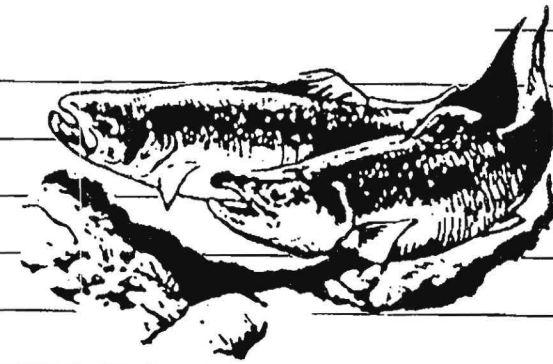
Research



Information bulletin

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Mucus as a Source for Reliable Isolation of *Aeromonas salmonicida* from Asymptomatic Fish

Aeromonas salmonicida, the cause of furunculosis, is a major pathogen of salmonid fishes. The bacterium is usually diagnosed in kidney samples of systemically infected fish by either serodiagnostic assay or bacteriological culture. Fish that survive epizootics of furunculosis generally become latent carriers of *A. salmonicida* and serve as a reservoir of infection for other fish. Still, it is often difficult to recover the bacterium from the kidneys of suspect carriers. Recently, we recovered the organism from mucus of asymptomatic Atlantic salmon *(Salmo salar)*. The dilution count procedure used to detect the pathogen in mucus allowed for easy separation of individual colonies and subsequent recovery of *A. salmonicida*. Such observation could provide an effective nonlethal alternative to sampling regimens presently recommended for the detection of this pathogen. This study was conducted to further substantiate that mucus is a valid site for the nonlethal isolation of *A. salmonicida*.

Lake Trout Samples Processed to Detect Latent Infection

Juvenile lake trout (*Salvelinus namaycush*) were sampled (n = 100 fish per group) at quarterly intervals within their first year of life. Two groups were sampled from each of three state fish hatcheries at Bath, Caledonia, and Rome (New York), which have a continuing history of enzootic furunculosis. Another two groups of lake trout were also sampled at the Caledonia hatchery. Paired mucus and kidney samples were processed for *A. salmonicida* by dilution drop counts on Coomassie Brilliant Blue agar. Inoculated plates were incubated up to 72 h at ambient temperature until colonies were visible. Bacteria were quantified in dilutions containing 10–30 colonies. Individual colonies were subcultured and identified by standard microbiological procedures.

Mucus Was a Reliable Source for Recovering the Pathogen

Our data indicated that mucus was indeed a viable site for the detection and isolation of *A. salmonicida* in carrier fish. Although *A. salmonicida* was not detected in any population at every quarterly inspection, each population tested positive at some time during the year of study. A total of 26 groups of lake trout was studied during this investigation. Five groups had *A. salmonicida* in both mucus and kidney samples, but the pathogen was further detected in another 10 groups from mucus samples, alone. No group tested positive for *A. salmonicida* in kidney samples that was not already positive by assay of mucus.

Regular Monitoring Program Enhanced Detection

These data further suggested that single-point inspections of either mucus or kidney samples may produce erroneous results. Monitoring of mucus

(nonlethal), enacted at several points during a production cycle, provided better information concerning the prevalence of the pathogen. Because *A. salmonicida* may remain viable in the water column for approximately 2 weeks, routine examination of mucus could, therefore, detect the pathogen at early stages of infection and provide better information for managing the resource and preventing disease.

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