

## **Summary:**

This work aimed to study Erythrodermatitis caused by *Aeromonas* in *Cyprinus carpio* in some production farms of Hama governorate. Therefore, 214 samples of common carp suffered from different degrees of ulcers were collected.

35 ,117 and 62 fish were collected from Kazu, Krimesh, and Ain altaka respectively.

The work has been divided into four sectors in which the disease and the degrees of ulcers were studied in addition to identification of the pathogen , and finally trying to find the best treatment and medication of the disease .

### **Types of ulcers (degrees) :**

Ulcers of diseased fish were classified into primary, moderate and deep, and the percentage of the affected fish with each type of these ulcers were 68.2%, 48.6% , 26.2 % respectively. The result revealed that 35.1% of the affected fish had suffered from different types of ulcers.

### **Detection of degree of the disease**

The disease degree was classified into elementary, secondary and advanced. The result showed that 37.4% of all cases were classified as elementary and suffered from primary ulcers only, 36% of cases were Classified as secondary and moderate ulcers with or without primary ulcers noticed. Finally 26.65% of all cases were advanced cases and suffered from deep ulcers without or with other types of ulcers.

### **Identification of the Pathogen**

Cultivation and isolation of the bacteria was carried out for pathogen identification, and the results were confirmed by polymerase chain reaction PCR using primers for Genus *Aeromonas* in general.

*Aeromonas* spp. were detected as the causative of Erythrodermatitis and isolated in percentages 92.5%, 76.6% and 21.1% from primary, moderate and deep ulcers respectively.

In addition to *Aeromonas* spp. some other bacteria may be isolated from the ulcers and take part in the disease.

Biochemical tests were carried out for detection and identification of species and subspecies of *Aeromonas*, and the results revealed that *Aeromonas salmonicida* subsp. *achromogenes* was the most dominant and isolated from 89.2% of all cases and from primary stages of the disease. On the other hand, *Aer. salmonicida* subsp. *salmonicida* and

*Aer. hydrophila* had been isolated from 9.5% and 1.4% of collected samples respectively.

### ***Treatment experiment***

In this work, antibiotic susceptibility test was carried out and the result showed that *Florfenicol* was the best antibiotic among those used in our test, and the sensitivity against *Aeromonas salmonicida* subsp.

*achromogenes* was 77.1%, 75% *Aer. salmonicida* subsp. *salmonicida*, and 50% for *Aer. hydrophila*.

A treatment experiment was designed and completed to compare among three strategies of treatment, first by medicated food with Florfenicol alone, second by the same medicated food with some co-treatment, and third included the medicated food with co-treatment in addition to Potassium permanganate bath (dip).

It was found that the application of the antibiotic alone, with the submersible or with Co-treatments and dip had a very significant effect ( $P < 0.01$ ) in decreasing the number of ulcers at the primary stage of the disease by 69.57%, 86.36% and 91.3%.respectively, and achieving healing was almost complete. The application of the antibiotic alone with the dip or with Co-treatments and dip had a very significant' decreasing effect ( $P < 0.01$ ) for the number of ulcers at the secondary and advanced stages of the disease by 60%, 55.88% and 68.75%.respectively.

The study concluded that Carp Erythrodermatitis is prevalent in the studied production farms in Hama governorate, and all types of ulcers on the affected fish were noticed . Therefore, all stages of the disease were observed on the infected fish. The main causative agent of Erythrodermatitis was *Aeromonas salmonicida* subsp. *achromogenes*, and the best antibiotic for treatment was fluorfenicol, and its best application was with co-treatment and potassium permanganate bath.