



## Innovation in action

### Automated calf monitoring

#### Research capability

##### > AFBI Research Farm

Research in the areas of grazing and indoor feeding systems with capacity to precisely monitor individual dietary intake, behaviour, health and welfare, from birth through to adulthood.

#### Challenge

Raising heifer calves is a significant annual expense for farmers. Ensuring a calf has the best start in life however will repay this investment through higher milk production and a longer productive life. Combining data from ag-tech sensors with machine learning methods could hold the key to successful calf management.



## Action

An innovative research project on the behaviour and performance of dairy calves has been instigated by the Agri-food and Biosciences Institute (AFBI) in partnership with IceRobotics Ltd, a world-leading developer and provider of data collection and analysis products for monitoring livestock behaviour.

Bringing together a range of datasets, the project is believed to be one of the most comprehensive studies of its kind, with the potential to show how calf performance impacts on the long-term health of the milk herd. The study is co-funded by CIEL which is leading the way in the introduction of innovative technologies and processes into livestock production. IceRobotics and AFBI are both members of the CIEL Network.

The project is the first in the UK to use IceRobotics's CowAlert - the latest wearable technology - to monitor performance patterns and detect health issues in the first three months of the calf's life.

IceRobotics and AFBI will be exploiting machine learning methods on information derived from the sensors. The key objective is to show how technology and analytics can help farmers monitor and manage the health, performance, and welfare of their calves, leading to a more sustainable and profitable farming business.

Researchers will assess and compare reproduction (calving to conception time), production (yield and milk solids), behaviour (utilising sensor technology to monitor use of space), and health and disease (lameness and mastitis incidence).

## Impact

**The project addresses several key industry challenges: Early detection of health issues may enable a reduction in the use of antibiotics and also reduce mortality rate, leading to improved animal health & welfare; at a broader level, healthy animals are more productive and so more efficient, which helps improve farming sustainability and lessen the carbon footprint of the industry.**

**The research findings could help to significantly reduce the cost of calf management which is estimated to account for 20% of total farm outlay. This is an important opportunity to fully exploit the potential of wearable technology and deliver one of the first commercially available automated calf monitoring system for the farming industry.**



CIEL, Innovation Centre, York Science Park  
Heslington, York YO10 5DG

T: 01904 567716 / E: [enquiries@cielivestock.co.uk](mailto:enquiries@cielivestock.co.uk)  
[www.CIELivestock.co.uk](http://www.CIELivestock.co.uk)

