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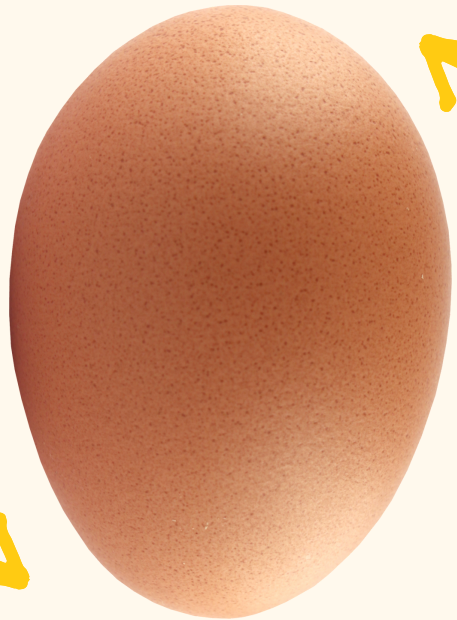
Incubation Stage

The stage refers to the incubation period **UP** until 2 or 3 days before a hatch. Different species have different incubation periods. Incubating different species together in the same incubator is not recommended, especially if the incubator is also used as hatcher.

Turning the eggs during incubation prevents embryo death and unhealthy hatches. Eggs must be turned at least three - five times every 24 hours. Turning more frequently is better and once per hour is best. Keep accurate records to ensure the eggs are turned three to five times each 24-hour period. Failure to turn eggs appropriately results in embryo death.

Turning must continue even through weekends. An automatic turner simplifies this task and decreases human error during the incubation process.

REMEMBER!



POINTY END DOWN

WIDE END UP

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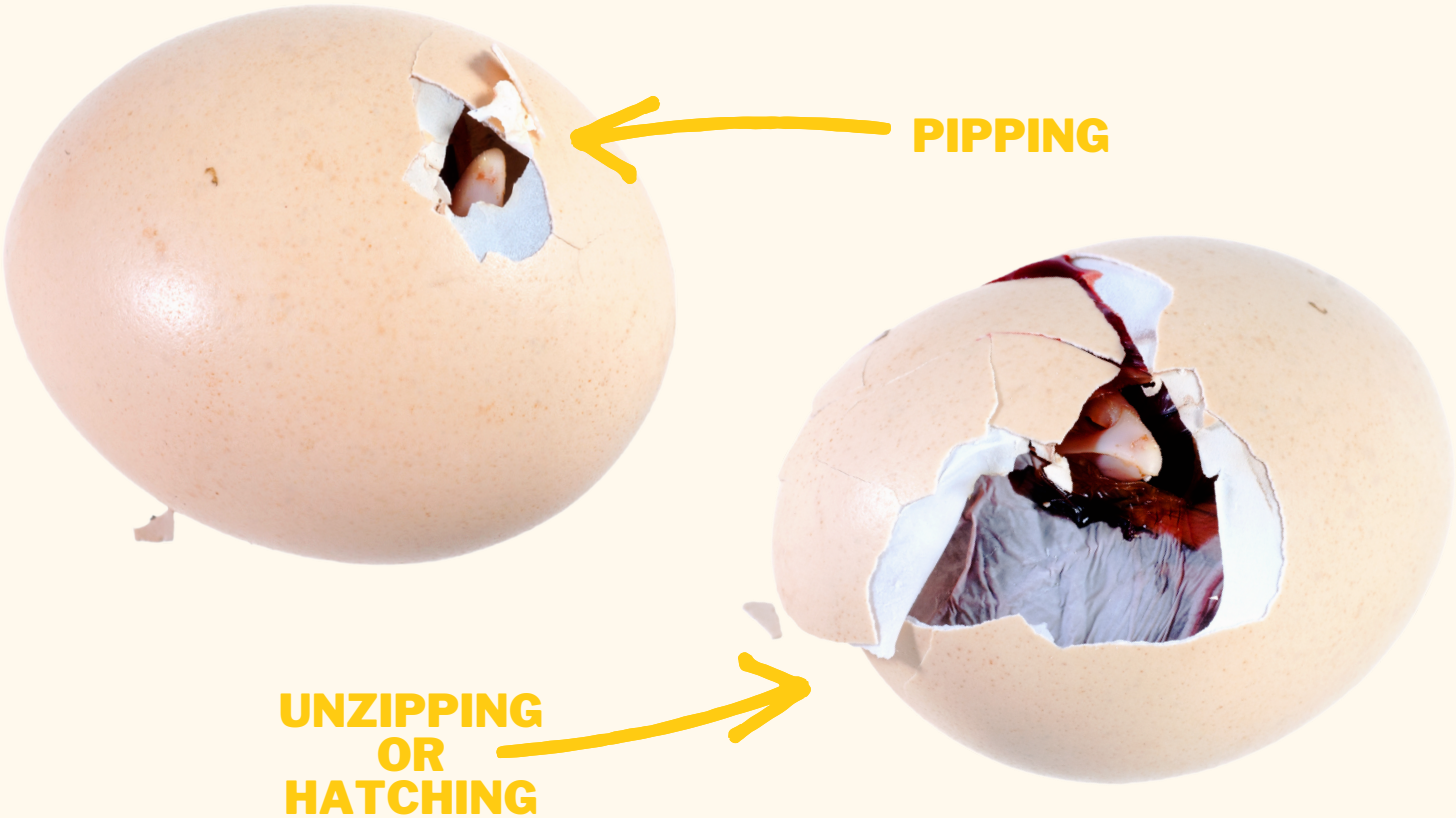
Hatch, Lock-Down or Setting Stage

