DERMOCYSTIDIUM SP. IN THE GILLS OF NILE TILAPIA IN BRAZIL

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RESUMO

The genus *Dermocystidium* is very comprehensive in the host and site of infection, however this is the first report of the occurrence of *Dermocystidium* sp. in the gills of Nile tilapia *Oreochromis niloticus*. This study was carried out in a fish farming located in the state of Santa Catarina, Brazil. Sixty adult tilapia (average weight 480.9 ± 210.2 g and average length 28.1 ± 4.2 cm) were captured from 12 fish farms located in the state of Santa Catarina, southern Brazil. The fish were anesthetized with eugenol (75 mg L^{-1}) and euthanized by brain section. Then, the first right branchial arch was removed, divided and fixed in 10% buffered formalin and 2.5% glutaraldehyde, for histopathology and Transmission Electron Microscopy (TEM) studies, respectively. The samples previously fixed in 10% buffered formalin were dehydrated in progressive graduation of alcohol, diaphanized in xylol and embedded in paraffin. Using a microtome, samples were sectioned in 3 µm and stained with Harris haematoxylin and eosin, mounted on permanent blades with Entellan® and analyzed by Differential Interference Contrast (DIC) microscope model Axio Imager A2 (Zeiss®, Germany). For TEM analysis, the gills were fixed in 2.5% glutaraldehyde in 0.1 M sodium cacodylate buffer, pH 7.2 for 24 hs. Post-fixed with osmium tetroxide solution, dehydrated in increasing solution of ethanol and transferred to ethanol: spurr resin. Ultra thin (60 nm) sections were cut with a diamond blade and stained with uranyl acetate and lead citrate for microscopic observation. No mortalities were reported in the facility studied and the animals were clinically healthy. Histopathological analysis of the gills showed that 8.33% of the fish presented spores of *Dermocystidium* sp. in the gill tissue. Histological sections of the present study showed gill alterations such as interlamellar epithelial hyperplasia, secondary lamella epithelial hyperplasia and fusion of secondary lamellae. The spores herein reported had a mean length and width of 6.206 x 5.233 µm and a refractile body diameter of 1.965 µm. This was the first report of *Dermocystidium* sp. in asymptomatic tilapia in Southern Brazil, possibly due to early detection of infection. Therefore, it is attentive to a possible emerging pathogen in farmed tilapia in Brazil. It is suggested the monitoring of fish farms to complete the identification of the agent, as well as epidemiological investigation and its pathogenicity in Nile tilapia.

PALAVRAS-CHAVE: Fish farming, dermatocystidiosis, spores, infection

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