

Fish welfare: Behavioural responses to anaesthesia in brown trout (*Salmo trutta*)

Bachelor or Master project in biology, 15-60 hp

This research project aims to explore how brown trout respond to different anaesthetics. When set in a container with water and an anaesthetic agent fishes initially respond with increased activity. By use of video-recording and analyzing software the duration and intensity of the response will be investigated.



A brown trout juvenile from River Dalälven.

Background

There is a wide array of different teleost species used in scientific research world-wide. These fish are frequently anaesthetised for various procedures and previous studies suggest that there is a divergence in the response to different anaesthetics among species. The use and efficiency, from a practical point of view, of anaesthetics in different species have been studied and reviewed. However, the fish welfare aspect and the in depth understanding of the pharmacological mechanism of action and effect in different species are largely unknown. In view of our increased awareness of animal welfare, also regarding fish, along with an increased use of fish as experimental animals, standardised anaesthetic

protocols that are species specific is a necessity to assure best practises with focus on fish welfare..

Methods

This project consists of two different steps. First, to anaesthetize juvenile brown trout with four different substances (metomidate, eugenol, tricaine methanesulfonate and benzocaine) and video record their behaviour. Depending

on the number of credits the student wish to achieve one or several concentrations can be used as well.

Second, to analyse the behaviour with a software (Ethovision). By use of this programme swimming speed, activity, swum distance can be estimated. The data collected will then be statistically analysed. The practical part will done I Älvkarleby, the computer work can be done anywhere

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