

THESIS

**NATIVE AND HISTOPATHOLOGICAL
EXAMINATION OF *Myxobolus* sp. FROM KOI
FISH FRY GILLS AND INTESTINE IN KEMLOKO,
NGLEGOK SUB-DISTRICT, BLITAR REGENCY**



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SURABAYA
2022**

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FRY GILLS AND INTESTINE IN KEMLOKO,
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BLITAR REGENCY**

Thesis submitted as partial fulfillment of the requirements for the degree of
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at

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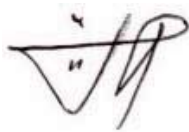
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DECLARATION

Hereby, I declare that the thesis entitled :

**NATIVE AND HISTOPATHOLOGICAL EXAMINATION OF *Myxobolus* sp.
FROM KOI FISH FRY GILLS AND INTESTINE IN KEMLOKO,
NGLEGOK SUB-DISTRICT, BLITAR REGENCY**

There is no other work ever published before to obtain a college degree in a certain college and to my knowledge there is also no work or opinion ever written or published by others, except those in writing referred to this paper and mentioned in the references.

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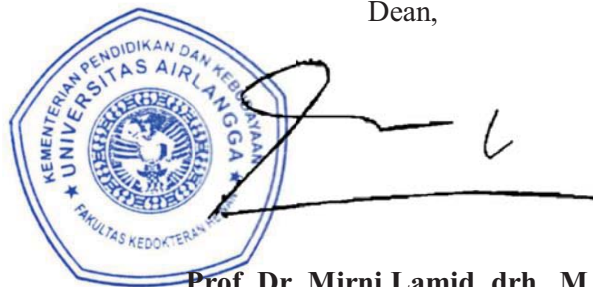
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SUMMARY

Koi fish (*Cyprinus carpio Linnaeus*) is one of the most potential freshwater fish resources that has wide distribution in Indonesia. Moreover, Koi fish supplies ornamental fish commodities and has a stable price in the international market due to their beautiful colour and body shape. Lately, the interest of ornamental fish such as Koi fish industry grows bigger prioritizing the sufficiency of Koi fish fry' quality and quantity as the chain-link of Koi fish cultivation business.

Fish disease is an obstacle to Koi fish cultivation development leading into economical losses. Most of the commonly encountered parasites which can be a significant disease agents towards Cyprinidae family especially Koi fish is *Myxobolus*. The aims of this research are to investigate the existence of *Myxobolus* sp. spore and to measure the size of *Myxobolus* sp. spore from the gills and intestine of Koi fish fry from Kemloko, Nglegok sub-district, Blitar Regency based on native and histopathological examination. This study is a descriptive qualitative study.

Kemloko village, located in Nglegok sub-district, Blitar regency is already known as a center for koi cultivation in Blitar. This is supported by the factor of Kemloko area which is located in the slopes of Mount Kelud impacted to the soil in Kemloko that is still very fertile, and is passed and irrigated by many rivers. The management of fishery resources in Kemloko is mostly koi fish, so in Kemloko Koi fish has become the identity of the area, even well-known at the national and international level.

As much as 40 fresh koi fish fry sample aged 40 days approximately with 2 – 3 cm in size obtained from cultivation pond in Kemloko, Nglegok sub-district, Blitar

Regency, East Java that have swollen gills specifically, were examined in this study and the result was all positive infested with *Myxobolus* sp. with various infestation degree from low to high infestation confirmed after native and histopathological examination. The characteristic of *Myxobolus* sp. spore is pyriform with round shape in the posterior part with two equal shape of polar capsule in the anterior part. In fresh mount preparats from native examination, *Myxobolus* sp. spore were between 8.6 – 14.72 μm x 4.89 – 9.11 μm . In histopathological examination, *Myxobolus* sp. spore were between 10.66 – 13.63 μm x 5.85 – 8.85 μm .

The transmission of *Myxobolus* could be direct or indirect. Direct transmission can happen from infected fish to another fish, meanwhile indirect transmission can happen through the help of *Tubifex tubifex* worm as the natural feed present in the cultivation pond in Kemloko. Water source for koi fish fry in cultivation pond in Kemloko, Nglegok sub-district, Blitar Regency comes from natural river from Penataran sub-district that geographically located in the upper part of Kemloko with no water filter. Thus can also increase the potency of *Myxobolus* spore transmission since *Myxobolus* spore harboring free and follow the flowing waters. The water quality measurement was also conducted in this study.

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Fitria Rizki Dwi Kurniasari

ABSTRACT

The goal of this research was to investigate the existence of *Myxobolus* sp. spore from the gills and intestine of Koi fish (*Cyprinus carpio Linnaeus*) fry from Kemloko, Nglegok sub-district, Blitar Regency and to measure its size from 40 Koi fish fry that had swollen gills and unclosed operculum specifically. Native and histopathological method were applied in this study. The outcome of this research showed that *Myxobolus* sp. spore was existed in the gills and intestine tissue of Koi fish fry. The characteristic of *Myxobolus* sp. spore was pyriform with round shape in the posterior part and the spore had two equal polar capsule in the anterior part. In the other hand, the measurement showed that the length of *Myxobolus* sp. spore in fresh mount preparats were between 8.6 – 14.72 μm with the width were between 4.89 – 9.11 μm . Meanwhile in histopathological examination the length was between 10.66 – 13.63 μm with the width were between 5.85 – 8.85 μm . These result concluded that *Myxobolus* sp. spore was infested in gills and intestine tissue of all Koi fish fry sample from Kemloko, Nglegok sub-district, Blitar Regency confirmed using native and histopathological examination.

Keywords : *Myxobolus* sp., Koi fish fry, Native and histopathological examination, Swollen gills, Intestine, Kemloko.

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The author acknowledges that this writing is still lacking. Therefore, the author are opened to any suggestion and recommendation for better writings and improvement. Hopefully, this research will be useful in veterinary science especially in veterinary parasitology field.

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Author

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LIST OF ABBREVIATION

et al., = et alii

sp. = species

ppm = parts per million