



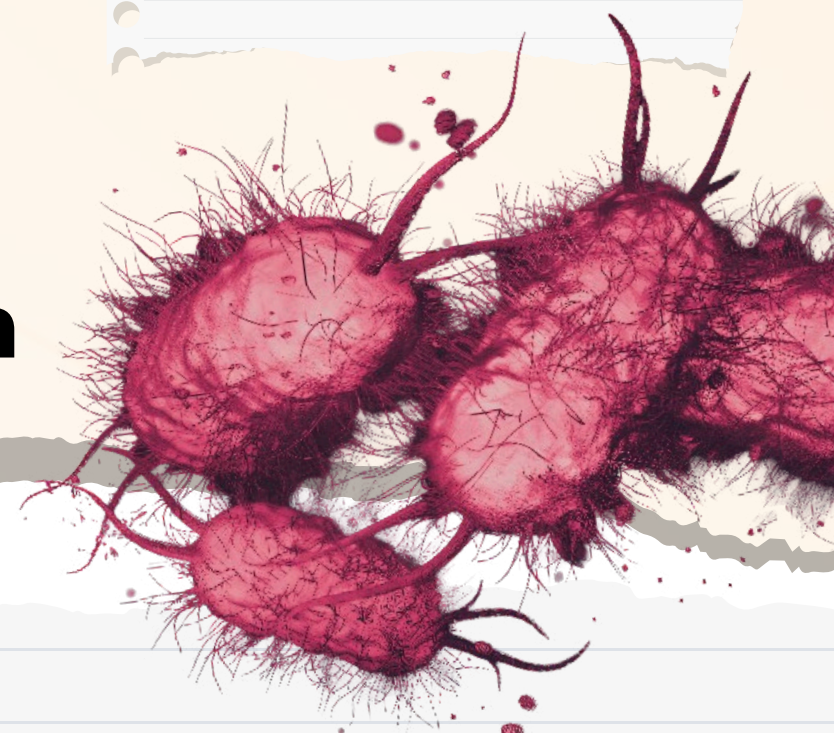
HATCHERY CONTAMINATION

PRINCIPLES & PRACTICAL TIPS FOR EFFECTIVE PREVENTION

4 Core principles to prevent Hatchery Contamination

Why it matters

- Hatcheries are the **central hub** of poultry production
- Link **breeder farms** → **commercial farms**
- Contamination spreads **fast & widely**
- Prevention is critical for **overall production success**



7 PHYSICAL PROTECTION



Goal: Prevent airborne and cross-contamination

KEY PRINCIPLES

- ✓ Plan hatchery design according to:
 - **Prevailing winds**
 - **Egg-to-chick flow**
- ✓ Always separate four flows:
 - **Egg flow**
 - **Setter flow**
 - **Hatcher flow**
 - **Chick flow**
- ✓ Avoid cross-contamination of:
 - **People**
 - **Equipment**
 - **Ventilation**



VENTILATION RULES



- Fresh air intake = **clean side**
- Exhaust air = **dirty side**
- Never reverse airflow

MOISTURE CONTROL



- Keep trays & baskets **dry after cleaning**
- Use ventilation at **lowest possible temperature**
- Dry immediately after washing, **before disinfection**
- Avoid fresh air intake in hot, humid conditions

DUCTWORK TIP



- Minimize air ducts over machines
- Prefer **walkable plenums**
→ easier cleaning, less mold risk

2 KNOWING YOUR ENEMY



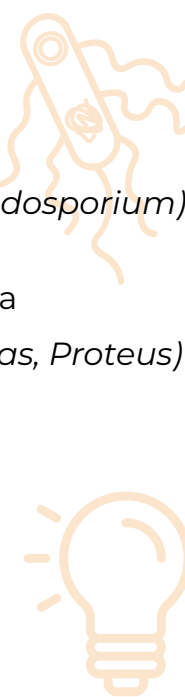
Goal: Target the right microorganisms

COMMON HATCHERY CONTAMINANTS

- ✓ Fungi & spores:
 - (e.g. *Aspergillus*, *Cladosporium*)
→ **high resistance**
- ✓ Gram-negative bacteria
 - (*E. coli*, *Pseudomonas*, *Proteus*)
- ✓ Gram-positive bacteria
 - (*Staphylococcus*)

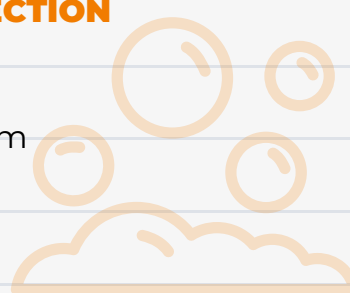
KEY RULE

- ✓ Effectiveness depends on the specific strain



DISINFECTANT SELECTION

- ✓ **Widely used**
 - Quat ammonium
 - Glutaraldehyde
 - Peracetic acid
- ✓ **Newer options**
 - Chloramine T
 - Anolytech
 - Ortho-phthalaldehyde



