

emerging disease in *Penaeus vanammei* (Pacific whiteleg shrimp) farming in India and worldwide. EHP infects the hepatopancreatic tubules of shrimp resulting in growth retardation associated production losses in shrimp farming. Early detection of EHP by molecular methods like polymerase chain reaction (PCR) is highly recommended in managing hepatopancreatic microsporidiasis in the shrimp culture systems. PCR assays reported based on the 18S RNA gene are more suitable for EHP detection in shrimp tissue than sediment samples as they detect other closely related organisms likely to be present in sediments resulting in false positive results. A multiplex assay has been developed to overcome this problem for specific detection of EHP in both shrimp tissue and sediment samples. This assay is suitable for detecting EHP from the hepatopancreas, post larvae, faeces of shrimp and sediment samples in shrimp ponds.

#### AH PO 30

### Incidences of parasitic infestations of cyprinid ornamental fishes during pre-monsoon and monsoon season

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The present study was carried out to investigate the seasonal prevalence and comparative host specificity of two important gill parasites viz., *Ergasilus* spp. and *Dactylogyrus* spp. among three economically important ornamental fishes viz., shining barb (*Pethia conchonius*), narayan barb

(*Pethia narayani*) and goldfish (*Carassius auratus*). A total 120 nos. of fish samples received from different ornamental fish rearing units were randomly screened in the laboratory by wet mount preparations for these parasites. In this study, 40 numbers each of shining barb (length 4.9-6.5 cm); narayan barb (length 4.2-6.2 cm) and goldfish (length 5.3-8.1 cm) were screened in weekly intervals during pre-monsoon (April-May) and monsoon (July-August). In pre-monsoon season, the parasitic density of *Ergasilus* spp. was found highest in the case of shining barb at 6 nos cm<sup>-2</sup> of gill tissue whereas, in narayan barb and gold fish the parasitic load was 2 nos cm<sup>-2</sup> of gill tissue. Interestingly the intensity of *Dactylogyrus* spp. was found to be more in the case of goldfish followed by shining barb and narayan barb (5 cm<sup>-2</sup>, 3 cm<sup>-2</sup>, 2 cm<sup>-2</sup>) respectively. However, in monsoon the parasitic load of *Ergasilus* spp. increased to 8 cm<sup>-2</sup>, 4 cm<sup>-2</sup> and 3 cm<sup>-2</sup> of gill tissue in shining barb, gold fish and narayan barb. *Dactylogyrus* spp. load was 8 cm<sup>-2</sup>, 5 cm<sup>-2</sup> and 3 cm<sup>-2</sup> of gill tissue respectively in shining barb, narayan barb and goldfish. Hence, it was observed that the host preference for both the parasites does not change with the season but the parasitic infestation intensity slightly increases in the monsoon.

#### AH PO 31

### Studies on *Bacillus mycoides*, as potential probiotic, on the haematological and biochemical parameters of *Pangasianodon hypophthalmus*

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The probiotic activity of *Bacillus mycooides* was evaluated by its effect on the haematological and biochemical factors of *P. hypophthalmus*. The experiment was carried out in two groups (control and treatment) and three replicates. In control group, probiotic was not applied in diet but in treatment group, *B. mycooides* was administered in feed at a concentration of  $10^7$  cells  $g^{-1}$ . In the day of thirty, 5 blood samples were drawn from every replicate for biochemical and haematological experiments. Results showed that *B. mycooides* addition to diet had no effect on erythrocyte count, haemoglobin, haematocrit, mean cell volume (MCV), mean corpuscular haemoglobin (MCH) and mean corpuscular haemoglobin concentration (MCHC) and there was no significant difference among two groups ( $p > 0.05$ ). But the leucocyte count, percent of lymphocyte, serum total protein, serum albumin, IgM and lysozyme of T group was significantly higher than that of C group ( $p < 0.05$ ), whereas percent of neutrophile and monocyte of C group was significantly higher than that of T group ( $p < 0.05$ ). The results suggest that *B. mycooides* can stimulate immune parameters in *P. hypophthalmus*.

AH PO 32

**Immunostimulatory activity of sulphated polysaccharides from seaweeds and resistance to *Aeromonas hydrophila* in *Oreochromis mossambicus***

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Aquaculture is fast growing food production industry that contributes nearly 50% of the annual fisheries production. The recent expansion of intensive aquaculture practices has led to a growing interest in understanding fish disease, so they can be treated or prevented. One of the bacterial pathogens in India, *Aeromonas hydrophila*, is known to cause a variety of diseases in fish such as haemorrhagic septicaemia, infectious dropsy, tropical ulcerative disease and fin rot leading to heavy mortality in aquaculture farms. Sulphated polysaccharides (SPS) are a class of compounds containing hemi-ester sulphate groups in their sugar residues. SPS are abundant in the cell wall of marine algae. They are reported to have blood anticoagulant, anti-tumour, anti-mutagenic, anti-complementary, immunomodulating, hypoglycemic, antiviral, hypolipidemic and anti-inflammatory activities. In the present study the effect of sulphated polysaccharides (SPS) from seaweed on the specific and non-specific immune response and disease resistance against *A. hydrophila* was investigated in *O. mossambicus*. For this purpose, fish were fed with sulphated polysaccharides for 14 days and determined its non-specific defense mechanism include phagocytosis, lysozyme activity, lipid peroxidation assay, NTB assay and its protein content. The efficacy is also determined by bacterial challenge and monitoring specific antibody level. The present study paves a way for further experiments in SPS to understand its mode of action and its use as a feed additive/medication to prevent bacterial infection in *O. mossambicus*.