

POULTRY DASHBOARD

October 2021 – September 2022



427 OF BUSINESSES REGISTERED WITH FARMING CONNECT ARE FROM THE POULTRY SECTOR

Strategic Awareness Events



Key topics included:

Embracing technology and training to tackle AMR



Reducing the risk of Avian Influenza



*Strategic Awareness Event themes are often cross-sectoral that tend to attract farmers from all sectors.

Demonstration Network

Wern farm: Enhancing bird health and performance through the use of sensor technology to control air, litter and water quality

Enhancing the shed environment can bring many benefits to the birds and farmer and reducing environmental emissions. Water quality was a challenge, with the borehole at Wern showing as being high in manganese. This had previously been treated with acid, but it negatively affected the gut health of the birds. Therefore, trialling a new product to improve water quality and improving the shed environment to enhance the health of the hens was a focus at Wern.

At the start of the project, sensors were fitted and linked to a LoRaWAN gateway to monitor the following every 10 minutes:

- Humidity
- Temperature
- Ammonia
- CO₂ levels

Monthly bacteria swabs were then undertaken at Wern. Pruex stabiliser product was sprayed in sheds via an automated Bobi spraying system installed in the corner of the pens. A convection oven was introduced to analyse moisture content in litter and muck on belts. An additional sensor was then placed in the muck shed to monitor ammonia released from muck after it leaves the shed. Sensors continue to collect data until December 2022 and swabs undertaken until May 2022.

Identical sensor unit used to that at Wern

Between 26 June and 21 July 2020, ammonia was recorded at 10-15ppm; the aim was to reduce this to at least 5ppm. Ammonia results varied throughout the duration of the project, as the muck was left on the belt for longer than it had been previously. For example, muck would have been removed from the belts after three or four days before the project started, as the weight of the high moisture content muck was too high. When the shed was being sprayed with Pruex bacteria, the muck was able to be left on the belts for up to 10 days, as the moisture levels and weight were reduced, and the ammonia did not build up to dangerous levels within a few days – meaning that it took longer to reach a level that required mucking out.

Ammonia levels were reduced by 75% in the summer months from 20 parts per million (ppm) to 5ppm. This has largely been because of bacteria dominance of beneficial bacteria helping to dry up the litter and reduce ammonia emissions and the reduction of muck leaving the shed, due to the reduced moisture content in the litter.



Ammonia data – Monthly (Oct 2021 to Sept 2022)
See page 2 for data and Summary.

Knowledge Exchange Hub

The following technical articles have been produced by the KE Hub:



FARM BUSINESS DIVERSIFICATION – A RESEARCH PERSPECTIVE



CRYPTOSPORIDIUM AND LIVESTOCK AS ZONOTIC RISKS

Discussion Groups



8 POULTRY DISCUSSION GROUP MEETINGS

held with



44 ATTENDEES

Venture



0 OPPORTUNITIES INCLUDE POULTRY

with



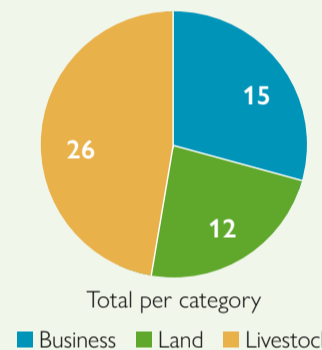
4 SEEKERS

Training

There have been six application windows between October 2021 and September 2022 with **1,064** instances of training delivered during this period.

Of this number, **53** instances were from the Poultry sector.

Individuals trained by category



E-learning

Some of the e-learning courses completed within this period relating to the Poultry sector:

INJURIOUS PECKING IN LAYING HENS



MANAGING POULTRY MANURE



POULTRY VACCINATION



For more information on e-learning, please visit the [website](#).

Management Exchange

Emma Duffy



Bangor University graduate Emma Duffy earned a first-class degree in Biology with Biochemistry. She is an accomplished equine specialist, a fruit and vegetable supplier and now a commercial poultry keeper. The Covid lockdown meant she could not offer private tuition in classical dressage at the small riding school at her family's 13 acre smallholding near Caernarfon. To compensate, Emma expanded her 'poultry hobby' into a new business venture selling both eggs and pullets, which works alongside 'Village Veg', the successful fruit and vegetable delivery business started in 2009.

"I plan to visit specialty poultry breeders and in-ovo technology businesses in the Netherlands, Germany and the UK to learn how to apply commercially used poultry-sexing techniques for the preservation of rare breeds."