This stage refers to **final** 2 to 3 days of incubation when chicks hatch out of the shell. Transfer eggs to a dedicated hatcher for the last 3 days to 4 days of incubation and do not turn them. If a hatcher is not available, remove the eggs from the turner and lay them in the hatching basket or place them on cloth or rough paper (not newspaper) in the incubator.

Make sure the cloth or paper do not cover vent holes, or touch the water or the heating element. During this stage, increase the relative humidity to 65 - 70%. You can increase the humidity by adding a wet sponge or wet paper towels to the incubator.

The chicks should start to pip within a day of the incubation period listed for the species



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When chicks hatch

Hatching requires great effort; the chick is very active then takes long rests. The entire process takes 10 hours to 20 hours. Do not worry about how long a chick takes to hatch unless it takes more than 20 hours.

Eggs that are not hatched 1 day after the predicted incubation period should be discarded. Do not help a chick free itself from the shell; chicks that cannot hatch on their own usually die. If you help them and they live, they usually will not thrive. Dispose of weaker deformed chicks humanely. These chicks should never be used for breeding because these traits could be transmitted to their young. Once chicks successfully leave the shell, increase the ventilation in the incubator and leave them in it about 24 hours or until their feathers are dry.

When more than 90% of the chicks are dry, remove them from the hatcher. Move the chicks to a warm brooder and give them water and feed.
Leaving chicks in the incubator too long can dehydrate them.

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What is a Incubator?

An incubator is basically a box that holds eggs while maintaining an appropriate temperature, humidity, and oxygen level. Incubators have varying capacities and adapters for eggs from different species.

Popular incubator models often include automatic turners, humidifiers, and temperature controllers. Egg turners can usually be purchased separately for incubators that do not include them. Humidifiers can be the type that disperses water vapour as needed or many smaller incubators use a simple water reservoir. Temperature is controlled by older wafer systems or the newer digital thermostats.

Incubators come in forced air or still air versions. The temperature and humidity in a forced air incubator is more consistent. They also return to desired temperature and humidity more quickly after being opened.

Still air incubators can give inaccurate humidity
and temperature readings and the temperature in them can vary considerably. Whenever possible, use a forced-air incubator. Regardless of incubator type, for a successful hatch, you must turn the eggs and monitor the temperature, humidity, and ventilation.

The incubator should be in a room that has no drafts or direct sunlight; the temperature and humidity should be controlled and stable. The incubator and hatcher should also be isolated from the growing facilities. Newly hatched chicks can be contaminated by older birds and the dust created by growing birds. Take biosecurity measures to insure the incubator area is not contaminated by older birds. Chicks may be hatched in the incubator depending on what type it is; however, hatching creates large amounts of dust and down. Hatching in a separate unit will keep dust and down from contaminating the incubator. Temperature and humidity can also be controlled more easily if you use separate units for incubating and hatching. Regardless of method, you must properly clean and disinfect the incubator and hatcher between batches.

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Temperature, humidity, & ventilation of incubator

During the set stage, temperature in the incubator should be 99.5˚F to 100˚F for chickens. Other species have different requirements. If the temperature deviates more than 1/2 degree from 100˚F, a poor hatch is likely. Check the temperature at least twice a day.

Relative humidity should be set at 55 to 60 percent. If the incubator uses a passive humidity control system, add water to the pan or trough daily to maintain correct humidity levels. If the humidity in the incubator is too low or too high, the hatch will fail.

Insufficient humidity causes are listed in our **'Hatching Problems Guide'**

The chick embryo uses oxygen and produces carbon dioxide. This gas exchange is insignificant during early incubation or when a small number of eggs are incubated; however, follow the manufacturer's recommendations to assure that developing chicks have adequate oxygen available.

Near the end of the incubation period, the shell nearly fills with the embryo and a full incubator requires large amounts of oxygen. Ensure adequate ventilation and monitor wet and dry bulb temperatures very carefully during the last third of incubation.

SOURCE: Incubating & Hatching Eggs - Texas A&M AgriLife Extension Services