



Cobb Genetics

Chick Embryo Development Guide



www.cobbgenetics.com

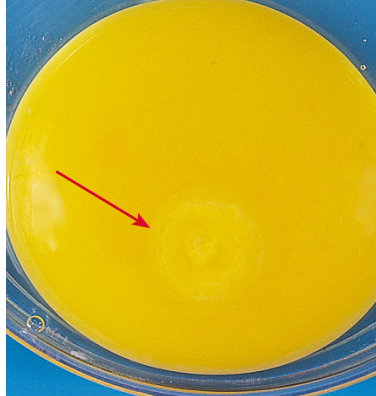
Infertile



Blastodisc

The embryo-forming part of the yolk that contains a single cell. If fertilized, it will develop into a blastoderm.

Fertile



Blastoderm

a single layer of embryonic epithelial tissue

Fertile



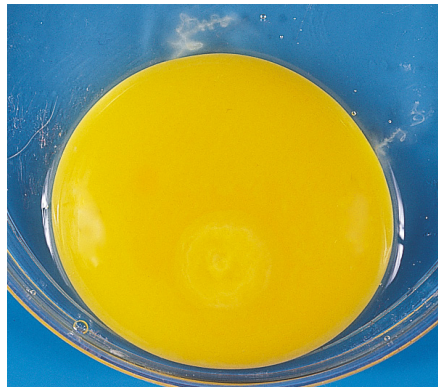
Blastoderm

Microscopic view

Day 1

Troubleshooting

- Poor fertility
- Pre-incubation
- Incorrect fumigation
- Incorrect turning
- Incorrect temperature
- Incorrect humidity
- Incorrect ventilation
- Inverted eggs
- Rough egg handling
- Insufficient egg holding time
- Contaminated eggs
- Feed issues (nutrition, drugs, toxins)

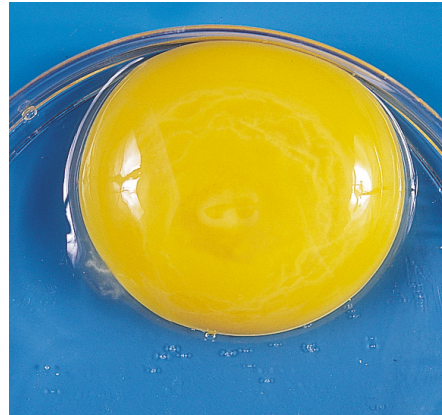


Tissue development appears

Day 2

Troubleshooting

- Poor fertility
- Pre-incubation
- Incorrect fumigation
- Incorrect turning
- Incorrect temperature
- Incorrect humidity
- Incorrect ventilation
- Inverted eggs
- Rough egg handling
- Insufficient egg holding time
- Contaminated eggs
- Feed issues (nutrition, drugs, toxins)



Tissue development clearly visible
Blood vessels appear

Day 3

Troubleshooting

- Poor fertility
- Pre-incubation
- Incorrect fumigation
- Incorrect turning
- Incorrect temperature
- Incorrect humidity
- Incorrect ventilation
- Inverted eggs
- Rough egg handling
- Insufficient egg holding time
- Contaminated eggs
- Feed issues (nutrition, drugs, toxins)



Heart beats
Blood vessels clearly visible

Day 4

Troubleshooting

- Incorrect turning
- Incorrect temperature
- Incorrect humidity
- Incorrect ventilation
- Inverted eggs
- Rough egg handling
- Contaminated eggs
- Feed issues (nutrition, drugs, toxins)



Eye pigmented

Day 5

Troubleshooting

- Incorrect turning
- Incorrect temperature
- Incorrect humidity
- Incorrect ventilation
- Inverted eggs
- Rough egg handling
- Contaminated eggs
- Feed issues (nutrition, drugs, toxins)

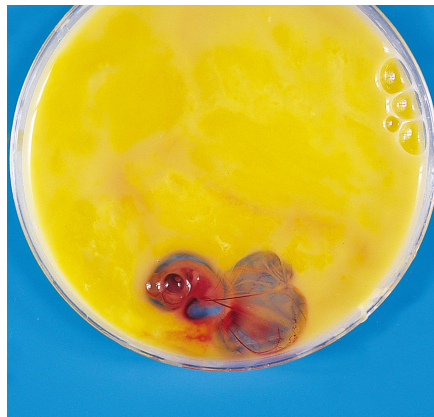


Knees and elbows appear

Day 6

Troubleshooting

- Incorrect turning
- Incorrect temperature
- Incorrect humidity
- Incorrect ventilation
- Inverted eggs
- Rough egg handling
- Contaminated eggs
- Feed issues (nutrition, drugs, toxins)



Beak appears
Voluntary movement begins

Day 7

Troubleshooting

- Incorrect turning
- Incorrect temperature
- Incorrect humidity
- Incorrect ventilation
- Inverted eggs
- Rough egg handling
- Contaminated eggs
- Feed issues (nutrition, drugs, toxins)



Comb growth begins
Egg tooth appears

Day 8

Troubleshooting

- Incorrect turning
- Incorrect temperature
- Incorrect humidity
- Incorrect ventilation
- Inverted eggs
- Insufficient egg holding time
- Rough egg handling
- Contaminated eggs
- Feed issues (nutrition, drugs, toxins)

