

# How to Rear a Monarch

Modified from:

<http://monarchlab.org/biology-and-research/monarch-rearing/rearing-how-tos/>

There are many different methods that can be used to rear monarchs, pick and choose what works best for you. As a part of their online training video series, the Monarch Larva Monitoring project produced a [video about rearing monarchs](#) and reporting data to the project. The Monarch Joint Venture has also produced a handy [monarch rearing flyer!](#)

Here are some tips for raising monarchs safely. These tips can also be applied when rearing other insects.



- Eggs should be kept in a container lined with a moist (but not dripping wet) paper towel to keep the milkweed from drying out.
- The eggs should hatch within 1-5 days if kept at normal room temperatures. On average 70-90% of eggs hatch and survive to adulthood. Those that are infertile, or have some genetic abnormalities, do not hatch.
- After hatching, the larva will eat its chorion (eggshell). It may also eat other, unhatched, eggs if they are nearby.
- Larvae (caterpillars) can be kept in an aquarium, large jar, ice cream bucket, bug cage, or another relatively large cage. The container should be easy to open (since you need to clean it every day), have a screen covering or holes for air flow, and allow you to see the larva inside. It should be large enough for the adult to expand its wings when it emerges.
- If you have used your cage for monarchs before, wash it well before you use it again. Sterilize it with a weak (10-20%) bleach solution.



- Keep the cage out of the sun or other hot places (like car trunks in summer). High temperatures can kill the larvae.
- **Cages must be cleaned and larvae provided with fresh milkweed DAILY.** Do not leave your monarchs unattended over the weekend. Milkweed can be found in many places -- along railroad tracks, on roadsides, in parks and gardens. You can pick several days' worth and keep it in a plastic bag in a refrigerator. Wash it in water before using it. Milkweed stays fresher if you



keep the end moist by wrapping it in a wet paper towel and covering the towel with aluminum foil, or use florist water tubes. A paper towel in the bottom of the cage helps the cleaning process.

- Monarchs remain in the larval stage for about 2 weeks after hatching from eggs. During this time, they go through five instars, which means that they molt (shed their skin) five times. While they are molting, they often crawl up the side of their container, and should not be handled during this time. If you look closely, you will notice when their old head covering is about to come off. You may be able to find this covering in your cage. They will eat the rest of their skin!
- **You will probably have some mortality during the larval stage.** This may be caused by a virus or bacterial infection, or by contaminated milkweed. You should remove dead larvae from the containers. You should not feel bad about this if you have been feeding your larvae regularly and keeping their container clean.

- When ready to pupate, larvae will crawl to the top of their cage, attach themselves with silken thread, and form a prepupal "J" before shedding their skin for the last time. This process is fun to watch, but it happens quickly. You can tell they will shed their larval skin soon when their front tentacles hang very limply and their bodies straighten out a little.



- The pupa stage lasts 9-14 days. Pupae turn darker the day before the butterflies emerge, and look black on the day they emerge. At this point, the wings are visible. The butterflies usually emerge in the morning; their wings will be soft, flexible, and wet when they first emerge. If they fall, carefully pick them up by holding the thorax, and place them on the top or side of the cage. They need to hang with their wings pointed down. A pupa that has been very dark for more than a few days is dead and should be removed from the container. Pupae that look deformed or dead should be removed from the container.
- Do not keep adult butterflies and caterpillars in the same rearing container, as this may promote the spread of the OE parasite.
- Butterflies shouldn't be handled for the first 4 or 5 hours after they emerge, and can be kept in the cage until the next day, when they should be released. They can also be released the day they emerge, especially if it is warm and sunny. Hold the butterflies carefully with their wings closed when you release them, or simply open their cage to let them fly free. Often when a butterfly is ready to be released, you can coax it to crawl onto your finger to let it fly away!