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## **Diseases occurrence of biofloc system in Sylhet district of Bangladesh: A report of mass mortality of striped snakehead, *Channa striata* (Bloch 793) due to co-infection with *Aeromonas veronii* and parasitic leeches**

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Present study was conducted to assess the fish diseases in Biofloc fish farms of Sylhet District, the north-eastern part of Bangladesh. Nine biofloc farms were visited to collect data through a questionnaire interview method. A total of seven diseases and ten major problems were observed. The prevalence of fish diseases varied among Upazilas and Farms. Data showed the most prevalent disease in the north-eastern region of Bangladesh was tail rot (55.56%) followed by hypoxia (44.44%), dropsy (44.44%), fungal attack (44.44%), streptococcus (11.11%), gill clogging (11.11%) and exophthalmia (33.33%) and almost all respondents reported that they had the seed problems and the electricity problems (100%). high ammonia (66.67%) was ranked as second and followed by high mortality rate (55.56%), oxygen deficiency (44.44%), poor floc production (33.33%), low-quality Probiotic (33.33%), and production rate (33.33%). Among 8 biofloc fish farms, farmers of 6 farms found biofloc as a non-sustainable culture system due to low-quality probiotics, electricity problems, non-trained culturists, sudden death of fish, prevalence of disease, high mortality rate, seed problem, etc. Additionally, we investigated the incidence of mass mortality of striped snakehead fish, *Channa striata* collected from a biofloc fish farms. Clinical and laboratory diagnosis has been performed on diseased *Channa striata* and found leech infestation on the skin of the moribund fishes showing skin abrasion and red spots. Bacteriological investigation revealed yellowish coloured colonies on the Rimler-Shotts (RS) selective media for *Aeromonas* spp. later carried out polymerase chain reaction technique (16s RNA, 1450 bp) to ascertain the bacterial species, *A. veronii*. Further, the sequences date were blast and submitted in the National Center for Biotechnology Information (NCBI, Accession- ON854128). Severe pathological changes were noticed in the gill, liver, kidney, spleen and muscles of the infected tissues following histopathological investigation of diseased fish. Antibiograms study showed among fifteen antibiotics disc, gentamycin produced large area of zone of inhibition against *Aeromonas veronii*. The information of the study will be helpful for the proper management of fish diseases and treatment and to know the status of biofloc fish farms and their sustainability in the north-eastern region of Bangladesh.

**Keywords:** Biofloc System, Disease occurrence, Disease Diagnosis, Histopathology, Problems/ Threats, Sustainability.

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