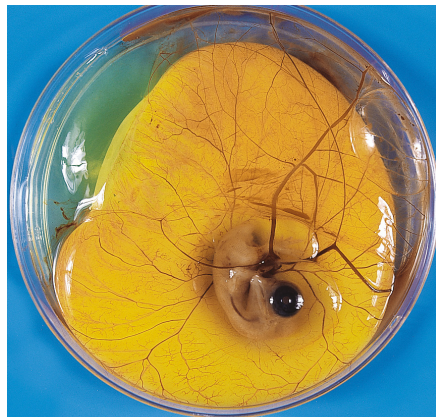


Feather tracts appear
Upper and lower beak same length

Day 9

Troubleshooting

- Incorrect turning
- Incorrect temperature
- Incorrect humidity
- Incorrect ventilation
- Inverted eggs
- Insufficient egg holding time
- Rough egg handling
- Contaminated eggs
- Feed issues (nutrition, drugs, toxins)



Embryo begins to appear bird-like
Mouth opening appears

Day 10

Troubleshooting

- Incorrect turning
- Incorrect temperature
- Incorrect humidity
- Incorrect ventilation
- Inverted eggs
- Insufficient egg holding time
- Rough egg handling
- Contaminated eggs
- Feed issues (nutrition, drugs, toxins)



Egg tooth clearly visible
Toe nails appear

Day 11

Troubleshooting

- Incorrect turning
- Incorrect temperature
- Incorrect humidity
- Incorrect ventilation
- Inverted eggs
- Insufficient egg holding time
- Rough egg handling
- Contaminated eggs
- Feed issues (nutrition, drugs, toxins)



Comb appears serrated
Tail feathers appear

Day 12

Troubleshooting

- Incorrect turning
- Incorrect temperature
- Incorrect humidity
- Incorrect ventilation
- Inverted eggs
- Insufficient egg holding time
- Rough egg handling
- Contaminated eggs
- Feed issues (nutrition, drugs, toxins)



Toes fully formed
First few feathers visible

Day 13

Troubleshooting

- Incorrect turning
- Incorrect temperature
- Incorrect humidity
- Incorrect ventilation
- Inverted eggs
- Insufficient egg holding time
- Rough egg handling
- Contaminated eggs
- Feed issues (nutrition, drugs, toxins)



Scales appear
Body lightly covered in feathers

Day 14

Troubleshooting

- Incorrect turning
- Incorrect temperature
- Incorrect humidity
- Incorrect ventilation
- Inverted eggs
- Insufficient egg holding time
- Rough egg handling
- Contaminated eggs
- Feed issues (nutrition, drugs, toxins)



Embryo turns head towards large
end of egg

Day 15

Troubleshooting

- Incorrect turning
- Incorrect temperature
- Incorrect humidity
- Incorrect ventilation
- Inverted eggs
- Contaminated eggs
- Feed issues (nutrition, drugs, toxins)



Gut draws into abdominal cavity

Day 16

Troubleshooting

- Incorrect turning
- Incorrect temperature
- Incorrect humidity
- Incorrect ventilation
- Inverted eggs
- Contaminated eggs
- Feed issues (nutrition, drugs, toxins)



Body covered in feather
Very little albumen remains

Day 17

Troubleshooting

- Incorrect turning
- Incorrect temperature
- Incorrect humidity
- Incorrect ventilation
- Inverted eggs
- Contaminated eggs
- Feed issues (nutrition, drugs, toxins)



Reduction of amniotic fluid
Head is between legs

Day 18

Troubleshooting

- Hatcher opened too often
- Rough transfer
- Transfer cracks
- Wet trays and hatcher
- Inconsistent transfer
- Incorrect turning
- Incorrect temperature
- Incorrect humidity
- Incorrect ventilation
- Inverted eggs
- Contaminated eggs
- Feed issues (nutrition, drugs, toxins)



Embryo growth nearly complete
Yolk sac remains external
Head is under right wing

Day 19

Troubleshooting

- Hatcher opened too often
- Rough transfer
- Transfer cracks
- Wet trays and hatcher
- Inconsistent transfer
- Incorrect turning
- Incorrect temperature
- Incorrect humidity
- Incorrect ventilation
- Inverted eggs
- Contaminated eggs
- Feed issues (nutrition, drugs, toxins)



Yolk sac absorbed into body
No amniotic fluid remaining
Air cell is only space not occupied
by the embryo

Day 20

Troubleshooting

- Hatcher opened too often
- Rough transfer
- Transfer cracks
- Wet trays and hatcher
- Inconsistent transfer
- Incorrect turning
- Incorrect temperature
- Incorrect humidity
- Incorrect ventilation
- Inverted eggs
- Contaminated eggs
- Feed issues (nutrition, drugs, toxins)



Yolk sac completely absorbed
Embryo becomes a chick (breathing
in air cell)
Internal and external pips



Day 21

Troubleshooting

Hatching early	High temperature 1 - 19 days Small eggs
Hatching late	Low temperature or humidity 1 - 19 days Egg storage issues Large eggs Low hatcher temperatures
Sticky chicks	High hatcher temperatures Egg storage issues Broken eggs in hatch basket Incorrect turning
Malpositions	Eggs incubated upside down Misshaped eggs Incorrect turning
Unhealed navels	High temperature 1 to 19 days High humidity 20 to 21 days Egg storage issues
Red hocks	Insufficient moisture loss
Abnormal chicks	Cross beak - genetics or viral infection Missing eyes - high temperature days 1 to 7 Wry neck - nutrition Crooked toes - temperature issues 16 to 21 days or nutrition Splayed legs - smooth hatching baskets / no paper / incorrect temperature
Incorrect pipping	Insufficient moisture loss



Chick hatches
Feathers dry
Ready for placement



