



健康
畜禽

Healthy
Livestock

EARLY DETECTION OF DIARRHEA IN WEANED PIGLETS FROM INDIVIDUAL FEED, WATER AND WEIGHING DATA



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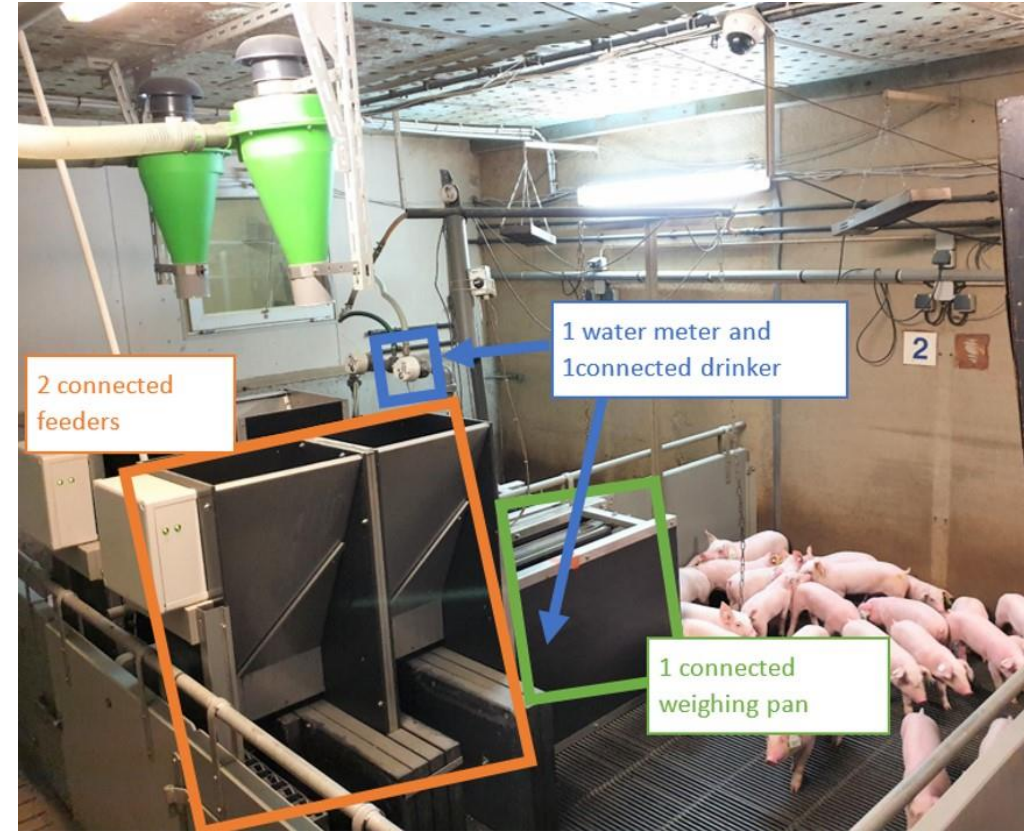
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Horizon2020

Materials & Methods

- **15 batches included in the trial**
from 28 days old to 70 days old
- **6 pens of 17 weaned piglets**
 - 2 individuals precision feeder ($10 \pm 2g$)
 - 1 individual water meter ($\pm 10ml$)
 - 1 individual precision weighing scale ($\pm 10g$)
 - 1 camera (only the last 3 batches)
- **Piglets divided into 3 weight classes**
Heavy; medium; light
- **3 or 5 individual health observations per week, in particular digestive disorders**
D0 = normal faeces, D1 = flabby faeces, D2 = liquid faeces



Main conclusions

- **Healthy weaned pigs :**

- ✓ The average weekly feed and water consumptions, related to weight, had no significant difference between weight groups
- ✓ They were respectively close to 4% and 10% of the live weight → light, medium and heavy pigs drink and eat in the same proportions.
- ✓ A high intra-individual variability of 40% was observed in feed and water consumptions during the first days → it may complicate the discrimination of diarrheic animals from healthy animals

- **Comparison between healthy and diarrheic weaned piglets :**

- ✓ No relevant indicators have been found to early detect diarrhea from pigs activity monitoring (with camera or accelerometers)
- ✓ No statistical difference for average daily water consumption → sick animals drink normally
- ✓ A significant difference for average daily feed consumption → sick animals eat less than healthy pigs when diarrhea occurs and 24-48h before diarrhea (for days 5–8 after weaning)
- ✓ But machine learning methods failed in detecting individually diarrheic animals from feed consumption because of the high intra-individual variability of this indicator even in healthy pigs

Early disease detection in the fattening unit

- **A precision feeding room for 96 pigs**
 - **1 weighing station**
 - **5 individual precision feeder**
 - **6 individual water meter**
- **4 SoundTalk microphones to detect cough**
- **Analysis in progress**

