

Candling Eggs

What is Candling?

Candling is a way of checking the fertility of an egg and the development of the embryo, with the use of a light source.

What are Candling Lamps?

Candling lamps are lights with a concentrated beam that may be shone through the shell of the egg to illuminate the egg contents.

The **OvaView** candling lamp from Brinsea is a very effective low cost all purpose candling lamp ideal for identifying infertile eggs with pale, plain shells (most species of hen, duck or goose etc). The OvaView is battery powered for convenience and uses high output, high efficiency LED illumination - so no bulbs to replace or concerns about overheating the eggs during inspection. The OvaView is designed to either be hand-held or can be left on a work surface during use. It is supplied with a flexible black ring to seal against the egg shell. The candling lamp comes with a set of 4 AA batteries but can be used with rechargeable AA. It is also available in a high intensity version for candling eggs with darker and mottled shells.



The Brinsea **OvaScope** is a very effective accessory for use with the OvaView or OvaView High Intensity candling lamps. The OvaScope fits over the OvaView, and the egg is then placed within the OvaScope and the egg cover replaced. The OvaScope cuts out all the ambient light and slightly magnifies the egg which makes the illuminated egg much easier to see. The egg can be rotated from outside the OvaScope to allow the egg to be viewed from a range of angles and there is the facility to fix a small camera or web cam to generate a digital image of the egg and embryo. The OvaScope makes candling much easier and is ideal for schools or for presentations.



Candling Results

The embryo is located at the large end of the egg, where blood vessels will be present under the surface if the egg is fertile. The embryo appears as a dark spot which becomes larger as the incubation period continues.

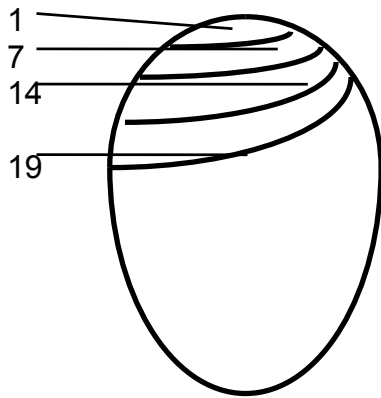
- **Fertile egg** – the egg will appear to have a black spot which as the embryo grows and incubation continues will grow larger until light will only pass through the air cell end of the egg.
- **Infertile egg** – eggs appear clear.
- **Dead embryo** – if the egg was fertile but the embryo has died then you will see a blood ring around the yolk or possibly a dark spot dried to the inside of the shell depending on when the embryo stopped growing.

Note that dark or brown shelled eggs are more difficult to candle than white or pale shelled eggs – the **High Intensity OvaView** is ideal for candling these types of eggs.

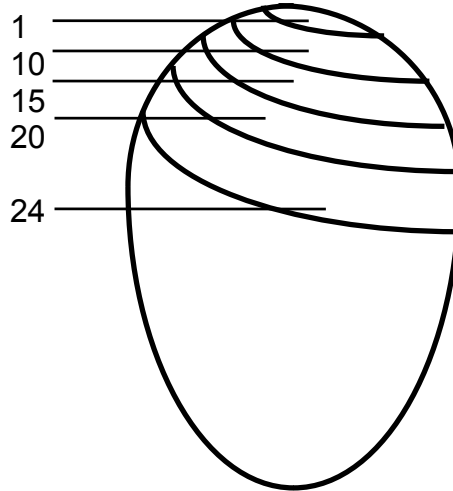
When To Candle

Candling can be done at any time during incubation, although day 8 onwards is usually when the embryo is more easily identified.

Using a candling lamp allows the size of the airspace to be determined which offers a guide to the weight loss rate. If the air space is larger than expected too much water is being lost and the humidity in the incubator should be increased to reduce the rate of water loss. If the air space is smaller than expected then the opposite applies.



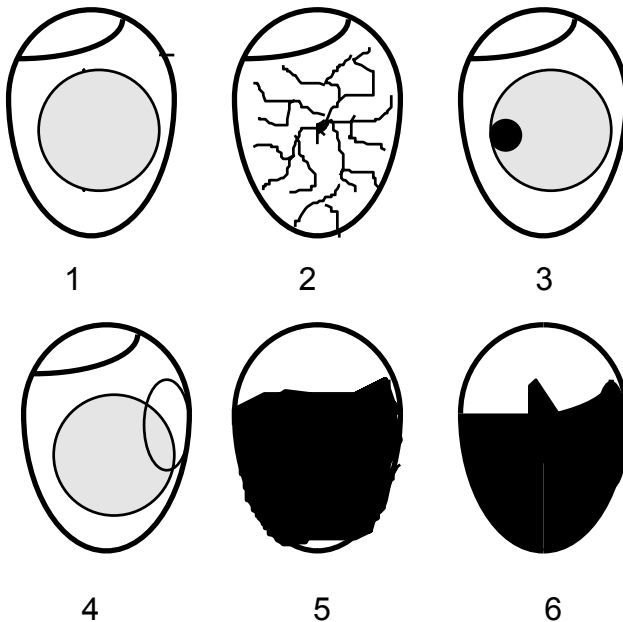
Hen Egg 58g



Turkey Egg 85g

Diagram shows extent of airspace development throughout incubation (in days)

Candling also allows the development to be observed so that eggs that are infertile or have died may be safely removed from the incubator.



1. Clear when candled - probably infertile (or very early death) when candled at 1/3 of the incubation period.
2. Fertile with red blood vessels - after 1/3 of the incubation period.
3. Red or black staining - early death when candled after 1/3 of the incubation period.
4. Embryo with red blood 'ring' - early death when candled after 1/3 of the incubation period.
5. Dark outline with ill defined detail - late death (1/2 or 2/3 through incubation period).
6. Live embryo with bill in air sack - due to hatch in 24-48 hours.

Remember that if you decide to candle your eggs, make sure that you handle the eggs carefully and only take them out of the incubator for a short time.