

Hen nutrition research to further reduce the environmental footprint of the Australian egg industry



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With one of the lowest carbon footprints of any animal protein, Australian consumers can already feel good about buying and eating eggs. New research into the nutritional strategies of layer hens conducted by the University of Queensland and funded through a partnership with Australian Eggs and Australian Pork, may now help egg farmers across the country further reduce their environmental impact through the diet formulations they feed their hens.

An extensive carbon assessment of the egg industry conducted in 2021 identified that the highest contributor of carbon to the supply chain is the feed hens eat. In particular, soybean meal which is used to provide hens with required protein has a relatively high carbon footprint as it has increasingly been sourced from South America and shipped to Australia. The exploration of feed alternatives became one of the best opportunities for carbon reduction, prompting Australian Eggs to invest in research into alternative ingredients that promoted sustainable production for laying hens and pig diets.

Now at the conclusion of this research, insect meal such as Black Soldier Fly larvae, canola meal, and lupins have been identified as the most viable alternatives to soy in the layer hen diet. It is understood that insect meal is one of the most promising alternate protein sources for addressing the global protein meal production challenge due to its high nutrient value and low environmental impact for cultivation.

Black Soldier Fly technology is growing and already being explored in the Australian egg industry through a collaborative research project with Australian Pork, into its use in waste management solutions.

Rowan McMonnies, Managing Director of Australian Eggs, said “every day, the Australian egg industry is working hard on producing more sustainable eggs with lower carbon footprint, highly nutritious and to the best welfare standards. This research will help take the next step encourage on-farm adoption of alternate proteins and carbon-reduction pathways”.

Dr Elham Assadi Soumeh is a Senior Lecturer in Animal Science and Production at The University of Queensland and was responsible for conducting the research for the egg layer and pig diets. Of the research, Dr Soumeh said “it is clear that sourcing quality and sustainable feed ingredients at acceptable prices has become the major challenge for the industry. Finding alternatives that are lower carbon solutions seemed difficult in the early stages, but it is pleasing to see there are some viable options to start further exploring”.

Tina Grech, a Senior Nutritionist for Alltech Lienert, specialises in poultry nutrition and management. On nutrition she said “the diets of animals involved in food production are extremely sophisticated and many people outside of the industry are surprised by how much science is involved. If the alternative feed ingredients identified in this research can provide Aussie farmers with a nutritious and more sustainable way to feed their animals, that’s a win for the environment, the community and primary industry”.

To learn more about Australian Egg’s environmental sustainability and other research projects, please visit www.australianeggs.org.au/what-we-do/leading-research

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Media enquiries

Kelly Seagrave
Manager, Communications and Engagement Projects
E. kelly.seagrave@australianeggs.org.au

About Australian Eggs

Australian Eggs is a member owned not-for-profit company providing research & development (R&D) and marketing services for the benefit of Australian egg farmers. Working together with the egg industry and the Australian Government, Australian Eggs strives to deliver value to industry and the public by investing in programs that increase consumption and ensure industry sustainability. All known Australian egg farmers are serviced by Australian Eggs, irrespective of their size, location or farming system.

About the research

The research project Alternative Protein-Rich feeds for the pork and egg industries was conducted by Dr Elham Assadi Soumeh of The University of Queensland, in partnership with Australian Eggs and Australian Pork. Concluding in late 2022, the desktop research project sought to identify potential substitutes for soy and other costly high-protein feed sources for layer and pig diets. The research focused on identifying the most economical and sustainable high-protein food sources, worthy of further investigation in future research.