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Incubating Eggs Successfully

Walk into nearly any farm supply store in the spring of the year and the sound of cheeping baby chicks likely fills the air. If you keep a backyard flock of chickens, purchasing chicks from stores like this or directly from hatcheries, is a great way to replenish your laying flock, especially if you enjoy watching chickens grow and develop. If you want to take poultry raising to the next level, incubation of hatching eggs is another option to consider, just remember you'll get some roosters too!

Whether eggs come from your flock or an egg supplier you must start with fertile eggs, store properly and incubate them carefully. Handling, environmental conditions, sanitation, and record keeping are all important factors when it comes to successfully incubating and hatching eggs. A fertile egg is alive containing living cells that can become a viable embryo/chick. Successful hatches begin with undamaged eggs that are fresh, clean, and fertile.

Do not incubate eggs that are cracked, misshapen, soiled, or unusually small or large. Do not wash or wipe eggs with a damp cloth because this removes the egg's protective layer and allow disease and bacteria to enter. It can also spread bacteria from one dirty egg to others. Eggs should be set as soon after collection as possible. It is best to incubate eggs within 7 to 10 days of being laid. Hatchability decreases rapidly when eggs are stored for more than 10 days.

An incubator is basically a box that holds eggs while maintaining an appropriate temperature, humidity, and oxygen level. Popular incubator models often include automatic egg turners, humidifiers, and temperature controllers. Incubators come in forced air or still air versions. The temperature and humidity in a forced air incubator is more consistent. Regardless of incubator type, a successful hatch requires turning eggs and closely monitoring the temperature, humidity, and ventilation. The incubator should be placed in a room that has no drafts or direct sunlight with stable temperature and humidity.

Stored eggs need to warm to room temperature for 4 hours to 8 hours before setting in the incubator. Once the eggs are in the incubator, do not adjust the temperature or humidity for a few hours, unless the temperature exceeds 102°F. After 4 hours, make proper adjustments. The final temperature should vary only .5 degree above or below 99.5°F. Relative humidity should be set at 55 to 60 percent. If the incubator uses passive humidity control, daily add water to maintain correct humidity levels. If the humidity in the incubator is too low or too high, the hatch will fail.

The set stage refers to incubation period up until 2 or 3 days before a hatch. Different species have different incubation periods, so know this time before starting. Most chickens have a +21-day period. Incubating different species together in the same incubator is not recommended, especially if the incubator is also used as hatcher. Set the small end of the egg lower than the large end in the incubator so the embryo can orient its head toward the air cell as it develops.

The hatch 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 in the incubator. During this stage, decrease the temperature 1°F and increase the relative humidity to 65 to 70 percent.

Hatching requires great effort from the chick, with the entire process taking 10 hours to 20 hours. Eggs that are not hatched within a day or two 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. Once chicks successfully leave the shell, increase the ventilation in the incubator and leave them there about 24 hours or until their feathers are dry. When more than 90 percent of the chicks are dry, remove them from the hatcher. Move the chicks to a warm brooder and give them water and feed.

This is a very quick summary of the process of incubation and hatching taken from a good Texas A&M Extension publication on the subject: [Incubating and Hatching Eggs](#) I'd encourage you to view this publication to learn more.