



Anthony Marsh
Director, Hoofcount

Hoofcount

Case study

Background

Dairy farming faces a significant challenge in managing hoof health, particularly with the prevalence of lameness caused by digital dermatitis. This condition affects over 90% of dairy herds in the UK, leading to substantial economic losses. While preventative measures like regular footbathing have been in place, early detection and timely treatment of lameness remain critical needs in the industry.

Hoofcount, a leading UK provider of automatic footbaths, recognised the need for a more proactive approach to hoof health. Their existing systems were already making strides in reducing lameness, but the company identified an opportunity to develop a device that could detect issues at an even earlier stage, ensuring prompt and effective treatment.

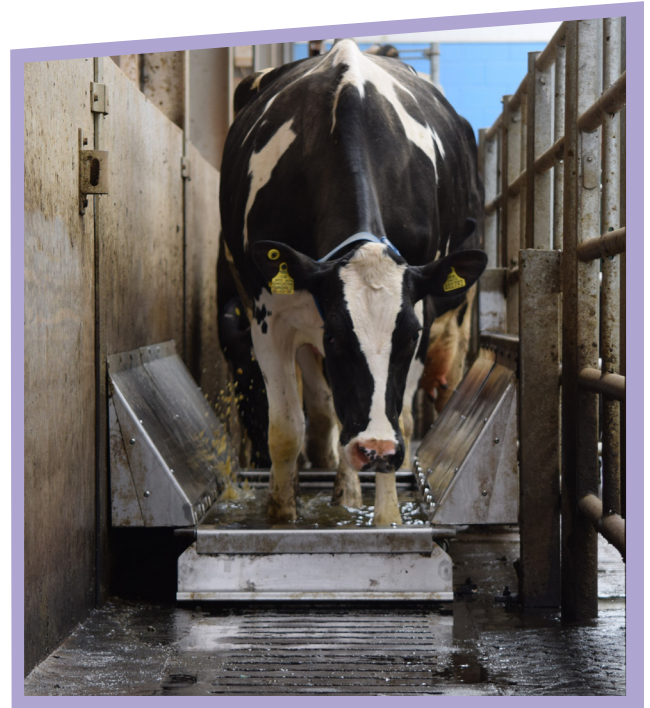


Innovation story

In response to this challenge, Hoofcount embarked on a two-year project to develop a cutting-edge lameness detection system, named Pedivue. This innovation was made possible through a £250,000 grant from UK Research and Innovation (UKRI) as part of Defra's Farming Innovation Programme.

Pedivue leverages advanced computer vision and machine learning technologies to monitor and assess hoof health on a daily basis. By retrofitting a high-speed camera and AI system to an existing Hoofcount footbath, the device captures critical moments of hoof movement, providing clear, square-on views of hoof soles. These images are then analysed by the AI system, which has been trained on extensive hoof data from multiple farms. Remarkably, even in its early stages, Pedivue achieved over 80% accuracy in detecting active digital dermatitis lesions.

The system not only identifies these lesions but also offers a farmer-friendly dashboard where the information is easily accessible. Farmers receive email alerts with treatment protocols, followed by reminders to ensure proper follow-up care. This early detection and intervention capability is a game-changer for managing digital dermatitis on dairy farms, helping to prevent the spread of the disease and improve overall animal welfare.



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Collaboration and Support

The development of Pedivue was a collaborative effort that brought together expertise from various sectors. Hoofcount worked closely with the UK Agri-Tech Centre at the South West Dairy Development Centre and the Centre for Machine Vision (CMV) at the University of the West of England, Bristol. This partnership was crucial in developing and refining the system and ensuring accurate and reliable hoof health assessments.

Hoofcount's Anthony Marsh explains: “Utilising the dairy centre and the resources at the UK Agri-Tech Centre has provided an excellent controlled centre for further development of the device with validated data capture.”

“The UK Agri-Tech Centre guided us through the initial application and have supported us throughout the project keeping timings and communication all on target.”

The successful development and launch of Pedivue marks a significant advancement in dairy farm management. By combining cutting-edge technology with practical farming needs, Hoofcount has created a tool that empowers farmers to take control of hoof health.

The UK Agri-Tech Centre's Rob Morrison (Head of Farms) notes “Pedivue has the potential to revolutionise hoof health management in dairy farms. By enabling automated detection through advanced vision and artificial intelligence, Pedivue ensures early intervention, improved animal welfare, and reduced costs, setting a new standard for the industry.”