

Introduction to Poultry (Layer) Production

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Designed as a quick-reference guide for students, extension workers, and new producers.

1. What Are Layer Hens?

Feature	Description
Purpose	Produce eggs for market or home consumption.
Typical Breeds	White Leghorn, Rhode Island Red, Hy-Line Brown, ISA Brown, Lohmann LSL, etc.
Production Life	18–72 weeks of laying (peak 24–30 weeks).
Average Output	260–320 eggs/hen/year (5–6 eggs/week).
Sexual Maturity	16–20 weeks of age (depends on breed, nutrition, lighting).

2. The Production System

System	Key Characteristics	Advantages	Disadvantages
Conventional Cage	Metal cages (40x60 cm ² /bird), 2–3 birds per cage.	Low labor, high biosecurity, easy manure collection.	Welfare concerns, limited movement.
Enriched/Perch Cage	Cages with perches, nest boxes, litter area.	Improves welfare, meets many market standards.	Slightly higher cost, still confined.
Barn (Floor) System	Deep litter floor, open air or tunnel-ventilated house.	Greater bird freedom, lower capital cost.	Higher labor for litter management, disease risk if litter wet.
Free-Range	Outdoor access 2–4 h/day, plus indoor housing.	Premium market price, consumer appeal.	Predator control, weather-related management.

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System	Key Characteristics	Advantages	Disadvantages
Organic	Certified organic feed, no synthetic meds, outdoor access, specific stocking density.	Highest price premium, niche market.	Strict certification, higher feed cost.

Choose a system based on capital, market demand, land availability, and animal welfare goals.

3. Facility Design Basics

1. House Size & Stocking Density

- Recommended: 5-6 birds/m² (cage), 8-10 birds/m² (barn).
- Allow space for feeders, drinkers, nest boxes, perches.

2. Ventilation

- **Temperature range:** 18-24°C (65-75°F).
- **Relative humidity:** 55-70%.
- Use tunnel or forced-air fans; provide fresh-air inlets and exhaust.

3. Lighting

- **Photoperiod:** 14-16h light/8-10h dark for peak lay.
- Light intensity: 10-20 lux at bird level.
- Use programmable timers; avoid sudden changes.

4. Floor & Litter

- Concrete or slatted floor; litter (wood shavings, rice hulls) 5-10cm deep.
- Replace or turn litter every 4-6 weeks to control moisture and ammonia.

5. Nest Boxes

- 1 box per 4-5 hens.
- Dimensions: 30x30x30cm (LxWxH).
- Provide dark, quiet corners; clean weekly.

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6. Perches

- 15?20?cm per