

Poultry Housing Management

Poultry Housing Management – Key Concepts & Practical Guidelines

1. Introduction to Poultry Housing

Aspect	Why It Matters
Animal Welfare	Reduces stress, disease, and mortality; improves productivity.
Biosecurity	Limits pathogen entry and spread.
Production Efficiency	Optimizes feed conversion, egg production, and meat gain.
Regulatory Compliance	Meets animal health, food safety, and environmental standards.

2. Housing Types & Their Typical Uses

Housing System	Typical Species	Main Advantages	Key Management Considerations
Conventional Cages	Layers (egg production)	High stocking density, easy feed/egg collection	Space per bird, ventilation, leg health monitoring.
Enriched / Furnished Cages	Layers	Perches, nest boxes, litter area ? better welfare	Maintain litter quality, perch strength.
Floor-Based (Litter Houses)	Broilers, layers, turkeys	Low cost, simple construction	Litter management, ammonia control, litter depth (4–6cm).
Free-Range / Pasture-Based	Layers, broilers, heritage breeds	Access to outdoors, consumer appeal	Predator control, pasture rotation, weather shelters.
Aviary / Multi-Tier	Layers, dual-purpose	High bird density with perches & nesting	Complex ventilation, cleaning of upper tiers.
Climate-Controlled/Controlled Environment	All species (especially in extreme climates)	Precise temperature & humidity control	Energy use, backup systems, sensor calibration.

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3. Core Design Elements

3.1 Space Requirements

Species	Minimum Floor Space (per bird)
Broiler (0–6?wk)	0.07?m ² – 0.09?m ²
Broiler (6–12?wk)	0.10?m ² – 0.12?m ²
Layer (cage)	0.05?m ² – 0.07?m ²
Layer (floor)	0.10?m ² – 0.12?m ²
Turkey (grow?out)	0.25?m ² – 0.30?m ²

Adjust for breed, age, and production phase.

3.2 Ventilation

- **Purpose:** Remove excess heat, moisture, ammonia, CO₂; supply fresh air.
- **Types:**
 - *Natural* (sidewall inlets, ridge vents).
 - *Mechanical* (fans, blowers, exhaust ducts).
- **Target Air Changes:** 5–10?air changes per hour (ACH) for broilers; 8–12?ACH for layers.
- **Air Quality Benchmarks:**
 - Ammonia ??25?ppm (24?h average).
 - CO₂ ??3000?ppm.
 - Relative humidity 50?70?% (adjust for season).

3.3 Temperature & Heat?Stress Management

Age	Recommended Temp (°C)	Management Tools
Day?old chick	32?34	Brooder heater, heat lamps, floor heating.
1?3?wk broiler	30?32	Adjustable brooders, floor heating mats.
4?6?wk broiler	24?27	Ceiling