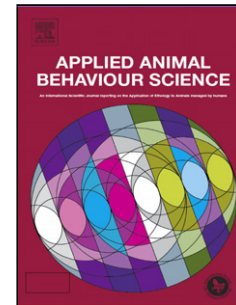


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Physiological and behavioural evaluation of common anaesthesia practices in the rainbow trout

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Highlights

- We examined the effect of commonly used anaesthetics on behaviour and physiology of rainbow trout.
- Rainbow trout demonstrated low behavioural stress during immersion in 2-phenoxyethanol.
- Plasma cortisol concentrations were lowest in 2-phenoxyethanol treatment group.
- MS-222 administration had the most adverse stress response.
- 2-phenoxyethanol may be a preferred alternative anaesthetic for use in rainbow trout.

Abstract

Anaesthetic drugs are commonly administered to fish in aquaculture, research and veterinary contexts. Anaesthesia causes temporary absence of consciousness and may reduce the stress and/or pain associated with handling and certain invasive procedures. The rainbow trout (*Oncorhynchus mykiss*) is a widely-used model species with relevance to both aquaculture and natural ecosystems. This study sought to establish the relative acute impact of commonly used anaesthetics on rainbow trout when used for anaesthesia or euthanasia by exploring their effects on aversion behaviour and stress physiology. Five widely used anaesthetics were investigated at two concentrations reflective of common laboratory practises: MS-222, benzocaine, 2-phenoxyethanol, etomidate and eugenol. The anaesthetics were administered

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