



R&D Projects

2018/19



**HEALTH &
DISEASE**



**FEEDING &
NUTRITION**



BIOSECURITY



RANGING



WELFARE



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



Pure Foods, Tasmania

Project Background

Hens don't utilise the entirety of range areas, especially in sunny conditions. Higher density pockets of birds on the range leads to reduced ground cover in higher trafficked range areas and less evenly distributed nutrients on the ranges.

Modern laying hen behaviour still mimics that of the jungle fowl, seeking shelter from sun and predators, even where these are not significant risks.

Project Aim

To provide an environment that encourages ranging behaviour.

In the financial year of 17/18, we conducted an initial study into what the best shapes and materials for shade construction encouraged pastured ranging. Pure Foods in Tasmania is one of many that incorporated the most favoured structures onto pastured ranges.

Results

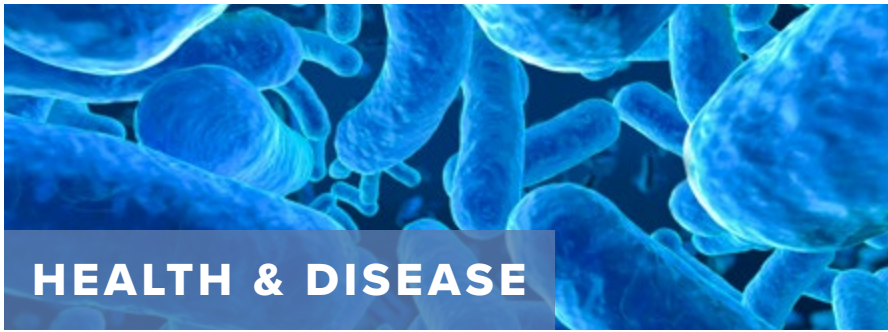
Birds are ranging significantly more and utilising a greater proportion of the range.

Due to industry request for natural shading options, Australian Eggs has now adopted another project to build on this on this work. Researchers are looking at vegetation and plant choices for ranges based on rainfall, soil and climatic factors, and resilience to chicken foraging.

See project *Resilient plants for free range* inside.



Australian Eggs has also commissioned a study into manure and nutrient deposition on farms. See *Nutrient mass balance on farm* inside.



HEALTH & DISEASE

Spotty liver: autogenous vaccine

One of two competitive projects looking to develop an autogenous vaccine to help reduce the impact of spotty liver disease on production.

📅 PLANNED COMPLETION – JANUARY 2020

Spotty Liver: autogenous bacterin vaccine

One of two competitive projects looking to develop an autogenous bacterin vaccine for spotty liver. This project also has a large focus on generating a better understanding of the epidemiology of the disease.

📅 PLANNED COMPLETION – MAY 2020

Probiotics for the control of *Salmonella*

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

📅 PLANNED COMPLETION – MAY 2020

Salmonella vaccination and feed additive control program

Determining the most effective and economical ways to manage *Salmonella* on farm, including evaluating vaccines and methods of administration, probiotics and organic acids.

📅 PLANNED COMPLETION – MAY 2019

Salmonella intervention strategies

Understanding the epidemiology (study of disease populations) for *Salmonella* on farm. Tracking *Salmonella* contamination in all production systems from day old to end of lay (80 weeks). Also assessing the efficacy of the *Salmonella* vaccine and egg washing in reducing *Salmonella* prevalence.

📅 PLANNED COMPLETION – MAY 2019

Study of gut 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 establish baseline data on laying hen gut microbiota that will allow future optimisation of diets.

📅 PLANNED COMPLETION – MAY 2020

Causes of fowl cholera

Developing a process to understand the genetic diversity in disease outbreaks, reduced vaccine protection, changes in virulence and host reservoirs on the farm. The output of this project will be a pay per use diagnostic test for producers.

📅 PLANNED COMPLETION – JULY 2019



FEEDING & NUTRITION

Practical strategies for hen feed efficiency

Exploring whether high and low feed efficient birds in a flock differ in nutritional requirements and egg quality and if this can be mediated at a flock level. For maximum control, this is initially being conducted in three stages using caged birds fed commercial rations.

