

An investigation of caudal fin rot due to *Flexibacter columnaris* in guppy, *Poecilia reticulata*.

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ABSTRACT

Large scale guppy (*Poecilia reticulata*) producers provide 17 to 21 days old fry to out-growers and when fish are 60 to 90 days old they are bought back and selected to be exported. Male guppies with wider caudal fins have a greater demand; however, some exporters recently reported that a larger proportion of these fish have eroded margins of caudal fins and even if a few such fish are included in a consignment, it is rejected by the importer causing considerable economic losses while damaging the reputation. Therefore the present study was undertaken to investigate the cause of fin erosion in guppies.

Monthly random samples of guppy were obtained from an exporter from April 2001 to April, 2002. These fish were maintained and observed in the laboratory under simulated conditions to those of the holding facilities at the exporter's aquarium. Within 48 hours, erosion of the margins of caudal fins progressed gradually leaving the fin rays bare and lesions developed on the caudal peduncle, body surface and on other fins which rapidly progressed in to yellow to orange coloured ulcers. Tips of gill lamellae of some fish showed necrosis which gradually reached the base of the gill arch. In wet mounts of lesions, clusters of long thin rods (0.60 μm to 1.0 μm width ; 5.0 μm to 10.0 μm length) with characteristic gliding motion of *Flexibacter columnaris* were present. The bacteria produced yellow- green flat colonies with uneven margins on cytophaga agar at ambient temperature (27.0 C $^{\circ}$ - 29.0 C $^{\circ}$). Prevalence of the disease was increased during the months with water temperature above 28.5 C $^{\circ}$ causing 83 % to 93% mortality within a period of 2 to 8 days. Challenge experiments revealed that there is a difference in the degree of virulence of *Flexibacter columnaris* isolated from different fish samples.