

## **SOUTH WEST DAIRY DEVELOPMENT CENTRE**

Promoting sustainable  
UK milk production

Managed and operated by Kingshay

  
*Kingshay*



# A fresh vision for the UK dairy industry

Agri-EPI Centre's South West Dairy Development Centre (SWDDC) is a state-of-the-art, 180-cow dairy unit in Somerset, the heart of the Southwest milk field

The SWDDC seeks to offer a fresh vision for the UK dairy industry by providing a truly innovative environment for the development, testing and demonstration of new technologies and techniques to support sustainable, efficient and high health and welfare milk production.

Innovative building design and management systems are combined to create a highly efficient, low cost dairy system, built at a cost that compares very favourably with more conventional, less automated systems.

**The Centre offers a platform for industry to trial and review new ideas for the benefit of dairy farmers throughout the UK. The key areas of focus are to:**

- Demonstrate profitable and resource efficient milk production
- Integrate robotic milking with precision grazing
- Use the latest technology available to optimise animal welfare and sustainable milk production
- Provide state-of-the art facilities for research, development and demonstration.

## Network of UK dairy centres

The SWDDC is one of three world-class, complementary dairy facilities owned by Agri-EPI Centre. It has also established a youngstock research facility based at Scotland's Rural College in Dumfries and a robotic milking and adaptable housing centre at Harper Adams University in Shropshire. Further dairy facilities have been established on commercial farms as part of the Agri-EPI network of satellite farms.



1 Scotland's Rural College, Dumfries



Harper Adams University

2 Harper Adams University, Shropshire



3 Kingshay, Somerset

○ Satellite Farms





# Industry impact



## Precision grazing

While the number of robotic dairies in the UK continues to increase, and it is recognised that grass can be a least-cost feed for dairy herds, successful grazing has been difficult to implement on many robotic units.

Emerging technology such as hyperspectral imaging and satellite data is being tested at the SWDDC to monitor and predict grass growth in its surrounding paddocks, allowing the herd access to up to three fresh areas of grazing per day. A network of tracks and flexible paddocks encourage cow flow between the paddocks and the robot milkers.

A number of additional trials focused around precision dairy production are underway or planned for the centre.



## Measure it to manage it

The SWDDC uses sensor technology to gather data in order to maximise precision in many aspects of feeding, production, health and welfare across the farm: indoors and outdoors, by satellite, and with wearable technology on the cows.

The automation of many processes within the dairy releases skilled staff to devote more of their time to cow health and welfare.

Wellbeing of the cattle is optimised through innovative housing design, which reflects the best of the natural cow environment while providing automated protection from changing weather conditions. It includes enrichment elements such as rotary brushes, state of the art lighting and cubicles.



## 5G connected cows

The centre is one of three UK 'testbeds' for the 5G RuralFirst project, the UK's most ambitious connectivity project.

A number of technologies utilising 5G data are being trialled, including connected cow collars, monitoring health and welfare, drone technology to measure and monitor grazing, and 5G enabled farm security.



# Innovation in dairy farm technology



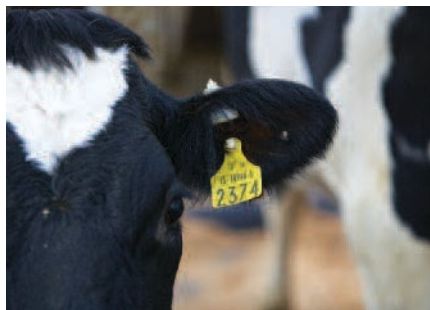
## Cow health

### Cow condition & mobility

A prototype 3D imaging system to measure incremental changes in cow body condition and mobility was tested at the SWDDC. This has now gone on to be launched as a commercially available product.

### In-line milk analysis

An agri-tech SME recently used the facilities to test prototypes of its in-line system to analyse progesterone levels in each cow's milk to precisely identify oestrus status in the cows.



## Cow comfort

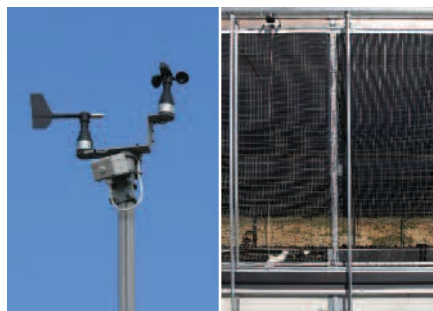
- The building is designed to optimise cow comfort with excellent light levels and ventilation
- Well designed cubicles & mattresses to optimise lying time
- Enrichment activity includes rotary brushes
- Well laid out housing to ease cow flow from lying area to milking to feeding

## Sensor technology

- Management information based on sensor technology across the farm
- High speed internet connectivity that links data across the Agri-Tech programme and the wider industry supporters
- Wearable technology on the cows
- 3D imaging to monitor cow health

## Fabric roofed building

- First of its kind in the UK and measures 90 meters by 28
- Translucent roof material transmits 20% of natural light
- Lightweight roof allows for lighter weight steel uprights



## Controlled environment

- Curtain wall controlling airflow
- Adjusts to wind speed, rainfall, internal temperature
- Remote control via Cloud App

## Automated milking system

- Three robots
- Providing high levels of data
- Low levels of cow stress

## Automated feed system

- The feed system delivers precision diets multiple times a day
- Weigh cells on feed bins linked to feed mill to optimise supply logistics

## A leading partnership

As one of the four UK Agri-Tech Innovation Centres, Agri-EPI Centre is accelerating the adoption of precision agriculture and engineering technologies to boost productivity across the whole agri-food chain.

It does this by exploring how to optimise performance of the highly complex agricultural production and processing systems. Agri-EPI provides world-class research and development facilities, connects academia and industry and progresses next generation technologies such as sensing, imaging and robotics to create a new understanding of production efficiency.

The South West Dairy Development Centre has been established in close partnership with independent dairy specialists Kingshay, which provides farmers with practical, unbiased information and support based on its own trials and investigations. Kingshay's range of services includes technical notes and reports based on practical farm-based research, field scale evaluations, surveys and product comparisons; comprehensive dairy herd costings and analysis; on-farm consultancy advice and training workshops. The Centre was made possible with funding support from Innovate UK and industry partners. [www.kingshay.co.uk](http://www.kingshay.co.uk)



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[www.gea.com](http://www.gea.com)



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[www.zoetis.com](http://www.zoetis.com)

## Get in touch

### Collaboration opportunities

The South West Dairy Development Centre provides a dairy industry platform for research, development and knowledge sharing and is part of a wider portfolio of Agri-EPI Centre facilities available for use by both funded and private research projects. We are open to new partnerships and projects and actively work with the other UK Agri-Tech Centres and others across the research community to provide the best package of facilities to meet your needs.

To discuss research opportunities, projects or media enquiries, please contact:

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### Visitor Centre, meeting facilities and tour opportunities

We also offer a well equipped and connected meeting facility which is available for hire and can include a farm tour with a member of the farm team.

To book a meeting facility and/or discuss farm management and tour opportunities, please contact:

Kingshay Office  
**T:** 01458 851 555  
**E:** [contact.us@kingshay.co.uk](mailto:contact.us@kingshay.co.uk)  
**W:** [www.kingshay.co.uk](http://www.kingshay.co.uk)





## FOUR CENTRES ONE VISION

Agri-EPI Centre is one of UK's four Centres of Agricultural Innovation. Supported by Department for Business, Energy and Industrial Strategy and Innovate UK, the four Agri-Tech Centres are delivering benefits to UK farming.



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**Promoting sustainable UK milk production**

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