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On-farm animal welfare assessment in slaughter pigs

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Overall project aim

To help **farmers** to improve the quality of their **pork** and broiler meat by applying **extensive husbandry practices**.

To produce knowledge and advice on extensive husbandry practices that meet environmental concerns, animal **welfare considerations** and sound farm economics.

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The focus for this presentation:

Animal welfare assessment aiming to

- Describe variation in animal welfare across farms covering both intensive and extensive farming methods in europe.
- 20 farms from each of 4 countries: **Denmark,** Poland, Italy, Spain
- Focused on slaughter pigs (30 kg until slaughter)

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The welfare assessment protocol

Build upon the five domain model (Mellor et al., 2020)

Use 4 domains within nutrition, environment, health and behaviour to describe the 5th domain of animal welfare as the mental state of the animal

Adjusted protocol (SusPigSys and Welfare Quality ®)

Challenge: reflect highly intensive to highly extensive systems

21 measures by direct observation on-farm:

- ❑ 5 resource-based measurements
- ❑ 16 animal-based measurements (6 behaviour + 10 clinical health measurements)

19 questions to each farmer (interview)

Animal welfare domain 1-4	mEATquality animal welfare measurements	Animal welfare domain 5 - Mental state/experiences
Nutrition	*Feeding - concentrates and roughage* *Body condition* *Watering*	*Hunger* *Thirst*
Environment	*Space allowance - square m per animal and total area* *Quantity and quality of bedding material* *Access to outdoor area* *Access to wallowing/cooling/shelter* *Dirtiness with excreta - pens and animals* *Swollen joins / knee and hock lesions* *Shivering* *Lying behaviour including huddling*	*Ease of movement* *Resting comfort* *Thermal comfort*
Health	*Tail biting, ear wounds, wounds on body* *Lameness* *Sunburn* *Indo and ectoparasites* *Hernia* *Coughing, Sneezing* *General appearance, Runts* *Invasive management procedures; tail docking, male and female castration, teeth grinding/clipping* *Medicine usage* *Mortality* *Discharged at abattoir (I)* *Sick pen access and quality*	*Pain* *Discomfort* *Physical thriving*
Behaviour	*Play (DA)* *Aggressive behaviour* *Mounting behaviour* *Stereotypies* *Tail in mouth* *Manipulation of material, other pigs, floor and pen fixtures* *Avoidance distance to human approach* *Flock size, Mixing / Regrouping* *Access to and quality of enrichment material* *Relocations to 'fresh' pastures or alike*	*Pleasure / joy* *Anger* *Pain* *Fear* *Frustration*

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The protocol for on-farm registrations

Followed a 7-step procedure:

1) Interview with the farmer
2) Random selection of 4 pens/flocks (~100 pigs).
    - Approached pens and tested: avoidance of humans
    - Quick behaviour scan: posture, manipulation and resting behaviour, panting and shivering behaviour as well as stereotypies
    - 10 min continuous behaviour obs.: mounting, play and aggression
    - Clinical health examination
    - Examination of pen resources: space allowance, bedding, dirtiness, rooting and explorative material, feeders and drinkers

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Calibration of observers between countries

Tine Rousing, DK was responsible for the calibration and training

Three x 2-day-traning and calibration sessions

- One for the Danish observation team
- One for the Polish and Spanish observation team
- One for the Italian observation team

Hotline to instructor during on-farm data collections

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Calibration of observers

Day 1:

- Morning in-class theory behind protocol
- Afternoon: Guided and pairwise on-farm training – on-farm discussions on disagreements/uncertainties

Day 2:

- Morning: unassisted individual on-farm registration
- Afternoon: Step-wise comparisons of individuals' registration and discussions on disagreements/uncertainties

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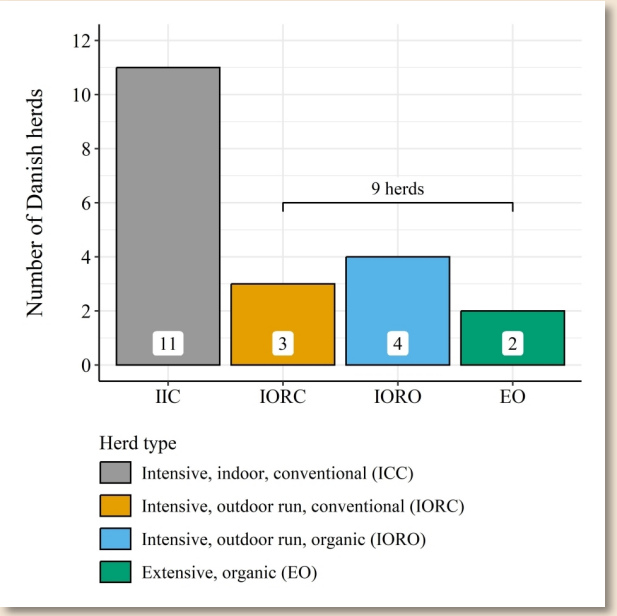
Descriptive – Danish herds



