

R&D Projects 2019/20



INVESTING IN RESEARCH TO SUPPORT THE
ON-GOING IMPROVEMENT OF THE EGG INDUSTRY



Australian Eggs is a not-for-profit company providing research, development and marketing of eggs for the benefit of all farmers regardless of their size, location or farming system.

We grow and adapt our R&D activities to the industry requirements, and adopt a balanced portfolio of projects each year.

Our marketing channels include:



TV, MAGAZINE, RADIO AND ONLINE
Advertising and engagement



SOCIAL MEDIA
Advertising



ALL ABOUT EGGS
Science-based education for primary and secondary school students



LIAISING WITH HEALTH CARE PROFESSIONALS on the health benefits of eating eggs

PROJECT CASE STUDY



Darling Downs Farms, Queensland

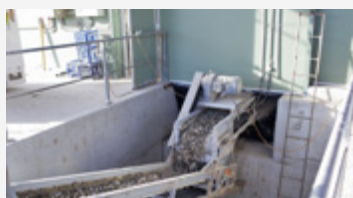
Project Background

The potential benefits of adding wood by-products to composting manure to create a valuable, nitrogen-rich product for horticultural industries was recently investigated by the Queensland University of Technology, in an Australian Eggs' funded project.

Current manure composting techniques can result in significant loss of nitrogen and increased methane and ammonia waste emissions. While adding carbon-rich material such as sawdust is known to increase the nitrogen content of the composted manure, it comes at a higher operational cost.

Project Aim

Conducted on an Egg farm in the Darling Downs region of Queensland, the trial aimed to establish the ideal inclusion rate of wood by-products to composted manure to maximise nitrogen retention and economic performance.



Outcomes

Following a successful on-farm trial, egg farms can now use the determined inclusion rate formula to compost chicken manure more effectively and more profitably.

The researchers found nitrogen losses can be significantly reduced when more sawdust is added to achieve a carbon to nitrogen ratio of 21:1.

Conversely, suboptimal inclusion rates of sawdust resulted in nitrogen losses of more than 55%, representing an economic loss of approximately \$25 per tonne of fresh manure or approximately \$250,000 per annum for a facility that composts 10,000 tonnes a year.

Greenhouse gas emissions recorded in this trial confirmed that stockpiling and composting poultry manure generates relatively low GHG emissions, compared to other manures.

Factsheets

Australian Eggs has created a number of factsheets on this topic to help producers earn additional farm income from manure.

Scan this QR code to view the factsheets:





BIOSECURITY & FLOCK HEALTH

Spotty Liver: Autogenous Vaccine

Developing an autogenous vaccine to help reduce the impact of spotty liver disease on production.

✓ PLANNED COMPLETION – JANUARY 2020

Study of Microbiota of Laying Hens from Different Production Systems

Studying the development of gut microbiota in pullets from rearing until 80 weeks of age in both cage and rearing systems to better understand the role it plays and allow optimisation of diets that support gut health.

✓ PLANNED COMPLETION – MAY 2020

Decontamination

Addressing knowledge gaps and developing a set of guidelines and procedures for every-day decontamination of production areas to manage the risk of disease infecting and spreading within the flock. Guidelines produced will be production system specific and include robust methods to validate efficiency of decontamination.

WATCH THE VIDEO >>>



✓ PLANNED COMPLETION – FEBRUARY 2021

Sustainable Worm Control

Gaining an improved understanding of the prevalence and management of parasitic worms within free range egg production. The research findings will be used to create a WormBoss Chicken tool that helps producers to diagnose and manage worms.

✓ PLANNED COMPLETION – APRIL 2021

Spotty Liver Disease Epidemiology

Identifying common causes of spotty liver disease and identifying management factors that can prevent or control the disease in free range hens.

WATCH THE VIDEO >>>



✓ PLANNED COMPLETION – NOVEMBER 2021

Biotechnology: Black Soldier Fly for Soil Improvement

This joint project with Australian Pork Limited will provide a novel solution for agricultural waste by using Black Soldier Flies to convert the waste into high quality fertilisers and soil improvers. It will also investigate whether Black Soldier Fly can outcompete Stable Fly as a biosecurity measure and allow for manure spreading in currently prohibited areas.

✓ PLANNED COMPLETION – DECEMBER 2022



ENVIRONMENTAL SUSTAINABILITY

Egg Producer Guide to Solar Energy

Creating a practical guide for producers to understand the process of installing and using solar and conducting a cost-benefit analysis to assess the return on investment and potential value to the business.

✓ PLANNED COMPLETION – JULY 2020

Nutrient Mass Balance On-Farm

Completing a comprehensive study that identifies all nutritional inputs and outputs across the life of a flock. Researchers are examining how nutrients are distributed around the farm, with a focus on quantifying manure deposition. Producers will subsequently have better tools for conducting environmental assessments and managing waste.

