

Choosing an Incubator

Introduction

Hatching chicks can be a rewarding experience, fun and educational for the entire family. Eggs used for hatching are fertilized eggs that hatch only if properly incubated. Fertilized eggs are obtained from reputable outside sources such as hatcheries or breeders, or they may come from your flock.

Shipped eggs have a lower chance of hatching than eggs picked up in person. The less time spent in transport, the better chance of them hatching. Collecting fresh eggs from your flock is the best way to have the highest hatch rate. If stored properly, you can save fertilized eggs until you get enough to set. Typically, hatching percentages continue to decrease the longer the eggs remain out of an incubator.

What Are Your Goals?

Determine your goals before selecting an incubator. There are many styles of incubators, from table top to floor models, ranging in size and price. Ask yourself these questions:

- What species of fowl do you want to hatch?
- How many eggs do you plan to set?
- How many hatches do you want per year?
- What features do you want an incubator to have?
- What percent hatch rate do you expect? (A realistic hatch rate is 80-85% if all goes well.)

Purchase the style of incubator that suits your needs before collecting hatching eggs.

Factors to Consider

Less expensive incubators generally have fewer features. They might lack an egg turning device and not control temperature and humidity as well as a more expensive incubator. Egg turning, ventilation, temperature and humidity all affect the success of a hatch. When looking at incubators consider the following features:

(1) Egg Type and Capacity—Some smaller incubators handle only chicken eggs without the possibility for modifications. Larger models usually can accommodate any type of egg. Models for home use hold as few as 3 eggs and as many as 250.

(2) Turning—Turning hatching eggs is vital to their survival. Turning keeps the yolk centered within the egg white so it doesn't stick to the shell membrane and cause the death of the developing embryo. Do you want an automatic turner or will someone be present to turn eggs at least three times a day, every day, until the last 72 hours before hatching? Some incubators come with rotating devices or tilting trays. An egg turner with racks that hold 42 chicken eggs and that move the eggs from side to side can be purchased for use in tabletop Styrofoam incubators. Racks sized for quail, duck, geese, and turkey eggs also can be purchased for certain types of egg turners.



(3) Airflow—A good airflow is very important for developing embryos, as they use up oxygen fairly quickly and simultaneously generate carbon dioxide. Good airflow is needed to continually replenish oxygen and remove the carbon dioxide. All incubators have vents to help circulate airflow. There are two types of incubators in relation to airflow: circulated air incubators and still-air incubators. Circulated air incubators, also known as forced air incubators, have built-in fans that continually circulate air to maintain sufficient oxygen and keep the temperature even. They are more expensive than still-air incubators but produce a better hatch rate. Still-air incubators, also known as gravity-flow incubators, do not have fans to circulate air, but instead rely on circulation that occurs naturally through vents.

(4) Temperature Control—The temperature inside an incubator is extremely important. Fluctuation in temperature or a difference of as little as one-fourth degree can decrease your hatching percentage or cause hatchlings to have health issues and poor survival rates. Incubators are either wafer controlled or electronically controlled. Many table top Styrofoam incubators have a wafer thermostat which you must adjust for a day or two to get the desired temperature inside the incubator. Wafer-controlled incubators allow for more fluctuation in temperature and can contribute to irregular hatches than do electronically-controlled incubators. Once the temperature in a wafer-controlled incubator is set you must be careful to avoid bumping the adjusting screw.

It is a lot easier to manage electronic temperature regulation. Temperatures for some electronically-controlled incubators are preset by the manufacturer for hatching chicken eggs. These can be adjusted for hatching other species of poultry. Others have a temperature-controlled thermometer that works on a relay switch.

Regardless of the type of temperature control in the incubator you purchase, run the incubator for 24-48 hours before adding eggs to make sure the temperature is adjusted correctly. Even with this precaution, minor adjustments may need to be made after adding eggs.

For circulated air incubators follow the manufacturer's recommendations for temperature settings.

(5) Humidity Control—Developing embryos must have the correct amount of moisture throughout incubation, as does a hatchling to break out of its egg. All incubators should have water-holding devices. Some have troughs built into the bottom of the incubator. Others have containers that can be attached externally to automatically dispense water into the incubator. Some have removable trays, pans, or plastic liners with troughs. If not included with your incubator, purchase a wet-bulb thermometer (hygrometer) to measure humidity in wet-bulb degrees or a digital hygrometer to measure percent relative humidity. Follow the incubator manufacturer's instructions.

(6) Ability to Observe—Certain brands or models of incubators offer transparent covers or large observation windows to make it easy to check the temperature and humidity and to watch the eggs throughout the incubation time and during the hatch. Opening an incubator because it has very small windows or no windows at all can reduce the hatching percentage. Therefore it is better to purchase an incubator with a larger observation area if you and your family want to observe.

(7) Cleaning Ease—Consider the ease of cleaning when looking at an incubator's construction. You will need to clean and sanitize your incubator once all of the hatchlings are moved from the incubator to the brooder.

(8) Cost—How much money are you willing to spend to purchase the type of incubator that has the features you want and will best help you reach your incubation and hatching goals?

This list of incubator features, but not the discussion, is from *Hatching & Brooding Your Own Chicks* by Gail Damerow, ©2013, Storey Publishing, MA.

In Summary

Do your research before deciding on what type of incubator to purchase. Consider your incubation and hatching goals and review the various factors to consider. If possible, talk to others who have used the type of incubator you plan to purchase.

Sources:

(1) *Hatching & Brooding Your Own Chicks* by Gail Damerow, ©2013, Storey Publishing, MA.

(2) *Incubating and Hatching the American Way: The Complete Guide to Incubating and Hatching from Fowl to Ratites* by Alexandra Douglas, ©2013, CreateSpace Publishing, SC.

(3) *Storey's Guide to Raising Poultry* by Glenn Drowns, ©2012, Storey Publishing, MA.

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