

What is the most humane way to euthanase aquarium fish?

There is no one method that can be considered as suitable for the euthanasia of all types of aquarium fish as they vary greatly in size and their adaptation to different environments (eg temperate, tropical, fresh and salt water). In addition, the scientific research that assesses the humaneness of different methods of killing fish is very limited, so it is hard to know exactly how humane some methods are.

The following methods appear to be the most humane available for the euthanasia of sick or injured aquarium fish:

Anaesthetic Overdose

Aquarium fish can be safely and humanely euthanased by administering an overdose of anaesthetic dissolved in water. This method is especially appropriate for large fish that are difficult to handle but needs to be carried out by a veterinarian as the recommended anaesthetics (MS-222 Tricaine methanesulfonate and Benzocaine hydrochloride) are not available to the general public.

Further information on the use of anaesthetics to euthanase aquarium fish is provided in the [American Veterinary Medical Association \(AVMA\) Guidelines for Euthanasia](#) published in 2007.

Clove Oil (eugenol)

Clove oil is a sedative which at high doses it can be used to euthanase small fish. Unlike veterinary anaesthetics, clove oil is readily available from most chemists. Around 400 mg of clove oil per litre of aquarium water is sufficient to cause death in exposed fish. When exposed to clove oil at this concentration fish quickly lose consciousness, stop breathing and die from hypoxia. Please note that the concentration of the solution must be appropriate and the fish must remain in the solution for at least 10 minutes.

The AMVA 2007 guidelines do not recommend clove oil as a euthanasia method, however there have been studies since these guidelines were published examining the effects of clove oil which have found it to be similar to MS-222 and Benzocaine hydrochloride.

Ice-Cold Bath

Tropical fish less than 50 mm in length can be euthanased by gradually exposing them to freezing cold water. The fish is put into a small container along with some aquarium water at the normal temperature. This container is then placed into a much larger container filled with crushed ice. This will rapidly chill the water in the smaller container, eventually rendering the fish unconscious.

Physical methods

For aquarium fish, as with other fish, physical methods such as stunning and decapitation (followed by rapid destruction of the brain by pithing) are humane when carried out quickly and correctly. However there can be considerable stress imposed by prior handling and many people are uncomfortable with using these methods. It is not recommended that you attempt physical methods without prior training as hesitation or lack of skill and experience will lead to a poor outcome for the fish.

Verfying death

Whatever method is used, it is essential to ensure that the fish is dead before disposal. A fish can be considered to be dead ten minutes after the last sign of gill movement.

Inhumane methods

There are many methods of fish euthanasia that are not considered to be humane and must not be used. These include flushing fish down the toilet; immersion in ice or placing in the freezer, boiling, decapitation without stunning or pithing, suffocation by leaving fish out of water.

Article ID: 403

Last updated: 02 Jun, 2010

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