

Agriculture
 Newsletter 2022

List of Courses

Foundation Degree
 Agriculture

BSc
 Agriculture
 Agriculture with Animal Science
 Agriculture with Business Management

MAg
 Agriculture
 Agriculture with Animal Science

Interested? Phone Hefin Williams on
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 ac.uk

IBERS Institute of Biological,
 Environmental and Rural Sciences

Virtual Study Tour

Due to COVID-19 our first year agriculture students were unable to visit the East of England as part of their studies. A virtual online study tour was put in place that utilised resources already available at IBERS as well as material developed by the Agriculture and Horticulture Development Board (AHDB) with their Strategic and Monitor Farm network. We are grateful to the AHDB staff and farmers that helped us put this in place.

Students had completed a research Wiki beforehand examining the nature of agriculture in the east and submitted an analytical presentation of their conclusions following the virtual tour.

During the week the students engaged with

- **David Wilson from the AHDB** who provided an overview of agriculture in the East of England,
- **Richard Ling at the Diss Monitor Farm** who discussed beef cattle nutrition and cereals on an iPad while walking around the farm and driving his pickup to the field,
- **Tom Mead** discussing soils at the Duxford Monitor Farm'
- **Brian and Patrick Barker on the Strategic Farm East** discussing crop strategies, the role of the environment on the farm and planning for the new ELMS,
- **Wisbech Monitor Farm with Andrew and Sam Melton** looking at precision Farming and machinery, Andrew Palmer, AHDB
- **Pig Specialist, and Agronomist Laura Buckingham** from Fram Farmers.

IBERS Agriculture students research sustainable parasite control in sheep



Eiry Williams

Eiry Williams is currently in her final year of a PhD funded by meat promotion Wales (HCC) and KESSII, a PhD which focuses on developing sustainable strategies for anthelmintic use to control gastrointestinal nematodes (GIN) in ewes.

Blanket treatment of ewes multiple times a year is known to rapidly accelerate resistance development and unfortunately this seems a common practice on GB farms.

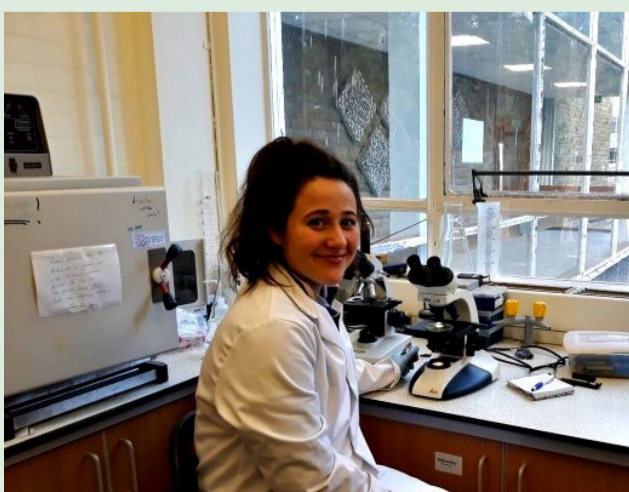
2020 BSc Agriculture graduate **Dafydd Roberts** completed a similar dissertation project, but this time focusing on lambs. In his study, Dafydd demonstrated that Welsh mountain lambs grazing pastures of moderate quality with a growth rate above 60g a day did not benefit from treatment (i.e did not improve their growth rate post treatment).

Dafydd's impressive study won him the 2020 Texel sheep society prize for the best sheep based dissertation at Aberystwyth University.

Fellow BSc Agriculture graduate **Sara Jenkins** found that the efficacy of moxidectin and ivermectin against GIN averaged 48% and 65%, respectively of farms primarily using macrocyclic lactones to control sheep scab, compared to 63% and 79% respectively, for farms using organophosphate dip as their primary sheep scab control method.



Dafydd's Study



Sara Jenkins

Aberystwyth University to lead major research project on greenhouse gas removal with crops

Scientists at Aberystwyth University will play a leading role in a major government-funded drive to remove greenhouse gases from the atmosphere.

As part of a UK Research and Innovation (UKRI) investment of £30 million over four-and-a-half years, researchers at Aberystwyth's Institute for Biological, Environmental and Rural Sciences (IBERS) will lead a consortium of partners to develop biomass crops.

The work will be led by Aberystwyth University in collaboration with Aberdeen University, Rothamsted Research, Gloucestershire University, the UK Centre for Ecology & Hydrology, and will benefit from the industrial expertise of Terravesta Ltd and Willow Energy.

The research also involves new field trials at Bishop Burton College, Yorkshire and Myerscough College, Lancashire.

Alongside project partners, they will be demonstrating the latest technologies for planting willow and Miscanthus, the two perennial biomass crops that are best suited to UK conditions.

Both crops grow well on land that is less suited to food production, and can be harvested every one to three years.

Since they remove carbon dioxide from the atmosphere as they grow, they are regarded as a renewable and low carbon source of electricity.

The team will also undertake detailed measurements of carbon flows in order to more accurately account for this carbon.

Professor Iain Donnison, Head of the Institute of Biological, Environmental & Rural Sciences (IBERS) at Aberystwyth University, commented:

"It's a great privilege to have been selected to take a leading role in this very important investment in efforts to tackle climate change. The project we lead, along with the others, will make important contributions to meeting the net zero climate targets which are so vital to protecting the future of our planet."



Energy crop breeding plots at Aberystwyth University's Upland Research Station at Pwllpeiran.

Precision Livestock Farming research at Aberystwyth

In a new research paper in the journal Applied Animal Behavior Science, Dr Manod Williams and a team of IBERS' researchers demonstrate that small sensors fitted to the legs of sheep can be used to successfully estimate how long they lie down.

The study is part of efforts to develop precision livestock farming methods for the sheep sector, and to allow a better understanding of the behaviour of pregnant ewes.

Dr Williams, who led the research, commented:

"There is a lack of understanding about the factors affecting the lying behaviour of sheep: we need to better understand how much they should lie down per day, what constitutes normal, and which physiological states affect them.

"Lying behaviour has been shown to be a highly valuable metric of behaviour in other species. But, to date, no exploratory analyses on the lying behaviour of pregnant sheep have been undertaken using accelerometer sensors."

Dr Williams added:

"This research also takes us a step closer to being able to predict with detail when ewes will give birth."

The study was conducted at two farms – one in Aberystwyth University's Fferm Gogerddan and another at Coleg Cambria's Llysfasi farm in Ruthin, north Wales.



Dr Manod Williams, Lecturer in Livestock Production in IBERS, Aberystwyth University



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