

Silkworm Rearing Kit

What is in the Kit?

- One silkworm rearing tub
- One petri dish/one tube containing eggs
- One mesh
- 10-20 silkworm eggs
- Pre-prepared silkworm food
- Forceps
- This guide



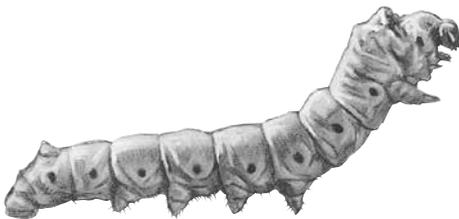
Getting Started

Once you receive your silkworm rearing kit you need to pop the silkworm food into a fridge to keep it fresh and place the mesh in the bottom of the rearing tub.

The eggs will arrive in the petri dish. You should gently tip them into the plastic rearing tub between the gaps in the mesh. Place the lid onto the rearing tub. The eggs should take around 7-21 days to hatch and should be kept somewhere warm but out of direct sunlight at around 24 degrees Celsius.

You may notice the eggs change from a grey/purple colour to a blue colour, this means they are getting ready to hatch.

Feeding and Caring for the Silkworms



Once your silkworms have hatched you will need to start feeding them. When they first hatch they are tiny and will not eat much to begin with but will turn into eating machines when they grow bigger!

You will need to take just enough food out of the fridge for each feed (to begin with a few bits the size of pin head will be plenty). Be careful not to use too much during the early stages as you may begin to run out later on.

Place the food onto the mesh, you should notice the silkworms climb onto the mesh/food within a few hours. Feed them enough so they eat most of it before it dries out. When they have eaten all their food or it has dried out you simply need to feed them again.

DO NOT PUT WATER IN WITH YOUR SILKWORMS THEY WILL GET THIS FROM THEIR FOOD.

Every other day you should remove the droppings and any dried out food from the rearing tub, this is best achieved by carefully removing the mesh (with the food and silkworms attached, you may have to use the forceps to make sure all the worms are on the mesh) and placing it on the upturned lid while you remove the droppings. To remove the droppings just use a small paintbrush or tissue. Then carefully replace the mesh into the tub. If any silkworms have come away from the mesh just use the forceps or a small paintbrush to return them to the rearing tub.

Generally speaking your silkworms will develop faster in warmer conditions and it is important to keep the temperature fairly constant. In the early stages of development leave the lid fully on for humidity. Once the worms reach 2-3 cm you should only loosely place the lid on top to allow air to circulate.

Your silkworm caterpillars will grow, but their skins will not. As they outgrow their skins, they will “moult” or shed their skins. Just before they begin each molt, your larvae will usually stop moving and/or eating. At this time, they often will raise their heads up a bit. Don't be alarmed, it is perfectly normal. Expect to see your silkworms moult three to four times.

Spinning Silk Cocoons

Your silkworms will be ready to spin their cocoons when they are about 7.5cm long. Before they spin the cocoons their skins may become tight or shrink, they may go to the side of the tub, they will stop eating and their skin will darken. You may notice a reddish brown liquid being released - this is perfectly normal.

As the silkworm begins to spin its cocoon, it will begin to move its head in a figure-8 motion. The silk,

which is actually hardened silkworm saliva, is a single strand that emerges from a small opening in its mouth called a "spinneret." Please don't disturb your silkworms at this point. They will take up to three days to complete a cocoon.

The silkworm will then begin to form its pupa inside the cocoon. It is inside this pupa that the humble silkworm will miraculously transform into an adult moth.

Once your silkworms have formed the cocoons all food can be removed as they will not need to eat again.

Emerging from the Cocoon

Approximately 10-28 days after forming the cocoon, the adult silk moth will be ready to emerge. Inside the cocoon is the pupa shell. This shell protects the silkworm as it makes its amazing change.

When the development is complete, the pupa will split open. The moth escapes from the cocoon by producing a fluid from its mouth that dissolves a hole through the silk. When the hole is big enough, the moth slips through. This emergence usually happens early in the morning and seems to always be before 9 A.M. As the moth emerges it will pump blood into its crumpled wings - this may take up to 1 hour.

The wet moth soon dries. You will notice that its tiny wings are far too small to lift its heavy body into flight.

The adult will secrete a beige or brown fluid when the wings are unfolded - this is perfectly normal. This is meconium.

After nearly 500 years of selective breeding for the silk industry the ability to fly has been lost. The adult moths do not have mouths so will not eat or drink but will survive on stored body fats and fluids.

Important- The moths will begin mating very soon after emerging so it is important to separate the males from the females. The females are shorter and fatter than the males and it should be easy to tell the difference. Each female can lay up to 500 eggs!

When your adult moths have emerged, you should move them into a larger container, with females and males separated. Although they are unable to fly, they will definitely walk to try find each other to mate.

Frequently Asked Questions:

How long will my silkworm eggs take to hatch?