Ammonia data – Monthly (Oct 2021 to Sept 2022):



Figure 1: Ammonia data for October 2021 at Wern Farm



Figure 2: Ammonia data for November 2021 at Wern Farm



Figure 3: Ammonia data for December 2021 at Wern Farm



Figure 4: Ammonia data for January 2022 at Wern Farm

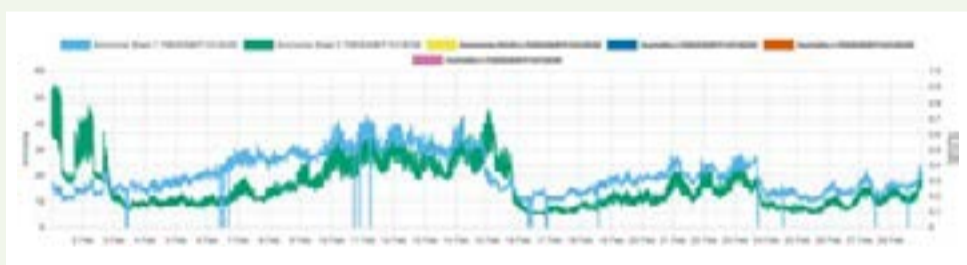


Figure 5: Ammonia data for February 2022 at Wern Farm

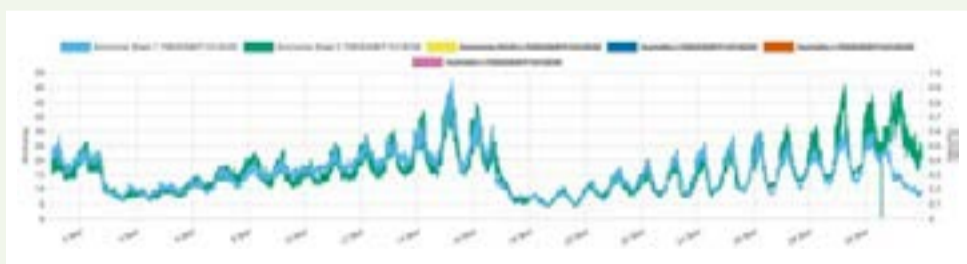


Figure 6: Ammonia data for March 2022 at Wern Farm



Figure 7: Ammonia data for April 2022 at Wern Farm



Figure 8: Ammonia data for May 2022 at Wern Farm

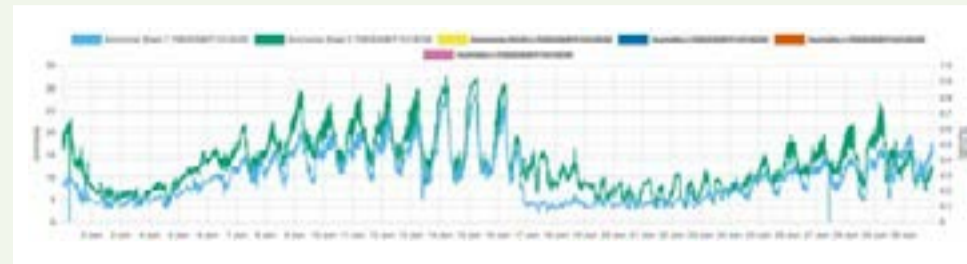


Figure 9: Ammonia data for June 2022 at Wern Farm



Figure 10: Ammonia data for July 2022 at Wern Farm



Figure 11: Ammonia data for August 2022 at Wern Farm

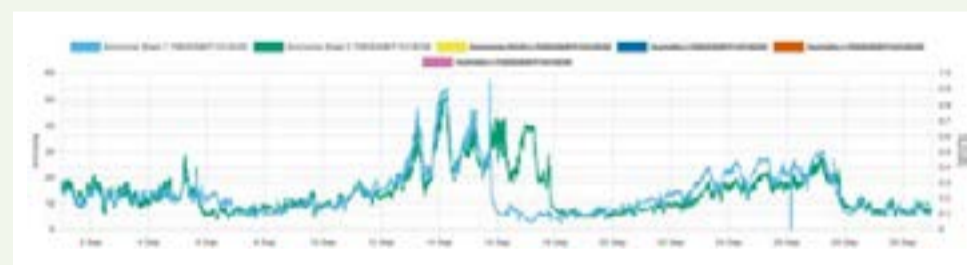


Figure 12: Ammonia data for September 2022 at Wern Farm

Summary:

- The graphs show the cyclical pattern of ammonia increasing up to the point of the belts getting mucked out, before the ammonia levels drop after the muck has left the sheds
- Over a 50% reduction in moisture content has been achieved on the belts, from 78% to 28% moisture content. Further reductions in moisture content were achieved on the litter on the floor/scratch area. Prutex bacteria have kept ammonia levels lower, increasing the length of time muck can be left on the belt until ammonia levels become high and muck needs to be removed from the belts. This has hugely benefitted Wern as mucking out has been required less frequently, saving Osian time.
- This has reduced labour and machinery costs and depreciation i.e. rusting muck trailers because of wet muck, associated with mucking out
- The graphs also show the seasonal patterns of peak ammonia being higher in the winter months, when rainfall and humidity is also higher
- The graphs also demonstrate the cyclical pattern of ammonia within the poultry houses in a 24-hour period. Ammonia levels decrease at night when the birds roost, the floor litter is undisturbed, and the birds form a blanket over the muck belts. When activity increases during the daytime, ammonia levels increase again.