



I INTEGRATIVE INTERNACIONAL CONGRESS
ON ANIMAL AND ENVIRONMENTAL HEALTH

MORTALITY AND PHYSIOLOGIC EFFECTS OF THE INSECTICIDE DICARZOL TO MATRINXÃ (*BRYCON AMAZONICUS*)

I Integrative International Congress on Animal and Environmental Health, 1ª edição, de 25/06/2024 a 28/06/2024
ISBN dos Anais: 978-65-5465-100-4

FERRAZ; Renato Barbosa ¹, XAVIER; Danielly Gonçalves ², ARAÚJO; Victoria Ribeiro de ³, COSTA; Karine Vasconcelos ⁴, CAMPOS; João Marcos Aguiar da Silva Carneiro ⁵, SANTOS; Anderson Araújo dos ⁶, RIBEIRO; Alyson Rogério ⁷, FREITAS; Thiago Mendes de ⁸, COSTA; Jesaias Ismael da ⁹

RESUMO

The presence of toxic compounds in the aquatic environment can affect the quality of fish, especially considering the occurrence of some persistent molecules with bioaccumulation potential. Among the contemporary xenobiotics, the following stand out heavy metals, microplastics, and pesticides. Products from either captivity or natives can be contaminated by these compounds depending on the quality of the cultivation water. In natural environments, close to large crops, it is usual detection of high levels of pesticides in water bodies due to the leaching and run-off of these products. In the case of fish and fish products, this contamination and bioaccumulation can harm humans, as fish are food for other animals. Therefore, investigating the ecotoxicity of these compounds in fish is crucial for us to be aware of the harmful concentrations to them and subsequently to other species. In this sense, this work aimed to assess the toxicity of the insecticide Dicarzol on matrinxã (*Brycon amazonicus*). For this, matrinxã juveniles were subjected to acute exposure (96 h) of 0.1, 1, and 10 mg/l of Dicarzol (58.2% Formetanate Hydrochloride), totaling 4 treatments with negative control (mineral water). Physiological effects (mortality and glucose) and the morphology of the fish gills were evaluated. The results suggest acute toxicity of Dicarzol for matrinxã at a level of 10 mg/l, where 100% mortality of juveniles was observed. The other concentrations showed no difference in survival and glucose levels. However, histological analyses indicate some changes in the gill's morphological patterns. For example, congestion in the secondary lamella of the gills from treatments 0.1 and 1 mg/L. The results indicate the harmful effects of Dicarzol on matrinxã, being the first work of its kind on native Amazonian fish species with Dicarzol, an insecticide widely sold in the northern region. It is concluded, therefore, that this compound usage, despite being approved by MAPA, must be conscious so as not to affect non-target animals, such as fish. Therefore, attention should be paid to the conscious use of insecticides, especially near regions that produce aquatic animals. Funding source: FAPEAM

PALAVRAS-CHAVE: xenobiotics, non-target animals, native species

¹ Universidade Nilton Lins , renatobarbosaferraz@gmail.com

² Universidade Nilton Lins , danielly.xavier22@gmail.com

³ Universidade Nilton Lins, Victoriaraaj204@gmail.com

⁴ Universidade Nilton Lins, 21009501@uniltonlins.edu.br

⁵ Universidade Nilton Lins, renatobarbosaferraz@gmail.com

⁶ Universidade Nilton Lins, anderson.eng.pesca@gmail.com

⁷ Universidade Federal de Minas Gerais, alysonrogerio@gmail.com

⁸ Universidade Nilton Lins , tmfreitas@niltonlins.br

⁹ Universidade Nilton Lins , ji.costa@niltonlins.br