pen
- Painkillers
- Euthanization if no improvement within a week
- A sow with a prolapse is not fit for transport

