

# SEFARI



Leading ideas at The Royal Highland Show



23rd -26th  
June 2022

## ROYAL HIGHLAND SHOW



Royal  
Botanic Garden  
Edinburgh



The Rowett  
Institute



The James  
Hutton  
Institute



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# LEADING IDEAS at The Royal Highland Show 2022

The Scottish Government's Strategic Research Portfolio for Environment, Natural Resources and Agriculture is delivered by a partnership of the Scottish Environment, Food and Agriculture Research Institutions (SEFARI), Scottish Universities and Agencies.

## The key components of the Portfolio are the:

- Strategic Research Programme, delivered through SEFARI, which provides the mid to long-term research needed to address crucial scientific priorities. These include tackling the climate emergency, biodiversity crisis and a Just Transition to next zero. SEFARI research informs transformative change in land use, food systems and supports resilience and growth of rural communities.
- Underpinning of SEFARI national resources and expertise, such as research farms, data collection and analytical resource.
- Scotland's policy facing Centres of Expertise for Climate Change (ClimateXChange), Waters (CREW), Animal Disease Outbreaks (EPIC), Plant Health (Plant Health Centre) and Centre for Expertise for Knowledge Exchange and Innovation (SEFARI Gateway), with partners and leadership variously across Scottish Universities, Agencies and SEFARI. The Centres provide policy and rural industry sector facing expertise and advice, drawn from the Strategic Portfolio and beyond.

The Royal Highland Show represents one of the key gatherings for the Portfolio, exemplifying its role in partnering research and expertise with and across policy, industry and communities. This booklet outlines a range of our activities at venues such as the Scottish Government Pavilion and the SEFARI Institute Pavilions. The show provides a valuable and vibrant opportunity to meet with Portfolio members, to discuss research and build partnerships across a range of topics spanning the environment, food and agriculture, whilst demonstrating how we support education, policy and industry to enhance impact.


## Contact us





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## Is the answer in the soil?

**Where & When?** In the SRUC pavillion throughout the show

The display will provide a wormery to demonstrate how earthworms utilise decomposing material such as leaf litter. Drawing material down into the soil to enhance carbon sequestration and improve soil structure and drainage. Nematodes observed under a microscope will provide an understanding that microscopic organisms are important in maintaining healthy soils.

Link to relevant online material - [Soil health: Let's get physical \(chemical and biological\) | AHDB](#)

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## Biodiversity zone

**Where & When?** In the James Hutton pavillion throughout the show

The zone will link to a variety of projects on biodiversity and these will include:

- Ensuring positive behavioural change for farmers towards best practice for clean growth: Economic and behavioural investigations
- Increasing fruit and vegetable production for sustainable, healthy, affordable diets and secure jobs

Link to relevant online material - [Ecological Sciences - James Hutton Institute](#)

**Main contact:**

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## Plant Health Centre

**Where & When?** In the James Hutton pavillion throughout the show

Talk to Scotland's Plant Health Centre who bring the plant sectors forestry, horticulture, environment and agriculture together to co-ordinate plant health knowledge, skills and activities across Scotland.

**The Centre's objectives are to:**

- Strengthen resilience to plant health threats
- Provide scientific evidence to government and plant health stakeholders
- Improve environmental and rural industry resilience
- Expand interdisciplinary networks to build capacity
- Engage effectively with stakeholders

**Link to relevant online material** - [Plant Health Centre](#)

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## Vaccination as a green solution to disease control

**Where & When?** In the Moredun BioBus and Moredun pavillion throughout the show

Moredun's research is focussed on developing solutions to prevent and control livestock disease to increase the sustainable efficiency of livestock production, improve animal health and welfare and reduce the environmental impact of agriculture. The development and application of vaccines is an effective way to prevent disease, without the use of drugs and chemicals, providing a "green" solution to disease control. Many of the vaccines used on farms today have been developed or tested at Moredun and recently Moredun scientists have developed and commercialised the world's first vaccine against a gastrointestinal parasite.

**Link to relevant online material** - [100 Years of The Moredun Foundation](#)

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## Nutrition and Health

**Where & When?** In the Rowett pavillion throughout the show

The Rowett Institute is at the forefront of nutrition and health research and their mission is, "Promoting sustainable nutrition and improving health and well-being through world class research and education." On the 23rd & 24th, meet our experts (from Rowett and across SEFARI e.g., BioSS) working to improve Scotland's food sustainability, safety and security from research ranging from hemp, AMR, to how to help food and drink industry and consumers meet net zero targets. On the 25th & 26th we will have a range of public and education activities.

### Links to relevant online material -

- [Crops for diet diversification](#)
- [Healthy environmentally sustainable diets](#)
- [Net zero opportunities to mitigate agricultural emissions in the North East of Scotland](#)
- [Circular food system: Nutrition security and sufficiency](#)
- [Diet inequalities and food patterns in Scotland](#)
- [Food swapping tool for healthier and more sustainable diets](#)

### Main contact:

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## Microbe Safari

**Where & When?** In the Moredun BioBus and Moredun pavillion on the 25th & 26th

This is an educational resource and activity about the fascinating world of microbiology that includes gut health, foodborne pathogens, antibiotic resistance, microbial communities, mycotoxins, soil, livestock and crop health and the environment. In the hands on activity we aim to provide information on the important relationships between microbes and food, show how these themes are connected and how they impact on our lives and the world that we live in.

