



Innovation in action

Waste valorisation for a sustainable and resource efficient poultry sector

**CIEL supported
industry-led research**

Challenge

Poultry production generates large quantities of litter, which consists of a mixture of manure, waste bedding and food, as well as feathers. The amount of litter depends on the frequency of its removal. In some countries the same bedding is often used for more than one production cycle, whereas in the EU, the litter is removed with every new flock and substituted with fresh bedding material. Yet poultry litter is perhaps one of the most valuable and yet under appreciated by-products that a poultry farm generates.





Action

In a bid to develop new sustainable ways to valorise this waste stream, leading poultry processor Moy Park renewed their research partnership with Scotland's Rural College (SRUC). The project enabled Moy Park to follow up on the unexpected, but repeated observation that rearing chickens on composted litter from a previous crop improved their performance. The outcomes added a new dimension to spent poultry litter valorisation for a sustainable and resource efficient poultry sector.

Trials held within the Allermuir Avian Innovation and Skills Centre, developed by SRUC and CIEL, compared birds reared on clean litter with litter which had been composted. The project sought to explore and better understand the link between litter microbiome composition and broiler production efficiency.

In the first of the two trials, no differences in performance were recorded. In trial two, birds on the composted litter were significantly heavier and had improved feed conversion ratios. Microbiome analysis suggests that the differences in results may be due to the presence of different bacteria in the composted litter. More trials and subsequent microbiome analysis are anticipated to investigate this further.

Impact

Moy Park produces over 7,000 tonnes of poultry litter per week and it is estimated that 4.55 megatonnes (Mt) of poultry litter is currently produced annually in the UK across the poultry industry as a whole. Turning waste into a resource improves profitability and carries significant environmental benefits.

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