

Introduction to Broiler Production

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Key concepts, steps, and best-practice considerations for raising meat chickens efficiently and responsibly.

1. What Is Broiler Production?

Aspect	Description
Definition	Commercial rearing of chickens (broilers) for meat, typically from hatch to market weight (~ 2–3 kg).
Goal	Maximize growth rate, feed efficiency, and carcass quality while minimizing mortality and costs.
Typical Cycle	1 day (hatch) ~ 5–7 weeks (grow-out) ~ processing.
Main Species	<i>Gallus gallus domesticus</i> – specialized fast-growing strains (e.g., Ross, Cobb, Hubbard).

2. Production System Overview

1. Breeding & Hatchery

- Parent stock (grandparent ~ parent ~ commercial) produce fertilized eggs.
- Incubation (~ 21 days) ~ hatchery ~ chick processing (sexing, vaccination, grading).

2. Brooding (0–14 days)

- Warm, dry environment; starter feed (high protein, 20–22%).
- Light schedule: 23 h light / 1 h dark to stimulate feed intake.

3. Grow-out (15–35 days)

- Transition to grower/finisher diets (lower protein, higher energy).
- Gradual reduction of temperature and lighting.

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4. Processing

- Transport to abattoir, humane stunning, slaughter, chilling, packaging.

3. Facility Design & Management

Component	Key Requirements
Housing	Ventilated houses or climate-controlled barns; litter (wood shavings, rice hulls) for moisture control.
Temperature	32–34°C at day ¹ ; decrease 2–3°C per week to ~21°C by week ⁴ .
Ventilation	≥ 0.2 m ³ /s ¹ /bird ¹ ; ammonia < 25 ppm.
Lighting	20–30 lux; 23 h light early, then 16 h light/8 h dark for finisher phase.
Biosecurity	Footbaths, vehicle disinfection, controlled access, all-in/all-out flock management.
Litter Management	Keep moisture < 30%; replace or amend when needed to prevent footpad dermatitis.

4. Nutrition Fundamentals

Phase	Feed Type	Crude Protein (CP)	Metabolizable Energy (ME)	Key Additives
Starter (0–14 d)	Crumble or fine mash	20–22%	3000–3200 kcal/kg	Vitamin E, probiotics, coccidiostat
Grower (15–28 d)	Pelleted feed	18–20%	3100–3300 kcal/kg	Enzymes (phytase), organic acids
Finisher (29–35 d)	Coarse pellets	16–18%	3200–3400 kcal/kg	Antioxidants, electrolytes

Nutrition tips

- **Feed-to-gain ratio:** 1.6–1.8 kg feed per kg weight gain (depends on strain).
- **Water**