

## EPIDEMIOLOGICAL STUDY OF FURUNCULOSIS IN SALMONID FISH IN JAPAN.

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Furunculosis, caused by the bacterium *Aeromonas salmonicida*, is serious disease in salmonid fish and this study was carried out for the purpose of establishing control methods for the disease. In a recent epidemiological study, we determined the distribution and prevalence of *A. salmonicida* in asymptomatic mature chum (*Oncorhynchus keta*), pink (*O. gorbuscha*) and masu salmon (*O. masou*) in Hokkaido and Honshu. *A. salmonicida* was distributed widely in the populations of mature salmonids in Hokkaido and Honshu. From 1979 to 1999, a total of 21,389 chum, pink and masu salmon were collected from the rivers in Hokkaido and Honshu. We isolated *A. salmonicida* from the chum salmon in 21 of the 34 rivers examined and the overall prevalence was 12.2 % in the infected stocks. In pink salmon, we isolated the bacteria in 10 of the 16 rivers examined and the prevalence of the agent in those rivers was 4.6%. The agent was isolated from the population of masu salmon in 6 of the 10 rivers examined and the prevalence in those rivers was 1.4%.

The changing annual prevalence of the agent in chum salmon in the Chitose River was closely related to changes in fish density in holding ponds: the prevalence of the bacteria increased in proportionally to the number of fish in the pond. The agent could not be isolated from the kidney of immature fish examined, but was isolated with CBB medium from the gill surface of immature fish caught in the rivers. *A. salmonicida* was also isolated from coelomic fluids of asymptomatic fish.

The bacteria are spread during fish migration within the river and during transportation of the fish from capture site to rearing pond. To control furunculosis in salmonid fish, fish should mature in ponds under conditions of low density and eggs should be disinfected to prevent spread of furunculosis during artificial propagation of salmonids.