Your silkworm eggs will usually hatch between 7-21 days.

My silkworms are not eating or moving!! What's wrong?

You will be glad to know that this is normal, and actually means your worms are healthy and growing. Because their soft skins do not stretch as they grow the worms must shed their skins. You will see them moult 3-4 times during their growth. Your worms will be inactive for 2-3 days before moulting.

How long before my silkworms spin their silk?

Your silkworms will constantly send out threads of silk to help them crawl about. They will usually start spinning their silk cocoons when they are about 5-8 weeks old.

How long will it take for them to spin the cocoons?

Your silkworms will need about 3 full days to complete their cocoons.

How long will the silkworms be in their cocoons?

It can vary but approximately 12-21 days during this time try not to disturb the cocoons.

What do the moths eat?

Nothing!! They have no mouths. They survive on stored body fats and fluids.

How long will the moths live?

7-14 days. You may notice the females tend to live longer than the males

Can I release the moths into the environment?

Due to their inability to fly they may not be able to venture very far if released and would be easy prey for more agile creatures. Silk moths no longer exist in the wild due to the selective breeding which has taken place over thousands of years. We recommend you do not release them.

How long will the whole process take?

The Average lifecycle will take 9-12 weeks but will depend on various factors such as temperature.

What should I do with my adult moths?

It is VERY important to separate the males from the females. The females are shorter and fatter than the males and it should be easy to tell the difference. Each female can lay up to 500 eggs!

Once you have separated the males from the females you can keep them in a shoe box or similar – you may want to build them a home out of cardboard with things to crawl on and around.

What will happen to my moths?

Upon emerging from the cocoon, the silkworm moth's crumpled wings will need to open completely. Don't be alarmed if the moth's wings remain crumpled. This is normal. If you have a male and a female, they will want to mate. You'll know that they are mating if they are facing away from each other while joining their tails together. They may do this for a whole day or even two. After this, the male's job is done, and he will soon die. After they mate, remove the male so the female can lay her eggs without being disturbed. The female may lay up to 500 yellow pinhead-sized eggs. She will lay eggs even if she doesn't mate with a male, but they won't hatch because the eggs will be unfertilized.

What happens if the silkworms mate? What do I do with the eggs?

If your moths have mated, after about 20 days the eggs will hatch. You can delay this process by placing them in the refrigerator for up to 6 months. This method isn't always successful, however. You will need plenty of mulberry leaves to feed to them. These are difficult to find in the UK, so firstly find a supplier before removing your eggs from the refrigerator.

Feeding Your Silkworms with Mulberry Leaves

Silkworms eat leaves from Mulberry trees. Wait until the Mulberry trees have leafed out in the Spring. Rearing can be done throughout the growing season as long as leaves are available. Place your eggs on the bottom of a small cardboard box to await hatching. Your eggs have already spent several months in the cold to satisfy their hibernation requirement. Hatching will begin in about seven days and will continue for one to two weeks. Before hatching, the eggs will turn dark around the edges. When you see the tiny worms, about the size of a typed comma, gently pick them up (with a small brush, perhaps) and place them on a clean, fresh mulberry leaf.

Cleaning Your Leaves

Place three to four drops of dishwashing liquid in a gallon of water. Slosh your Mulberry leaves about in this solution for about one minute. Remove the leaves from the soapy water and rinse with running tap water.

Shake off the excess water. Use some leaves for feeding and store the remainder in a plastic bag in the refrigerator for later use. You may wish to keep your leaves fresh by wrapping a small piece of moist sponge around the cut end and securing with a rubber band.

Each day during the first week make a fresh leaf bouquet and gently lay it on top of any older bouquets containing the little larvae.

After the first week, the larvae will be large enough to eat the leaves before they dry out and you will then need only to lay clean fresh leaves over them. Sometime during each day remove the old leaf bouquets or bare leaves from your rearing box. Your silkworms will seldom wander away from their food. They have become so domesticated through thousands of years, their dependence upon your care is complete and total. You must provide your silkworms with lots of clean mulberry leaves as they are voracious eaters during the final larval stages!

Interesting Facts:

- A silkworm must spin about 300,000 loops of silk to make its cocoon!!
- The adult moth almost always emerges in the morning, usually before 9am .
- Silk moths do not eat or drink at all during their life time, they survive on stored body fats and fluids
- Each female moth can lay 500 eggs!!!
- A silkworm will eat about 50 times its final weight during its eating period
- From the time it hatches to a full grown larva the silkworm increases in size by 10,000 times
- The silkworm will shed its skin 4 times during its larval stage
- The silkworm sheds its skin by attaching the tail end of its skin to the surface on what it is resting. It then simply walks out of it.
- Silk moth cocoons are made from a single strand of silk. One cocoon can be made of up to half a mile of unbroken silk. This means the silkworm would have to produce the silk at a rate of 25 feet an hour!!