

Introduction to Poultry (Layer) Production

Introduction to Poultry (Layer) Production

Key concepts, steps, and best practices for starting and managing a commercial egg-laying operation.

1. Overview of Layer Production

Aspect	Description
Purpose	Produce table eggs for market (fresh, processed, or specialty)
Typical Cycle	18–20 weeks of rearing ? 72–78 weeks of laying ? 2 week molting (optional) ? depopulation
Breed Selection	Hy-Line Brown, Lohmann White, ISA Brown, etc. – choose based on egg colour, feed efficiency, climate tolerance
Production Systems	- Conventional cage (battery) - Enriched cage (perches, nest boxes) - Barn (aviary) - Free-range - Organic
Key Performance Indicators (KPIs)	- Egg production (% of hens laying) - Egg mass (kg/hen/day) - Feed conversion ratio (FCR) - Mortality rate - Hatchability (if hatching eggs are kept)

2. Facility Design & Housing

2.1 Site Selection

- **Accessibility:** Close to feed, water, markets, and veterinary services.
- **Topography:** Flat, well-drained land; avoid flood-prone areas.
- **Biosecurity:** Isolated from other livestock, preferably with a perimeter fence.

2.2 Housing Types

Introduction to Poultry (Layer) Production

System	Space per Bird	Advantages	Disadvantages
Conventional cage	0.05m ²	High density, easy manure management	Welfare concerns, limited movement
Enriched cage	0.06-0.07m ²	Perches, nest boxes, better welfare	Slightly higher cost
Barn (aviary)	0.10-0.12m ²	Natural behaviours, good ventilation	More labor for litter management
Free-range	0.20m ² + outdoor area	Consumer appeal, welfare	Predator control, land requirement
Organic	Same as free-range + organic feed	Premium market	Strict certification, higher cost

2.3 Environmental Control

- **Temperature:** 18-24°C (optimal); use heating in winter, ventilation/cooling in summer.
- **Relative Humidity:** 50-70%; excess humidity → respiratory problems, low humidity → dust.
- **Ventilation:** 0.2-0.3m³/air/kg/bird/hour; fresh air inlets, exhaust fans, side-wall curtains.
- **Lighting:** 14-16h light/10-12h dark; gradual dimming at start of lay to stimulate ovulation.
- **Litter Management (barn/free-range):** Wood shavings, rice hulls, or sand; maintain depth 5-10cm; replace when soiled.

3. Stock Management

3.1 Production Phases

Phase	Age (weeks)	Main Activities
Brooding	0-6	Heat lamps (30°C → 24°C), starter feed (18% CP), chick vaccination
Grow-out	7-18	Transition to grower feed (16% CP), reduce temperature, prepare for laying house

**