**Link to relevant online material -** [Microbe Safari](#)

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## Assessing public good delivery in the uplands

**Where & When?** In the SRUC pavillion throughout the show

Nearly 70% of Scotland's land area consists of uplands (or land of upland character) dominated by rough grazing. RESAS-funded research at SRUC Kirkton & Auchtertyre farms is assessing public good provision (flood mitigation, carbon sequestration and biodiversity) from different grazed and ungrazed habitats across the farms. More integrated land management will be needed to ensure the delivery of multiple outcomes from individual upland farms in the future.

**Link to relevant online material** -[Addressing upland agricultural and environmental challenges in Scotland](#)

**Main contact:**

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## Disease detectives

**Where & When?** In the Moredun BioBus and Moredun pavillion throughout the show

Moredun's research is focussed on developing solutions to prevent and control infectious diseases and the development of rapid and accurate diagnostic tests has enabled the detection of infectious agents in animals, wildlife, people and the environment. These diagnostic tools have been applied to improve understanding of disease transmission routes, pathogen survival and virulence, detect infected hosts, surveillance to detect new pathogens and diagnostics to look at efficacy of treatments. Moredun scientists worked in collaboration with NHS colleagues to provide extra capacity for PCR testing during the Covid pandemic a great example of One Health in Action. Moredun's diagnostic tests have been used to underpin the Scottish Government BVD eradication campaign and for UK wide sheep scab control programmes.



**Links to relevant online material** -

- [Test don't guess](#)
- [Stop the spread](#)
- [Battle against BVD](#)

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## Agri-tech zone

**Where & When?** In the James Hutton pavillion throughout the show

**The zone will include:**

- A greenhouse gas emissions app linked to a project on: Towards carbon positive through improved farming
- Research using vertical farming facilities links to projects on: Exploring barley diversity for resilience and sustainability
- Monitoring the environmental impact of controlled environment agriculture
- The impact of novel crops and farming technologies on the Scottish agricultural landscape

More broadly, the zone relates to the projects on food and drink manufacturing, establishing baseline contributions to climate change and identifying scope for reduction of environmental impacts and also links to the Advanced Plant Growth Centre and International Barley Hub.

**Links to relevant online material** - [Advanced Plant Growth Centre](#)

**Main contact:**

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## Parasites R Us

**Where & When?** In the Moredun BioBus and Moredun pavillion throughout the show

Parasites are fascinating organisms that live in or on a host animal, where they obtain food and shelter, often at the expense of the host. Diseases caused by parasites have a major economic and welfare impact on animals, people and the environment. Research at Moredun is aiming to understand the complex relationships between parasites and their hosts and to determine the best intervention and control strategies to reduce the use of chemicals and pesticides and develop sustainable and environmentally friendly solutions to combat parasites.

**Links to relevant online material**

- [Stop the creeps on sheep](#)
- [Control the crypto](#)
- [War of the worms](#)
- [Fight the fluke](#)

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## Land use zone

**Where & When?** In the James Hutton pavillion throughout the show

Projects shown will include:

- Ensuring positive behavioural change for farmers towards best practice for clean growth: Economic and behavioural investigations
- Healthy Soils and CentrePeat
- Achieving Multi-Purpose Nature-Based Solutions

**Links to relevant online material** – [Climate-Positive Farming](#)

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## Gateway to Impact

**Where & When?** In the Scottish Government Pavilion, 11am-12.30pm on 23rd

The event will focus on the need for increased collaboration, co-construction and knowledge exchange to aid the effective use of research evidence in today's world - and how SEFARI Gateway (the Centre of Expertise for Knowledge Exchange and Innovation) and the wider 2022-2027 Scottish Government's funded Strategic Research Portfolio can deliver impact. There will be a series of short presentations followed by a networking opportunity.

**Links to relevant online material** – [SEFARI Gateway](#)

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## Cinema Room

**Where & When?** In the James Hutton pavillion throughout the show

Examples that will be shown include:

- 360° videos of field sites of peatland restoration and monitoring greenhouse gas emissions
- Videos and augmented reality models of Glensaugh Carbon Positive Farm (e.g. carbon in soils)
- Videos and augmented reality models of Balruddery Farm, including the Centre for Sustainable Cropping and multi-functional land use, landscapes and seascapes (e.g. aquaculture, renewable energy), and multi-functional land use linked to James Hutton Institute's Flagship International Land Use Study Centre
- A SEFARI Gateway funded video highlighting the vital role of the Scottish Centres of Expertise on how they interact and deliver Scottish Government policy needs. In Scotland, we are in the unique and proud situation of having five dedicated Centres of Expertise who are: ClimateXChange, CREW, EPIC, the Plant Health Centre and SEFARI Gateway.

**Main contact:**

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Colleagues from across the Centres of Expertise will also be at the show



## Where to find us



Scottish Government  
Riaghaltas na h-Alba  
gov.scot