

Hatchery



- The hatchery is a special building with controlled ventilation where fertilised eggs are incubated and chicks are hatched.
- During the 21 day incubation period, temperature and humidity are carefully controlled to ensure the optimal conditions for chicks to develop inside the eggs.
- Female chicks are raised for egg production and take approximately 18 weeks from the time of hatching to commence laying.

Farm (Free range)



- Hens are housed in sheds overnight but provided with regular outdoor access during daylight hours.
- While there are challenges such as potential threats from predators, as well as the need to address biosecurity risks such as disease outbreaks, these challenges provide opportunities to develop and implement effective strategies to safeguard the flock.

Farm (Barn)



- Hens are housed in large, climate controlled sheds.
- The sheds do not contain cages, and hens are free to roam around and perch within the indoor space, without the threat of outdoor predators or diseases.

Farm (Cage)



- Hens are housed in sheds to protect them from external threats such as predators and pathogens that cause disease.
- Modern sheds use automated systems to control feeding, watering, humidity, temperature, waste, and egg collection.
- This system allows producers to carefully monitor the health of the birds whilst increasing productivity, producing a larger number of eggs for consumers at a lower cost.

Egg Collection



- Eggs are collected once a day, taken to a high-tech grading floor, cleaned and checked for quality.
- Depending on the size of the enterprise and the production method, some eggs are gathered by hand, others are collected by automated belt conveyors.

Washing



- Eggs are inspected by a series of machines and cleaned with either wet or dry methods.
- Soft-bristled brushes, sanding sponges, cloth or paper towel are used.
- The washing process is fast and eggs are dried immediately.

Sanitation



- Many farms run the eggs through an ultraviolet light disinfection system to kill any bacteria that may have made it onto the surface.
- Rarely eggs may become contaminated with the bacteria *Salmonella* as they are laid if they come into contact with *Salmonella*-positive poo.
- Sanitisation of eggs reduces the risk of this bacteria being transferred from the outside of eggs to humans.

Candling



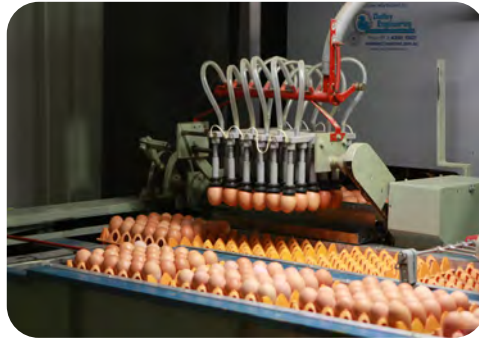
- Candling is the process of using light to make egg shells transparent so the producer can see what is inside.
- The machines perform light spectrum analysis to detect defects like cracks, measuring the height of the albumen, and shell thickness.
- Automatic acoustic crack detectors contain probes that detect cracks and remove them.

Stamping



- After being cleaned and checked, each egg is stamped with a unique code that identifies the farm where it was laid.
- This allows for traceability in the event of a health incident involving eggs.
- Each Australian state and territory has its own laws and regulations regarding egg stamping requirements.

Weighing



- Eggs are automatically weighed and sorted into cartons depending on their weight.
- There are five weight categories: king-size (average 73g), jumbo (avg 68g), extra-large (avg 60g), large (avg 52g) and medium (avg 43g).
- Egg weight varies depending on a range of factors, including the breed of hen and the age of the layer.

Packing



- After weighing, eggs are packaged into cartons.
- Egg cartons are specifically designed to protect them from cracking and prevent the porous shells from absorbing strong odours and flavours from other foods when refrigerated by consumers.
- Cartons are labelled with nutritional information and branding to appeal to consumers and inform them about the product (weight, best-before dates etc.).

Refrigeration



- After packaging, eggs are refrigerated below 7°C until loaded into a delivery truck.
- Controlling the temperature of the eggs helps to keep them fresher for longer and ensures food safety.

