

Egg Breakout and Post-Hatch Analysis

Days of Incubation



Fertile Egg True Infertile Bloodspots

Possible Causes

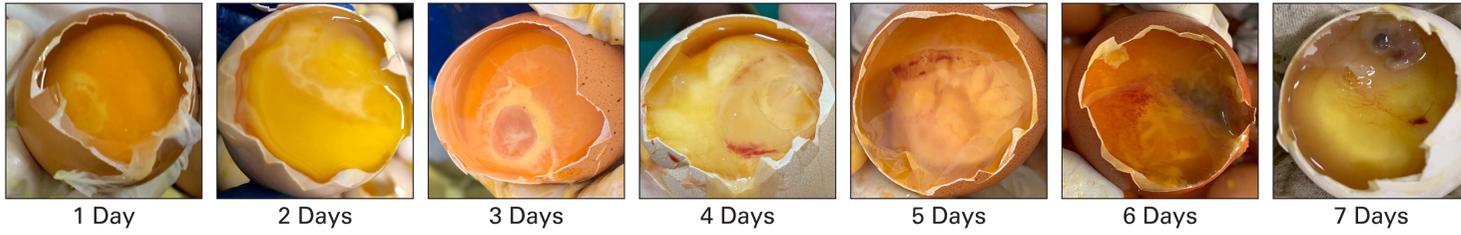
- Incorrect male/female ratio
- Too young / too old flocks
- Nutritional deficiencies
- Infestation of parasites (mites)
- Disease in breeder flock
- Feet and leg problems for males
- Heavy or light males
- Mycotoxins and drugs
- Nutritional deficiencies or excess
- High stocking density

Possible Causes

- Over fumigation
- Turning failure
- Long storage
- Very low humidity in storage
- Improper temperature in storage or early incubation
- Very young/very old breeders
- Rough handling and/or damaged during transport
- Disease challenge
- Mycotoxins, pesticides, drugs
- Nutritional deficiencies: vitamins (E, A, B2, B5, B7), copper, linoleic acid

Development Stage

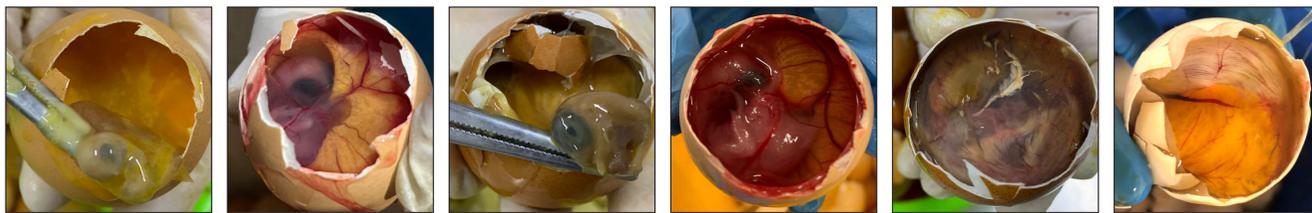
0-7 (Early)



1 Day 2 Days 3 Days 4 Days 5 Days 6 Days 7 Days

Development Stage

8-13 (Middle)



8 Days 9 Days 10 Days 11 Days 12 Days 13 Days

- High eggshell temperature
- Temperature fluctuations
- Turning failure or insufficient turning angle
- Incorrect ventilation (very high on the first week)
- Nutritional deficiency: B-complex vitamins, phosphorus, manganese, linoleic acid
- Poor shell quality

