

# Biosecurity Measures in Broiler Production

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*Purpose: Minimise disease risk, protect animal welfare, ensure product safety, and sustain profitability.*

### 1. Foundations of Biosecurity

| Concept                                 | What It Means                                                                                             | Why It Matters                                                         |
|-----------------------------------------|-----------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|
| External (or “first-line”) biosecurity  | Controls that prevent pathogens from entering the farm                                                    | Stops introduction of new diseases (e.g., avian influenza, Salmonella) |
| Internal (or “second-line”) biosecurity | Measures that limit spread of pathogens within the flock                                                  | Reduces morbidity/mortality once a pathogen is present                 |
| Biosecurity plan                        | Written, site-specific protocol covering all entry points, animal handling, waste, and emergency response | Provides a reference for staff, auditors, and veterinarians            |

### 2. Physical Barriers & Facility Design

| Measure                      | Implementation Tips                                                                                             | Typical Effectiveness                                    |
|------------------------------|-----------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|
| Perimeter fencing            | Secure all gates; use self-closing locks; keep a “clean-outside, dirty-inside” flow                             | Prevents wild birds, rodents, and unauthorized personnel |
| Controlled entry points      | One main gate for people, a separate gate for vehicles; footbaths (disinfectant) and hand-wash stations at each | Reduces direct pathogen transfer                         |
| Air filtration & ventilation | Positive-pressure houses, HEPA filters for intake air; maintain 0.5–1 m³/s/bird ventilation rate                | Limits aerosolised viruses and ammonia buildup           |
| Separate housing zones       | Dedicated brooding, grow-out, and processing areas with physical barriers                                       | Limits cross-contamination between age groups            |

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| Measure               | Implementation Tips                                            | Typical Effectiveness                                             |
|-----------------------|----------------------------------------------------------------|-------------------------------------------------------------------|
| Rodent & pest control | Seal gaps, install bait stations, schedule regular inspections | Eliminates major mechanical vectors for Salmonella, Campylobacter |

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## 3. Personnel Practices

| Practice              | Key Steps                                                                                              | Frequency               |
|-----------------------|--------------------------------------------------------------------------------------------------------|-------------------------|
| Footwear & clothing   | Provide farm-specific boots and coveralls; store them at the entry gate; change before entering houses | Every shift             |
| Hand hygiene          | Hand-wash with soap & disinfectant & dry; use disposable towels                                        | Before/after each house |
| Visitor policy        | Pre-approved list, sign-in log, mandatory PPE, escorted at all times                                   | Continuous              |
| Training & refreshers | Biosecurity SOPs, disease signs, emergency drills                                                      | Quarterly + onboarding  |
| Health monitoring     | Staff must report any respiratory or gastrointestinal illness; restrict entry if symptomatic           | Daily                   |

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## 4. Animal Management

| Aspect                       | Biosecurity Action                                                                              | Rationale                                     |
|------------------------------|-------------------------------------------------------------------------------------------------|-----------------------------------------------|
| Source of day-old chicks     | Use certified SPF (specific-pathogen-free) or vaccinated hatcheries; obtain health certificates | Guarantees low pathogen load at start         |
| Quarantine                   | Isolate new batches for 7–10 days; monitor for clinical signs; test for Salmonella/IBD          | Detects latent infections before integration  |
| All-in/all-out (AIAO) system | Fill a house with one flock, empty and clean before the next                                    | Breaks disease cycles and simplifies cleaning |
| Age segregation              | Keep brooding, starter, and finisher birds in separate houses; no mixing                        | Limits pathogen spread across age groups      |
| Litter management            | Use fresh, dry litter; replace or treat (e.g., lime) between cycles                             | Reduces bacterial load and ammonia            |

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## 5. Sanitation & Disinfection

### Step Details