✓ PLANNED COMPLETION – AUGUST 2020

Assessing the Carbon Footprint of the Egg Industry

Undertaking a life cycle and carbon footprint assessment of the egg industry to establish a benchmark. The research will provide carbon mitigation options and determine the cost of production and supply chain pathway for a carbon neutral egg. Results will enable cross industry comparison of carbon impact and provide insight into how to move toward a carbon neutral future.

✓ PLANNED COMPLETION – NOVEMBER 2021



ANIMAL WELFARE

Values in Welfare 2.0

Following on from the recent values scoping project, this research will survey the community to gain a deeper understanding of how Australians trade off their values in relation to animal welfare and other areas of concern such as human health and the environment.

📅 PLANNED COMPLETION – MARCH 2020

Practical Strategies to Measure Hen Welfare

Using the emerging field of micro RNA to identify potential biomarkers of affective states in hens. It will identify positive and negative markers that can be tested in pooled egg samples.

WATCH THE VIDEO >>>



📅 PLANNED COMPLETION – APRIL 2020

Causes of On-Farm Smothering

Conducting a comprehensive study of 80 flocks in Vic and Qld to identify factors that are associated with smothering events. The work will allow future testing of interventions to prevent or minimise smotherers.

WATCH THE VIDEO >>>



📅 PLANNED COMPLETION – MAY 2020

Resilient Plants for the Range

Trialling and identifying plant species that can be used on outer range areas to maintain ground cover and encourage chickens to range throughout all Australian climates. Guidelines will be developed that contain plant choices for ranges based on rainfall, soil and climatic factors and resilience to chicken foraging.

📅 PLANNED COMPLETION – MAY 2020

Impacts of UV Light

Investigating UV light and light intensity and its effects on ranging behaviour of free range hens. This will determine whether hens prefer or avoid high levels of UV or light intensity, how ranging behaviour is affected and will better inform shade requirements.

WATCH THE VIDEO >>>



📅 PLANNED COMPLETION – SEPTEMBER 2021



FOOD SAFETY

Efficacy of Autogenous Vaccine for SE

Testing the validity of using an autogenous vaccine to control *Salmonella* Enteritidis.

📅 PLANNED COMPLETION – DECEMBER 2021

Probiotics for the Control of *Salmonella*

Determining probiotic efficacy in protecting against, or reducing, *Salmonella* shedding by birds. This will assist egg farmers in developing cost-effective *Salmonella* control programs..

📅 PLANNED COMPLETION – MAY 2020

Learn more about a recently completed project – *Salmonella* epidemiology and on-farm intervention strategies >>>





FEEDING & NUTRITION

Feed Review

Reviewing the nutrition profiles of common feed ingredients used in the egg industry. This will assist egg farmers in evaluating current feed practices and formulating effective low-cost rations.

WATCH THE VIDEO >>>



📅 PLANNED COMPLETION – JUNE 2020

Pullet to Late Lay Nutrition

Gaining an understanding of how to optimise egg shell quality at peak lay through nutritional management from 18 weeks. Hens of lighter and average weight will be trial-fed on diets of either higher or lower nutritional density to 36 weeks, after which their feed efficiency and egg shell quality will be measured.

📅 PLANNED COMPLETION – AUGUST 2020



Find out more about the background research – practical strategies to increase layer hen feed efficiency – which led to this new project >>>



OTHER

Industry Capacity Building

Training and professional development designed for promoting leadership and a high level of competency at all levels of farm staff within Australian egg businesses. This includes a new suite of husbandry training in addition to formal certifications offered through 4UpSkillng:

- EggStart
- Cert III in Poultry Production
- Diploma in Agriculture (Poultry).

For more information contact research@australianeggs.org.au

Integrated Schools Education

The All About Eggs program continues to be expanded through refreshed resources for primary school students, continuation of

the hatchery program and new interactive content for secondary schools. The program will foster a community of Australian school students who are educated and engaged on the value of eggs and egg farming.

Extension

This covers a range of activities designed to facilitate the adoption of research outcomes on farms. Includes the development of videos, app content, manuals and factsheets and the presentation of workshops throughout Australia.

ESA

The voluntary industry quality assurance program that seeks to foster a common high standard of practice across farms and grading floors to meet regulatory and retailer requirements for the sale of eggs.

Human Health – Vitamin D research

After 2018 nutritional research showed eggs can supply up to 82% of of human daily Vitamin D requirement, a new research project seeks to further investigate the role eggs play in preventing Vitamin D deficiency. People who are eating eggs five days a week will be assessed for Vitamin D at the end of winter, when levels of the vitamin are usually low, and then again 3 months later to see if eating eggs has a measurable effect. This information will be used to promote the value of eggs in a healthy diet to healthcare professionals.