Transportation



- Refrigerated trucks control the temperature of eggs as they are transported.
- Trucks are reversed into the cool room to create a seal, ensuring no temperature change between refrigeration and transportation.

Retail & Food Services



- Retail includes sales to restaurants, supermarkets, cafes, markets, etc. These sales are for consumers to either purchase and prepare themselves, or to have the product prepared for them.
- Retailers follow strict guidelines on how eggs are stored before consumers purchase them.

Processing Eggs for Retail and Food Services



- Eggs that do not meet the specifications required for direct sale to consumers can be processed and turned into products such as scrambled egg mix and liquid egg whites.

Consumer



- Consumers select the type of eggs (free range, cage, barn-laid, or organic) based on their needs.
- Factors including the cost, size, availability, and location of production can contribute to consumers' purchasing choices.
- Consumers should store their eggs in a refrigerator after purchasing to maintain health and safety standards and keep eggs fresher for longer.

Producer



An egg producer is a person who manages, coordinates and performs farming operations related to raising hens for egg production. Producers care for the health and welfare of their animals, manage the farm landscape and oversee budgeting to ensure the economic, social and environmental sustainability of the farm.

Biosecurity Officer



Biosecurity Officers work with producers to identify, prevent, and eradicate threats from pests, weeds and diseases that may impact food and fibre production. Biosecurity measures such as sanitisation, vaccination and record keeping are used on egg farms to reduce the risk of threats to hen and human health.

Egg Grader



Egg Graders are responsible for quality control procedures and packaging eggs for distribution. Egg Graders operate the machinery and equipment used to wash, sanitise, candle, weigh, stamp, sort and package eggs.

Hatchery Assistant



Hatchery Assistants monitor the temperature and humidity of incubators, rotate incubating eggs and operate machinery involved in the hatching process. They are responsible for maintaining hatchery hygiene, biosecurity measures and sex sorting after hatching.

Poultry Veterinarian



Poultry Veterinarians specialise in the medical treatment and management of poultry including chickens, ducks, and turkeys. They work closely with producers to improve and maintain the health, welfare, and productivity of hens on egg farms.

Agri-environmental Scientist



Agri-environmental Scientists develop, implement, and advise on policies and plans for improving farm environmental sustainability. They collect samples and analyse water, feed, soil, and other components that could impact agricultural production. The scientists advise on practices and technologies that can help to manage the farm landscape and reduce negative environmental impacts.

Marketing Officer



Marketing Officers advise businesses on the development, coordination, and implementation of plans for pricing and promoting their goods and services. They can be involved in creating advertising campaigns and branding products.

Dietitian



Dietitians provide advice and education on food and nutrition to support people in managing and improving their health. Nutritional requirements vary at different stages of life. Eggs are high in protein and contain 13 essential vitamins and nutrients making them an important part of a balanced diet for people of all ages.

Waste Management



Egg production systems can turn their farm waste into a value-added product that provides an additional source of income. Manure can be used as a sustainable alternative to synthetic fertilisers on farms. This natural fertiliser is nutrient-rich, supporting the growth of crops for human and livestock consumption.

Autovaccination



Hens on egg farms can be vaccinated to improve welfare and biosecurity. Manually vaccinating hens is a time consuming operation that can cause occupational health and safety risks such as repetitive strain injury for farm workers. Autovaccination technology is used in the industry to automatically vaccinate hens, making the vaccination process safer, more efficient, and more accurate, improving outcomes for hens and humans.

Year 7-10 Instructions

PIEFA Food and Fibre Card Game | Australian Eggs Supply Chain



Scan the QR code to learn how to use these cards to sequence the eggs marketing and supply chain from farm to fridge.

Virtual Farm Tours



Scan the QR code to explore the three types of egg production systems in Australia through the Virtual Reality 360 Farm Tours.

All About Eggs



Scan the QR code to visit the All About Eggs website where you can access videos and lessons exploring the farm to fridge supply chain of Australian eggs.