BEST PRACTICE

- ✓ Perform **MIC tests** (Minimum Inhibitory Concentration)
- ✓ Test **every new disinfectant batch**

3 PTPL THE CLEANING FORMULA



Power • Temperature • Product • Lapse

POWER

- ✓ Physical force during cleaning
Examples:
 - Scrubbing
 - High-pressure washing
- ✓ Strong start = easier next steps
- ✓ Use **machines** wherever possible

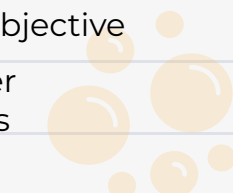


BEST PRACTICE

- Use water **>50°C**
- Or fully remove organic matter first

PRODUCT

- Choose based on cleaning objective
 - **Alkaline** → organic matter
 - **Acidic** → mineral deposits
- Foam helps visibility
 - **Foam helps visibility = better adhesion**



TEMPERATURE

- Hot water improves cleaning
- Removes grease, scale & residues

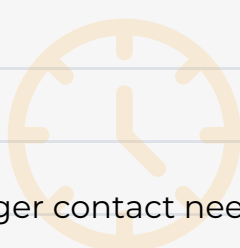
CRITICAL INSIGHT

- Many microbes grow best at **15–45°C**
- Incubation temperature = ideal growth range
- Washing below **50°C** may **increase contamination**



LAPSE (CONTACT TIME)

- Time = effectiveness
- Minimum **20 minutes**
- More errors earlier → longer contact needed



4 GAS DIFFUSION



Goal: Safe & effective gaseous disinfection

KEY FACTORS

- ✓ Correct **dosage**
- ✓ Proper **air temperature**
- ✓ Uniform **distribution**



EGG QUANTITY RULES

- More compact eggs:
 - ↓ Air speed
 - ↓ Product dose
 - ↑ Exposure time

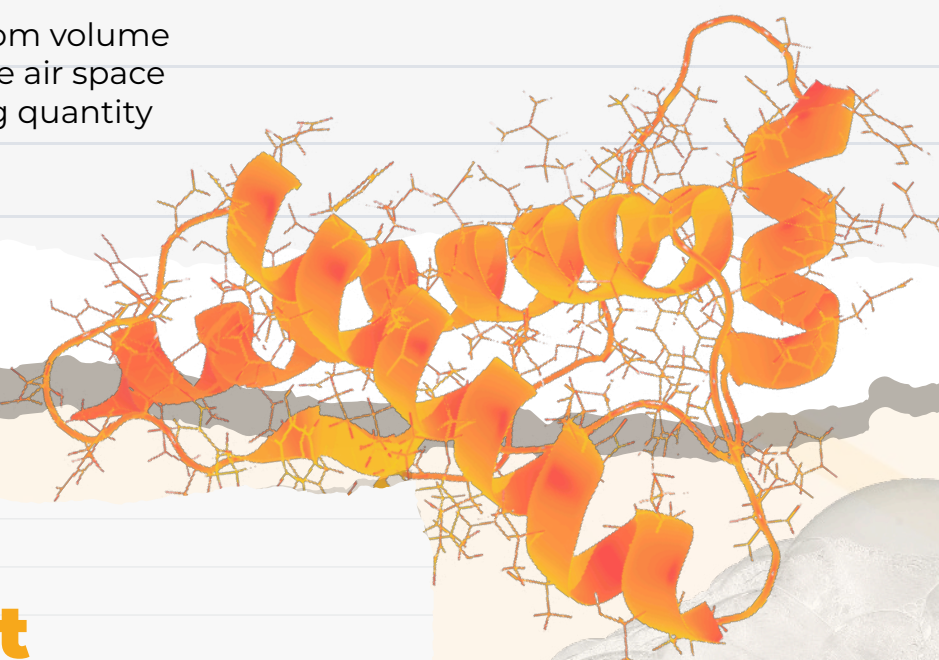
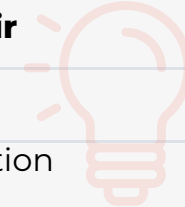


WHY IT MATTERS

- More compact eggs:
 - ↑ Poor diffusion = embryo damage
 - ↑ Overdosing affects outer eggs first

IMPORTANT PRINCIPLES

- Gas disinfects the **air and surfaces**, not the egg interior
- Effective concentration depends on:
 - Room volume
 - Free air space
 - Egg quantity



Key Takeaway

Hatchery contamination prevention requires **structure & discipline**

Focus on:

- ✓ Physical separation
- ✓ Targeted disinfection
- ✓ Correct cleaning parameters
- ✓ Controlled gas diffusion

Result

- ✓ Lower microbial pressure
- ✓ Better hatchery hygiene
- ✓ Safer chicks & stronger production outcomes



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