PREVALENCE, SURVEILLANCE AND VIRULENCE CHARACTERIZATION OF FLAVOBACTERIUM COLUMNARE AND F. PSYCHROPHILUM IN INDIAN CATFISHES OF SUB HIMALAYAN REGION

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ABSTRACT – Twenty isolates of *F. columnare* (Fc1 - Fc20) and eight isolates of *F. psychrophilum* (Fp1 - Fp8) have been isolated from different organs (kidney, spleen and necrotic tissue) of diseased Indian catfish (*Clarias batrachus* and *Heteropneustes fossilis*) exhibiting the overt signs of columnaris and cold water diseases, sampled from water bodies of sub Himalayan region. Significant (P<0.01) mortality has been noted in cat fishes of this region. Most of the Fc and Fp isolates exhibited morphological and biochemical characters similar to those of standard strain with slight variations such as Fc1 - Fc3 formed yellow-orange and yellow-green and Fc2 - Fc4 appeared as yellow colonies with rhizoid edges, respectively on selective medium supplemented with tobramycin. They were gram negative rods and positive to H$_2$S production and starch hydrolysis but negative to nitrate reduction and glucose metabolism. They produced flexirubin type pigmentation and hydrolyzed gelatin. ELISA test revealed the prevalence of antibody titers in very few candidates of same age, length and weight groups of healthy *C. batrachus* and *H. fossilis* and immuno-fluorescence studies explicated their presence in the tissue of kidney and intestine of experimentally infected fish and hence cat fishes cultured in sub Himalayan region appear to be vulnerable and carrier of these pathogens.

*Keywords:* *F. columnare, F. psychrophilum*, isolates, virulence, immunohistology, hyper immune sera, Indian catfish