📅 PLANNED COMPLETION – MARCH 2019

Nutritional management of free range laying hens

Identifying the sub groups of hens in a free range system, tracking and analysing their movements inside the shed and on the range. It will also examine whether feeding strategies can be tailored to suit specific groups to improve production, health and welfare.

📅 PLANNED COMPLETION – MARCH 2019

Nutrient mass balance on farm

Completing a comprehensive study to identify all nutritional inputs and outputs across the life of a flock. It is examining how nutrients distribute around the farm, and in particular will quantify manure deposited. Producers will subsequently have better tools for conducting environmental assessments and development applications.

📅 PLANNED COMPLETION – AUGUST 2019



BIOSECURITY

Drivers of biosecurity engagement

Understanding the current status of biosecurity knowledge in the egg industry – including current legislation and biosecurity information available to egg farmers to direct our biosecurity extension activities.

☑ PLANNED COMPLETION – JULY 2019

Mass disposal preparedness

Developing a robust, documented plan and sites for mass disposal of biomass that may occur during the disposal phase of an emergency disease outbreak. Initial stages will be undertaken in South Australia in partnership with Agrifutures Australia.

☑ PLANNED COMPLETION – JULY 2019

Review of rodent control for the poultry industry

Surveying the current use of rodenticides in Australian poultry production and identifying available and emerging rodent control products which could be adopted by the poultry industries.

☑ PLANNED COMPLETION – JUNE 2019

Antimicrobial stewardship

Working to implement and roll out the Egg Industry Antimicrobial Stewardship (AMS) plan for responsible use of antimicrobials. With a focus on industry vets and offering support to farms to develop their own AMS plans and procedures.

☑ PLANNED COMPLETION – MID 2019

Competitive exclusion by good bacteria

Identifying bacteria that can outcompete *Salmonella* in the environment to reduce contamination on grading floors. The project will identify suitable candidate bacteria as well as a delivery system to administer a commercialised product.

☑ PLANNED COMPLETION – MARCH 2019



RANGING

Resilient plants for free 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. Developing a guideline that contains plant choices for ranges based on rainfall, soil and climatic factors and resilience to chicken foraging.

☑ PLANNED COMPLETION – MAY 2020

Impacts of UV on ranging behaviour

Looking at 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, whether ranging behaviour is affected and will better inform shade requirements.

☑ PLANNED COMPLETION – SEPTEMBER 2021





WELFARE

New technologies for managing stress

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 – providing a simple way for farmers and scientists to test hen welfare.

📅 PLANNED COMPLETION – APRIL 2020

Hen welfare issues

Compiling a comprehensive literature review on all aspects of hen welfare. It will be a detailed exploration of the current respected science, with a focus on Australia conditions to help direct future research investment in this area and provide an esteemed source of information.

📅 PLANNED COMPLETION – MAY 2019

Causes of smothering on farm

Conducting a comprehensive study of 80 flocks in Vic and Qld to identify factors that are associated with smothering events and interventions that can be used to prevent or minimise these.

📅 PLANNED COMPLETION – MAY 2020

Animal welfare and values

Bringing together a panel of experts in animal welfare, veterinary and social sciences to identify and clarify how science is interpreted by the public, and how this can affect the applications of research outcomes.

📅 PLANNED COMPLETION – JANUARY 2019

OTHER

Integrated schools

This is a refresh of the All about Eggs primary school program and the development of a complementary high school program. Developing a community of engaged school students across Australia that understand and appreciate the value of eggs and egg farming to help build future sustainability.

Industry capacity building

Activities aimed to foster future industry leaders at all levels across Australian egg businesses. It includes leadership opportunities through the Australian Rural Leadership Foundation, the Australian Eggs International Leadership Scholarship and training programs for all levels of farm staff including:

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

For more information contact research@australianeggs.org.au

Dissemination

A multitude of activities designed to facilitate the adoption of research outcomes on farms. It includes the development of 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 – choline research

A research project looking into the value of eggs as a source of choline, which is important during pregnancy for brain development. To be used to continue to promote the value of eggs in a healthy diet to health care professionals.



For more information go to www.australianeggs.org.au