

Study of Mortality *Acanthopagrus Latus* Fish in Iraq

Ali Balash Jebur¹, Rasha Abdulameer Jawad²

¹Lec. College of Science, Department of Biology, Al Qasim Green University/ Iraq, ²Asst. Prof., Department of Biology Sciences, College of Education for Pure Sciences, University of Karbala/Iraq

Abstract

This study was conducted in Iraq in Karbala during the winter period in December and January of each year. The study aimed to know the causes of fish death in large numbers. *Acanthopagrus Latus* By investigating the most important causative factors by taking random samples of infected fish in Lake Razazah, it was noticed through a study of the appearance of these fish that they have severe laceration with clear redness in the abdominal area and specifically near the opening of the complex, which extends to the dorsal area near the gills cover Over time, in some of the studied samples, the tissue culture of the affected area indicated the presence of a fungus *Aspergillus Niger* Which may be one of the causes, our **conclusion** caused by the death of fish *Acanthopagrus Latus* In addition, someone has approximately (12) types of yeasts found in these infected fish.

Keyword: *Acanthopagrus Latus*, histological, Toxins, mortality

Introduction

Fish, like other neighborhoods, are exposed to many diseases, as the water environment is one of the important means of transmitting many diseases to fish, in addition to the presence of any environmental or physiological imbalance that may lead to a loss of balance between the fish's ability to resist and its resistance to the environmental medium, as this imbalance leads to The emergence of a disease condition and environmental pollution with fungi may be one of the most important problems facing humans and animals, which leads to the availability of conditions for their growth ⁽¹⁾. The dangerous effects of fungi are due to their production of some secondary metabolic products known as mycotoxins MyCotoxins Which causes severe toxic symptoms Acute toxicity Or it is of chronic toxicity chronic toxicity ⁽²⁾.

In addition to causing poisoning Poisoning Which leads to serious injuries to the nervous and digestive

systems, renal and hepatotoxicity of the human being, and it also works to inhibit the body's immune response and that the least pathological form appears in the form of allergies ⁽³⁾.

Also, the sharp changes in the water temperature that increase the concentration of chemical pollutants and toxins that weaken the immunity of the fish and its ability to adapt, and consequently its death, are the result of increased rates of infection with fish diseases due to bacteria or fungi, or the presence of a viral infection such as the herpes virus / koi (CYHV-3) (KHV) In the gill tissue, kidney and brain, this virus is dangerous and deadly ⁽⁴⁾.

Both indicated ⁽⁵⁾ Until the poisoning with fungi toxins in Russia as a result of using the news contaminated with fungi *Fusarium sporotrichioides*. The product of toxins Trichothecenes In the nineteenth century, the population was infected with nutritional enterococcus Aimentary toxic aleukia.

A state of decadence was recorded in a large number of horses in the Middle East in 1934 as a result of feeding with yellow corn contaminated with molds. The disease was known at the time as Moldy corn disease ⁽⁶⁾.

Corresponding author:

Rasha Abdulameer Jawad

Email: rasha.a@uokerbala.edu.iq

A study also indicated the existence of the deaths of many birds as a result of feeding them with a fodder contaminated with a fungus *Aspergillus flavus* the product was poisoned to aflatoxin and the disease was known at the time Turkey × disease⁽⁷⁾.

And finally, the emergence of cases of heart urticaria Cardiac beriberi Cirrhosis of the liver, total renal and cardiovascular disorder as a result of the Japanese population eating rice contaminated with the fungus *Aspergillus*⁽⁸⁾.

Materials and methods of work

A preliminary study was conducted by taking a swab from the affected area to determine the cause of the injury, so it appeared that it was a fungal, not bacterial, infection, as the study was conducted during the winter season (December and January 2017-2018).

Random samples were taken from the fish, whose number ranged from 100 fish to varying degrees of infection. Their total length ranged from (28-31) centimeters and their weights ranged between (380-450) grams. Tissue sections were taken from the affected area and were transplanted into the agricultural medium. Zapex agar the record according to the method⁽⁹⁾ Which includes the following materials: (1) Cloud K_2HPO_4 (0.5), Cloud KCl (2), Cloud $NaNO_3$ (0.5), Cloud $MgSO_4 \cdot 7H_2O$ (0.01), Cloud (20), $Feso_4 \cdot 7H_2O$ Cloud, Sucrose (18) Cloud Agar Dissolve the ingredients in a liter of distilled water, then place the incubator installed at a temperature $(25 \pm 2)C^\circ$ for three days, a person who breaks the mushroom according to the shape and color of the colonies on the Zabic medium, in addition to the diagnostic characteristics of the fungus, where the source was approved In the diagnosis⁽¹⁰⁾.

