

A large field of yellow flowers under a blue sky, framed by a white curved border.

Arable and Horticulture Innovation at the UK Agri-Tech Centre

Enabling Innovation at the UK Agri-Tech Centre

The UK Agri-Tech Centre has made strategic investments to improve the UK's capacity for research and innovation across the arable and horticultural sectors. We provide an ecosystem that delivers whole supply chain, science-based solutions at scale, connecting an outstanding breadth of expertise and facilities to accelerate innovation for industry, and provide evidence for policy needed in the UK and beyond.

Sector focuses

- Biopesticides and biostimulants
- Controlled Environment Agriculture (CEA)
- Crop cultivation, seeds and traits
- Integrated crop and pest management
- Crop storage and post-harvest solutions
- Biodiversity and natural capital
- Nutrient management
- Precision agriculture
- Data analytics and decision support
- Soil health and regenerative agriculture
- Sustainable farming systems

Facilities & Equipment

Innovation Farm Network

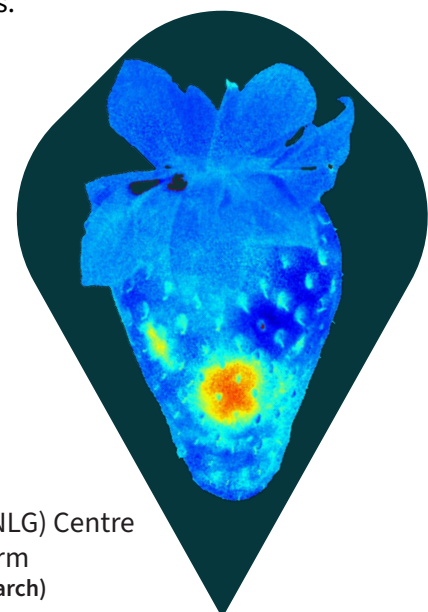
Our innovation farm network is a network of commercial farms, serving as real-world testbeds for agri-tech trials, research and development. This collaborative environment breaks down barriers to adoption and accelerates the development and commercialisation of new agri-tech products. It establishes new benchmarks in agricultural and horticultural excellence, providing the right environment for agri-tech developers to innovate and collaborate with farmers.

Soil and Crop Health

Our soil and crop health capabilities empower innovators to develop novel technologies. We integrate advanced technologies, like precision-controlled environments, multi-sensor phenotyping, and advanced imaging equipment to generate real-time data. Our facilities enable the study of plant-soil-water relationships and plant physiological changes to stressors such as nutrients, pests and disease, heat and drought. These capabilities aim to maximise yields, support integrated crop management, increase nutrient efficiency, and comprehensively evaluate crop and soil systems.

Facilities:

- Digital Phenotyping Lab (hosted by Rothamsted Research)
- Crop Phenotyping and Soil Health Facility (hosted by Cranfield University)
- Natural Light Growing (NLG) Centre
- North Wyke Farm Platform (hosted by Rothamsted Research)



Biopesticides & Biostimulants

We offer a comprehensive suite of pioneering capabilities, dedicated to researching and improving novel crop protection techniques. These encompass precision spraying, high specification field trials, screening and testing of new biopesticides, and controlled pest management trials. These tools help combat emerging and existing crop pests and diseases, providing farmers with alternative methods for crop protection. We also have access to the UK's first comprehensive and authenticated database of plant pathogenic fungi and bacteria, and international pest horizon scanning to enhance the efficiency of crop pest and disease diagnosis globally.

Facilities:

- Fungal Biopesticide Development Lab (hosted by CABI)
- Advanced Glasshouse Facility (hosted by Stockbridge Technology Centre)
- The National Reference Collection (hosted by CABI)
- International Pest Horizon Scanning (hosted by CABI)



Crop Storage and Post-harvest Solutions

Our Crop Storage and Post-harvest Solutions facilities simulate supply chain environments, precisely controlling and monitoring storage conditions – temperature, humidity, atmospheric composition (e.g., CO₂) – to enhance crop handling, storage and shelf-life, reducing losses. We integrate advanced, individually controlled temperature and atmospheric storage rooms (4-6 tonnes) and portable experimental chambers (80kg) and develop novel technologies.

Facilities:

- Advanced, energy-efficient cold stores (4 and 6 tonne capacities) (hosted by ADAS and the James Hutton Institute)
- P-Pod experimental chambers (hosted by the University of Greenwich)

Controlled Environment Agriculture (CEA)

Our unique CEA facilities range from pilot-to-commercial scale to foster the development, optimisation, validation, scale-up and demonstration of next generation technologies and innovative solutions that optimise the indoor production of crops (yield; costs), improving food quality whilst reducing our impact on resources.

We can test the effect of different strategies (environmental controls; IPM); growing systems (natural light; hydroponic; sunless); recipes (lights; nutrients); explore new crops and applications (seed breeding; high-value molecules; ingredients), as well as integrate circular economy opportunities (nutrients; energy; heat; CO₂) to drive forward the novel practices and innovation that underpin this sector's ambitions for sustainable and resilient food production.

Facilities:

- Innovation Hub for Controlled Environment Agriculture (IHCEA)
- Vertical Farm Demonstrator (hosted by Stockbridge Technology Centre)
- Dynamic Vertical Farming Cabinet (hosted by Stockbridge Technology Centre)
- Advanced Glasshouse Facility (hosted by Stockbridge Technology Centre)
- Natural Light Growing (NLG) Centre



Precision and Regenerative Agriculture

Whilst our capabilities collectively promote regenerative and precision agriculture, we have a suite of technologies that facilitate R&D focusing on net zero, resilient systems, long-term soil health, and environmental sustainability. These technologies include sensors and farm platforms to test and validate regenerative and precision agriculture practices.

Facilities:

- Intelligent Ag Kit: e.g. Avadex granular applicator and System Cameleon
- Airborne, lab and field sensors
- Robotic development platforms
- Farm data platform integrating geospatial operational and research data

Ecosystem & expertise

Capabilities

Support product development, proof of concept, test and trial (from lab to field)

Network

An ever-increasing range of contacts and collaborators, to drive effective partnerships and connections across the agri-tech innovation system

Knowledge

Combining innovation expertise, professional advice, sector specialisms, market intelligence

Contact us at
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for more information