Intensive, indoor, conventional


Intensive with outdoor run, organic with outdoor run



Extensive, paddock, organic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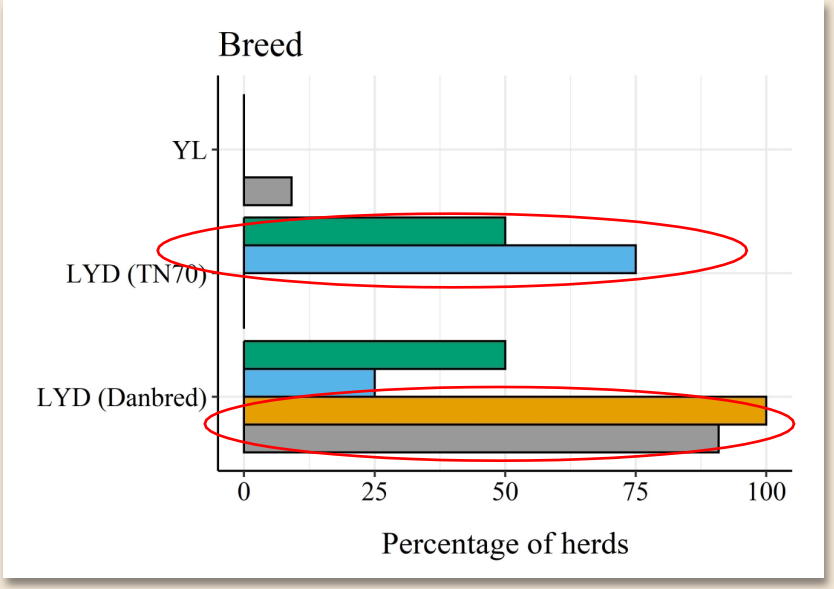
Variety of breeds in danish herds

- 100 % of conventional farms used Danbred (LYD crosses)
- 75 % of organic farms used TN70 (LYD cross)



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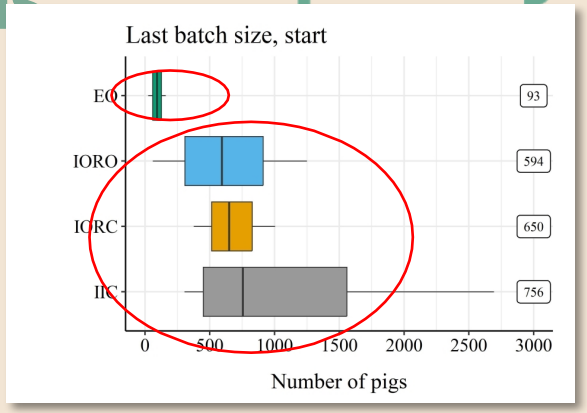
Batch and pen size in Danish herds

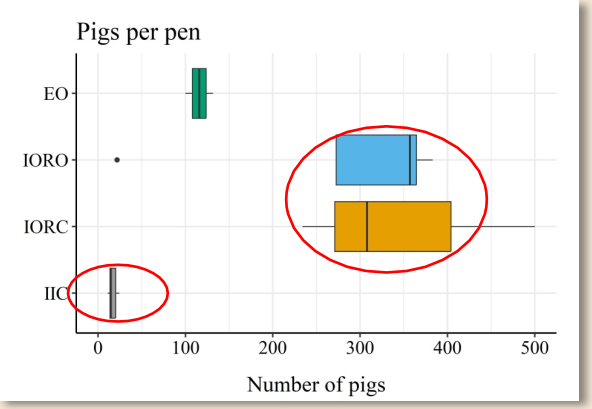
Batch size:

- Extensive organic (<100 batch)
- All other farms (> 500 pigs)



Pigs per pen:

- Conventional inddor: groups size of 18-20 pigs
- Outdoor run: group size of >300 pigs



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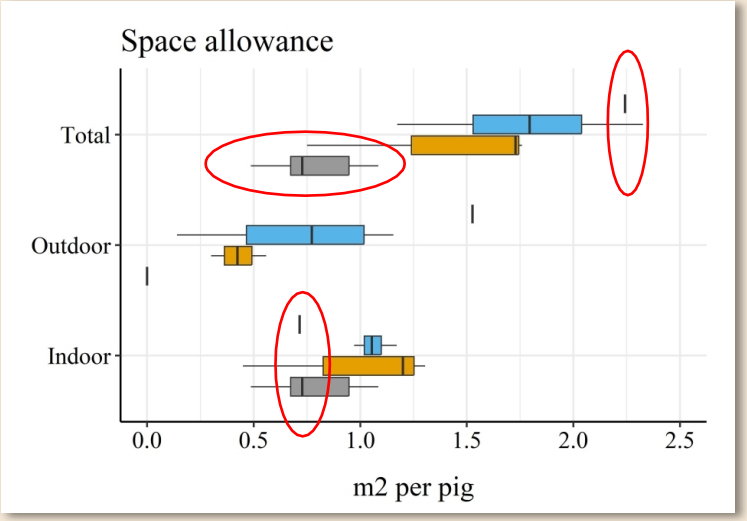
Space allowance per pig in Danish herds