Results and Discussion

The study showed a sample of fish infected with different degrees of skin infection with a fungus *Aspergillus niger* This may be one of the most important reasons that lead to the destruction of large numbers of fish, as well as the histological study showed that the fish were infected with (12) different types of yeasts.

The fungus that causes this disease has the ability to live in different thermal ranges and its appearance in most seasons of the year, which made it outside the group of fungi. Mesophilic fungi Within (20-30) degrees Celsius and the researcher was able⁽¹¹⁾ In his study of desert soils near Lake Al-Razzazah to isolate (74) species, the deficient fungi were prevalent, as they accounted for 85.1% of the number of species and the gender was *Aspergillus* It is the predominant one as (14) species were isolated from it (19.7%) in addition to the capacity of Qatar *Aspergillus* On the spread in a proportion characterized by high salinity⁽¹²⁾ Because of the destruction in large numbers of fish due to the different tissue rot resulting from this injury⁽¹³⁾. One of the main reasons that help the spread of fungal diseases among fish is water pollution and lack of ventilation or a high proportion of ammonia and other toxic substances as most fungal diseases are diseases with secondary infection⁽¹⁴⁾.

Among the most important signs of fungal infection is the infection of the skin with dehydration and the presence of red, dark, superficial sores in addition to scales and fungal diseases. These are secondary diseases that affect fish pre-infected with certain wounds or bacterial or parasitic diseases, or that suffer from inappropriate conditions⁽⁴⁾⁽¹⁵⁾.

That mushroom *Aspergillus* Toxins are produced Aflatoxins They are effective biological toxins that may be the main cause of death and death of these fish, as well as their ability to cause many diseases for humans and animals, such as cancer of the liver and reproductive system, as well as causing miscarriage and hemorrhage⁽¹⁶⁾⁽¹⁷⁾.

He pointed out⁽¹⁸⁾The mushroom's ability to withstand various environmental conditions, whether its growth and reproduction, or its formation of reproductive units, not sexual, in large numbers, sexual stages, and stone bodies more resistant to inappropriate environmental conditions and for most types of high enzymatic susceptibility to help it use various materials as a food source, so it tolerates salinity and dehydration in Desert soils are also characterized by their ability to grow in poor soils with nutrients Figure 1.

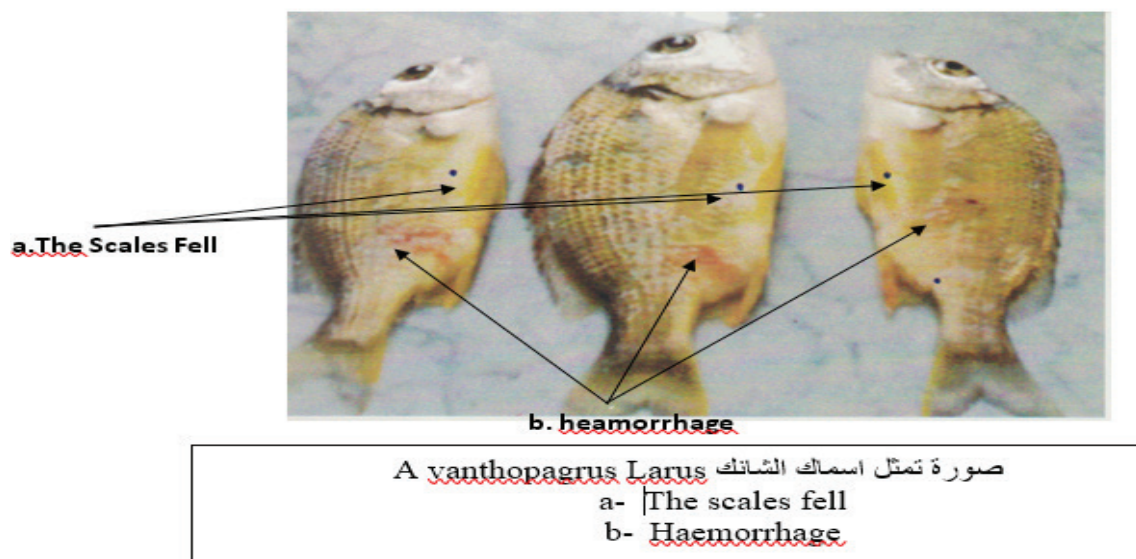


Figure 1: A picture representing Shanks A vanthopagrus Larus “a- The scales fell; and b- Haemorrhage”

Ethical Clearance: The Research Ethical Committee at scientific research by ethical approval of both MOH and MOHSER in Iraq

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