

## Axolotl – *Ambystoma Mexicanum* Care

Axolotls belong to the amphibian group and originate from the high-altitude freshwater lakes of Mexico. Sadly, they are now included on the CITES endangered species list. The incredible regenerative abilities and large robust embryos of the axolotl have led to its widespread use in laboratory research.

The axolotl exhibits neotony in which normal metamorphosis does not occur and instead the larval form of the animal is maintained, this means that both the gills and fins are retained and other characteristics such as protruding eyes do not develop. Whilst the axolotl has rudimentary lungs, breathing occurs via the gills and to a lesser extent, the skin. Despite this, the axolotl grows larger than most larval forms of salamander and reaches sexual maturity. In rare cases axolotls can spontaneously metamorphose.

### **BIOLOGY**

- Axolotls have small, cone like teeth which they use to manoeuvre food into the mouth. They are poikilothermic, meaning their body temperature fluctuates with that of the environment.
- Axolotls begin as a tiny (2mm diameter) egg containing an embryo and surrounded by jelly. These hatch into the larval form and gradually develop limbs over the following weeks. Axolotls tend to be transparent for the first few weeks of life but can take on a wide variety of colours later in life. Axolotls reach their adult size by 18-24 months, and this can vary but is on average 25-30cm.
- Axolotls have been known to live past 20 years but commonly have a lifespan of 10-12 years so consider the time commitment when deciding on an axolotl as a pet.
- Axolotls can be sexed on their appearance, with the males being more elongated and less rounded than females. Male axolotls also have a more swollen cloaca than females once sexually mature. The availability of sperm within males goes through cycles throughout the year and is therefore not always present.

### **ACCOMMODATION**

- Axolotls are best housed alone, and any tank sharing is at some risk. Young axolotls may be housed together provided there is plenty of space and whilst cannibalism is greatly reduced in adult axolotls, those of different sizes should not be left together.
- Axolotls should be housed in an aquarium as they are aquatic and an adult size of up to 35cm should be considered when choosing accommodation size.
- Whilst filters are not essential if the water is changed frequently, they are strongly advised in order to keep the levels of toxic ammonia low. It is essential that filters do not cause strong water

flow as this can cause severe stress in axolotls. It is also not advised to keep plants in the tank as they will be readily and rapidly destroyed. Over-filtration is also a potential cause of stress and filtration must therefore be controlled. Care should be taken to keep the tank in a quiet, vibration free area.

- The optimum environmental temperature for axolotls is 16-18°C and should never exceed 24°C.
- The ideal water pH is 7.4-7.6. Chlorine, found in tap water, is harmful to axolotls and so either a de-chlorinator must be used, or the water must be left to stand for 24 hours before adding it to the tank, to allow the chlorine to diffuse out of the water. If you live in an area in which chloramines are added to the water, then a de-chlorinator is essential. 10-20% of the water should be changed every week although this can be altered depending on the filter system of the tank and results of water quality testing.
- Various substrates can be used for the bottom of the tank, however sand is the best choice as axolotls can occasionally eat gravel which can cause a fatal obstruction. Hides such as caves and pipes are recommended to allow axolotls to retreat out of sight.
- Axolotls do not require strict lighting and are actually very sensitive to sudden changes in lighting and to UVB radiation, so tanks are often left unlit. This is another reason for not choosing live plants to decorate the tank.
- After setting up a tank for axolotls, it should be left empty to mature for 2 weeks before any animals are added.

## **WHAT TO FEED**

- Axolotls are carnivores and will eat live or dead prey, although the movement of live prey helps to stimulate them to feed, especially when young. Axolotls can be hand fed to make them more social, especially since the rudimentary teeth of the axolotl means that whilst they may bite, their teeth can rarely pierce human skin.
- Water based food should be taken from fish-free water since they can be a source of disease. Adult axolotls can be fed earthworms, bloodworms, blackworms, salmon pellets and brine shrimp. Daphnia are good for larval axolotls. Juveniles can eat whiteworms and grindal worms although these are fatty and oily so should not become a permanent diet.
- Feed should be dusted with a calcium supplement (they can be fed in a separate tank to avoid this contaminating the water, although this is not essential) and gut loading of live food is advised.

## **HANDLING**

Axolotls should undergo minimal handling since their skin is susceptible to toxins and to trauma.

## **INSURANCE**

We highly recommend that you take out a pet insurance policy and consider a regular annual health check for your pet axolotl, where we can advise on health and husbandry in more detail.