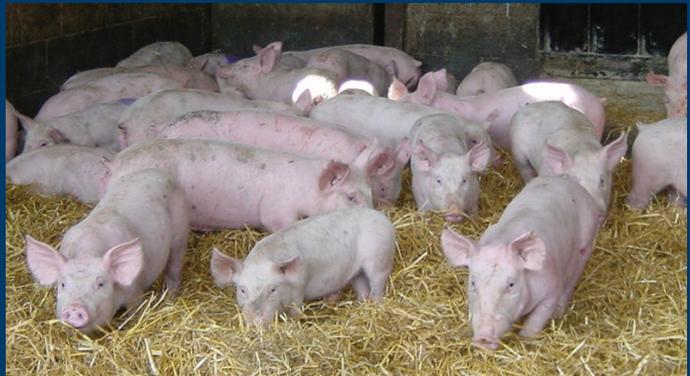


# NU Farms

Centre for Digital Innovation  
Applied to Livestock (C-DIAL)



Our research is:

- Improving animal performance and health with digital technologies
- Detecting early signs of disease in animals
- Developing early warning systems for targeted selective treatment
- Reducing input from antibiotics



SUSTAINABLE  
DEVELOPMENT  
GOALS

2 ZERO  
HUNGER



C-DIAL

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## What do we do?

- Automatically measure animal performance and the behaviour of animals in an indoor environment using sensor-based and automated technologies to increase the welfare and performance of livestock.
- Enable remote visualisation of animal welfare requiring minimal physical interaction with the animals.
- Prevent harm to animals by keeping them under remote observation.

## What is the challenge?

Animal health and welfare is crucial to the sustainable intensification of agriculture and the future of livestock. While animals are monitored through first hand observation, it is impractical to do 24/7. In the raising of piglets for example there are numerous dangers that they may encounter when left unattended, such as sows lying on them – a major cause of piglet death.

## Why is it important?

In decreasing the prevalence of disease and early death in livestock it makes sustainable agriculture possible by preventing overuse of antibiotics to stop drug resistance, and improve animal welfare standards overall.

Advanced  
diagnostics for  
animal  
welfare



*Nedap feeders*

## Why Newcastle University?

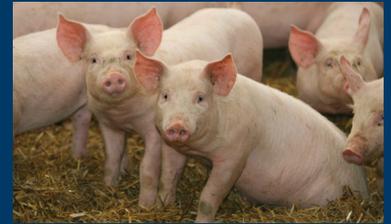
Many agritech developments fail to reach market because their technological readiness level is insufficient. At Newcastle University our world-class research is speeding up the outputs from innovation giving agritech a boost in the market. Newcastle University is a core partner in two Centres for Agricultural Innovation: the Centre for Crop Health and Protection (CHAP) and the Centre for Innovation Excellence in Livestock (CIEL)

- a consortium of 11 world-class research institutes developing new industry-needed solutions.

## What is it for?

C-DIAL is a purpose built research facility co-funded by CIEL at Cockle Park Farm. It enables the automated measurement of animal performance and detection of certain animal behaviours that are early signs of disease. By identifying the probability of disease it targets animals that actually require treatment, rather than the entire group. This results in more efficient use of antibiotics and faster recovery.

Monitor pigs  
from farrow  
to finish



## What do we offer?

- Make 'large-scale phenotyping' possible where characteristics and traits of thousands of animals are measured.
- Identify early signs of abhorrent behaviour or vice amongst animals that leads to harm.
- Research on early warning systems that detects behavioural signs of disease in order to take intervention.
- Methods for quantifying the consequences of farm management practices on animal health and welfare rapidly.
- Climate controlled areas for housing animals, including one with an electronic feeder for pigs that monitors feed intake.
- State-of-the-art 18m gait laboratory to accurately measure and analyse small changes in an animal's gait, diagnosing the first signs of lameness.
- Better understanding of movements from farrow to finish to increase animal welfare.

2 ZERO HUNGER



C-DIAL

Working towards Goal 2: Zero hunger of the 17 UN Sustainable Development Goals (SDGS).