

Identification and estimation of ectoparasites in gold fish (*Carassius auratus*) and Koi carp (*Cyprinus carpio*) in Rambodagalle Fish Breeding and Training Center

B.G.D. Sumuduni¹, D.H.N. Munasinghe^{1*}, P. Chandrarathna² and N.J. De S. Amarasinghe¹

¹Department of Zoology, Faculty of Science, University of Ruhuna, Matara, Sri Lanka.

²Ornamental Fish Breeding and Training Center, Rambodagalle, Sri Lanka.

The determination of the health conditions of fish is important in the ornamental fish farming industry. Some ectoparasites are highly pathogenic and cause fish mortalities, thus contributing to economic loss. An investigation on the parasitic infestation of gold fish (*Carassius auratus*) and Koi carp (*Cyprinus carpio*) cultured at Rambodagalle Fish Breeding and Training Center was carried out in July 2013. A sample of 30 gold fishes and 50 Koi carps in the same age group were collected from two separate harvesting ponds and gills, skin scrapes and fins were examined in the laboratory for ectoparasites. The relationship between the occurrence of parasites and the host body size was also estimated. Intensity of Infection (IC), Density of Infection (DI), Incidence of Infection (IF) and Index of Infection (IN) were calculated for all abundant parasite species namely *Tricodina* sp., *Centrocestus* sp., *Apiosoma* sp., *Gyrodactylus* sp., *Dactyrogyrus* sp., *Ichthyobodo necatrix*, *Argulus* sp. and *Posthodiplostomum cuticola*.

Tricodina sp. and the metacercarian stage of *Centrocestus* sp. are the most common parasites in the two fish species and gold fish are more susceptible than Koi carp to these two parasites. These conclusions are based on our findings that *Tricodina* infection (for gold fish IF = 100%, IC = 4272.4, IN = 128172, DI = 4272, for Koi carp, IF = 66%, IC = 11.06, IN = 240.9, DI = 7.3) is higher than infection of *Centrocestus* sp. (for gold fish IF = 80%, IC = 22.33, IN = 428.8, DI = 17.86, for Koi carp, IF = 62%, IC = 1.61, IN = 31, DI = 1) in both fish species compared to our detection of *Apiosoma* sp., *Gyrodactylus* sp., *Dactyrogyrus* sp. or *Ichthyobodo necatrix*. *Argulus* sp. was found only in Koi carps and *Posthodiplostomum cuticola* was found only in gold fish. A comparison of level of infestation of external parasites versus host body size was conducted using two length classes; smaller fish (standard length up to 3.9cm) and larger fish (standard length from 4.0 – 9.0 cm). Results

indicated that gold fish had a higher incidence of infestation in smaller fish, while in Koi carp, the smaller fish showed lower infestation than the larger fish. The above two fish species have gained high demand among other ornamental fish species. Thus, these findings are important in planning of proper treatment programmes for both fish species.

Keywords: Gold fish, Koi carp, *Tricodina* sp., *Centrocestus* sp., parasite infection indices

*Corresponding author e-mail: dhn@zoo.ruh.ac.lk, donamunasinghe@gmail.com