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Efficacy of Trichlorfon and Glutaraldehyde baths against ornamental fish parasites

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ABSTRACT

The expansion of aquatic animal and ornamental fish cultivation emphasizes the importance of understanding common external parasite infections in aquariums. Chemical treatments like Trichlorfon and Glutaraldehyde are commonly used but can pose health risks to fish. This study evaluated their effectiveness on various ornamental fish species, showing success in curing most infections. However, concerns about environmental impact prompt interest in sustainable control methods like biological control and selective breeding.

Keywords: Glutaraldehyde, Trichlorfon, Ornamental fish, Parasite, Fish disease

INTRODUCION

At present, the cultivation of aquatic animals and ornamental fish is a common occurrence of external parasite infections in aquaculture, causing fish health deterioration and making fish vulnerable to further infections. Drugs and chemicals such as trichlorfon and glutaraldehyde are commonly used to combat these parasites. Effective management strategies are crucial for addressing these parasitic challenges in aquaculture to ensure the health and well-being of aquatic organisms.

The study aimed to comprehensively evaluate the effects of trichlorfon and glutaraldehyde administered through therapeutic baths on inducing parasitic infections in ornamental fish species.

MATERIAL AND MATHOD

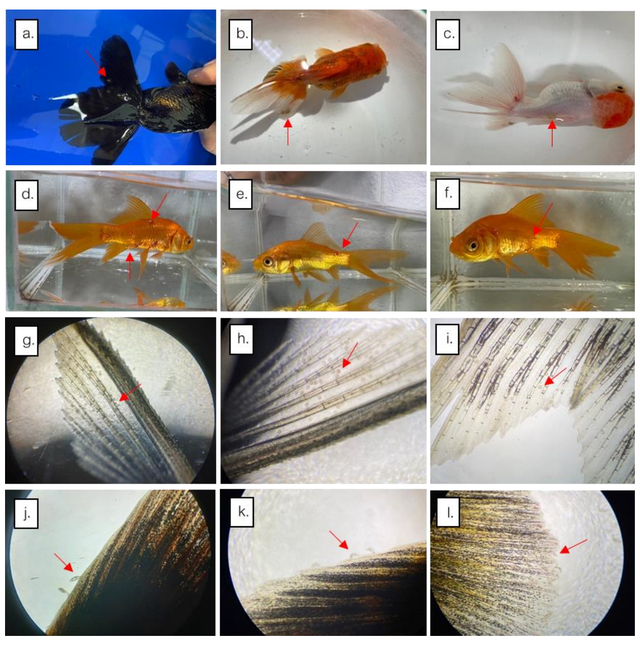

Fig. 1: Infection fish lice (*A. foliaceus*) in goldfish (*C. auratus*) (a.- c.). Infection anchor worm (*L. cyprinacea*) in goldfish (*C. auratus*) (d.- f.). Infection trichodina (*Trichodina* sp.) in otofish (*O. vittatus*) (g.- i.) and infection monogenean (*Gyrodactylus* sp.) in guppy fish (*P. reticulata*) (j.- l.) from Chatuchak fish market.

Experimental setup

- Nine 24-inch aquariums, each with 22.5 liters of water.
- Goldfish tested with glutaraldehyde (2.25 and 3 mg/l) for Fish lice and Anchor worm.
- Otto fish tested with glutaraldehyde (2.25 and 3 mg/l) and trichlorfon (0.5 and 1 mg/l) for Trichodina.
- Guppies tested with glutaraldehyde (2.25 and 3 mg/l) and trichlorfon (0.5 and 1 mg/l) for monogenean.
- Symptoms and images recorded every 24 hours.
- Toxic effects monitored; parasite elimination assessed via microscopy.
- Results documented for drug toxicity

