A Practical Guide to Hatching Silkworm Eggs at Home

Raising Bombyx mori from eggs is one of those quiet, rewarding projects that teaches patience and attention to detail. When I first tried hatching silkworm eggs, I assumed it would be as simple as keeping them warm and waiting. It turned out there is a bit more nuance to it, especially if you want a strong, healthy brood right from the start. Whether you are a teacher looking for a classroom project or someone setting up a small home silkworm farm, understanding the process from egg to first instar makes all the difference.

What Exactly Are Silkworm Eggs?

Silkworm eggs are tiny, pinhead-sized spheres that start out pale yellow and gradually darken to a deep grey or black as the embryo develops inside. Bombyx mori eggs come in two main types: those that will hatch within a couple of weeks if kept warm, and those that enter a resting state called diapause. Diapause is a natural pause in development that allows the eggs to survive cold winters. For home hatchers, it is important to know which type you have. If your eggs are in diapause, you will need to perform a diapause break by exposing them to a specific cold period, usually in a refrigerator, before you can begin incubation.

Proper egg storage is critical before you even think about hatching silkworm eggs. If you receive eggs by mail or buy them in advance, store them in a cool, dry place away from direct sunlight. I keep mine in the vegetable drawer of my fridge, inside a sealed container with a bit of ventilation. Humidity level matters during storage too; too dry and the eggs may desiccate, too damp and mold can set in. Aim for a stable environment around 40, 50% humidity until you are ready to start the incubation period.

Preparing for Hatching

Before you begin, gather your supplies. You will need a hatching tray, a heat source with a thermostat, a spray bottle for misting, and a good supply of young mulberry leaves or silkworm chow for the newly hatched larvae. The hatching tray should be shallow, clean, and have a lid or cover that allows some airflow. I use a plastic shoebox with small holes melted into the lid. Line the bottom with a paper towel or a thin layer of clean, dry leaves to give the larvae something to cling to when they emerge.



Temperature control is the single most important factor. Bombyx mori eggs need consistent warmth, ideally between 24°C and 28°C (75, 82°F). If it dips below 20°C, hatching can stall or stop entirely. I use a simple reptile heat mat under the tray, connected to a thermostat probe placed right on the eggs. This setup holds the temperature within a degree or two. Avoid placing the tray in direct sunlight or near a radiator, as fluctuations can be just as harmful as cold.

Humidity level during incubation should be kept around 70, 80%. Dry air can make the egg shells too hard for the larvae to break through. I mist the inside of the tray once or twice a day with a fine spray bottle, making sure not to soak the eggs directly. A small hygrometer inside the tray helps you keep track. If the humidity drops, cover more of the ventilation holes; if it climbs above 85%, uncover them for a while.

The Hatching Process

About 10 to 14 days after you start incubation, depending on temperature, the eggs will begin to darken and you may see tiny black specks inside them. This is the embryo fully formed and ready to emerge. The actual hatching silkworm eggs event usually happens over the course of a day or two. The larvae chew a small hole in the shell and wiggle out, and within a few hours they are looking for food.

This stage is called the brushing stage, because the newly hatched larvae look like tiny black hairs or brush bristles. They are incredibly small, about 3 mm long, and very delicate. Their first meal must be ready the moment they hatch. If you are using mulberry leaves, pick the youngest, tenderest leaves from the top of the tree. Wash and dry them gently, then chop them into small strips or offer whole leaves if they are very small. Silkworm chow is a good alternative if fresh mulberry is not available; just prepare it according to the package directions and offer it in thin slices.

One common mistake at this point is to move the larvae too soon. Leave them on the hatching tray with their food for the first 24 hours. They will start eating and producing a fine silk thread that helps them anchor to the surface. After that, you can carefully transfer them to their main rearing container. Use a soft brush or a feather to pick them up; they are easily crushed by fingers.



Caring for Newly Hatched Larvae

The first instar is the most vulnerable stage in silkworm rearing. The larvae are tiny, their mouths are small, and they need food that is cut or shredded into pieces they can manage. If you offer whole mulberry leaves, the edges will dry out before the larvae can eat them. I chop the leaves into squares about the size of a fingernail and scatter them over the larvae. Fresh food should be given three to four times a day, and any uneaten leaves should be removed to prevent mold.

Temperature and humidity remain important through larval development. Keep the rearing area at the same warmth you used for hatching. The larvae will grow fast, shedding their skin four times over the next three to four weeks. Each time they molt, they stop eating for a day or so and become still. Do not disturb them during these molts; they are vulnerable and need to rest.

Common Challenges and How to Avoid Them

Even experienced keepers run into problems. Here are a few I have encountered and the fixes that worked:

- **Mold on eggs or food:** Too much moisture. Reduce misting frequency and increase ventilation. Remove any moldy leaves immediately.
- **Larvae not eating:** Check temperature first. If it is too cold, they will slow down. Also make sure the food is fresh and chopped small enough.
- **Uneven hatching:** Some eggs may hatch a day or two later than others. This is normal if the eggs were stored at slightly different temperatures. Just keep providing fresh food for the latecomers.
- **Cannibalism:** Rare in Bombyx mori but can happen if food runs out. Always have enough mulberry leaves or chow ready before the eggs hatch.

Another issue that surprises beginners is the sheer amount of waste. Silkworms eat constantly and produce frass (droppings) that piles up fast. Clean the rearing tray daily to keep bacteria and fungus at bay. A clean environment is the best prevention for disease.

From Eggs to a Thriving Colony

Hatching silkworm eggs successfully is the first step in a journey that takes you through the entire silkworm life cycle. Once your larvae reach the second or third instar, they become much hardier and easier to care for. By the time they spin their cocoons, you will have watched the whole process from egg to adult moth. It is deeply satisfying, and each batch teaches you something new about temperature control, humidity level, and the timing of each stage.



If you are thinking about silkworm breeding or want to maintain a sustainable home silkworm farm, start with a small batch of eggs. Master the hatching and early care before scaling up. The principles of brood care are the same whether you have fifty eggs or five hundred. Pay attention to the details during the first instar, and the rest of the rearing will go more smoothly.

In the end, good silkworm husbandry comes down to consistency. Keep the temperature steady, the humidity balanced, and the food fresh. The eggs will do the rest. And once you see those tiny black larvae crawling onto a fresh mulberry leaf for the first time, you will know it was all worth it.