Total m^2 per pig:

- Lowest for conv. Indoor
- Highest for extensive paddock

Indoor area:

- Lowest for conv indoor and extensive paddock



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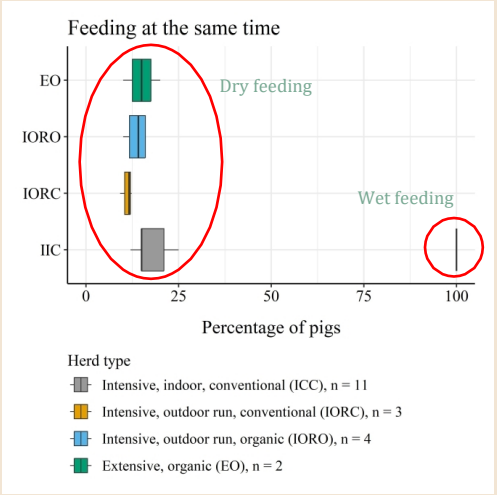
Access to feed in Danish herds

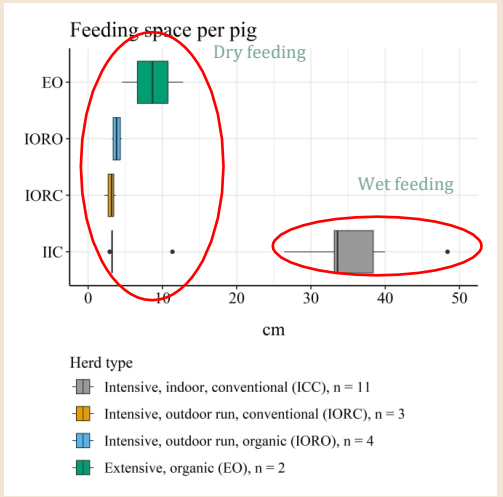
Feeding at the same time

- 50 % of conv. Indoor had wet feed
- all other had dry feeding
- Only wet feed allowed all pigs to eat together



Feeding space per pig(cm):

- More feed space on farms with wet feeding
- More feeder space on extensive farms



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Behaviour in Danish herds

Play behaviour:

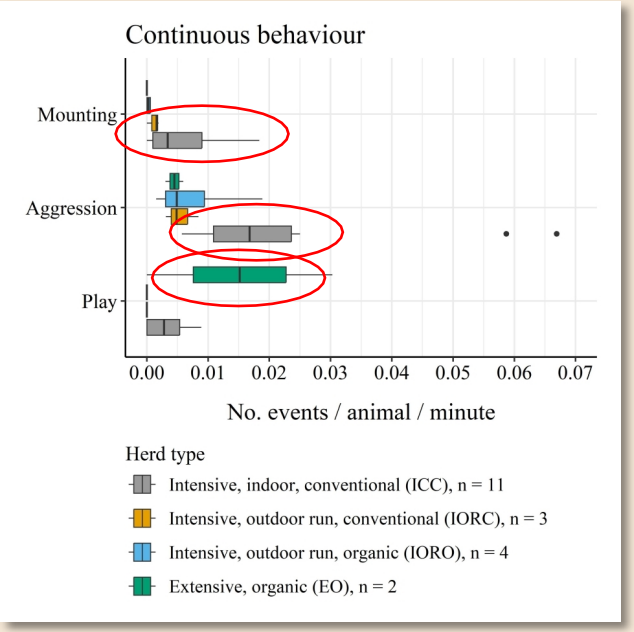
- Mainly observed in in extensive on paddock

Aggression:

- Mainly observed in conv. indoor

Mounting behaviour

- Mainly observed in conv. indoor



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Summary and challenges

Training necessary

- To align observers
- To make sure we covered all possible welfare aspects
- Indoor and outdoor area is a challenge – where to observe?

First results of welfare assesment

- identified differences amongst DK intensive and extensive
- Unexpected results e.g. no play observed on farms with outdoor Access
- Is the observation time sufficient ? Is the location of the observer sufficent?

Nest step

- to gather data in joint data base across countries
- describe to variety in animal welfare within countries and between countries

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