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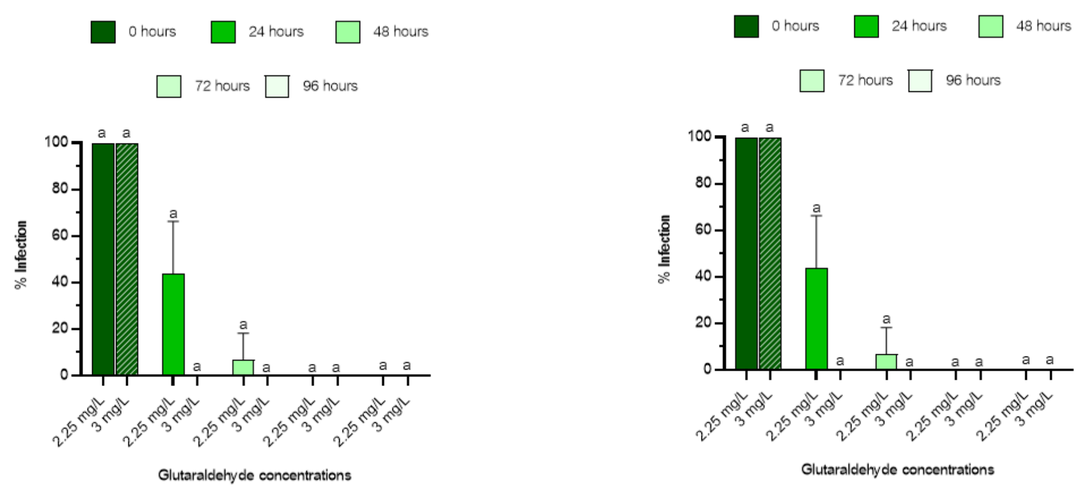
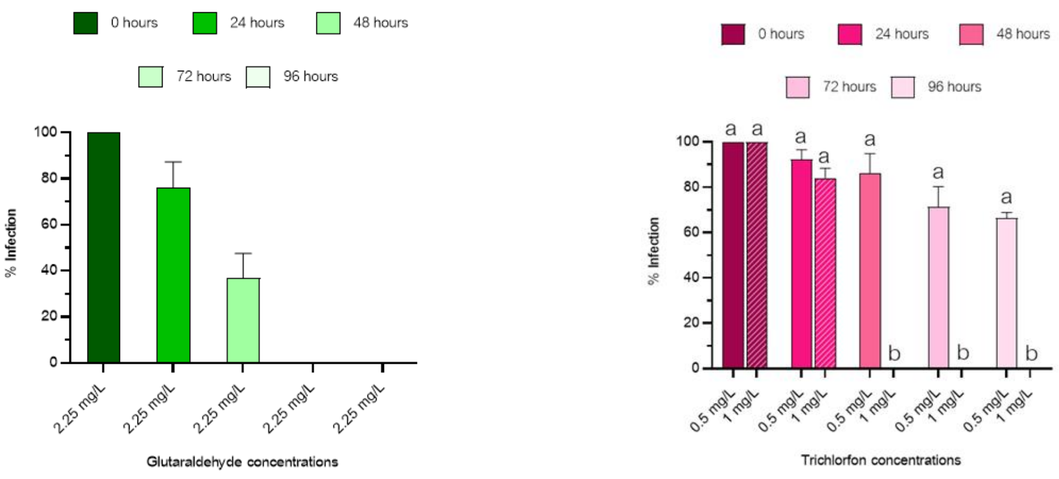
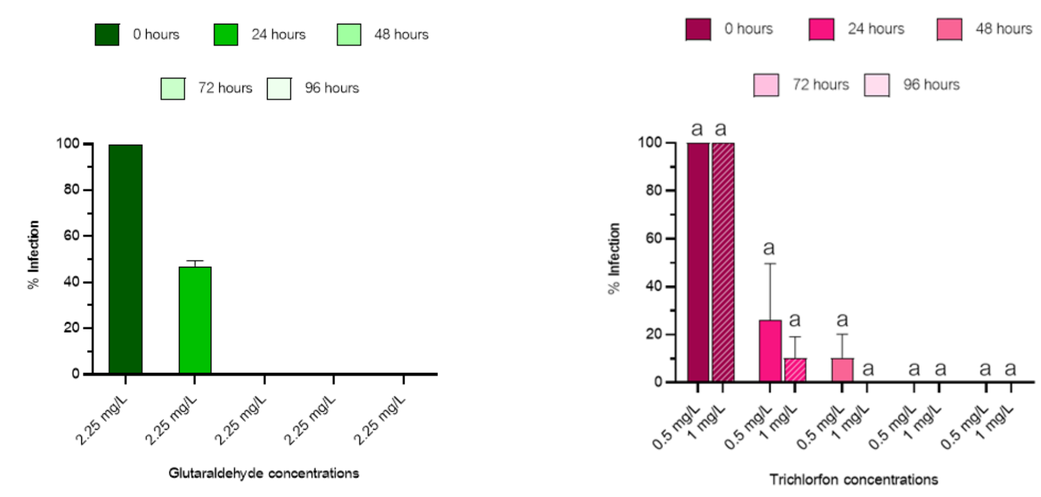
RESULT AND DISSCUSSINO



Glutaraldehyde at concentrations of 2.25 mg/L and 3 mg/L effectively reduced fish lice (*A. foliaceus*) and anchor worms (*L. cyprinacea*) within 24-72 hours of treatment. Fish became lethargic during treatment, but wounds caused by anchor worms improved gradually.



Trichodina (*Trichodina* sp.) infections in otofish (*O. vittatus*) were eradicated with glutaraldehyde at 2.25 mg/L within 72 hours, while trichlorfon at 0.5 mg/L resulted in fish mortality after 48 hours.



Monogeneans (*Gyrodactylus* sp.) in guppyfish (*P. reticulata*) were effectively eliminated by both glutaraldehyde (2.25 mg/L) and trichlorfon (0.5 mg/L and 1 mg/L) within 24-48 hours. Fish displayed lethargy and depression during treatment.

CONCLUSION

Results showed that parasites like fish lice, anchor worms, and monogeneans were effectively eradicated within 24-72 hours with specific concentrations of glutaraldehyde and trichlorfon. Glutaraldehyde was more effective, even at lower concentrations, compared to trichlorfon. Both drugs caused fish lethargy and slow swimming. Glutaraldehyde is recommended for parasite elimination due to its effectiveness and minimal impact on fish, with guidelines provided for safe usage.

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