



Dr Amy Moss

DECRA Postdoctoral Fellow, School of ERS

Senior Poultry Scientist, Poultry Hub Australia

Dr Amy Moss is a multi-award winning Senior Poultry Scientist with Poultry Hub Australia based at the University of New England. Dr Moss has a PhD in Veterinary science: poultry nutrition and over 10 years' experience running poultry research trials, with the overarching goal to enhance the sustainability of the Australian chicken-meat industry.



Developing food-waste diets for the Australian laying hen and chicken-meat industries

Dr Amy Moss

August 2026

Purpose

This paper summarises the work done by Dr Moss and team (Dr Hiep Dao, Mr Rebel Northey) at the University of New England to develop food waste diets for laying hens and meat chickens, in collaboration with, and using the food waste streams provided by, Food Recycle Ltd.

Developing food waste diets for laying hens

- A trial was conducted at the University of New England exploring the development of food waste diets for laying hens, funded by Food Recycle Pty Ltd. The trial consisted of three treatments with 50 hens/treatment over 24–43 weeks of production.
- This trial was the first of its kind to compare commercial hen diets with diets containing >99% food waste, and a 50-50 blend of the two. Such high inclusion rates of food waste had not been previously tested in diets for poultry and balanced to meet the nutrient requirements of hens.
- The trial demonstrated that the laying performance of hens offered >99% food waste diets was not only equivalent, but had a feed efficiency superior to, that of the commercial diet over the trial period of 20 weeks.
- Hence, feeding diets almost solely consisting of food waste was possible and could even generate benefit in feed efficiency and thereby reduce feed cost for the Australian laying hen industry.
- This study was published in Nature Scientific Reports – the 5th most cited scientific journal in the world, which highlights the importance and standing of this research.

Developing food waste diets for meat-chickens

- Following the success of the hen trial conducted at the University of New England, Dr Moss sought to explore the capacity of food waste to be used in diets for meat-chickens, which is potentially more difficult to achieve given that meat-chickens have a higher nutrient requirement than laying hens and may not tolerate the higher salt content, fat content, and the variation in nutrient provided in some food waste streams.
- Due to Dr Moss' previous success in this area, her outstanding early career researcher profile and the potential benefit for both environmental and economic outcomes of food waste inclusion to meat-chicken diets, Dr Moss was awarded the Australian Research Council's prestigious Discovery Early Career Researcher Award 2024 to explore food waste diets for meat-chickens.
- Within this award, Food Recycle Pty Ltd collaborated in the second study providing the food waste for the trial. This trial, conducted at The University of New England, consisted of a meat-chicken trial of four treatments (8 replicate pens of 10 meat-chickens per treatment from 0–42 days post-hatch) to explore the impact of graded inclusions of food waste on growth performance. The first treatment consisted of a standard commercial meat-chicken diet program. Treatments 2–4 consisted of diets containing graded inclusions of processed food waste from Food Recycle, up to 70% of the total diet.

- Over the entire duration of the trial, the treatment containing 35% of the diet as food waste had the same weight gain and feed efficiency as the treatment fed the standard commercial diet. Thus, it was concluded that food waste inclusions of up to 35% maintain performance. Further, due to the reduced cost of the food waste diet compared to the commercial diet, feeding 35% food waste diets also reduced feed costs and generated a saving of 8 cents per kg of live gain. Given the Australian poultry industry produces about 1.5 million tons of chicken meat per annum, this potential cost saving is significant.

Summary

In summary, food waste has excellent potential as a feed ingredient for both the hen and chicken-meat industries, and can be anticipated to produce performance and economic benefits. Additionally, the re-use of an otherwise low-value product reduces the burden of food waste in landfill; thereby providing additional positive environmental outcomes.