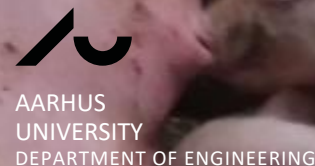


# Sow welfare and environmental emissions

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# Background and aim

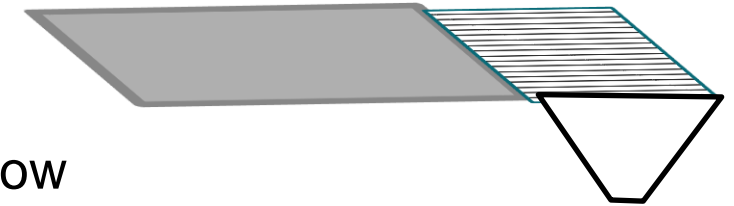
- Background

- Loose sows during lactation to improve pig welfare
- Larger footprint leads to increased emission of odour and ammonia
- Solid floor for nest-building, rooting and enrichment materials increase risk of soiled floor and increased emissions



- Aim

- Develop housing-concept with high level of pig welfare and low environmental impact

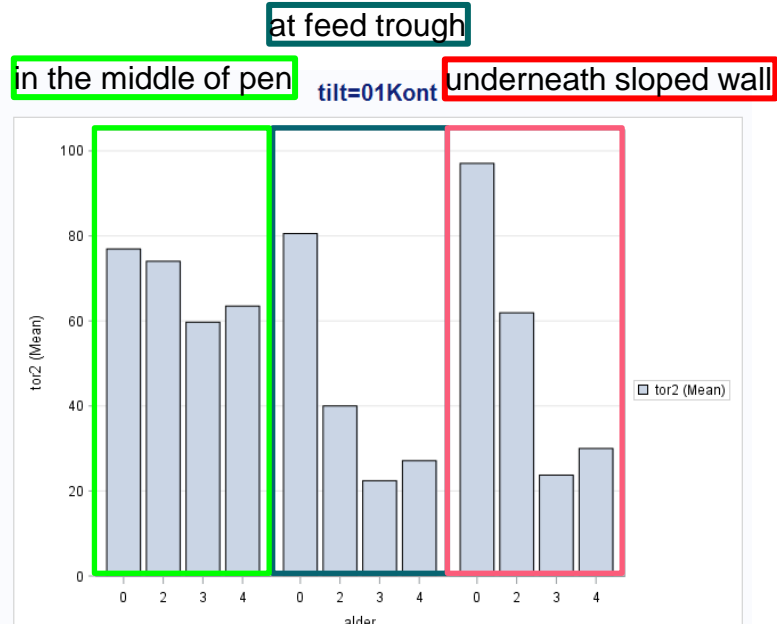


# Screening of initiatives to improve cleanliness and dry solid floor

- Initiatives to motivate sows to use solid floor for resting
  - Incoming air at 'snout'
  - Increase air speed with fans
  - Lower room temperature
  - Change from partial pit ventilation to only outlet through ceiling vents
- Initiatives to motivate sows to use slatted floor for dunging and urinating
  - Change position of feed trough
  - Change position of feed trough and place 'dunging wall'
  - Change from bars in both sides to only bars in one side
- Initiatives to dry solid floor or moisten slatted floor
  - Floor heating
  - Sprinkling on slats

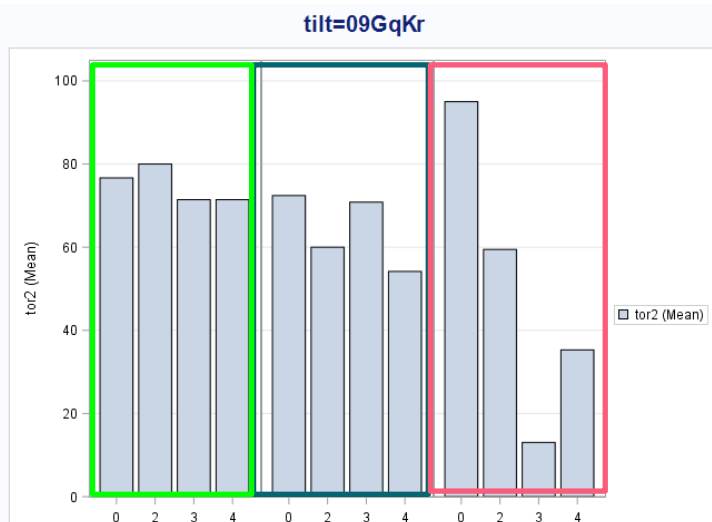


# Preliminary results – hygiene on solid floor



- Regardless of initiative
  - Hygiene on solid floor ↓
    - Increasing age of piglets
    - If moisture at feed trough or behind sloped wall

- Initiative - Hygiene on solid floor ↑
  - Motivate use of slatted floor for dunging
    - Placing feed trough at slatted floor and placing a 'wall'
  - Motivate use of solid floor for resting
    - Fans above solid floor



# Take home messages - 1

- Recommendations and research
  - Keep solid floor clean and dry, so moist/dung doesn't spread to rest of solid floor
  - Resting area
    - Airquality is important – we'll continue with fans
  - Dunging
    - Initiated one year test of feed trough and 'wall'
    - However - no 'easy fix' – further research needed
- In lab and later large scale measure emissions



# Take home messages - 2

## Dilemma

- Sustainable pig production – but how?????
  - If ‘only’ welfare - easy to say ‘end cage’, more space or outdoor
    - But more space increase risk of emissions
    - Outdoor significantly increase risk of leaching
    - Solid floor
      - Good to supply straw and as resting area
      - Good to decrease emissions (decrease slurry surface)
- Farmers and industry are including
  - Pigs – welfare
  - Planet – environment and clima
  - People – work conditions, society and consumers
  - Price – willingness to pay and income to continue farming

