

**Immunostimulatory Effect and Disease Resistance against *Aeromonas hydrophilla* in Koi Carp, *Cyprinus carpio*(L) of Dietary Supplements of Coriander Seed (*Coriandrum sativum*), Heen Bovitiya Leaf (*Osbeckia octandra*) and Hathawaria Leaf (*Asparagus racemosus*)**

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The ornamental fishery is a developing sector in Sri Lanka. High cost of production and loss due to disease conditions are major constraints of the aquaculture sector. Many chemical compounds including antibiotics are used by farmers to control disease conditions that are not environmentally sound and cause drug resistance bacteria. The occurrence of bacterial disease in fish fingerlings is found due to various pathogenic bacteria and the majority were identified as *Aeromonas sp.* The application of native herbal plants in the aquaculture sector is an effective and environmentally friendly method for enhancing fish immunity and growth. This study was conducted to investigate effective immunostimulant for koi carp fingerlings among *Coriandrum sativum* (Coriander seeds), *Osbeckia octandra* (Heen bovitiya leaf), and *Asparagus racemosus* (Hathawaria leaf). Three feeds were produced by incorporating each plant's dry powder with Growfin commercial feed as Feed TK (1% of Coriander seed), Feed TA (1% of Hathawaria), and Feed TH (1% of Heen bovitiya). Growfin feed was used as the control Feed (C). The feeding period was six weeks. Growth performance and feed performance were at the estimated. Blood sampling and a challenge study using *Aeromonas hydrophilla* were carried out at the end. In terms of hematological parameters, Red blood cell count and White blood cells were significantly ( $p < 0.05$ ) higher in Hathawaria leaf compared with the control. Hathawaria leaf showed significantly ( $p < 0.05$ ) the highest specific growth rate (SGR%) and feed conversion ratio FCR 1.8. The hepatosomatic index (HSI) was significantly ( $p > 0.05$ ) smaller among the treatment groups and the control showed the highest HSI. In the challenge study, treated groups showed a high survival rate compared to the control. Among them, Hathawaria treatment showed the highest survival rate (83.3%). The results showed that the dietary supplement of Hathawaria can enhance immunity, growth, and resistance against *Aeromonas hydrophilla*.

**Keywords:** *Aeromonas hydrophilla*, *Asparagus racemosus*, *Coriandrum sativum*, koi carps, *Osbeckia octandra*.

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