Growth Stage

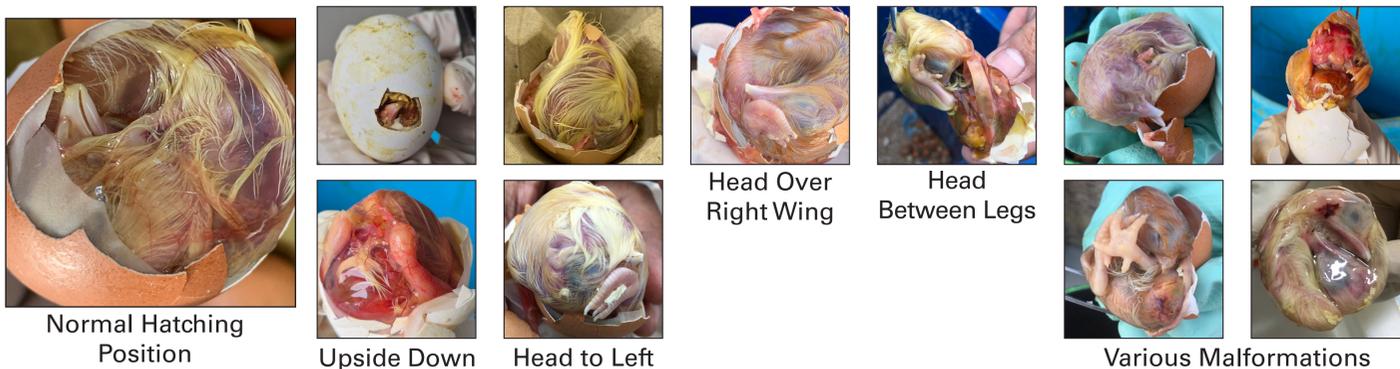
14-21 (Late)



14 Days 15-17 Days 18 Days 19 Days 19.75 Days 20 Days 21 Days

- Turning failure
- Contamination (MG/MS)
- Insufficient moisture loss
- Low incubation temp.
- Long storage
- Wide hatch window
- Poor ventilation
- Too high/low hatcher temp.
- Nutritional deficiencies: vitamins (E, A, D, K, B1, B2, B5, B7, B9, B12), selenium, calcium, phosphorus, linoleic acid

Malposition / Malformation



Normal Hatching Position Upside Down Head to Left Head Over Right Wing Head Between Legs Various Malformations

- Eggs incubated upside down
- Contamination
- Frequent door opening (first 7 days)
- Nutritional deficiencies
- Low incubation temperature
- High CO₂ for the first week
- Inadequate turning angle
- High incubation temperature from day 14 onwards
- Poor ventilation

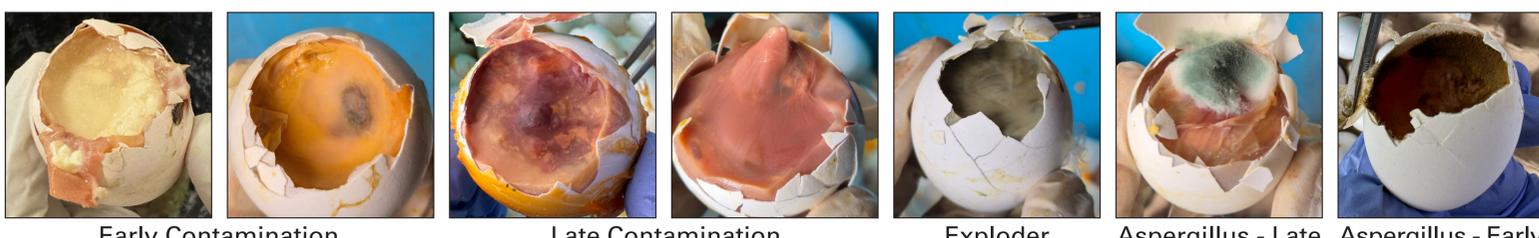
Cracked Eggs



Toe Punch Cracked Infertile Cracked Fertile Partial Eggshell Transfer Damage

- Poor shell quality
- Old breeder flocks
- Hairline cracked
- Rough handling
- Immature oviduct

Contaminated



Early Contamination Late Contamination Exploder Aspergillus - Late Aspergillus - Early

- Poor biosecurity
- Egg sweating
- Too high humidity in the egg storage
- Dirty eggs and high floor eggs
- High humidity in the chicken shed